Waccamaw Spike

Elliptio waccamawensis

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DESCRIPTION

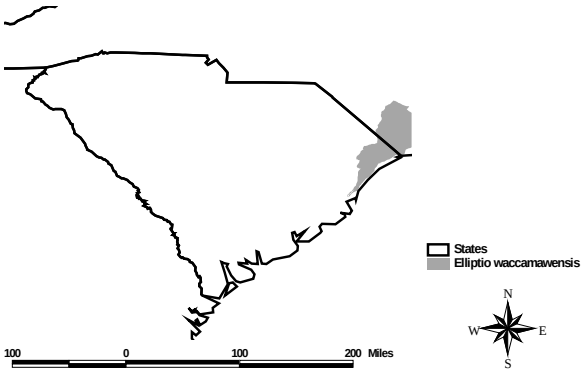
Taxonomy and Basic Description

The Waccamaw Spike has a moderately inflated elliptical shell with a prominent angular ridge on its posterior slope; the ventral margin is straight. The outer surface of the shell is light to dark brown and smooth; the inner surface is white to bluish (Bogan and Alderman 2004, 2008).

Status

The Waccamaw Spike is a species of federal concern. Nature Serve (2011) identifies this species as having a global status of imperiled (G2/G3Q) and a state status of critically imperiled (S1) in both South Carolina and North Carolina.

POPULATION SIZE AND DISTRIBUTION



The Waccamaw Spike is endemic to the Pee Dee River Basin in North and South Carolina. This species is found in the main channel of the Waccamaw, Little Pee Dee, Great Pee Dee, and Black Rivers and in Lake Waccamaw (Savidge 2006). The Waccamaw Spike is generally common when found, but is of conservation concern because of its extremely restricted distribution and many impending threats.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The Waccamaw Spike prefers a substrate of compact sand. The species may be quite sensitive to acidification and turbidity, because a survey at Lake Waccamaw (Adams et al. 1990) observed a positive correlation between the abundance of this species and both pH and light penetration.

CHALLENGES

The habitat for the Waccamaw Spike is adversely affected because the Waccamaw River is experiencing a decline in both water levels and pH. Agriculture, extensive logging, and

development in Myrtle Beach, South Carolina also impact the Waccamaw Spike since these activities can increase sedimentation and degrade watershed health, particularly if sediment control measures are not implemented. Due to its proximity to the habitat for this species, development in Wilmington, North Carolina may also be contributing to declining habitat quality for this species. There is also extensive development in the vicinity of Lake Waccamaw. Like other mussels, the Waccamaw Spike appears to be 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).

CONSERVATION ACCOMPLISHMENTS

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

CONSERVATION RECOMMENDATIONS

- Explore the need to list the Waccamaw Spike in South Carolina, based on monitoring results and the fact that its distribution and abundance are extremely restricted.
- Monitor mussel populations in the Waccamaw drainage frequently. Monitoring should include measurement of habitat variables such as pH, water levels, and turbidity.
- Protect critical habitats for the Waccamaw Spike 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 Waccamaw Spike.
- Encourage responsible land use planning throughout the Waccamaw watershed.
- Consider species needs when participating in the environmental permit review process.
- Conduct further research to determine the degree of sensitivity of the Waccamaw Spike to various point and non-point sources of pollution and land use impacts.

MEASURES OF SUCCESS

Persistence of identified populations of the Waccamaw Spike and an increase in abundance where they currently are very rare will be considered indicative of success. The maintenance of good water quality in the Waccamaw drainage will also indicate the success of watershed management techniques.

LITERATURE CITED

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