Lowland Shiner

Pteronotropis stonei

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DESCRIPTION

Taxonomy and Basic Description

The Lowland Shiner is a member of the genus *Pteronotropis*. There are currently seven recognized species in the genus *Pteronotropis*, all of which are restricted to the Lower Coastal Plain from Mississippi to South Carolina (Etnier and Starnes 1993). The Lowland Shiner is a newly recognized species (Suttkus et al. 2003) that was previously synonymized with the Sailfin Shiner (*Pteronotropis hypselopterus*). The Lowland Shiner has a small head and deeply compressed body; the dorsal and anal fins are enlarged and triangular in shape. This species has a broad bluish-black stripe that extends from the snout to the base of the tail. Above the broad lateral stripe is a thinner gold to orange stripe. The Lowland Shiner can attain a length of 65 mm (2.5 in.) (Rohde et al. 1994).

Status

The Lowland Shiner is not federally or state listed. They are considered secure (G5) globally (NatureServe2013); however, there is some concern for their long-term status based on their limited distributions. Being a newly recognized species, it does not currently have a concern status, although it may warrant one based on its limited distribution. It is currently not ranked (SNR) in South Carolina (NatureServe2013). The Lowland Shiner was considered vulnerable in a recent assessment of North American freshwater fishes (Jelks et al. 2008).

POPULATION SIZE AND DISTRIBUTION

The Lowland Shiner is restricted to Georgia and South Carolina from the Pee Dee River drainage to the Satilla River drainage (Suttkus et al. 2003). Within South Carolina, the Lowland Shiner is largely restricted to the Southeastern Coastal Plain from the Pee Dee River to the Savannah River and is most commonly found in the Edisto and Combahee River systems. Information on population size and status is limited. However, this species currently appears to be stable in South Carolina (SCDNR unpublished data). Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for the Lowland Shiner in wadeable streams was 1.08 (95% confidence interval: 0.67 – 1.49) per 100 m^2.

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Lowland Shiner occurs in small- to medium-clear and blackwater streams. It prefers areas with moderate flow like slow riffles, runs and flowing pools. The Lowland Shiner is generally associated with clean sand substrate and aquatic vegetation (Suttkus et al. 2003).

CHALLENGES

The Lowland 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. Approximately one-half of the global distributions of the Lowland Shiner occur in South Carolina. Therefore, conservation efforts within South Carolina are critical to the global preservation of this 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.

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 Lowland Shiner.
- 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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