

Creeper

Strophitus undulatus

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DESCRIPTION

Taxonomy and Basic Description

The shell of the Creeper is elliptical and somewhat rhomboid; the anterior end is rounded and the posterior end is bluntly pointed and often obliquely truncated.

The posterior ridge is broadly rounded and may be compressed or quite pronounced. The outer surface of the Creeper's shell is yellowish or greenish, with greenish, often wavy rays in young individuals. Older individuals are dark brown or black and usually without rays. The inner surface is white or bluish white and iridescent around the margins and center. The shell is usually less than 110 mm (4.4 in.) in length (Parmalee and Bogan 1998).



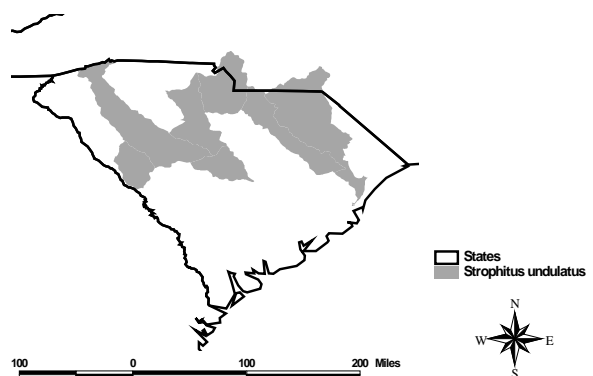
photo by John Alderman

Status

NatureServe (2011) currently lists the Creeper as secure in Tennessee and Ontario, but imperiled (S2) or critically imperiled (S1) in several other states, including South Carolina. This mussel has a global ranking of secure (G5). However, this ranking may need to be updated, as the Creeper appears to be declining across its range. It is recommended for a rank of S1 in South Carolina (John Alderman pers. comm.) and is currently a species of special concern.

POPULATION SIZE AND DISTRIBUTION

The Creeper is widespread throughout the eastern and central United States and Canada. In South Carolina, it has been found at several locations: Cloud's Creek in the Steven's Creek Basin; Big Cedar Creek in Richland County; the Lynches River and its tributary, Flat Creek; the Catawba River; the Pee Dee River; and the Congaree River. Creeper populations have declined as it is never abundant where it is found in South Carolina. This species is locally more common in some parts of southern North Carolina in high quality rivers and streams (Taxonomic Expertise Committee 2004).



HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The Creeper can be found in shallow water in both small streams and large rivers. It inhabits a variety of substrates, from silt to boulder fields. While the Creeper can be found in lakes, it does not appear to be able to reproduce in this habitat; lake populations eventually die out (Taxonomic Expertise Committee 2004). In addition to utilizing a variety of fish and salamander species as hosts, this is one of the few species that is able to complete larval development without utilizing a host (Bogan and Alderman 2004, 2008).

CHALLENGES

Observations suggest that this species is sensitive to channel modification, pollution, sedimentation, and low oxygen conditions. Because it is restricted to streams with especially very good water quality in South Carolina, it may be even more sensitive to siltation and pollution than other mussel species. Impoundments appear to threaten the reproduction and/or recruitment of the Creeper (Taxonomic Expertise Committee 2004). The Creeper has an unusually wide range for a freshwater mussel, and there is some concern that mussels currently classified as the Creeper in different parts of its range may actually be other species (Taxonomic Expertise Committee 2004).

CONSERVATION ACCOMPLISHMENTS

There are no significant conservation accomplishments specifically for the Creeper at this time.

CONSERVATION RECOMMENDATIONS

- Conduct additional surveys to look for new populations of the Creeper and closely monitor existing populations.
- Conduct genetic analysis on the Creeper throughout its range.
- Explore the need to elevate the listing of the Creeper based on survey results.
- Evaluate the effects of impoundments on the Creeper. Determine methods for impounded habitat restoration that will benefit the species.
- Protect critical habitats for the Creeper 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 Creeper.
- 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 Creeper to various point and non-point sources of pollution and land use impacts.

MEASURES OF SUCCESS

Persistence of known populations and an increase in their size will indicate the success of management activities.

LITERATURE CITED

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