

Santee Chub

Cyprinella zanema

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DESCRIPTION

Taxonomy and Basic Description

The Santee Chub is also a member of the family Cyprinidae. Containing 29 species, *Cyprinella* is the second largest genus of American cyprinids (Jenkins and Burkhead 1994). Members of the genus *Cyprinella* are distinguished from other cyprinids by their large, vertical, diamond-shaped scales and a black blotch in the dorsal fin (Rohde et al. 1994). In South Carolina, there are 8 species of *Cyprinella*. The Santee Chub is probably most closely related to the Thinlip Chub; these two species share similar habitat types (Rohde et al. 1994). The Santee Chub can reach a length of 75 mm (3 in.) (Page and Burr 1991). This chub has a slender, fusiform body, a long snout, and exhibits dark cross-hatching on the back and sides. Breeding males are silvery with yellow fins and black streaks on the dorsal and caudal fins (Rohde et al. 1994).

Status

The Santee Chub is currently stable (Warren et al. 2000) and apparently secure (G4) throughout its range, though it is not ranked (SNR) in South Carolina and is considered vulnerable (S3) in North Carolina (NatureServe 2013).

POPULATION SIZE AND DISTRIBUTION

The Santee Chub is restricted to the Santee River drainage within South Carolina, primarily in the Piedmont and Blue Ridge Foothills (Rohde et al. 1994). A few populations of Santee Chub found in the Coastal Plain represent an undescribed species known as the “Thinlip” Chub. Outside of South Carolina, the “Thinlip” Chub is also found in the Cape Fear River drainage of North Carolina (F. Rohde, pers. comm.). Population size and status information for the Santee Chub is unknown. Based on South Carolina Stream Assessment (2006-2011) data, the mean statewide density estimate for Santee Chub in wadeable streams was 0.01 (95% confidence interval: 0.005 – 0.02) per 100 m².

HABITAT OR NATURAL COMMUNITY REQUIREMENTS

The Santee Chub inhabits small- to medium-sized streams with sand and rocky runs or current-swept pools (Rohde et al. 1994). This species seems to be able to tolerate more turbid and warm waters than its close relative, the Big-eye Chub, *Hybopsis amblops* (Page and Burr 1991).

CHALLENGES

The Santee Chub is often locally abundant in Piedmont South Carolina and believed to be currently stable, but its limited distribution is cause for concern. The major threats to this species are deforestation, loss of riparian cover, siltation, and impoundments. Conservation efforts within South Carolina are important to the global conservation of this species.

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.
- Conduct a genetic study of the Santee Chub and its close relatives, the Thicklip and “Thinlip” Chubs, to resolve taxonomic questions.
- Protect critical habitats from future development and further habitat degradation by following Best Management Practices (BMPs) 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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