Southern elktoe (*Alasmidonta triangulata*) Specimen unmeasured. Uchee Creek, Russell Co., Alabama. Photo by Jason Wisniewski, GA DNR. Specimen provided by the Florida Museum of Natural History.

Common Name: SOUTHERN ELKTOE

Scientific Name: *Alasmidonta triangulata* Lea

Other Commonly Used Names: none

Previously Used Scientific Names: none

Family: Unionidae

Rarity Ranks: G1/S1

State Legal Status: Endangered

Federal Legal Status: none

Description: The southern elktoe has a moderately thin, inflated shell, often with distinct concentric sculpturing originating at the umbo and rarely exceeding 70 mm (2⅞ inches) in length. Umbos are elevated above the hingeline and positioned to the anterior portion of the sub-triangular shell. Anterior margin of shell is rounded while posterior margin is bluntly pointed. Posterior ridge sharp angular. Adults typically with dark brown to black periostracum with faint

rays while young individuals have yellow to green with green rays present. Left valve often with two compressed, poorly developed pseudocardinal teeth and reduced or absent lateral tooth. Right valve with one compressed, high pseudocardinal tooth and lateral teeth reduced or absent. Umbo cavity is deep and nacre white.

Similar Species: Triangle floater (*Alasmidonta undulata*) and Altamaha arcmussel (*Alasmidonta arcula*). Little conchological difference exists between these species. As a result, these specimens may be best identified using a combination of genetics and biogeography.

Habitat: Typically occupies large creeks to large rivers with soft substrates of silt, mud, sand, or gravel, often in backwaters and pools.

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: Little is known about the life history of the southern elktoe. It is presumed that periods of gravidity are similar to that of the triangle floater and the Altamaha arcmussel which have been found gravid from August though October, and possibly through May. The host fish for the southern elktoe is unknown.

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: This species appears to occur in the Savannah, Ogeechee, Flint, and Chattahoochee Rivers in Georgia. However recent genetic analyses suggest that individuals found in the Ogeechee River may be the Altamaha arcmussel, therefore, the southern elktoe may be restricted to the Flint and Chattahoochee rivers. In Georgia, the southern elktoe is currently known only from Chickasawhatchee Creek near Elmodel Wildlife Management Area in Baker County and Patsiliga Creek in Taylor County. An additional specimen was also collected from Potato Creek, Upson County. One population also remains in Uchee Creek (Chattahoochee River), Russell County, Alabama. Several live *Alasmidonta* sp. were collected out of Clarks Hill Reservoir in the Savannah River Basin during 2007. These individuals strongly resemble both the southern elktoe and the Altamaha arcmussel and have been deposited at the North Carolina Museum of Natural Sciences for further examination.

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 the lower Flint River basin 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 suffocate individuals.

Georgia Conservation Status: The southern elktoe is known from Chickasawhatchee Creek in the vicinity of Chickasawhatchee and Elmodel Wildlife Management Areas in Georgia. However, 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: Continuing survey efforts for the southern elktoe throughout its historical range as well as examining its basic life history was identified as a high priority management need for the conservation of this species during the 2005 Georgia Wildlife Action Plan. Understanding the basic life history of this species will provide the foundation upon which all other research and conservation actions should be built. Determining the hydrologic needs of this species was also identified as a high priority research need for those populations occurring in the lower Flint and Chattahoochee river basins. Lastly, the taxonomy of this species should be examined, as individuals from the Atlantic Slope may be a different species than those in the Apalachicola Basin.

Selected References:

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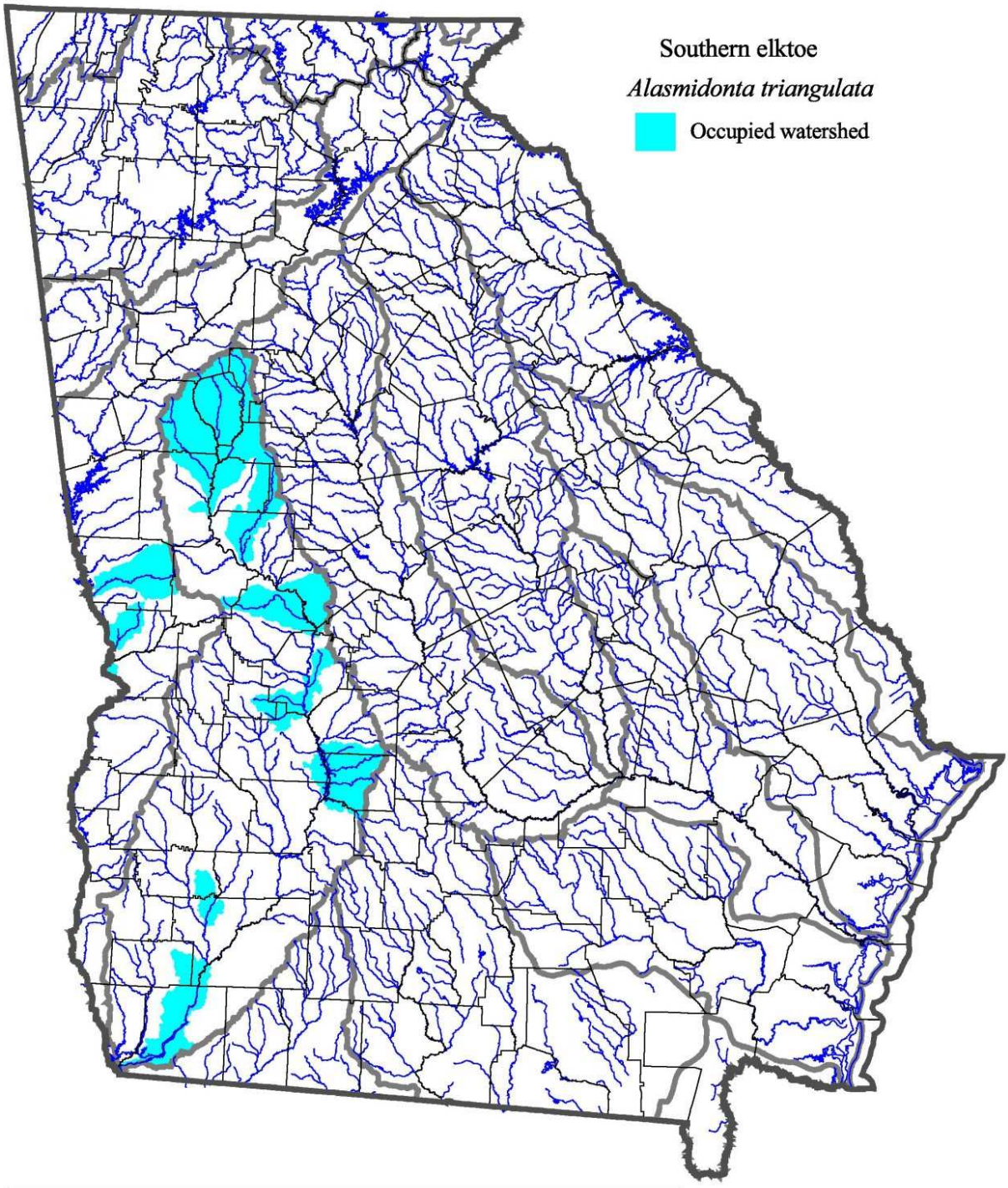

Watersheds (Huc 10) with known occurrences. Streams, county lines, and major river basin boundaries are also shown. Map generated from GADNR (Nongame Conservation Section) data on January 26, 2009.