

## Moderate Conservation Priority – Carolina Endemics

**Greenfin Shiner** *Cyprinella chloristia*

**Fieryblack Shiner** *Cyprinella pyrrhomelas*

**Thicklip Chub** *Cyprinella labrosa*

**Lowland Shiner** *Pteronotropis stonei*

**Highback Chub** *Hybopsis hypinotus*

**Rosyface Chub** *Hybopsis rubrifrons*

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### DESCRIPTION

#### Taxonomy and Basic Description

The greenfin shiner is a member of the cyprinid family (minnows) and belongs to the genus *Cyprinella*. This genus, with 29 species, is the second largest of American cyprinids, after *Notropis* (Jenkins and Burkhead 1993). Members of the *Cyprinella* genus are distinguished from other cyprinids by their large vertical diamond-shaped scales and a black blotch in the dorsal fin (Rohde et al. 1994). As with the other *Cyprinella*, the greenfin shiner is a crevice spawner (Jenkins and Burkhead 1993). The greenfin shiner is a relatively deep-bodied *Cyprinella* with a midlateral stripe that is more pronounced posterior to the dorsal fin. The breeding male often displays lime-colored dorsal and caudal fins. Adult greenfin shiners range in length from 44 to 72 mm (1.7 to 2.8 inches) (Rohde et al. 1994).



The fieryblack shiner is also a member of the *Cyprinella* genus in the family Cyprinidae (minnows). Adult fieryblack shiners range in length from 47 to 110 mm (1.8 to 4.4 inches). This attractive species has a red snout, a black bar behind the opercle and a black margin on the caudal fin (Rohde et al. 1994). Breeding males display bright red and white bands on the caudal fin (Rohde et al. 1994).

The thicklip chub is a member of a group of three fishes known as the barbed *Cyprinella*. The thicklip chub can be distinguished from nonbarbed *Cyprinella* by its chub-like appearance and the presence of barbels in the corner of its mouth. The thicklip chub is a slender fish with a horizontal and inferior mouth. The back of the fish is marked with prominent cross-hatching and ranges in color from dark olive (juveniles and females) to steel blue (breeding males). All fins have cream-colored edges; males develop straw to red colored fins



during the breeding season. Adults range in length from 46 to 75 mm (1.8 to 3 inches) (Rohde et al. 1994).



The lowland shiner, another cyprinid, is a member of the genus *Pteronotropis*. There are currently seven recognized species in the genus *Pteronotropis*, all of which are restricted to the lower coastal plain from Mississippi to South Carolina (Etnier and Starnes 1993). The lowland shiner has a small head and deeply compressed body; the dorsal and anal fins are enlarged and triangular

in shape. This species has a broad bluish-black stripe that extends from the snout to the base of the tail. Above the broad lateral stripe is a thinner gold to orange stripe. The lowland shiner can attain a length of 65 mm (2.5 inches) (Rohde et al. 1994).

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.



The rosyface chub is also a member of the genus *Hybopsis* in the cyprinid family. The rosyface chub has the typical chub body, somewhat elongate with a long snout, upward-looking eyes and a small barbel in the corner of its inferior mouth. Breeding males can be distinguished from other members of *Hybopsis* by the strong rosy-red coloration

that develops on the anterior third of the body. Rosyface chubs can attain a length of 84 mm (3.25 inches) (Rohde et al. 1994).

## Status

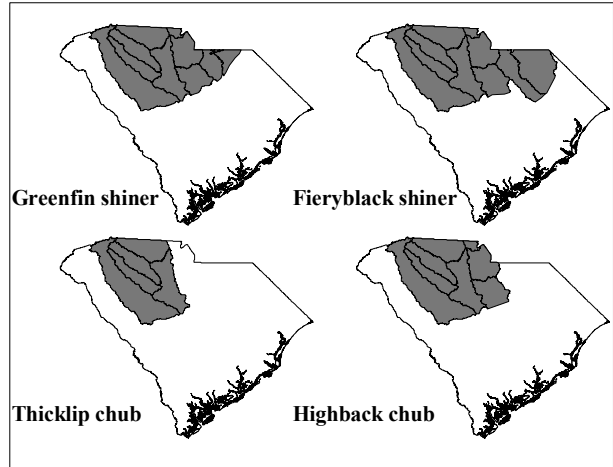
None of these fish is listed federally or within the state of South Carolina as a fish of special concern. All are apparently secure; however, there is some concern for their long-term status based on their limited distributions. Both the greenfin shiner and the fieryblack shiner are considered apparently secure (S4) in North Carolina (NatureServe 2004). In North Carolina, the thicklip chub is considered vulnerable (S3) (NatureServe 2004). The highback chub is considered apparently secure (S4) in North Carolina and imperiled (S2) in Virginia (NatureServe 2004). The rosyface chub is considered critically imperiled (S1) in North Carolina, largely due

to its limited distribution within the state; Georgia has listed the rosyface chub as vulnerable (S3) (NatureServe 2004). The lowland shiner is a newly recognized species (Suttkus et al. 2003) that was previously synonymized with sailfin shiner (*Pteronotropis hypselopterus*) and, therefore, does not currently have a concern status, although it may warrant one based on its limited distribution.

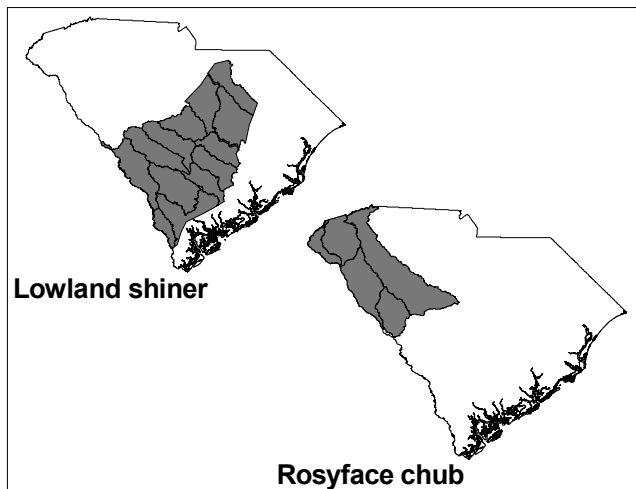
**POPULATION DISTRIBUTION AND SIZE**

**Distribution**

The greenfin shiner and the fieryblack shiner are completely restricted to the Carolinas. The greenfin shiner and the fieryblack shiner are restricted to the Santee and Pee Dee River systems above the fall line in North Carolina and South Carolina.



The thicklip chub and the highback chub are largely restricted to the Carolinas; however, there have been a few occurrences of highback chubs and one record for the thicklip chub in the Pee Dee drainage of Virginia (Jenkins and Burkhead 1993). The thicklip chub, at least in South Carolina, appears to be restricted to the Broad and Saluda drainages of the Santee River system above the fall line. In North Carolina, the thicklip chub is found both in the upper Pee Dee and upper Santee drainages. The highback chub is found in the Blue Ridge foothills and piedmont sections of the Santee and Pee Dee River drainage.



The lowland shiner is restricted to Georgia and South Carolina from the Pee Dee River drainage to the Satilla River drainage (Suttkus et al. 2003). Within South Carolina, the lowland shiner is largely restricted to the southeastern coastal plain from the Pee Dee River to the Savannah River and is most commonly found in the Edisto and Combahee River systems.

The rosyface chub is restricted to the Saluda, Savannah and Altamaha River drainages of Georgia and South Carolina, predominantly above the fall line (SCDNR unpublished data).

**Population Size and Trend**

Information on population size and status is limited. However, all six species appear to currently be stable in South Carolina (SCDNR unpublished data).

## HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Both the greenfin shiner and the fieryblack shiner require cool, clear water in creeks and small to moderately sized rivers. The greenfin shiner prefers the slower areas and margins of pools and runs with clean sand and rocky substrates. The fieryblack shiner is generally associated with rocky runs and pools below riffles (Page and Burr 1991; Rohde et al 1994). As with other *Cyprinella* species, the greenfin shiner and fieryblack shiner are crevice spawners, depositing eggs in crevices of logs and rocks and thus require coarse substrates and instream structures such as logs to deposit their eggs (Rohde et al 1994).

The thicklip chub and the highback chub are found in cool to warmwater creeks and small rivers with clear to turbid water. They are generally found in riffles and runs with sandy, gravely and rocky bottoms (Page and Burr 1991; Jenkins and Burkhead 1994). The rosyface chub inhabits the pools and margins of riffles in small streams and the banks and eddies of larger streams. It is generally found over sand or gravel and requires clean gravel in fast riffles for reproduction (NatureServe 2004).

The lowland shiner occurs in small to medium clear and blackwater streams. It prefers areas with moderate flow like slow riffles, runs and flowing pools. The lowland shiner is generally associated with clean sand substrate and aquatic vegetation (Suttkus et al. 2003).

## CHALLENGES

All of these species are currently stable with relatively large distributions throughout the state. They are of conservation concern because they only occur in the Carolinas and Georgia and only within a few major drainages. Two-thirds of the global range of the greenfin shiner occurs within the state of South Carolina. Approximately one-half of the global distributions of the fieryblack shiner, the lowland shiner, the thicklip chub, the highback chub and the rosyface chub occur in South Carolina. Conservation efforts within South Carolina are critical to the global preservation of these species. Challenges to these 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. Development of the Interstate 85 corridor between Charlotte, North Carolina and Greenville, South Carolina could also result in adverse impacts to several of these species.

## CONSERVATION ACCOMPLISHMENTS

There are currently no conservation accomplishments known at this time for these species.

## CONSERVATION RECOMMENDATIONS

- Determine statewide distribution and population status of the greenfin shiner, the lowland shiner, the fireyblack shiner, the thicklip chub, the rosyface chub and the highback chub with statewide stream surveys.

- Describe life history and habitat requirements of the greenfin shiner, the lowland shiner, the fireyblack shiner, the thicklip chub, the rosyface chub and the highback chub.
- Identify critical habitats and areas with healthy populations of the greenfin shiner, the lowland shiner, the fireyblack shiner, the thicklip chub, the rosyface chub and the highback chub.
- Determine the status of the lowland shiner given its recent taxonomic revision.
- 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 other areas that contain available habitat.
- Encourage responsible landuse planning.
- Consider 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 affects 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 most of these species. In the event that more protective BMPs are implemented, population studies of these fish could assist in determining the effectiveness of those measures.