Seagreen Darter

Etheostoma thalassinum

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DESCRIPTION

Taxonomy and Basic Description

The Seagreen Darter is a member of the family Percidae and the subgenus *Etheostoma*; this subgenus contains 14 species, 11 of which occur in South Carolina (Rohde et al. in press).

The Seagreen Darter is a moderate-sized darter ranging in adult length from 66 to 78 mm (2.6 to 3.1 in.) (Rohde et al. 1994). This species has 7 squarish, dark brown saddles and a similar number of small dark brown blotches on the sides. The first dorsal fin has a red edge with a dusky black base. The second dorsal fin is reddish-orange. Pelvic and anal fins are blue (Rohde et al. 1994). Breeding males are brilliantly colored and develop tubercles on the mid-ventral scales just anterior to the anus and also on the caudal peduncle (Kuehne and Barbour 1983).

Status

The Seagreen Darter is not listed in South Carolina (SNR) (NatureServe 2013), but Guillory et al. (1978) considered the Seagreen Darter as a species of special concern in North Carolina. It is currently considered vulnerable (S3) in North Carolina (NatureServe 2013) and stable throughout its range (Warren et al. 2000), being apparently secure (G4) globally (NatureServe 2013).

POPULATION SIZE AND DISTRIBUTION

The Seagreen Darter is restricted to the Santee River drainage of the Carolinas. This species inhabits lower elevation tributaries in the mountain regions and is also found over a broad area of the Upper Piedmont in the Carolinas (Rohde et al. 1994). It is less frequently found below the Fall Line in tributaries of the Congaree River. The Seagreen Darter appears not to be threatened at this time because it is locally common in many of the streams of the upper Santee drainage. Detailed survey and inventory for range and abundance of the Seagreen Darter are needed (Kuehne and Barbour 1983). Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for Seagreen Darter in wadeable streams was 0.08 (95% confidence interval: 0.05 – 0.12) per 100 m^2.

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Seagreen Darter favors a habitat of rock, rubble or gravel riffles in large creeks and rivers with moderate to swift currents (Kuehne and Barbour 1983). It has adapted to wide variations in temperature and water clarity.

CHALLENGES

Although the Seagreen Darter is currently considered stable, conservation efforts within South Carolina are critical to their global conservation. More than half the global distribution of Seagreen Darter occurs in South Carolina. Within the State, destruction of stream riffle habitat caused by land development, deforestation, loss of riparian cover, siltation, and hydrologic alterations like channelization and impoundments could jeopardize these species. The Seagreen Darter is especially vulnerable, given its limited distribution in the upper Santee River Basin. Further, in extreme headwaters of their range, Seagreen Darters may be adversely affected by Brown and Rainbow Trout introductions.

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.

- Describe life history and habitat requirements of Seagreen Darters.
- Study the potential predator/prey relationship between darters (Turquoise and Seagreen Darters) and introduced trout (Brown and Rainbow Trout) and the impact of this relationship on the native darters.
- 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 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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