

**Redlip Shiner***Notropis chiliticus*

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**DESCRIPTION****Taxonomy and Basic Description**

The Redlip Shiner is a member of the genus *Notropis*. Containing about 71 species, *Notropis* is considered the genus of true shiners (Rohde et al. 1994). The true shiners are generally small and nearly all lack a barbel. Silver color is dominant; breeding males of many species have bright colors (chiefly red) and some are boldly black-patterned. A great deal of variation occurs across the genus in morphology, color, and biology.

The Redlip Shiner is characterized by bright red lips with red coloration in the dorsal, anal, and caudal fins and with black blotches on the sides (Rohde et al. 1994), and the lateral line is complete (Jenkins and Burkhead 1994). These fish have 8 or 9 anal rays (Jenkins and Burkhead 1994). Breeding males exhibit scarlet-red body and eye coloration with yellow fins (Rohde et al. 1994). Adults range in length from 40 to 55 mm (1.6 to 2.2 in.) (Jenkins and Burkhead 1994).

**Status**

The Redlip Shiner has the legal status of a species of special concern in South Carolina and is considered to be potentially critically imperiled (S1?) (NatureServe 2013). Its status across much of its range is apparently secure (G4) (NatureServe 2013).

**POPULATION SIZE AND DISTRIBUTION**

The Redlip Shiner is native to the Pee Dee drainage and the Dan River system of the Roanoke River drainage in North Carolina and Virginia. This species has recently been introduced and is apparently established in the New River drainage and Cape Fear drainage in North Carolina and Virginia. It is abundant in mountain streams and common in the piedmont (Page and Burr 1991). In South Carolina, the Redlip Shiner is restricted to the Sandhills and Slate Belt Ecoregions in the upper Pee Dee River drainage. The most viable populations of Redlip Shiner likely occur in Thompson Creek, Chesterfield County, SC. The Redlip Shiner was not collected at any randomly selected wadeable stream sites in the South Carolina Stream Assessment (2006-2011).

The Redlip Shiner is considered abundant in mountain streams within its range and less abundant in the Piedmont, with a very limited distribution in South Carolina. South Carolina is the southern-most extreme portion of its range, but may not be part of the natural range of the Redlip Shiner. Conservation actions in South Carolina may have little impact on the overall status of

these fishes. However, due to the limited habitat available for this species in South Carolina, and if it is to be maintained as part of South Carolina's fauna, then it is essential that the habitat requirements for these fishes be better understood and actions taken to protect and preserve appropriate sites for the survival of this species.

## HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Redlip Shiner occupies flowing pools of clear headwaters, creeks, and small rivers of the Piedmont and Mountains; it prefers areas with sand-gravel to rubble bottom. The Redlip Shiner spawns on nests of Bluehead Chub (*Nocomis leptcephalus*) (Johnson 1991; NatureServe. 2004).

## CHALLENGES

This species is vulnerable in South Carolina due to its very limited distribution, but it is currently stable throughout much of its range. Challenges to this species are similar to those of other aquatic fauna and include point and non-point source pollution, deforestation and loss of riparian corridors, impoundment development, channelization and siltation from poor land use practices, and unplanned or poorly planned urban and suburban development. Because of its limited distribution, it is also vulnerable to habitat losses due to anthropogenic influences such as water withdrawals or environmental disturbances such as drought.

## CONSERVATION ACCOMPLISHMENTS

South Carolina Stream Assessment (2006-2011) 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.
- Describe life history and habitat requirements of the Redlip Shiner.
- Survey Thompson Creek and surrounding areas in Chesterfield County to determine the status of the Redlip Shiner as this stream likely houses the strongest populations of this species and may have been severely impacted by the drought of 2002. Protect these areas, once identified.
- Protect critical habitats from future development and further habitat degradation by following Best Management Practices (BMPs) 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

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

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