

Eastern Pondmussel

Ligumia nasuta

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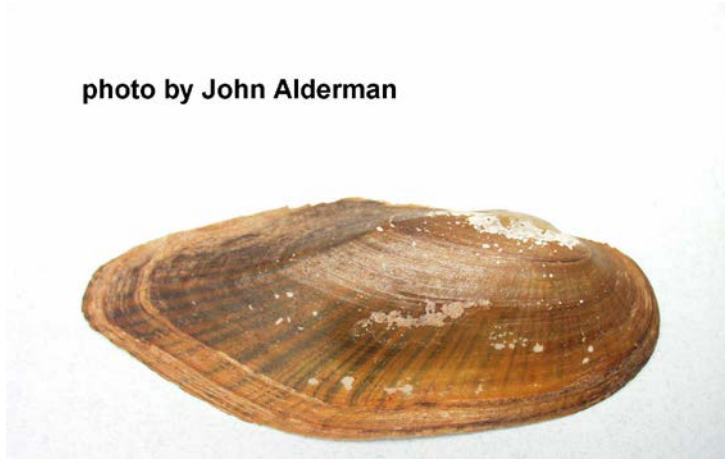
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DESCRIPTION

Taxonomy and Basic Description

The shell of the Eastern Pondmussel is elongated and sub-elliptical with a rounded anterior margin and a broadly curved ventral margin. The posterior margin is rounded and drawn out into a posterior angle or blunt point near the midline of the shell, and the posterior ridge well developed. The ventral margin of the female's shell is expanded in the postbasal region. The outer surface of the Eastern Pondmussel shell is dark olive green to brownish, often with faint, dark green straight and narrow rays, especially in juveniles. The shell also has irregular growth lines; sometimes a few ribs are present below the posterior ridge. The inner surface of the shell is bluish-white, sometimes with salmon in the beak area, and is iridescent posteriorly. The shell can reach a maximum length of 102 mm (4.1 in.) (Bogan and Alderman 2004, 2008).

photo by John Alderman

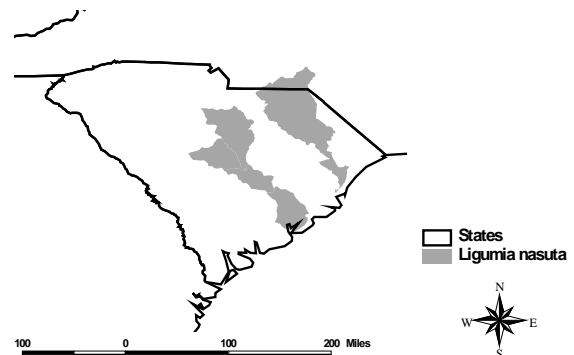


Status

NatureServe (2011) currently identifies the Eastern Pondmussel's global status as apparently secure (G4). The species is ranked as imperiled (S2) and critically imperiled (S1) in South and North Carolina, respectively (NatureServe 2011).

POPULATION SIZE AND DISTRIBUTION

This historic range of the Eastern Pondmussel extends from the Savannah River Basin in Georgia north to Maine and Ontario and as far west as Michigan. In South Carolina, it was historically documented in the Savannah, Santee-Cooper, and Pee Dee Basins (Johnson 1970). It has recently been documented in the Savannah, Congaree, Broad, and Pee Dee Rivers and in Lake Greenwood. The species can be abundant when found, but extant populations are quite rare (Taxonomic Expertise Committee 2004).



HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The Eastern Pondmussel can be found in lakes, ponds, streams, and rivers of variable depths with muddy, sandy, or gravelly substrates. Often, it is found in very shallow water near the banks of rivers (Taxonomic Expertise Committee 2004).

CHALLENGES

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 threats compares to other species. The tendency for the Eastern Pondmussel to inhabit shallow water near riverbanks may make it especially sensitive to sudden drops in water levels (Taxonomic Expertise Committee 2004).

CONSERVATION ACCOMPLISHMENTS

Additional populations have been located in Lake Greenwood and the lower Broad River (Savidge 2006; Price and Eads 2011). Two hundred individuals of Eastern Pondmussel were reared in captivity, and tagged individuals were released in the lower Broad River in 2010 (C. Eads, pers. comm.).

CONSERVATION RECOMMENDATIONS

- Conduct additional surveys to determine the status and distribution of the Eastern Pondmussel.
- Evaluate the need to list the Eastern Pondmussel based upon survey results.
- Examine museum specimens to determine the historic range of the Eastern Pondmussel; compare its present and historic distributions.
- Protect critical habitats for the Eastern Pondmussel 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 in other areas that contain available habitat for the Eastern Pondmussel.
- 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 Eastern Pondmussel to various point and non-point sources of pollution and land use impacts.

MEASURES OF SUCCESS

Once the distribution of the Eastern Pondmussel is thoroughly evaluated, persistence of populations and increases in numbers where rare will indicate successful conservation efforts.

LITERATURE CITED

- NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>.
- Bogan, A.E. and J.M. Alderman. 2004. Workbook and key to the freshwater bivalves of South Carolina. i-ii + 1-64 pp. + 5 pls.
- Bogan, A.E. and J.M. Alderman. 2008. Workbook and key to the freshwater bivalves of South Carolina (Revised Second Edition). i-ii + 1-66 pp. + 5 pls.
- Johnson, R.I. 1970. The systematics and zoogeography of the Unionidae (Mollusca: Bivalvia) of the southern Atlantic Slope Region. *Bulletin of the Museum of Comparative Zoology*. 140(6):263-449.
- Price, J.E. and C. Eads. 2011. Brooding patterns in three freshwater mussels of the genus *Elliptio* in the Broad River in South Carolina. *American Malacological Bulletin* 29(1-2): 121-126.
- 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.