# Flat Bullhead

*Ameiurus platycephalus*


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DESCRIPTION

**Taxonomy and Basic Description**

The Flat Bullhead is a member of the family Ictaluridae. The Ictalurids, with approximately 46 species, represent the largest family of fishes indigenous to only North America (Jenkins and Burkhead 1994). The genus *Ameiurus* contains the moderately-sized (reaching only a few pounds) catfish collectively known as the "bullheads". Flat Bullheads have a large flat head, a relatively straight snout profile, a bi-colored maxillary barbel that has a white leading edge, short rounded anal fin, emarginate tail, gold-yellow to dark brown colored back, dark mottling along the sides, and a cream colored belly. In their natural habitats (rivers and streams), Flat Bullheads typically reach maximum adult sizes of 294 mm (11.4 in.) (Rohde et al. 1994). However, in disturbed habitat such as impounded river reaches and reservoirs, they reach substantially greater sizes (443 mm, 17.6 in.) (SCDNR unpublished data).

**Status**

The Flat Bullhead is not ranked (SNR) in South Carolina (NatureServe 2013). However, in a recent assessment of North American fishes, this species was considered vulnerable to imperilment (Jelks et al. 2008). The Flat Bullhead is considered apparently secure (G4) globally (NatureServe 2013).

POPULATION SIZE AND DISTRIBUTION

Flat Bullheads occur in the Piedmont and Coastal Plain of the Atlantic Slope from the Roanoke River drainage, Virginia south to the Altamaha River drainage, Georgia. In South Carolina, it occurs from the Mountains to the Piedmont in nearly every major drainage, but is most common above the Fall Line. Flat Bullheads appear to be relatively stable in South Carolina streams; however, their fate in the larger rivers is uncertain due to the presence of the nonnative Flathead Catfish. Flat Bullheads are common to abundant in the upper Santee drainage, but decreasing trends have been noted in many coastal rivers like the Edisto River, following the introduction of Flathead Catfish (C. Thomason, SCDNR, pers. comm.). The largest populations of Flat Bullhead are probably located in the Broad River system, a system where the Flathead Catfish has yet to be introduced. Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for the Flat Bullhead in wadeable streams was 0.05 (95% confidence interval: 0.03 – 0.07) per 100 $m^2$.

## HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Flat Bullhead is typically found in streams, rivers, and impoundments occupying areas with mud, sand, or rock bottoms, with slow-flowing water along the banks and in pool areas (Jenkins and Burkhead 1994; Rohde et al. 1994; NatureServe 2013).

## CHALLENGES

The Flat Bullhead is adversely affected by the same myriad of challenges for all aquatic species, such as sedimentation, hydrologic modification, impoundments, non-point source pollution, and development. Additionally, this species is also threatened by the introduction of nonnative ictalurids like the Flathead Catfish and the Blue Catfish; both of these non-native species displace and prey on the smaller bullheads. Flathead Catfish have been shown to prey on bullhead species and greatly reduce their numbers (Guire et al. 1984; Ashley and Buff 1986; Quinn 1988; Bart et al. 1994).

## CONSERVATION ACCOMPLISHMENTS

South Carolina Stream Assessment (2006-2011) data have facilitated the calculation of standardized abundance (density) estimates for this species at multiple spatial strata including statewide, river basin, level-IV ecoregion, and “ecobasin” (ecoregion x river basin). These estimates, for the first time, provide an objective measure of current population status that will serve as a baseline for following future population trends and gauging the effectiveness of conservation actions.

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

Use South Carolina Stream Assessment decision-support GIS modeling tools to identify levels and spatial distributions of critical habitat factors to sustain the species in geographic areas of interest.

- Use South Carolina Stream Assessment decision-support GIS modeling tools to identify priority regions and watersheds at greatest risk of decline in stream integrity.

- 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.
- 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 effects of crossing streams at multiple locations and using stream bottoms as trails.
- Prevent the spread of Flathead Catfish and other non-indigenous aquatic species.
- Educate the public as to the discontents of stocking nonnative species.
- 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 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 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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