

Banded Killifish*Fundulus diaphanous*

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DESCRIPTION**Taxonomy and Basic Description**

The Banded Killifish is a member of the large genus *Fundulus*, in the family Fundulidae (topminnows). Two subspecies are recognized, *F. d. diaphanus* and *F. d. menona*. The Banded Killifish reaches a length of 130 mm (5.1 in.). The fundulids are commonly used as bait (Jenkins and Burkhead 1994) and are important for mosquito control (Rosen 1973). Hobbyists also keep many members of the family in aquaria. The Banded Killifish is distinguished from others in the genus by a more elongate body, longer and more flattened snout, small scales and numerous narrow bars. Bars are darker than the background color in females and silvery in males (Rohde 1994 et al.).

Status

The Banded Killifish has received legal status as a fish of concern in South Carolina. It is considered secure or apparently secure (G5) throughout most of its global range (NatureServe 2013). It is classified as critically imperiled (S1) in locations on the fringes of its range, including South Carolina, Illinois, South Dakota, Manitoba and Newfoundland (NatureServe 2013).

POPULATION SIZE AND DISTRIBUTION

The Banded Killifish is widely distributed in Atlantic Slope drainages from the Pee Dee River in South Carolina, north to the Maritime Provinces and Newfoundland; St. Lawrence, Great Lakes, and Mississippi River Basins from Quebec to Manitoba; and south to Southern Pennsylvania, Northern Illinois, and Northeastern Nebraska (Page and Burr 1991). The subspecies, *F. d. diaphanus* dominates in Atlantic slope drainages and *F. d. menona* in the remainder of its range, with the exception of the St. Lawrence and Lake Erie drainages where the two subspecies integrate. In South Carolina, the Banded Killifish occurs only in the Waccamaw and Sampit Rivers (SCDNR unpublished data). The Banded Killifish is common to abundant throughout much of its range. In South Carolina, it is classified as critically imperiled because of its limited distribution. The Banded Killifish was not collected at any randomly selected wadeable stream sites in the South Carolina Stream Assessment (2006-2011).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Banded Killifish thrives in a wide range of salinities, from fresh water to estuaries with salinity as high as 20 ppt. It inhabits quiet waters of lakes, ponds, and sluggish streams, usually

over a sand, gravel, or detritus-covered bottom where there are patches of submerged aquatic plants. Banded Killifish also frequently occur in estuarine waters. Schools of these fish tend to stay in shallows in the summer (NatureServe 2013).

CHALLENGES

The Banded Killifish are not threatened globally, but their limited distribution in South Carolina is cause for concern. Challenges to this species are similar to those for other aquatic fauna and include alterations in channel morphology and flow, point and nonpoint source pollution and sedimentation.

CONSERVATION ACCOMPLISHMENTS

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

- Identify lotic and lentic habitats with healthy populations and intact critical habitat in the Waccamaw and Sampit River systems. Protect these areas, once identified.
- Protect critical habitats from future development and further habitat degradation by following Best Management Practices as well as 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 on 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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