

“Broadtail” Madtom*Noturus* sp. c.f. *leptacanthus*

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**DESCRIPTION****Taxonomy and Basic Description**

The “Broadtail” Madtom is a new and currently undescribed member of the family Ictaluridae (bullhead catfishes) and a member of the genus *Noturus* (Rohde et al. 1994). Fishes in this genus are known as madtoms and, with 27 species, comprise the most diverse genus of ictalurids. Madtoms are small and can be distinguished from other catfish by their long adipose fin, which is continuous with the caudal fin. The “Broadtail” Madtom is a slender-bodied fish with fine black speckling on an otherwise pale body. Although there is not much known about this fish, it probably reaches lengths similar to the Speckled Madtom (*N. leptacanthus*), which has a maximum total length of 94 mm (3.7 in.) (Rohde et al. 1994).

Status

The “Broadtail” Madtom has received legal status as a federal species of concern and is listed as threatened in South Carolina. In North Carolina, the only other state where it occurs, it has received legal status as a fish of concern. This species is critically imperiled (S1) in South Carolina (NatureServe 2013) and is considered vulnerable to imperilment throughout its range (Warren et al. 2000). The “Broadtail” Madtom is globally considered to be imperiled (G2) (NatureServe 2013). It was also considered vulnerable in a recent assessment of North American freshwater fishes (Jelks et al. 2008).

POPULATION SIZE AND DISTRIBUTION

The “Broadtail” Madtom is restricted to coastal plain streams in the Carolinas. Within South Carolina, one or two populations have been identified in the Edisto, Lynches, and Little Pee Dee Rivers.

This undescribed species is difficult to collect; as a result, little is known about its status (F. Rohde, pers. comm.). The “Broadtail” Madtom was not collected at any randomly selected Wadeable Stream Sites in the South Carolina Stream Assessment (2006-2011).

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The “Broadtail” Madtom generally occupies the middle of narrow and deep Coastal Plain rivers with sand and gravel substrates (Page and Burr 1991). The habitats of this fish are poorly known but “Broadtail” Madtoms are often associated with woody debris (F. Rohde, pers. comm.).

CHALLENGES

The “Broadtail” Madtom, like other small ictalurids, is adversely affected by the nonnative Flathead Catfish (*Pylodictis olivaris*). Flathead Catfish are voracious predators that have decimated ictalurid and other fish populations throughout the Southeastern United States (Guire et al. 1984; Jenkins and Burkhead 1994; Bart et al. 1994).

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

- Continue to determine statewide distribution and population status for the “Broadtail” Madtom with statewide stream surveys.
- Describe life history and habitat requirements for the “Broadtail” Madtom.
- Identify critical habitats and areas with healthy populations for the “Broadtail” Madtom.
- Conduct genetic assessments to determine appropriate taxonomy for the “Broadtail” Madtom.
- Formally describe the “Broadtail” Madtom and examine morphological and genetic differences among the populations in the Edisto, Pee Dee, Lynches, and Lumber Rivers.
- Protect critical habitats for the “Broadtail” Madtom 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 for the “Broadtail” Madtom.
- Encourage responsible land use planning.

- Consider species needs when participating in the environmental permit review process.
- Continue development of educational materials in order to raise public awareness of nongame fish species and their ecological importance to the natural history of South Carolina's aquatic habitats.
- Educate off-road 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 most of 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.

LITERATURE CITED

- Bart, H.L., M.S. Taylor, J.T. Harbaugh, J.W. Evans, S.L. Schleiger and W. Clark. 1994. New distribution records of Gulf Slope drainage fishes in the Ocmulgee River system, Georgia. *Southeastern Fishes Council Proceedings*. 30:4-9.
- Guire, C.R., L.E. Nichols and R.T. Rachels. 1984. Biological investigations of flathead catfish in the Cape Fear River. *Proceedings of the Southeastern Association of Fish and Wildlife Agencies*. 35(1981):607-621.
- Jelks, H.L., S.J. Walsh, N. M. Burkhead, S. Contreras-Balderas, E. Díaz-Pardo, D.A. Hendrickson, J. Lyons, N.E. Mandrak, F. McCormick, J.S. Nelson, S.P. Platania, B.A. Porter, C.B. Renaud, J.J. Schmitter-Soto, E.B. Taylor, and M.L. Warren, Jr. 2008. Conservation status of imperiled North American freshwater and diadromous Fishes. *Fisheries* 33 (5):372-407.
- Jenkins, R.E., and N.M. Burkhead. 1994. *Freshwater Fishes of Virginia*. American Fisheries Society. Bethesda, Maryland. 1079 pp.
- NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: March 26, 2013).
- Page, L.M. and B.M. Burr. 1991. *A field guide to freshwater fishes: North America north of Mexico*. Houghton Mifflin Company. Boston, Massachusetts. 432 pp.
- Rohde, F.C., R.G., Arndt, D.G. Lindquist and J.F. Parnell. 1994. *Freshwater Fishes of the Carolinas, Virginia, Maryland, and Delaware*. The University of North Carolina Press. Chapel Hill, North Carolina. 222 pp.

Warren, M.L., Jr., B.M. Burr, S.J. Walsh, H.L. Bart, Jr., R.C. Cashner, D.A. Etnier, B.J. Freeman, B.R. Kuhajda, R.L. Mayden, H.W. Robison, S.T. Ross and W.C. Starnes. 2000. Diversity, distribution, and conservation status of the native freshwater fishes of the southern United States. *Fisheries* 25(10):7-31.