



Southern clubshell (*Pleurobema decisum*) 56 mm (2¼ inches). Conasauga River, Murray Co., Georgia. Photo by Jason Wisniewski, GA DNR. Specimen provided by the McClung Museum courtesy of Gerry Dinkins.

Common Name: SOUTHERN CLUBSHELL

Scientific Name: *Pleurobema decisum* Lea

Other Commonly Used Names: none

Previously Used Scientific Names: none

Family: Unionidae

Rarity Ranks: G2/S1

State Legal Status: Endangered

Federal Legal Status: Endangered

Description: Shell profile is subtriangular in outline and the shell is heavy and inflated with a maximum length or approximately 93 mm (3¾ inches). Anterior margin broadly rounded to truncate and posterior margin is bluntly pointed and terminates below the midline of the shell. Ventral margin typically straight to broadly rounded. Umbos positioned far anteriorly and elevated above the hingeline. Posterior ridge is broadly rounded, becoming less prominent near the ventral margin. The periostracum is amber to brown, sometimes with broken rays.

Pseudocardinal teeth are heavy and lateral teeth are long and slightly curved. Umbo cavity shallow. Nacre color typically white.

Similar Species: The genus *Pleurobema* is generally regarded as one of the most difficult of genera to identify. Even the most seasoned malacologists find mussels in this genus to be extremely difficult to identify due to very few, or subtle differing, conchological characteristics. Williams et al. (2008) recognize two species that strongly resemble the southern clubshell and should be referenced to obtain a detailed list of similar species and characteristics to distinguish between these species. As a result, no similar species will be discussed in this account.

Habitat: Typically occupies large streams to large rivers with moderate flow and sand or gravel substrates; sometimes found in pools with slow or no current.

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 through pedal feeding and then developing the ability to filter feed during adulthood.

Life History: Females brood and release glochidia from June to July. Females release glochidia in small white or orange conglomerates. The primary host has been identified as the blacktail shiner (*Cyprinella venusta*), and the striped shiner (*Luxilus chrysocephalus*) was reported as a marginal host. Females reach sexual maturity at approximately 26 mm (1 inch).

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: Endemic to the Mobile River basin of Alabama, Georgia, Mississippi, and Tennessee. Historically, the southern clubshell was found throughout most of the upper Coosa River Basin in Georgia. However, the southern clubshell currently appears to be restricted to the Conasauga River drainage and Salacoa Creek in the Coosawattee River watershed in Georgia.

Threats: Excess sedimentation due to inadequate riparian buffer zones, development, and agriculture covers suitable habitat and could potentially suffocate mussels. Poor agricultural practices may also cause eutrophication and degrade water quality. Industrial effluent as well as sewage treatment plant discharges may also be degrading water quality.

Georgia Conservation Status: The southern clubshell 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: Minimizing sedimentation in the Upper Coosa River basin and its tributaries is a key component to conserving the southern clubshell. Restoration of riparian buffers will stabilize banks, providing clean gravel and sand substrates for the species. If habitat degradation can be minimized, reintroduction/augmentation of the southern

clubshell populations should be explored in order to re-establish viable populations of the species. However, prior to initiating any reintroduction/augmentation projects for the southern clubshell, the effective population size of this species should be examined to ensure that these actions would not negatively affect the genetic integrity of the population.

Selected References:

Haag, W.R. and M.L. Warren, Jr. 2003. Host fishes and infection strategies of freshwater mussels in large Mobile Basin streams, U.S.A. *Journal of the North American Benthological Society* 22: 78-91.

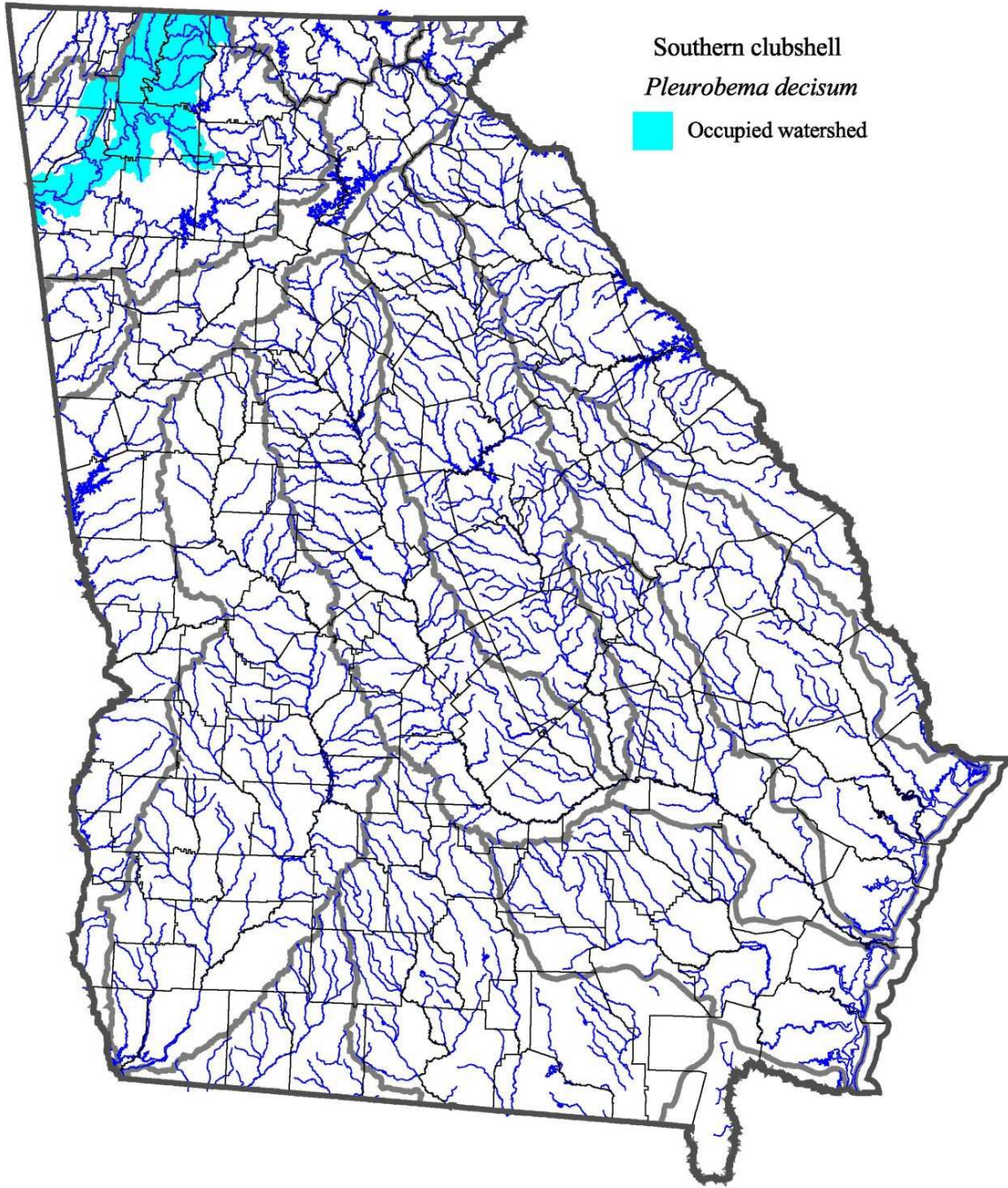
Haag, W.R. and J.L. Statton. 2003. Variation in fecundity and other reproductive traits in freshwater mussels. *Freshwater Biology* 48: 2118-2130.

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

Williams, J.D., A.E. Bogan, and J.T. Garner. 2008. *Freshwater mussels of Alabama and the Mobile Basin in Georgia, Mississippi, and Tennessee*. The University of Alabama Press, Tuscaloosa.

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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.