



Upland combshell (*Epioblasma metastriata*) female, 46 mm (1¾ inches). Coosa River, Alabama. Photo by Jason Wisniewski, GA DNR. Specimen provided by the Auburn University Museum courtesy of Dr. Brian Helms.

Common Name: UPLAND COMBSHELL

Scientific Name: *Epioblasma metastriata* Conrad

Other Commonly Used Names: none

Previously Used Scientific Names: none

Family: Unionidae

Rarity Ranks: GH/SX

State Legal Status: Endangered

Federal Legal Status: Endangered

Description: Shell profile is sub-triangular to trapezoidal with a maximum length of approximately 60 mm (2.4 inches). Umbo positioned slightly anteriorly to middle of valves. Females exhibit extrapallial swelling near the posterior portion of the shell while males tend to be more rounded to ventrally straight. The periostracum is yellowish-brown and often has thin, broken green rays. Pseudocardinal teeth are double in left valve and two short, curved lateral teeth are present in left valve. Umbo cavity typically shallow. Nacre color typically white.

Similar Species: Southern combshell (*Epioblasma penita*). The upland combshell can be distinguished from the southern combshell by the former having a more broadly rounded extrapallial swelling near the posterior margin of the shell. The upland combshell rarely exceeds 60 mm where as the southern combshell can attain lengths of over 70 mm.

Habitat: The preferred habitat for this species is poorly documented. However, it has been collected from medium to large rivers with moderate current and gravel or sand 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 through pedal feeding and then developing the ability to filter feed during adulthood.

Life History: The life history of this species is poorly understood, but may be similar to that of other species in the genus *Epioblasma*, which release glochidia in the late spring through early summer and utilize darters or sculpins as hosts.

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. Since the upland combshell is thought to be extinct, it is possible that the species may still occur but in extremely low densities. Due to the potentially low densities, it may be necessary to sample sites multiple times in multiple seasons to account for lower detection probabilities.

Range: This species is recognized as a Mobile Basin endemic and had historically occurred in the Coosa, Cahaba, and Black Warrior basins of Alabama, Georgia, and Tennessee. In Georgia, the upland combshell was historically collected from various locations in the Conasauga River as well as the Chattooga, Etowah, and Oostanaula Rivers near Rome, 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 effluents as well as sewage treatment plant discharges also degrade water quality.

Georgia Conservation Status: The upland combshell is not known to occur on any state properties 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: The upland combshell may be extinct and is proposed for delisting this species, as the last live specimen was collected from the Little Cahaba River in 1973. However, with the exception of the Conasauga River, few sites in the Georgia portion of the Upper Coosa River Basin have recently been surveyed. Therefore, this

species may still persist in under-surveyed reaches in the basin. Increasing survey efforts in the Upper Coosa River Basin of Georgia would help to provide additional insight to the status of this species as well as other rare species in the basin.

Selected References:

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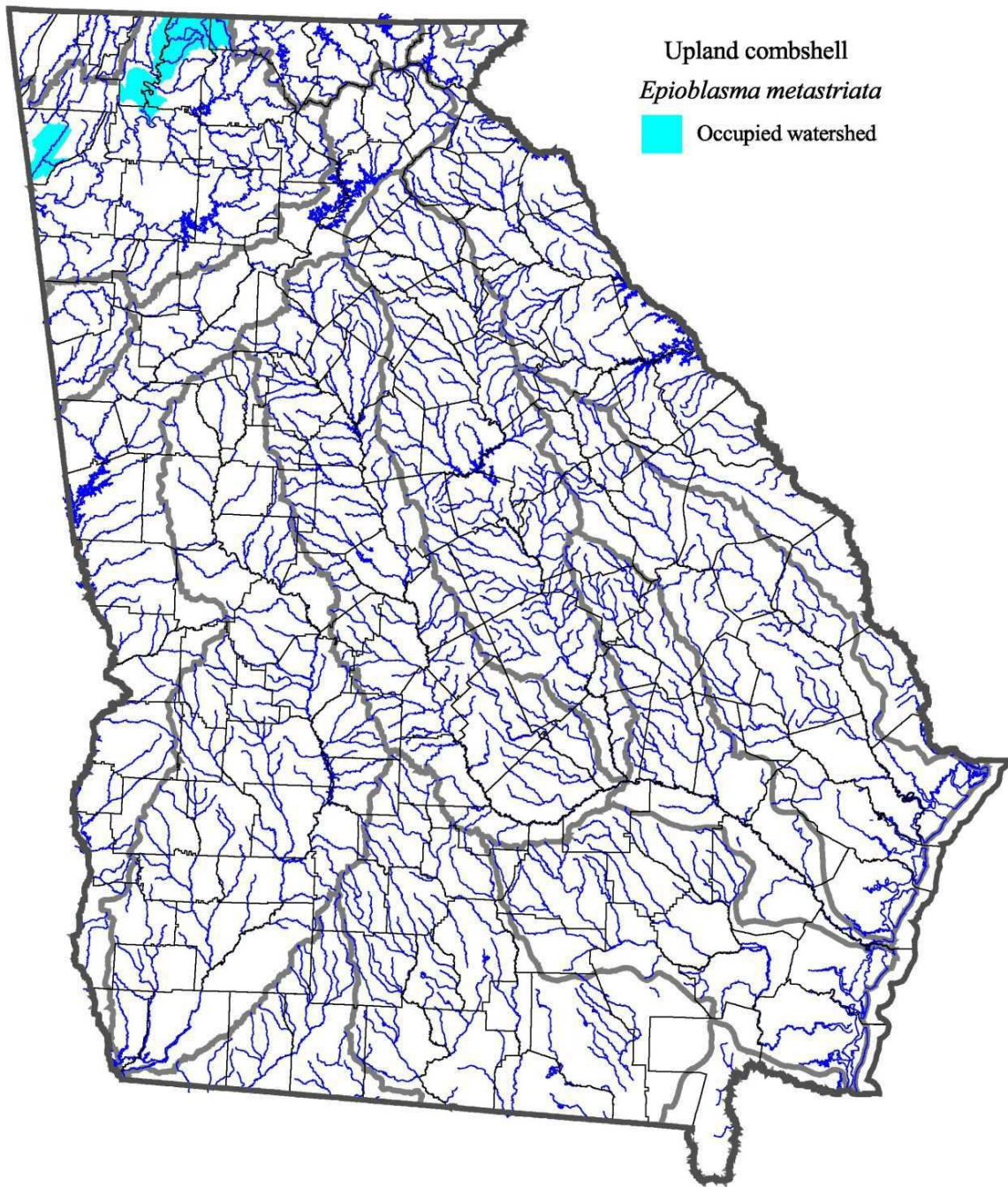
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Williams, J.D., A.E. Bogan, and J.T. Garner. 2008. Freshwater mussels of Alabama and the Mobile Basin in Georgia, Mississippi, and Tennessee. The University of Alabama Press, Tuscaloosa.

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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.