

Swallowtail Shiner

Notropis procne

Contributors (2013): Kevin Kubach and Mark Scott [SCDNR]

DESCRIPTION

Taxonomy and Basic Description



The Swallowtail 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).

Adult Swallowtail Shiners range from 46 to 78 mm in total length (1.8 to 3.1 in.) (Rohde et al. 2009). The overall coloration is a somewhat translucent straw-yellow with a dark lateral stripe extending onto but not encircling the snout. It has a predorsal stripe, a dash of black pigment at the base of the dorsal fin and two light dashes along the back, just anterior and posterior to the dorsal fin. The breast is usually unscaled (Rohde et al. 2009).

Status

The Swallowtail Shiner is considered secure (G5) on a global scale but is listed as imperiled (S2) in South Carolina (NatureServe 2013). It is currently stable according to Warren et al. (2000).

POPULATION SIZE AND DISTRIBUTION

The Swallowtail Shiner is distributed along the Atlantic Slope from the Delaware and Susquehanna River drainages in New York to the Santee River drainage in South Carolina (Rohde et al. 2009). In South Carolina, it is found in the Pee Dee and Santee River Basins primarily in the Piedmont, with some records from the Inner Coastal Plain as well. Based on South Carolina Stream Assessment data (2006-2011), the mean statewide density estimate for Swallowtail Shiner in wadeable streams was 0.06 per 100 m² (95% confidence interval: 0.03–0.08).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Swallowtail Shiner occurs in sandy pools of small to medium streams (Rohde et al. 2009).

CHALLENGES

Primary threats to the Swallowtail Shiner include loss of forested land and especially the removal of riparian cover along Piedmont and Inner Coastal Plain 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 Swallowtail 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 the 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 be maintained in natural vegetation. Preservation of large tracts of forested Piedmont landscapes would represent a major accomplishment.

LITERATURE CITED

- 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.
- 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.