

**Highback Chub***Hybopsis hypinotus*

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

The Highback Chub is a member of the genus *Hybopsis* in the family Cyprinidae. This fish looks similar to numerous shiners but often has a small barbel in the corner of its inferior mouth, a long snout, and upward-looking eyes (Rohde et al. 1994). The Highback Chub has a strongly arched dark olive body with a black lateral stripe that extends onto the snout. During the breeding season, males display red fins.

**Status**

The Highback Chub is not listed federally or within the State of South Carolina as a fish of special concern. It is apparently secure globally (G4); however, there is some concern for their long-term status based on their limited distributions. The Highback Chub is considered apparently secure (S4) in North Carolina, imperiled (S2) in Virginia, and is currently not ranked (SNR) in South Carolina (NatureServe 2013).

**POPULATION SIZE AND DISTRIBUTION**

The Highback Chub is found in the Blue Ridge Foothills and Piedmont sections of the Santee and Pee Dee River drainages. Information on population size and status is limited. However, this species currently appears to be stable in South Carolina (SCDNR unpublished data). Based on South Carolina Stream Assessment data (2006-2011), the mean statewide density estimate for the Highback Chub in wadeable streams was 0.18 (95% confidence interval: 0.00 – 0.36) per 100 m<sup>2</sup>.

**HABITAT OR NATURAL COMMUNITY REQUIREMENTS**

The Highback Chub is found in cool to warm water creeks and small rivers with clear to turbid water. They are generally found in riffles and runs with sandy, gravelly, and rocky bottoms (Page and Burr 1991; Jenkins and Burkhead 1994).

**CHALLENGES**

The Highback Chub is currently stable with relatively large distributions throughout the State. They are of conservation concern because they are only found within a few major drainages. Approximately one-half of the global distributions of the Highback Chub occur in South Carolina. Therefore, conservation efforts within South Carolina are critical to the global

preservation of this species. Challenges to this species are similar to those faced by other aquatic fauna and include point and nonpoint source pollution, deforestation and loss of riparian corridors, impoundment development, siltation from poor land use practices, and unplanned or poorly planned urban and suburban development.

## CONSERVATION ACCOMPLISHMENTS

South Carolina Stream Assessment 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:

- He 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.
- Describe life history and habitat requirements of the Highback Chub.
- 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 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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