Common Name: BLUE SHINER

Scientific Name: *Cyprinella caerulea*

Other Commonly Used Names: none

Previously Used Scientific Names: none

Family: Cyprinidae

Rarity Ranks: G2/S1

State Legal Status: Endangered

Federal Legal Status: Threatened

Description: Blue shiners grow to 10 cm (4 in) in length. Coloration is olive dorsally with silvery sides. A distinctive metallic blue-black lateral stripe runs from the gill covering to the caudal fin where it widens to form a spot at the base of the caudal fin. Scale edges above and below the lateral stripe are edged with melanophores to form a distinctive diamond shape. Mouth opens just below the snout tip and is slanted in profile. Breeding males develop intense yellow on all fins except the dorsal.

Similar Species: Four other species of *Cyprinella* are known from the Conasauga River system: the Alabama shiner (*C. callistia*), the blacktail shiner (*C. venusta*) the introduced red shiner (*C. lutrensis*) and the tricolor shiner (*C. trichroistia*). The uniform width and intensity of the lateral stripe separates the blue shiner from all of these species.

Habitat: The preferred habitat of blue shiners consists of small to medium streams that include rocky substrates. Fish are found in riffles and runs, as well as pools with moderate to swift current, over gravel to cobble or boulder substrate.

Diet: Terrestrial insects captured from stream drift; also aquatic insects.

Life History: Blue shiners have an extended spawning period from May to August. Eggs

are deposited in silt free areas in rock crevices, or possibly crevices in woody debris, in habitats with moderate current. Life history studies on the blue shiner revealed that most individuals were sexually mature in the third summer of life and some were in their fourth. Blue shiners can be seen foraging in flowing water in midwater.

Survey Recommendations: Seining is a good method for collecting minnows. Snorkeling is also effective for presence-absence surveys.

Range: The blue shiner is endemic to the Mobile River drainage. It is historically known from the Coosa River system of southeastern Tennessee, northwestern Georgia, and eastern Alabama and from the Cahaba River system of Central Alabama. In Georgia, the blue shiner has been collected from the Coosawattee and the Conasauga river systems. The species is probably extirpated from the Etowah, Oostanaula and Coosawattee systems. Currently, the only upper Coosa River occurrences in Georgia are from the upper Conasauga River system above the junction with Coahulla Creek and from the upper Holly Creek system. Check the Fishes of Georgia Webpage for a watershed-level distribution map.

Threats: Potential threats to the blue shiner are principally degradation of tributary streams and the main channel of the upper Conasauga River in Georgia and Tennessee. The Georgia range is very restricted, with all known populations occurring in the cooler portions of the upper Conasauga River. Recent collections in the Conasauga River demonstrate the decline in population size as habitat becomes increasingly degraded in a downstream direction. 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 blue shiner where populations still exist. Fishes like the blue shiner, that depend upon small crevices in which to lay their eggs, are especially vulnerable to impacts of excessive sedimentation, as these spawning sites will fill in with silt and sediment, thus preventing spawning. An additional threat is hybridization with the introduced red shiner, which has been documented in laboratory studies.

Georgia Conservation Status: There are several records on U.S. Forest Service property in the upper Conasauga, but all other populations are on private lands.

Conservation and Management Recommendations: Conserving populations of the blue shiner depends on maintaining and restoring habitat and water quality in streams of the upper Conasauga River system. It is essential to eliminate sediment runoff from land-disturbing activities (such as roadway and housing construction); maintain forested buffers along stream banks; eliminate inputs 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 storm water runoff, which scours stream channels and results in lower baseflows. For these reasons, containing and slowly releasing stormwater runoff from developed areas is an important element in protecting stream habitats for fishes and other

aquatic organisms.

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B. Albanese-Added picture, updated status and ranks, added fish atlas link, converted to new format, minor edits to text