

Blacknose Dace

Rhinichthys atratulus

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DESCRIPTION

Taxonomy and Basic Description

The Blacknose Dace is a widely distributed cyprinid of the genus *Rhinichthys*, first described in 1804. *Rhinichthys* exhibit considerable morphological and genetic variation (Etnier and Starnes 1993). Two members of this genus occur in South Carolina (Rohde 1994), with an additional three species in the western United States (Etnier 1993). Two subspecies of Blacknose Dace are recognized: an Atlantic slope form, *R. a. atratulus*, found in and north of the New River, Virginia; and a western form, *R. a. meleagris*, in north-central North America (Jenkins and Burkhead 1994). Recently, a third subspecies (*R. a. obtusus*), an upland form found in the southern Ohio River to Mobile Basin, was elevated to species status and named the western Blacknose Dace (*R. obtusus*) (Nelson et al. 2004). It would stand to reason, based on the zoogeographical evidence (Ross 1970) of a historic connection between the upper Savannah and upper Tennessee River system, that Blacknose Dace in South Carolina would most likely be more closely related to the western Blacknose Dace. However, the species in South Carolina is currently recognized as *R. atratulus* (Blacknose Dace) (Nelson et al. 2004).

Adult Blacknose Dace range in length from 44 to 100 mm (1.7 to 3.9 in.) (Rohde 1994). The species has small scales, a frenum, a subterminal mouth with a small barbel in each corner, a moderate-sized head, small eyes, a moderate-sized mouth and fleshy lips. The breast and belly are fully scaled. There is a black lateral stripe extending from the snout through the eye to the caudal area, separating a brownish back from a whitish belly (Jenkins and Burkhead 1994).

Status

The Blacknose Dace has received legal status as a fish of special concern in South Carolina. It is currently stable within its range (Warren et al. 2000) and globally secure (G5) (NatureServe 2013). The Blacknose Dace is considered critically imperiled (S1) in South Carolina (NatureServe 2013). This listing for South Carolina may be overly pessimistic in that much of Blacknose Dace habitat has been protected in the Mountain Bridge Wilderness Area at Jones Gap State Park in Marietta, South Carolina.

POPULATION SIZE AND DISTRIBUTION

The Blacknose Dace is found in Atlantic, Great Lakes, Hudson Bay, Mississippi, and upper Mobile Bay basins from Nova Scotia to Manitoba and south to Nebraska, northern Alabama,

northern Georgia and the Coastal Plain in Virginia (Page and Burr 1991; NatureServe 2013). In South Carolina, Blacknose Dace are found in the upper Savannah River drainage and Saluda River system in the Blue Ridge and Inner Piedmont ecoregions (SCDNR unpublished data).

Blacknose Dace are common throughout their range (Page and Burr 1991; Rohde et al. 1994; Etnier and Starnes 1993). NatureServe (2013) has a local ranking of imperiled (S1) for South Carolina; this indicates limited abundance along the species' southernmost range. Healthy populations are known to occur in Howard Creek (Savannah drainage), Matthews Creek and Big Falls Creek (Santee drainage). Blacknose Dace also occur in lower abundance in the Chattooga, Whitewater, Eastatoee, Middle Saluda, and South Saluda Rivers (SCDNR unpublished data). The Blacknose Dace was not collected at any randomly selected wadeable stream sites in the South Carolina Stream Assessment.

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Blacknose Dace occurs in small- to medium-size coolwater creeks with slow to rapid current and a diverse substrate of sand, gravel, and rock (Rohde et al. 1994). In South Carolina, Blacknose Dace are known to occur sympatrically with Eastern Brook Trout (SCDNR unpublished data).

CHALLENGES

In South Carolina, the Blacknose Dace is vulnerable because of its limited distribution. Additionally, development, deforestation, loss of riparian cover, siltation, and impoundments in coolwater streams adversely affects this species.

CONSERVATION ACCOMPLISHMENTS

Populations of Blacknose Dace found in Matthews Creek, Big Falls Creek, and Howard Creek have been protected through fee simple land purchases and/or conservation easements in those areas.

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

- Describe life history and habitat requirements for the Blacknose Dace.
- Identify streams with healthy populations and intact critical habitat in the upper Savannah River drainage, and Saluda River System for Blacknose Dace. 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 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 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 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 these species. Methods that protect water quality are also likely to protect this species and others. In the event that more protective BMPs are implemented, population studies of these fish could assist in determining the effectiveness of those measures.

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