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Conserving South Carolina's At-Risk Species:

Species facing threats to their survival

Brook floater

(*Alasmodonta varicosa*)



Brook floater/Photo credit: Allen Barlow

Description

The shell of the brook floater is oblong, long and rhomboid with the anterior margin abruptly curved the ventral margin long and gently concave centrally. Growth ridges are marked by concentric ridges. The outer surface is generally smooth except on the posterior slope; it is yellowish, greenish or covered with dark greenish rays in juveniles. The outer surface becomes brownish with rays partially obscured or almost black in adults. The inner shell surface is whitish or bluish-white often with salmon, pink or purple in the beak cavity. Maximum shell length for this species is 70 mm (2.8 inches).

Identification keys are provided in Bogan and Alderman (2004) for South Carolina.

Range

The brook floater is found along the east coast from eastern Canada to the Savannah River basin in South Carolina and Georgia. In North Carolina and South Carolina, populations are small, isolated, and have limited extents. In South Carolina, the brook floater occurs in several streams in the Steven's Creek basin including Beaverdam, Stevens, Turkey and Mountain Creeks. The most viable southern popula-

tion may be in the Chattooga River near the South Carolina/Georgia state line. It is also found in Flat Creek and the Lynches River; however, the brook floater is only found in portions of this river with good water quality and stable stream-banks. South Carolina counties where the brook floater is known to occur are: Chesterfield, Edgefield, Greenwood, Kershaw, Lancaster, McCormick, Oconee, and Saluda.



Brook floater range map - Canadian Wildlife Service Environment Canada

Habitat

The brook floater is found in high relief streams among boulders in sand.

Status

This species has disappeared from 60-80 sites range-wide and its current global status is vulnerable (G3). There has been a sharp decline in numbers where present with significant declines being noted in Massachusetts, New York, Pennsylvania, New Jersey, Rhode Island, Virginia, North Carolina, and South Carolina. It is not ranked in South Carolina, but is currently a species of special concern in this state. The U.S. Fish and Wildlife Service was petitioned to list the species in April 2010 and published a substantial 90-day finding in September 2011 indicating listing may be warranted.

Threats

The brook floater is particularly sensitive to habitat degradation (silt, nutrient and sewage loads, pollution) caused by poor agricultural practices, development, loss of riparian corridors, impoundments, off-road motor vehicle use, and other water quality issues. Impacts from over-collection and competition with exotics species such as the Asiatic clam (*Corbicula fluminea*) and the zebra mussel (*Dreissena polymorpha*) have also been documented.

Management/Protection Needs

Protect the brook floater and its habitat from further degradation by following best management practices and protection of riparian areas, especially those portions along Flat Creek in the Lynches River drainage. Encourage responsible land use planning and promote good land stewardship practices through educational programs. Conduct surveys to determine the presence and location of the brook floater in South Carolina and continue to monitor known populations.

References

COSEWIC Assessment and Status Report on the Brook Floater *Alasmodonta varicosa* in Canada - 2009
 NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>.
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