

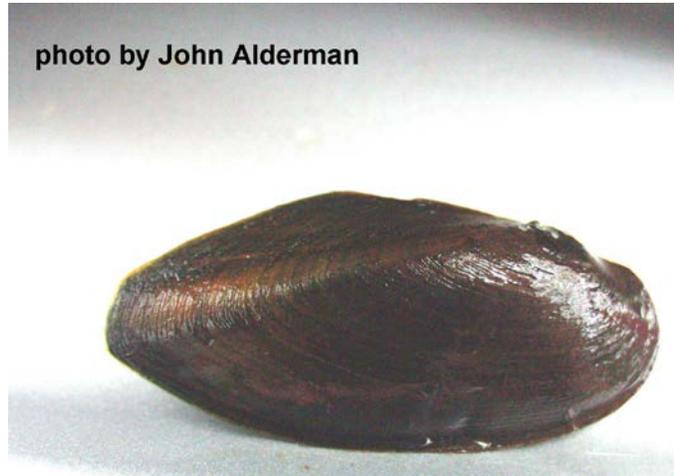
Northern Lance*Elliptio fisheriana*

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DESCRIPTION**Taxonomy and Basic Description**

The northern lance was not previously reported as part of South Carolina's fauna, but specimens resembling this species have recently been found in parts of the Pee Dee drainage in South Carolina as well as in Lake Marion in the Santee drainage (Alderman 2005; Savidge 2006). The identity of these specimens is not certain, as they resemble both *E. fisheriana* and *E. nasutilus*. It is also possible that the 2 species are actually synonymous (T. Savidge, pers. comm., e-mail message February 2, 2005). The taxonomy of this and related species requires further study (Taxonomic Expertise Committee 2011).

**Status**

NatureServe (2011) currently identifies the Northern Lance as having a global ranking of apparently stable (G4). The Northern Lance is currently unranked in South Carolina, but has a ranking of vulnerable (S3) in North Carolina.

POPULATION SIZE AND DISTRIBUTION

The Northern Lance ranges from Pennsylvania to North Carolina and west to West Virginia (NatureServe 2011). The recent collections extend the southern limit to the Pee Dee and Santee drainages of South Carolina. At most South Carolina sites, the species is uncommon, often with only 2 or 3 individuals found after several hours of effort.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The Northern Lance seems to be found primarily in soft sediments in shallow water less than 0.6 m (2 ft.) from stream and river banks that are highly stable with an intact riparian zone (T. Savidge, pers. comm., e-mail message, Feb. 2, 2005).

CHALLENGES

Because the Northern Lance is usually found in shallow zones of gently sloping stable banks, it is likely that it is especially vulnerable to streambank erosion, sudden water level fluctuations, and vehicular traffic in streams. Observations suggest that this species is sensitive to channel modification, pollution, sedimentation, and low oxygen conditions, but we do not know how the

relative sensitivity of this species to these challenges compares to other species (Taxonomic Expertise Committee 2004). All of the general challenges to mussels are likely to apply to this species, although we do not know how specific actions affect this species.

CONSERVATION ACCOMPLISHMENTS

The species has been identified as a potentially valid species occurring in South Carolina but requires additional taxonomic research.

CONSERVATION RECOMMENDATIONS

- Continue to conduct surveys and monitor the population density of the Northern Lance.
- Conduct genetic analyses across the range of the Northern Lance to try to determine the relationship between the Northern Lance and *E. nasutilus* as well as to other lanceolate Elliptios.
- Explore the need to list the Northern Lance within South Carolina, based on survey results.
- Protect critical habitats for the Northern Lance from future development and further habitat degradation by following Best Management Practices and protecting and purchasing riparian areas.
- Promote land stewardship practices through educational programs both within critical habitats with healthy populations and other areas that contain available habitat for the Northern Lance.
- Encourage responsible land use planning.
- Consider this species' needs when participating in the environmental permit review process.
- Educate off-road motor vehicle operators of the negative effects of crossing streams at multiple locations and using stream bottoms as trails.
- Conduct further research to determine the degree of sensitivity of the Northern Lance to various point and non-point sources of pollution and land use impacts.

MEASURES OF SUCCESS

Resolving taxonomic questions regarding the relationship between the Northern Lance and other lanceolate elliptios will be one measure of success. Determining the extent of its distribution will be another. Once the South Carolina distribution of the Northern Lance is determined, persistence of identified populations and an increase in populations where they are currently very rare will be considered indicative of success.

LITERATURE CITED

Alderman, J.M. 2005. Mussel surveys for Santee Cooper FREC relicensing. Prepared for Normandeau Associates, Bedford, NH. 1–167 pp.

Savidge, T.W. 2006. Freshwater mussel surveys of the Pee Dee River basin in South Carolina. Prepared by The Catena Group for The Nature Conservancy–South Carolina Chapter. 1–47 pp.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>.