

Highfin Shiner*Notropis altipinnis*

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DESCRIPTION

Taxonomy and Basic Description

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

Adult Highfin Shiners are small, ranging in total length from 36 to 63 mm (1.4 to 2.5 in.) (Rohde et al. 2009). This species has a diffuse, black lateral stripe extending from less than halfway onto the caudal fin to, and occasionally over, the eye and around the nostril. The lateral stripe does not extend below the lowest part of the lateral line and it is bordered above by a light (mostly unpigmented) stripe. The scales on the back are outlined in black. The lateral line is often incomplete. The mouth is oblique and there is a U-shaped smudge of pigment between the nostrils when viewed from above. Little or no pigment is present along the anal fin base (Rohde et al. 2009).

Status

The Highfin Shiner is considered secure (G5) 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 Highfin Shiner occurs primarily in the lower Piedmont region of drainages from the Chowan River, Virginia to the Savannah River, Georgia/South Carolina (Rohde et al. 2009). It is found in all of South Carolina's river basins in the lower Piedmont, especially the Carolina Slate Belt Ecoregion. Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for Highfin Shiner in wadeable streams was 0.19 per 100 m² (95% confidence interval: 0.10 – 0.28).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Highfin Shiner occurs in pools and runs of small to moderate streams with substrata ranging from sand to rocks (Rohde et al. 2009). In the South Carolina Stream Assessment, it was often collected in relatively slow streams of the Carolina Slate Belt Ecoregion with abundant bedrock and boulder habitats.

CHALLENGES

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

LITERATURE CITED

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