

Sandbar Shiner*Notropis scepticus*

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DESCRIPTION

Taxonomy and Basic Description

The Sandbar Shiner belongs to the minnow family (Cyprinidae) and the genus *Notropis*, which is among the most diverse groups of North American freshwater fishes, with at least 81 taxa (Rohde et al. 2009; NatureServe 2013).

A moderate sized minnow, adult Sandbar Shiners range in total length from 70 to 90 mm (2.8 to 3.5 in.) (Rohde et al. 2009). The overall coloration is a silvery-straw shade while the scales on the back are darkly outlined, forming faint lines that meet on the caudal peduncle. The eye is large (wider than the snout is long) and the lateral line punctuate and down-curved. It has a relatively pointed snout featuring a large, terminal and oblique mouth with black pigment on the lips. The dorsal fin origin is slightly behind that of the pelvic fins (Rohde et al. 2009).

Status

The Sandbar Shiner is considered apparently secure (G4) on a global scale and is not currently ranked in South Carolina (SNR) (NatureServe 2013). It is currently stable according to Warren et al. (2000).

POPULATION SIZE AND DISTRIBUTION

The Sandbar Shiner occurs in the Piedmont portions of all of South Carolina's river basins from the Cape Fear River drainage, North Carolina to the Savannah River, Georgia/South Carolina (Rohde et al. 2009). Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for Sandbar Shiner in wadeable streams was 0.20 per 100 m² (95% confidence interval: 0.13 – 0.26).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Sandbar Shiner predominantly occurs in moderate to large streams where it inhabits flowing pools over a sand substrate (Rohde et al. 2009).

CHALLENGES

Primary threats to the Sandbar Shiner include loss of forested land, especially the removal of riparian cover along Piedmont streams. Land development, siltation, and hydrologic alterations such as channelization and construction of impoundments also threaten this species.

CONSERVATION ACCOMPLISHMENTS

South Carolina Stream Assessment data have facilitated the calculation of standardized abundance (density) estimates for this species at multiple spatial strata including statewide, river basin, level-IV ecoregion, and “ecobasin” (ecoregion x river basin). These estimates, for the first time, provide an objective measure of current population status that will serve as a baseline for following future population trends and gauging the effectiveness of conservation actions.

Educational materials have been developed in order to raise public awareness of nongame species and their ecological importance to the natural history of South Carolina’s aquatic habitats, including:

- The Reel Art program creates a topic for secondary school students and judges the artists’ submissions (e.g. a list of the Piedmont Fishes of SC to select from as subjects for drawing or painting).
- We compiled information and photographs for the development of nongame fish description web pages which are currently in development.
- We developed the Blackwater River Guide and interactive Powerpoint.
 - <http://www.dnr.sc.gov/education/pdf/BlackwaterInteractivePoster.pdf>
 - <http://www.dnr.sc.gov/education/pdf/BlackwaterRivEdGuide.pdf>
- We developed and printed the Fish Species of Concern Coloring Book (2009).
 - <http://www.dnr.sc.gov/aquaticed/pdf/SCFishesofConcernColoringBook.pdf>

CONSERVATION RECOMMENDATIONS

- Use South Carolina Stream Assessment decision-support GIS modeling tools to identify levels and spatial distributions of critical habitat factors to sustain the species in geographic areas of interest.
- Use South Carolina Stream Assessment decision-support GIS modeling tools to identify priority regions and watersheds at greatest risk of decline in stream integrity.
- Protect critical habitats 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.
- Encourage responsible land use planning.
- Consider this species’ needs when participating in the environmental permit review process.
- Continue to develop educational materials in order to raise public awareness of nongame species and their ecological importance to the natural history of South Carolina’s aquatic habitats.
- Educate motor vehicle operators of the negative effects of crossing streams at multiple locations and using stream bottoms as trails.

MEASURES OF SUCCESS

Successful conservation of Sandbar Shiner habitats would produce expected population densities comparable to or exceeding those observed in the South Carolina Stream Assessment (2006 –

2011) for given ecoregions, river basins, and ecobasins. A success criterion would be cooperation of SC landowners in achieving the foremost goal of the Southeastern Aquatic Resource Partnership's 2008 Southeast Aquatic Habitat Plan which states that 85% of lands within 30 m (100 ft.) of streams or rivers should be maintained in natural vegetation. Preservation of large tracts of forested Piedmont landscapes would represent a major accomplishment.

LITERATURE CITED

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: March 26, 2013).

Rohde, F. C., R. G. Arndt, J. W. Foltz and J. M. Quattro. 2009. Freshwater Fishes of South Carolina. The University of South Carolina Press, Columbia. 544 pp.