High Conservation Priority – Coastal Plain Species

Bannerfin Shiner *Cyprinella leedsi*
Blackbanded Sunfish *Enneacanthus chaetodon*
Pinewoods Darter *Etheostoma mariae*

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DESCRIPTION

Taxonomy and Basic Description

The bannerfin shiner is a member of the family Cyprinidae. This is the world's largest family of fishes, containing about 194 genera and almost 2,440 species. Eighty-six species occur in the mid-Atlantic region. With 29 species, *Cyprinella* is the second largest genus of American cyprinids after *Notropis* (Jenkins and Burkhead 1993). Members of the genus *Cyprinella* are distinguished from other cyprinids by their large vertical diamond-shaped scales and a black blotch in the dorsal fin (Rohde et al. 1994). Bannerfin shiner can be distinguished from other *Cyprinella* by the position of the black blotch; which occurs on the anterior portion of the dorsal fin. Bannerfin shiners are deep bodied, slender fish with a flattened underside and long rounded snout. The back is olive tan with a black middorsal stripe; the belly is white and the flanks are silvery gray. Bannerfin shiners reach lengths of 100 mm (3.9 inches) (Rohde 1994 et al.).

The blackbanded sunfish is a member of the family Centrarchidae. The 30 species of this family include the sunfishes, crappies and black basses. Blackbanded sunfish are a deep bodied, extremely compressed fish with a small mouth and six black bars on a silvery body. They generally reach an adult length of 50 to 82 mm (2 to 3.2 inches). The caudal fin is rounded. The pelvic fins are pink to red, anteriorly (Rohde 1994).

The pinewoods darter is a member of the family Percidae and placed in the genus *Etheostoma*. This family includes four genera of darters. One of these, *Etheostoma,* is the largest genus of freshwater fishes in North America; it contains approximately 115 species (Etnier and Starnes 1993). These fish are characterized by having two dorsal fins, relatively large pectoral fins and an elongate body. The pinewoods darter is a member of the subgenus *Belophlox*, which can be separated from most other darters by the presence of a broad dark stripe on its side and contrasting light lateral line (Rohde et al. 1994). The pinewoods darter has roughly ten elongate dark blotches on its side and a red marginal or submarginal band in its first dorsal fin. Pinewoods darters reach a maximum length of about 74 mm (2.9 inches) (Page and Burr 1991).

Status

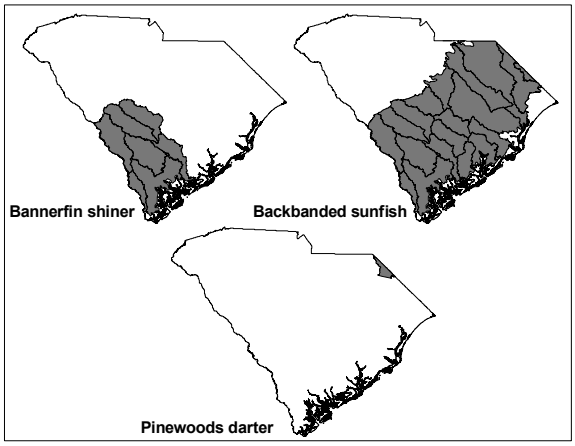
The bannerfin shiner is not listed in South Carolina, but is considered vulnerable to imperilment in Georgia and Florida (NatureServe 2004).

The blackbanded sunfish is not listed in South Carolina, but is considered as at least vulnerable in seven of nine states where it historically occurred (NatureServe 2004). It is presumed extirpated from Pennsylvania and is considered critically imperiled in Virginia, Maryland and Georgia (NatureServe 2004).

The pinewoods darter is a federal species of concern listed as endangered in South Carolina and of special concern in North Carolina, the only other state where it occurs. It was identified as a species vulnerable to imperilment in a recent assessment of southeastern freshwater fishes (Warren et al. 2000) and considered imperiled in North Carolina and critically imperiled in South Carolina (NatureServe 2004).

POPULATION DISTRIBUTION AND SIZE

Distribution



The bannerfin shiner occurs in Atlantic slope drainages from the Edisto River, South Carolina to the Altamaha River, Georgia (NatureServe 2004). It also occurs in the gulf slope drainages of the Ochlockonee and Suwanee Rivers in Georgia and Florida (Marcy et al. 2005). In South Carolina, the species is restricted to the coastal plain ecoregion in the Edisto and Savannah River drainages (SCDNR unpublished data).

The blackbanded sunfish is widely distributed in the coastal plain from New Jersey to Florida, as well as in streams of gulf slope drainages of Georgia and Florida (NatureServe 2004). The range is fragmented; this species is often missing from areas where appropriate habitat is seemingly present (Rohde et al. 1993). In South Carolina, the blackbanded sunfish is found predominantly in the upper coastal plain from the Little Pee Dee River south to the Savannah River.

The pinewoods darter is restricted to the Little Pee Dee River system in North and South Carolina. The species is found only in the sandhills, just below the fall line. In South Carolina, the pinewoods darter has only been found in Panther and Beaverdam Creeks near McColl, South Carolina. There have been no recent collections of the pinewoods darter; it has likely been extirpated from the state (F. Rohde, pers. comm.).

Population Size and Trend

Bannerfin shiner populations appear to be stable (Warren et al. 2000; NatureServe 2004), although it is uncommon and sometimes rare (Page and Burr 1991; NatureServe 2004).

Collections have been made at numerous sites throughout its limited range. The blackbanded sunfish is currently considered secure. Although this species is sometimes locally common, it is more often uncommon in field collections (Rohde et al. 1993). Its fragmented range and noticeable absence in appropriate habitats give the impression that it is a species in decline. The pinewoods darter, though common in a very localized area of the sandhills region in North Carolina, is believed to be extirpated from South Carolina. Development pressures in the sandhills give this fish an uncertain future.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

The bannerfin shiner inhabits channels of medium to large sized, sand-bottomed coastal plain rivers. Schools often gather in eddies behind woody debris or in-stream structures. They rarely enter tributary streams further upstream than the modern floodplain (Marcy et al. 2005). As with other *Cyprinella* species, the bannerfin shiner is a crevice spawner, depositing eggs in crevices of logs and rocks and thus requires coarse substrates and instream structures such as logs to deposit its eggs (Rohde et al 1994).

The blackbanded sunfish is found in quiet, shallow, densely vegetated margins of lakes, ponds, swamps, roadside ditches and streams with sand or mud bottoms (Shute et al. 1981; Jenkins and Burkhead 1994). They are largely restricted to stained, but not turbid, acidic water with a pH of 4.0 to 5.0. In the lotic systems of the Middle Savannah River Basin, adults seasonally migrate into beaver ponds to spawn (Marcy et al. 2005).

Pinewoods darter adults occupy shallow streams with clear or tannin stained water. They often position in moderate current with gravel or rubble substrates. Young inhabit pools with vegetation, sand or silt substrates that have little flow (NatureServe 2004).

CHALLENGES

The bannerfin shiner appears to be stable and widely distributed throughout its range. The major challenge to this species is from pollution (NatureServe 2004). However, habitat alterations could present isolated problems (NatureServe 2004).

The blackbanded sunfish is adversely affected by the practice of draining of ponds and swamps as well as by pesticide contamination (Burkhead and Jenkins, 1991). Additionally, the potential for this species to be collected for the aquaria trade could result in adverse impacts to populations (Burkhead and Jenkins 1991).

Challenges to the pinewoods darter include sedimentation of stream bottoms and loss of habitat. Residential development, timber harvest and road construction/maintenance have likely led to increased sedimentation of pinewoods darter habitat. Further, both dam construction on streams to create ponds for golf courses and golf course irrigation has led to a direct loss of habitat and favor competitive and often highly predacious species like the redbreast sunfish, bluegill and largemouth bass (NatureServe 2004).

CONSERVATION ACCOMPLISHMENTS

There are currently no conservation accomplishments known at this time for these species.

CONSERVATION RECOMMENDATIONS

- Determine statewide distribution, population status, life history and habitat requirements for the bannerfin shiner, the blackbanded sunfish and the pinewoods darter with statewide stream surveys.
- Identify streams and rivers with healthy bannerfin shiner populations and intact critical habitat in the Savannah River drainage below the Fall Line, the Edisto River System and the ACE basin. Protect these areas, once identified.
- Identify lotic and lentic habitats with healthy blackbanded sunfish populations and intact critical habitat in the coastal plain of South Carolina. Protect these areas, once identified.
- Survey streams in the sandhills ecoregion of the Little Pee Dee River system to determine the existence or extirpation of Pinewoods darter. Previous positive locations in Panther Creek and Beaver Dam Creek should be surveyed. Protect any identified areas.
- 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.
- Educate aquarists as to the adverse impacts of removing fish from the wild.

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.