

**Greenfin Shiner***Cyprinella chloristia*

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

The Greenfin Shiner is a member of the cyprinid family (minnows) and belongs to the genus *Cyprinella*. This genus, whose members number 29 species, is the second largest of American cyprinids after *Notropis* (Jenkins and Burkhead 1994). Members of the *Cyprinella* genus are distinguished from other cyprinids by their large, vertical diamond-shaped scales and a black blotch on the dorsal fin (Rohde et al. 1994). As with the other *Cyprinella*, the Greenfin Shiner is a crevice spawner (Jenkins and Burkhead 1994). The Greenfin Shiner is a relatively deep-bodied *Cyprinella* with a midlateral stripe that is more pronounced posterior to the dorsal fin. The breeding male often displays lime-colored dorsal and caudal fins. Adult Greenfin Shiners range in length from 44 to 72 mm (1.7 to 2.8 in.) (Rohde et al. 1994).

**Status**

The Greenfin Shiner is not listed federally or within the state of South Carolina as a fish of special concern. They are apparently secure; however, there is some concern for their long-term status based on their limited distributions. The Greenfin Shiner is considered apparently secure (G4) globally and is currently not ranked (SNR) in South Carolina (NatureServe 2013).

**POPULATION SIZE AND DISTRIBUTION**

The Greenfin Shiner is completely restricted to the Santee and Pee Dee River systems above the Fall Line in North Carolina and South Carolina. Information on population size and status is limited. However, this species appears to currently be stable in South Carolina (SCDNR unpublished data). Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for the Greenfin Shiner in wadeable streams was 0.18 (95% confidence interval: 0.04 – 0.33) per 100 m<sup>2</sup>.

**HABITAT OR NATURAL COMMUNITY REQUIREMENTS**

The Greenfin Shiner requires cool, clear water in creeks or small to moderately-sized rivers. The species prefers the slower areas and margins of pools and runs with clean sand and rocky substrates. As with other *Cyprinella* species, the Greenfin Shiner is a crevice spawner, depositing eggs in crevices of logs and rocks and thus requires coarse substrates and in-stream structures such as logs to deposit its eggs (Rohde et al 1994).

## CHALLENGES

The Greenfin Shiner is currently stable with relatively large distributions throughout the State. They are of conservation concern because they are only found within a few major drainages. Two-thirds of the global range of the Greenfin Shiner occurs within the State of South Carolina. Therefore, conservation efforts within South Carolina are critical to the global preservation of these species. Challenges to this species are similar to those faced by other aquatic fauna and include point and non-point source pollution, deforestation and loss of riparian corridors, impoundment development, siltation from poor land use practices and unplanned or poorly planned urban and suburban development. Development of the Interstate 85 corridor between Charlotte, North Carolina and Greenville, South Carolina could also result in adverse impacts to several of these species.

## 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 Greenfin Shiner.

- 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

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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- Rohde, F.C., R.G., Arndt, D.G. Lindquist and J.F. Parnell. 1994. *Freshwater Fishes of the Carolinas, Virginia, Maryland, and Delaware*. The University of North Carolina Press. Chapel Hill, North Carolina. 222 pp.