

High Conservation Priority – Other Species

Turquoise Darter *Etheostoma inscriptum*

Seagreen Darter *Etheostoma thalassinum*

Piedmont Darter *Percina crassa*

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DESCRIPTION

Taxonomy and Basic Description

The turquoise darter, the seagreen darter and the Piedmont darter are all members of the family Percidae. Both turquoise and seagreen darters are in the subgenus *Etheostoma*; this subgenus contains 14



species, 11 of which occur in South Carolina (Rohde et al. in press). The Piedmont darter and blackbanded darter are the only representatives in the genus *Percina* found in South Carolina.

The turquoise darter is a moderate-sized darter ranging in adult length from 66 to 78 mm (2.6 to 3.1 inches) (Rohde et al. 1994). Adults of both sexes have five to six dark dorsal saddles and six blotches on the side (Kuehne and Barbour 1983). The male turquoise darter is brown with several horizontal rows of small red spots, while the sides of the female are yellow-brown with brown saddles and blotches. The colorful breeding males take on a pinkish body color with dark green bars on the side. The lower portion of the head becomes blue, as do the pelvic fins, anal fins and outer extremes of the caudal fin. The dorsal fins of males become blue-green with red edges during the spawning period (Rohde et al. 1994).



The seagreen darter is a moderate-sized darter ranging in adult length from 66 to 78 mm (2.6 to 3.1 inches) (Rohde et al. 1994). This species has seven 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).

The absence of tubercles in breeding Piedmont darter males places this darter in subgenus *Alvordius*. The specific name *crassa* means “thick” and refers to the rather stocky appearance of this species (Kuehne and Barbour 1983). The Piedmont darter is a moderate-sized darter



ranging in adult length from 68 to 90 mm (2.7 to 3.5 inches) (Rohde et al. 1994). The fish has a general brown color with seven to nine vertically elongated oval blotches joined by a mid-lateral band. A caudal spot is usually diffuse and vertically elongated (Kuehne and Barbour 1983). The Piedmont darter has a black chin bar, black breast spot and a large black teardrop below the eye. The first dorsal fin has a black edge, a tan band below, a yellow interior and vertical black markings below the lower portion of each spine (Rohde et al. 1994). Chin, throat and breast are lightly stippled in females and more heavily so in males.

Status

The turquoise darter is not listed in South Carolina or Georgia, but is a fish of special concern in North Carolina, where it is considered critically imperiled (NatureServe 2004), likely due to its very restricted range in that state. In a recent assessment of southeastern fishes, the turquoise darter was considered currently stable (Warren et al. 2000).

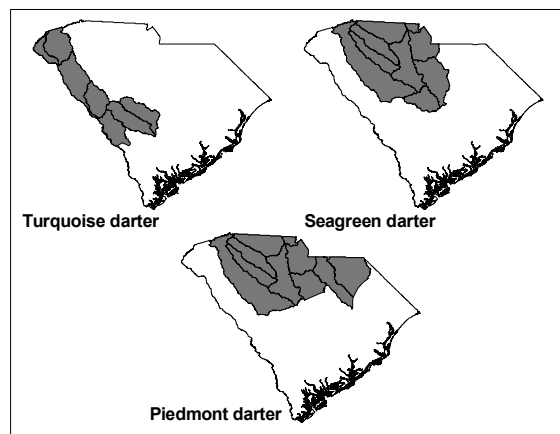
Seagreen darter is not listed in North Carolina or South Carolina, but Guillory et al. (1978) considered the seagreen darter as a species of special concern in North Carolina. Currently, it is considered vulnerable in North Carolina (NatureServe 2004) and stable throughout its range (Warren et al. 2000).

Warren et al. (2000) classified the Piedmont darter as currently stable. Due to its limited habitat in Virginia, it is considered a special concern species (Guillory et al. 1978), classified as critically imperiled (NatureServe 2004). The Piedmont darter is not listed in North Carolina or South Carolina where it is abundant and considered apparently secure (NatureServe 2004).

POPULATION DISTRIBUTION AND SIZE

Distribution

The turquoise darter is found in the Savannah River drainage in North Carolina, Georgia and South Carolina. In Georgia, it is also found in upper Ogeechee and Altamaha River drainages (Page and Burr 1991). In South Carolina, it is most often found above the fall line, but also occurs in the upper Edisto River in the coastal plain.



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 Piedmont darter is found primarily from northwestern to southeastern North Carolina and in north central South Carolina. The northern extreme of its range extends into a small portion of southwestern Virginia (Rohde et al. 1994).

Population Size and Trend

The turquoise darter is frequently documented in stream surveys; however, the true abundance of the species is unknown. Detailed survey and inventory for range and abundance of the turquoise darter are needed (Kuehne and Barbour 1983). 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). The Piedmont darter is frequently documented in stream surveys; however, the true abundance of the species is unknown.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The turquoise darter is a riffle dweller within large streams and small rivers. In much of its range, riffle habitat conditions occur sporadically, accounting for the darter's spotty distribution. It normally lives in moderately swift areas of a stream at depths of 10 to 30 cm (4 to 12 inches) (Kuehne and Barbour 1983). 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. The Piedmont darter is found in clean, moderate to large streams with a sand to cobble substrate. Though a riffle dweller, this darter does not seem to favor extremely strong currents (Kuehne and Barbour 1983; Rohde et al. 1994).

CHALLENGES

Although all three of these species are currently considered stable, conservation efforts within South Carolina are critical to their global conservation. Approximately one-third of the global distributions of turquoise darter and Piedmont darter and more than half the global distribution of seagreen darter occur 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. Coastal plain populations of the turquoise darter are of concern due to increased development pressures in that region. Further, in extreme headwaters of their range, turquoise and seagreen darters may be adversely affected by brown and rainbow trout introductions.

CONSERVATION ACCOMPLISHMENTS

Populations of turquoise darters and Piedmont darters occurring in Matthews Creek, Big Falls Creek and Howard Creek are protected through land purchase and/or conservation easements.

CONSERVATION RECOMMENDATIONS

- Determine statewide distribution and population status of turquoise, seagreen and Piedmont darters with statewide stream surveys.

- Describe life history and habitat requirements of turquoise, seagreen and Piedmont darters.
- Identify streams with healthy populations and intact critical habitat in the Savannah River drainage and upper Edisto River basin for turquoise darter and in the Saluda River, Broad River, Congaree River and Catawba River Basins for seagreen darter. Protect these areas, once identified.
- 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.
- Identify streams with healthy Piedmont darter populations and intact critical habitat in the upper Santee and Pee Dee drainages. Protect these areas, once identified.
- 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 landuse planning.
- Consider species needs when participating in the environmental permit review process.
- Develop a Non-Game Fishes of South Carolina poster and other 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 affects 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 these species. Methods that protect water quality are also likely to protect most of these species. In the event that more protective BMPs are implemented, population studies of these fish could assist in determining the effectiveness of those measures.