

## Tennessee Shiner

*Notropis leuciodus*

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### DESCRIPTION

#### Taxonomy and Basic Description

The Tennessee Shiner is also a member of the cyprinid family (minnows) and belongs to the genus *Notropis*. With 71 species, *Notropis* is the second largest genus of freshwater fishes in North America (Rohde et al. 1994). The Tennessee Shiner is slender with a prominent midlateral stripe and a lateral line set off by dashes terminating in a small rectangular spot at the base of the caudal fin. During the breeding season, the bodies and fins of males take on a red hue and they display a lime green stripe on their upper side. Adult Tennessee Shiners range in length from 43 to 82 mm (1.7 to 3.2 in.) (Rohde et al. 1994).

#### Status

The Tennessee Shiner is listed as a species of special concern in South Carolina. Globally, this species is considered to be currently stable (Warren et al. 2000) and secure (G5), and is not ranked (SNR) in South Carolina (NatureServe 2013).

#### POPULATION SIZE AND DISTRIBUTION

The upper Savannah River contains several fish species that are typically found in the Tennessee drainage and not on the Atlantic Slope. The presence of the Tennessee Shiner in the Savannah River of the Southern Atlantic Slope is likely due to a stream capture from the Tennessee River (Ross 1970). In South Carolina, this species occurs only in the Chattooga and Seneca River systems of the upper Savannah River drainage.

Within South Carolina, the Tennessee Shiner is restricted to the Chattooga and Seneca River system in the upper Savannah River drainage. The Tennessee Shiner occurs throughout most of the Tennessee drainage in Alabama, Georgia, Tennessee, North Carolina, Tennessee and Kentucky. Information on population size and status is limited for this species. From what is known about the upper Savannah River drainage, it appears that the Tennessee Shiner can be found in the Chattooga River. The Tennessee shiner was not collected at any randomly selected wadeable stream sites in the South Carolina Stream Assessment (2006-2011).

#### HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Tennessee Shiner inhabits the mid-water areas of riffles, runs and pools adjacent to moderate and swift currents (Jenkins and Burkhead 1994). The Warpaint Shiner and, to a lesser extent, the Tennessee Shiner are dependent on chub nests (*Nocomis* spp.) for reproduction. The

Tennessee Shiner has also been observed spawning in shallow gravel runs without nests (Jenkins and Burkhead 1994).

## CHALLENGES

Although the Tennessee Shiner is currently stable throughout the majority of its range, its limited distribution in South Carolina makes it vulnerable to imperilment within the State. Because of its limited distribution within South Carolina, it is especially vulnerable to development within the Chattooga River system. The major challenges to this species are deforestation, loss of riparian cover, siltation, and impoundments.

## CONSERVATION ACCOMPLISHMENTS

The core area of Tennessee Shiner abundance is protected by the Wild and Scenic Chattooga River.

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.
- Describe life history and habitat requirements of the Tennessee Shiner.
- Identify critical habitats and areas with healthy populations of the Tennessee Shiner and protect these areas once identified.
- 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 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

Determining the distribution, life history, habitat needs, and Southeastern population structure and trends would represent a measure of success for this species. Methods that protect water quality are also likely to protect this species. In the event that more protective BMPs are implemented, population studies of this fish could assist in determining the effectiveness of those measures.

## LITERATURE CITED

- Jenkins, R.E., and N.M. Burkhead. 1994. *Freshwater Fishes of Virginia*. American Fisheries Society. Bethesda, Maryland. 1079 pp.
- 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, D.G. Lindquist and J.F. Parnell. 1994. *Freshwater Fishes of the Carolinas, Virginia, Maryland, & Delaware*. The University of North Carolina Press. Chapel Hill, North Carolina. 222 pp.
- Ross, R.D. 1970. The Distributional History of the Biota of the Southern Appalachians. Pp 29-37. *In: Research Division Monograph 4*, P.C. Holt, Editor. Virginia Polytechnic Institute and State University. Blacksburg, Virginia.
- Warren, M.L., Jr., B.M. Burr, S.J. Walsh, H.L. Bart, Jr., R.C. Cashner, D.A. Etnier, B.J. Freeman, B.R. Kuhajda, R.L. Mayden, H.W. Robison, S.T. Ross and W.C. Starnes. 2000. Diversity, distribution, and conservation status of the native freshwater fishes of the southern United States. *Fisheries* 25(10):7-31.