

PHOTO NOT YET AVAILABLE

**Common Name:** BLUESTRIPE SHINER

**Scientific Name:** *Cyprinella callitaenia* (Bailey and Gibbs)

**Other Commonly Used Names:** none

**Previously Used Scientific Names:** *Notropis callitaenia*

**Family:** Cyprinidae

**Rarity Ranks:** G2G3/S2

**State Legal Status:** Rare

**Federal Legal Status:** none

**Description:** The average adult blueshiner has a total body length up to 90 mm (3.5 in). The head is long and rounded, and the snout projects slightly over its subterminal mouth. There are 7-8 anal fin rays and a pharyngeal tooth count formula of 1-4-4-1. Coloration consists of a dusky olive shading on the back and silvery sides with diamond-shaped scale outlines. A blue-black lateral stripe runs from the gill covering to the base of the caudal fin, where it widens to form a dark spot. There is also a crescent-shaped black line that runs from the eye to the mouth. Breeding males develop white on the paired fins, anal fins and on the tips of the caudal fin, and an intense salmon color immediately above the lateral stripe. Breeding male tubercles are arranged in two semi-linear rows on the head and are separated from the snout tubercles by a wide hiatus.

**Similar Species:** In comparison to the similar-appearing and often syntopic blacktail shiner (*Cyprinella venusta*), the blueshiner has a small caudal spot (vs prominent), a crescent of dark pigment between the eye and the upper lip that is lacking in the blacktail shiner, and a mouth that opens near the bottom of the head, distinctly posterior to the snout tip (versus a terminal mouth opening at the tip of the snout). Furthermore, nuptial male blueshiners have head tubercles arranged in two semi-linear rows (vs. scattered on head in the blacktail shiner).

**Habitat:** Blueshiners inhabit mainstem reaches of rivers and large streams in riffles and runs with rubble or sand substrate and are most often collected in areas with swift current velocities. It has also been found in the lower reaches of several small impounded tributaries to the Chattahoochee River, where the backwaters of the reservoir apparently mimic large stream habitat.

**Diet:** Probably aquatic insects or terrestrial insects captured from stream drift.

**Life History:** The blueshiner has an extended reproductive period, and spawns over rock crevices, as is typical of the genus, from April until August. A study of a population in a tributary to the Chattahoochee River documented spawning pairs depositing gametes into crevices in bedrock or between the edges of large rocks and underlying bedrock, in areas with moderate to

swift current. Females have the ability to propel eggs a considerable distance relative to their body length, thus making it possible to place eggs in predation-resistant sites.

**Survey Recommendations:** This species is particularly vulnerable to daytime seining, especially in medium to shallow sandy habitats, where it can occur in large numbers.

**Range:** Bluestripe shiners are endemic to the Apalachicola River drainage, occurring in the mainstem Apalachicola, Chattahoochee and Flint rivers, and major tributaries. In the middle section of the Chattahoochee River (Georgia/Alabama border), it can be found in several small, western tributaries whose lower reaches have been inundated by mainstem reservoirs. In Georgia, this species has been collected from the Chattahoochee and Flint river systems, from the Coastal Plain to the upland districts of the Piedmont physiographic province. Check the [Fishes of Georgia Webpage](#) for a watershed-level distribution map.

**Threats:** Potential threats to the bluestripe shiner are degradation and impoundment of streams in the main channel of the Chattahoochee and Flint river systems. The range in Georgia is spotty, with most known populations occurring in the Flint as opposed to the Chattahoochee system. Recent fish collection efforts in the Chattahoochee River system in the Atlanta area documented the absence of the bluestripe shiner from these streams. Stream degradation resulting from failure to employ Best Management Practices (BMPs) for forestry and agriculture, failure to control soil erosion from construction sites and bridge crossings, and increased stormwater runoff from developing urban and industrial areas further threaten the bluestripe shiner where populations still exist. Fishes like the bluestripe shiner depend upon small crevices within which to lay their eggs and are therefore especially vulnerable to impacts associated with excessive sedimentation. The filling of these spawning sites with silt and sediment prevents successful spawning.

**Georgia Conservation Status:** Much of its historic habitat in the Chattahoochee River has been lost due to impoundments, which have inundated long reaches of the main channel and the lower reaches of numerous tributaries. Still, the species has been able to persist in the Chattahoochee River in some reservoirs (e.g., Walter F. George), and in the lower reaches of some inundated tributaries. There are also a few recent records in the Chattahoochee and Chestatee Rivers, upstream of Atlanta. The species is still relatively common in much of the main channel Flint River, where it often is the numerically dominant species. Based on this information, the State of Georgia changed its status from Threatened to Rare in 2006.

**Conservation and Management Recommendations:** Conserving populations of the bluestripe shiner depends on maintaining and restoring habitat and water quality in streams of the Chattahoochee and Flint River systems. It is essential to eliminate sediment runoff from land disturbance activities such as road and house construction; maintain forested buffers along stream banks; eliminate the input of contaminants such as fertilizers and pesticides; eliminate chronic discharges of industrial effluent and sewage; and maintain natural patterns of stream flow. Watershed clearing and urban development can lead to unnaturally flashy stormwater runoff, which scours stream channels and lowers baseflow. For these reasons, containing and slowly releasing stormwater runoff from developed areas is an important element in protecting stream habitats for not only the bluestripe shiner but other aquatic organisms. Impounding streams should be a last resort for developing water supplies.

### **Selected References:**

Bailey, R. M. and R. H. Gibbs Jr. 1956. *Notropis callitaenia*, a new cyprinid fish from Alabama, Florida, and Georgia. Occas. Pap. Mus. Zool. Univ. Michigan 576:1-14.

Boschung, H. T. and R. L. Mayden. 2004. The Fishes of Alabama. Smithsonian Institute, Washington, 736 pp.

Dinkins, G.R. 2005. Nomination form for protected species listing, bluestripe shiner. Unpublished document prepared for the Board of the Georgia Department of Natural Resources.

Lee, S. L., C. R. Gilbert, C. H. Hocutt, R. E. Jenkins, D. E. McAllister, and J. R. Stauffer. 1980. Atlas of North American fishes. North Carolina State Mus. Nat. Hist. 867pp.

Mettee, M. F., P. E. O'Neil, and J. M. Pierson. 1996. Fishes of Alabama and the Mobile Basin. Oxmoor House, Birmingham. 820pp.

Page, L. M. and B. M. Burr. 1991. A field guide to freshwater fishes of North America north of Mexico. Houghton Mifflin, Boston. 432pp.

Wallace, R. K. Jr., and J. S. Ramsey. 1981. Reproductive behavior and biology of the bluestripe shiner (*Notropis callitaenia*) in Uchee Creek, Alabama. Amer. Midl. Nat. 106: 197-200.

**Author of Account:** Byron J. Freeman and Gerry Dinkins

### **Date Compiled or Updated:**

B. Freeman, 1999: original account

K. Owers, Jan, 2009: Updated status and ranks, added fish atlas link, converted to new format, minor edits to text

B. Albanese-February 10, 2009, added similar species, conservation status sections.

G. Dinkins, Aug, 2009: General update of entire account

Z. Abouhamdan, April 2016: updated link