Sawcheek Darter

Etheostoma serrifer

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DESCRIPTION

Taxonomy and Basic Description

The Sawcheek Darter belongs to the family Percidae (perches) and the genus *Etheostoma*, the most diverse genus of North American freshwater fishes with at least 160 species (NatureServe 2013). It is a member of the subgenus *Hololepis*, which is also represented in South Carolina by the Swamp Darter (*E. fusiforme*) and Carolina Darter (*E. collis*) (Rohde et al. 2009).

Adult Sawcheek Darters range in size from 40 to 68 mm total length (1.6 to 2.7 in.) (Rohde et al. 2009). Overall coloration is tan with dark mottling on the side and a greenish venter. It has a highly arched and incomplete lateral line and a serrated edge on its preopercle. Two vertically aligned dark spots, usually outlined in orange or red, are present at the base of the caudal fin. The cheek, opercle, breast, and belly are fully scaled (Rohde et al. 2009).

Status

The Sawcheek Darter is considered secure (G5) on a global scale (NatureServe 2013) and currently stable according to Warren et al. (2000). It has received varying degrees of state status including imperiled (S2) in Georgia, vulnerable (S3) in Virginia, secure (S5) in North Carolina, and not ranked (SNR) in South Carolina (NatureServe 2013).

POPULATION SIZE AND DISTRIBUTION

The Sawcheek Darter is distributed primarily on the Atlantic Coastal Plain from southeastern Virginia to the Altamaha River system, Georgia (Rohde et al. 2009). It is found across all drainages in the coastal plain of South Carolina and a few localities in the Outer Piedmont. Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for Sawcheek Darter in wadeable streams was 0.06 per 100 m^2 (95% confidence interval: 0.01 – 0.10).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

Sawcheek Darters typically occur in small to moderate Coastal Plain streams with mud, sand, and organic substrates, often in association with aquatic vegetation (Rohde et al. 2009). Based on South Carolina Stream Assessment (2006-2011) data, it tends to occur in streams with relatively greater current velocities than those typically occupied by the Swamp Darter and Carolina Darter.

CHALLENGES

Primary threats to the Sawcheek Darter 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 the Sawcheek Darter (Marion 2008). Land development, siltation, and hydrologic alterations such as channelization and construction of impoundments also threaten this species.

Although it has a relatively wide range across South Carolina, the Sawcheek Darter generally occurs in low abundance where it is found.

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 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 Sawcheek Darter 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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