

# Brook Floater

## *Alasmidonta varicosa*

### *Freshwater Mussel Species of Concern*

State Rank: S2 (imperiled), Global Rank: G3 (vulnerable)

#### **Identification**

The brook floater (*Alasmidonta varicosa*) is a small mussel, usually less than 70 mm in length. The shell is thinner towards the posterior margin and the mussel has a subovate or subtrapezoidal shape (Strayer and Jirka 1997). The ventral margin is slightly indented and the anterior end is abruptly curved. The valves are laterally inflated, giving the mussel a swollen appearance in cross section (Connecticut DEP 2003; Bogan 2002; Nedeau 2000). The posterior ridge is broad and rounded with well-defined ridges crossing the growth lines on the posterior slope. The periostracum (outer covering) is commonly yellowish-green (juveniles) to greenish-brown (adults) and usually has radiating dark green rays across the surface. This species possesses a cantaloupe colored foot (Bogan 2002; Connecticut DEP 2003; Nedeau 2000; Strayer and Jirka 1997).



Photo:

[http://www.mass.gov/dfwele/dfw/nhesp/images/al\\_varicosa.jpg](http://www.mass.gov/dfwele/dfw/nhesp/images/al_varicosa.jpg)

#### **Habitat**

The brook floater is only found in habitats that have consistently flowing water – from small streams to large rivers. It is not found in water bodies that have static water flow such as ponds or lakes (Connecticut DEP 2003; Nedeau 2000). This species favors clean water in gravel or sand and gravel substrates in riffles of creeks and small rivers (Nedeau 2000; [www.natureserve.org/explorer](http://www.natureserve.org/explorer); [www.ncwildlife.org/pg07\\_WildlifeSpeciesCon/pg7b1a1\\_8.htm](http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7b1a1_8.htm); <http://research.amnh.org/biodiversity/mussel/alasmidontagenusframeset.html>).



Photo:

<http://research.amnh.org/biodiversity/mussel/alasmidontagenusframeset.html>



Photo:

<http://www.mass.gov/dfwele/dfw/nhesp/images/bioimgback.jpg>

#### **Host Fish**

Identified potential fish hosts for the brook floater include: blacknose dace, longnose dace, golden shiner, pumpkinseed, slimy sculpin, yellow perch, and margined madtom (Bogan 2002; Nedeau 2000; [www.ncwildlife.org/pg07\\_WildlifeSpeciesCon/pg7b1a1\\_8.htm](http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7b1a1_8.htm); <http://research.amnh.org/biodiversity/mussel/alasmidontagenusframeset.html>).

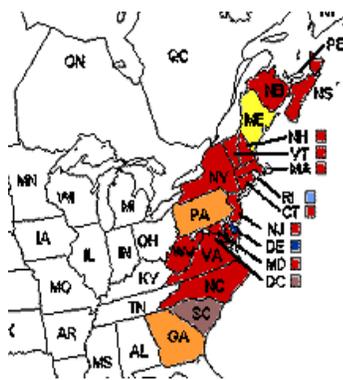
## Status

*Alasmidonta varicosa* is sporadically distributed in Atlantic drainages from Nova Scotia to South Carolina. It appears to be extant from most of the sites it was previously reported in along the Atlantic coast in Maine. This species is observed frequently in Maine; however, when found, populations consist of only a few individuals (Nedeau 2000). In an assessment of the conservation status of the freshwater mussels of the United States by the American Fisheries Society (Williams et al. 1993), the brook floater was listed as threatened. The Pennsylvania status of the brook floater is imperiled (S2) due to a lack of individuals found during surveys throughout most of its range within state boundaries ([www.naturalheritage.state.pa.us/invertebrates.aspx](http://www.naturalheritage.state.pa.us/invertebrates.aspx)). More surveys are required to determine the status of this species and other freshwater mussels in Pennsylvania.

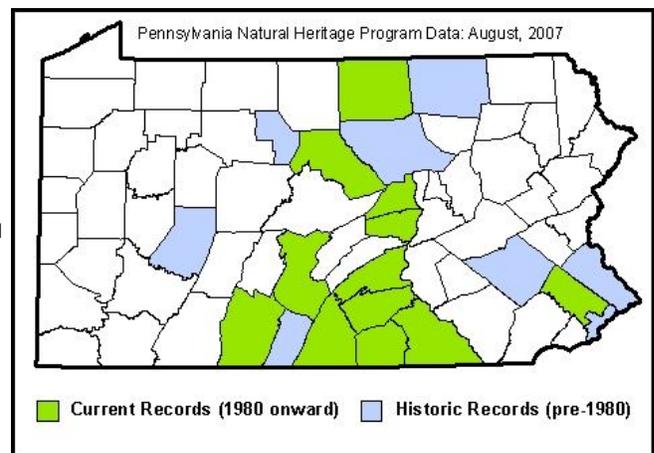
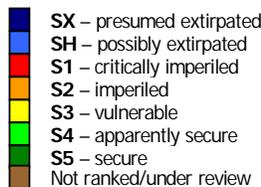
The brook floater has experienced significant declines in population size throughout most of its range. This species has been affected by general pollution, siltation, wastewater runoff, impoundments, and biological collection. Additionally, introductions of the zebra mussel and Asiatic clam have had negative impacts on the distribution of this species. The brook floater is extremely sensitive to hypoxia, pollution, and silt (Nedeau 2000; [www.natureserve.org/explorer](http://www.natureserve.org/explorer)).

### North American State/Province Conservation Status

Map by NatureServe (2007)



#### State/Province Status Ranks



## References

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- NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: September 4, 2007).
- Nedeau, E.J, M.A. McCollough, and B.I. Swartz. 2000. The Freshwater Mussels of Maine. Maine Dept. of Inland Fisheries and Wildlife, Augusta, ME.
- New York Metropolitan Region and New Jersey Freshwater Mussel Identification Handbook. Website: <http://research.amnh.org/biodiversity/mussel/alasmidontagenusframeset.html>
- North Carolina Mussel Atlas, Species Information and Status. Website: [www.ncwildlife.org/pg07\\_WildlifeSpeciesCon/pg7b1a1\\_8.htm](http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7b1a1_8.htm)
- Pennsylvania Natural Heritage Program. Biota of Concern In Pennsylvania (BOCIP) Lists. Website: [www.naturalheritage.state.pa.us/invertebrates.aspx](http://www.naturalheritage.state.pa.us/invertebrates.aspx)
- Strayer, D.L. and K.J. Jirka. 1997. The Pearly Mussels of New York State. The New York State Education Dept., Albany, N.Y. 113 pp and plates.
- Williams, J.D., M.L. Warren, K.S. Cummins, J.L. Harris, and R.J. Neves. 1993. Conservation Status of Freshwater Mussels. Fisheries. 18(9): 6-22



Pennsylvania Natural Heritage Program

