Ochlockonee moccasinshell (*Medionidus simpsonianus*). Specimen not measured. Ochlockonee River, Leon Co., Florida. Photo by Jason Wisniewski, GA DNR. Specimen courtesy of the Florida Museum of Natural History.

Common Name: OCHLOCKONEE MOCCASINSHELL

Scientific Name: *Medionidus simpsonianus* Lea

Other Commonly Used Names: none

Previously Used Scientific Names: none

Family: Unionidae

Rarity Ranks: G1/SH

State Legal Status: Endangered

Federal Legal Status: Endangered

Description: Shell profile is sub-rhomboidal to elliptical in outline, and the shell is rather delicate and rarely exceeds 55 mm (2⅛ inches) in length. Anterior margin broadly rounded while posterior margin is pointed and terminates near the posterior-ventral margin. Ventral margin is straight to slightly arcuate. Umbos positioned anterior of the middle of the valves and elevated to or just slightly above the hingeline. Posterior ridge is broadly rounded with well developed corrugations present on the posterior slope. The periostracum is dark brown to green with broken

rays. Pseudocardinal teeth are short and triangular while lateral teeth are slightly curved. Umbo cavity shallow. Nacre color bluish-white to iridescent.

Similar Species: None

Habitat: Typically occupies small streams to large rivers with moderate flow and sandy substrates.

Diet: The diets of unionids are poorly understood but are believed to consist of algae and/or bacteria. Some studies suggest that diets may change throughout the life of a unionid with juveniles collecting organic materials from the substrate though pedal feeding and then developing the ability to filter feed during adulthood.

Life History: The life history of Ochlockonee moccasinshell is unknown mainly as a result of the rarity of this species. However, it is assumed to be similar to that of other individuals in the genus *Medionidus*, which brood glochidia from early spring to mid summer and parasitize darters.

Survey Recommendations: Surveyors should consider sampling during periods when female individuals are spawning or brooding as this species may have higher detection rates during this period. However, since basic life history information for many of Georgia's unionids is lacking, sampling during periods when closely related species are spawning or brooding may increase probability of detection.

Range: Ochlockonee moccasinshell is endemic to the Ochlockonee River of Florida and Georgia. Historically, this species was known from 7 locations in the Ochlockonee River. It was thought to be extinct until August 2007 when 2 live individuals were found several miles north of Tallahassee, Florida. No recent records of this species have been found in Georgia despite several surveys in the Ochlockonee River.

Threats: Habitat fragmentation may isolate populations and prevent fish movement, limiting the distribution of host fishes carrying glochidia. Additionally, construction of impoundments may further fragment populations and inundate suitable habitat. Excessive water withdrawals in Southwest Georgia coupled with severe drought could cause this species to become extirpated from Georgia. Excess sedimentation due to inadequate riparian buffer zones also covers suitable habitat and potentially suffocates individuals. This species is also though to be impacted by discharges from wastewater treatment plants located in several large municipalities in the headwaters in Georgia.

Georgia Conservation Status: The Ochlockonee moccasinshell is not known from any state or federal lands in Georgia. Unlike terrestrial species, the occurrence of an aquatic species on state or federal lands may not eliminate habitat degradation due to the influences of upstream and downstream disturbances.

Conservation and Management Recommendations: In order to better assess the status of the Ochlockonee moccasinshell in Georgia, extensive surveys are needed in the Ochlockonee River

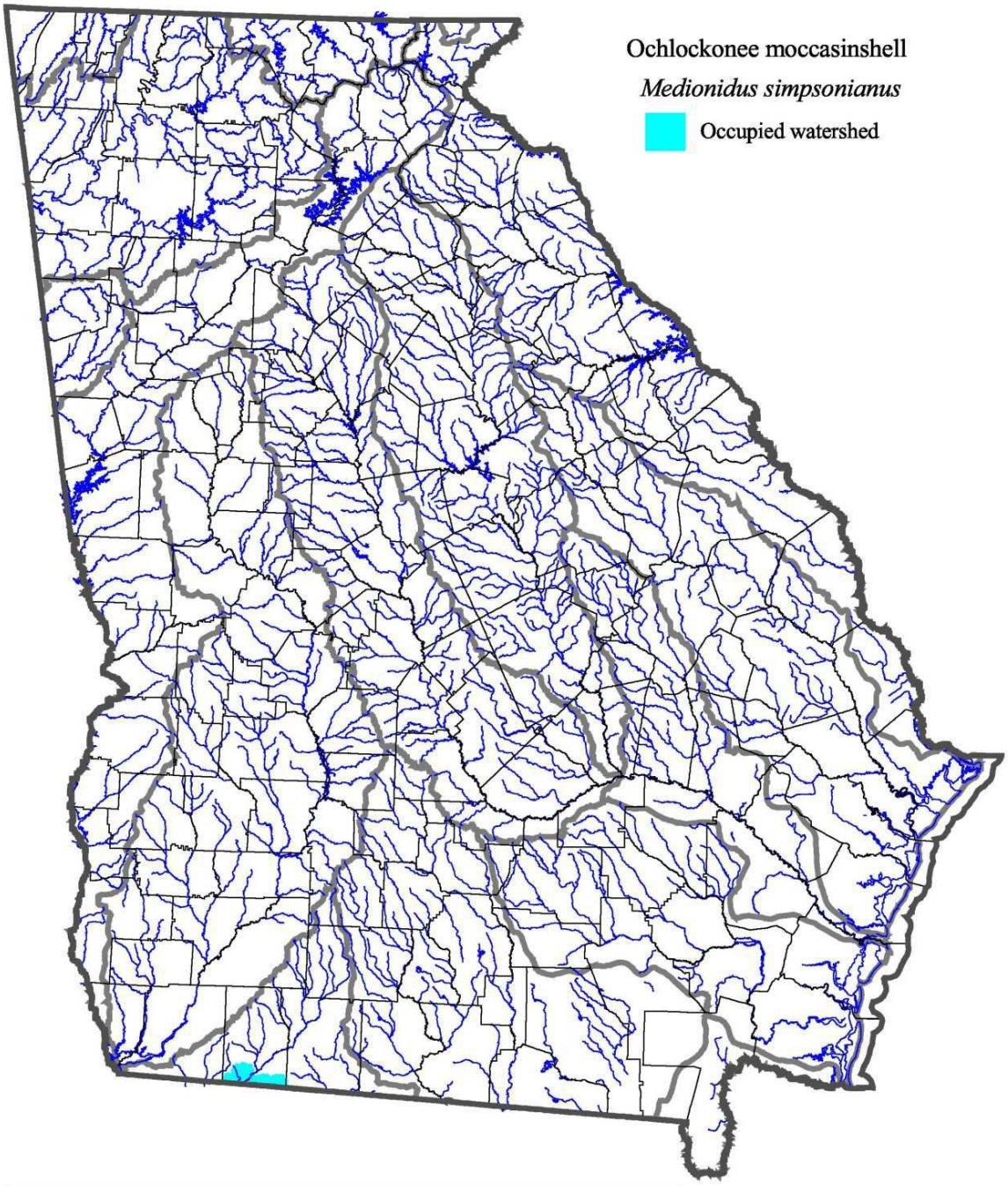
basin. Habitats in the Georgia portion of the basin are very similar to the habitat where the Ochlockonee moccasinshell was collected in Florida during 2007. The Ochlockonee River of Georgia is one of the most under-surveyed basins in the state.

Selected References:

Vaughn C.C. and C.C. Hakenkamp. 2001. The functional role of burrowing bivalves in freshwater ecosystems. Freshwater Biology 46: 1431-1446.

Author of Species Account: Jason Wisniewski

Date Compiled or Updated: September 2008



Watersheds (Huc 10) with known occurrences. Streams, county lines, and major river basin boundaries are also shown. Map generated from GADNR (Nongame Conservation Section) data on January 26, 2009.