Ironcolor Shiner

Notropis chalybaeus

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DESCRIPTION

Taxonomy and Basic Description

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

Adult Ironcolor Shiners are relatively small, ranging in total length from 45 to 65 mm (1.8 to 2.6 in.) (Rohde et al. 2009). The sides and back are yellowish and there is a well-defined black lateral stripe extending from the caudal fin base to the snout with pigment present on the chin and lips. Its snout is shorter than the width of the eye and its mouth is small with a black roof. Breeding males have a bright orange stripe above the black lateral stripe and often have orange spots above and below the black caudal spot. The lateral line is usually incomplete (Rohde et al. 2009).

Status

The Ironcolor Shiner is considered apparently secure (G4) on a global scale and is not currently ranked (SNR) in South Carolina (NatureServe 2013). Although it occupies a relatively wide range, it is regarded as vulnerable in a recent assessment of North American fishes due to present or threatened destruction and modification or reduction of its habitat (Jelks et al. 2008). Accordingly, it has received varying degrees of state conservation status as high as S1 (critically imperiled in Alabama, Delaware, Maryland, Michigan, Missouri, New York, Oklahoma, and Pennsylvania.

POPULATION SIZE AND DISTRIBUTION

The Ironcolor Shiner occurs in the Coastal Plain of the Atlantic and Gulf Slopes from Maine to Texas and northward in the Mississippi River Basin to Wisconsin (Rohde et al. 2009). Although it is found in all of South Carolina's river basins on the Coastal Plain, populations appear to be somewhat patchy in distribution according to South Carolina Stream Assessment (2006-2011) collections. Based on South Carolina Stream Assessment data, the mean statewide density estimate for Ironcolor Shiner in wadeable streams was 0.22 per 100 m^2 (95% confidence interval: 0.00 – 0.45).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Ironcolor Shiner inhabits small, low-velocity blackwater streams and swamps (Rohde et al. 2009).

CHALLENGES

Primary threats to the Ironcolor Shiner include loss of forested land and especially the removal of riparian cover along Coastal Plain streams. Mature forest and riparian vegetation is an important source of large woody debris in Coastal Plain streams which provides critical habitat for many endemic southern Atlantic coastal plain species including Ironcolor Shiner (Marion 2008). Land development, siltation and hydrologic alterations such as channelization and construction of impoundments also threaten this species. The conversion of lowland swamps and streams into channelized, shallow drainage ditches with unnaturally high current velocities represents a principal threat to Ironcolor Shiner habitat.

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.
- 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 Ironcolor 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 Coastal Plain landscapes would represent a major accomplishment.

LITERATURE CITED

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