



Rayed creekshell (*Anodontooides radiatus*). Specimen not measured. Tullahulla Creek, Jasper Co., Mississippi. Photo by Jason Wisniewski, GA DNR. Specimen courtesy of Gerry Dinkins.

Common Name: RAYED CREEKSHELL

Scientific Name: *Anodontooides radiatus* Conrad

Other Commonly Used Names: Southern creekmussel (Apalachicola-Chattahoochee-Flint Rivers basin only)

Previously Used Scientific Names: *Strophitus subvexus* (Apalachicola-Chattahoochee-Flint Rivers basin only)

Family: Unionidae

Rarity Ranks: G3/S2

State Legal Status: Threatened

Federal Legal Status: none

Description: Shell is thin, moderately inflated, elongate, and rarely exceeds 75 mm (3 inches) in length. Umbos slightly elevated above the hingeline and positioned anteriorly. Anterior margin of shell is rounded while posterior margin is bluntly pointed to rounded. Ventral margin broadly rounded. Posterior ridge rounded near umbo, but flattens ventrally. Adults typically with dark

green or amber periostracum often with dark green rays. One rudimentary, pseudocardinal tooth and with lateral teeth absent. Beak cavity shallow and wide. Nacre white.

Similar Species: The rayed creekshell can be distinguished from the southern rainbow (*Villosa vibex*) by the latter having well developed teeth. The umbos in the rayed creekshell typically are narrower and elevate above the hingeline more than that of the southern rainbow. Recent publications suggest that individuals identified as the southern creekmussel (*Strophitus subvexus*) from the Apalachicola River Basin were incorrectly identified and were actually the rayed creekshell.

Habitat: Typically occupies mud, sand, or gravel substrates in small creeks to large rivers.

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 brooding period and host fish are unknown for this species. Gravid rayed creekshells have been collected out of the Mobile River basin from August through December. Furthermore, in the ACF basin, gravid females were collected in late September and early December.

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 this species may be a headwater specialist, surveys for the rayed creekshell should be done in headwater reaches of streams in the lower Chattahoochee and Flint River basins.

Range: Endemic to coastal plain portions of Gulf Slope drainages from Alabama, Florida, Georgia, Mississippi, and Louisiana. Within the Apalachicola River Basin, the rayed creekshell was known from the Chattahoochee and Flint Rivers and their tributaries. Current distribution in Georgia appears to be restricted to the lower Flint River tributaries as well as the mainstem river up to the Fall Line.

Threats: Habitat fragmentation may isolate populations and prevent fish movement, limiting the distribution of host fishes carrying glochidia. Additionally, construction of impoundments could 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 and incompatible agricultural practices may also cover suitable habitat and could potentially suffocate individuals. Rapid development of the northern extent of the Flint River Basin could severely impact the remaining populations of this species.

Georgia Conservation Status: The rayed creekshell 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: Examination of the basic life history was identified as a top research priority needed 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. Investigating the effects of groundwater withdrawals on the distribution and abundance of this species was also identified as a high priority research need for this species.

Selected References:

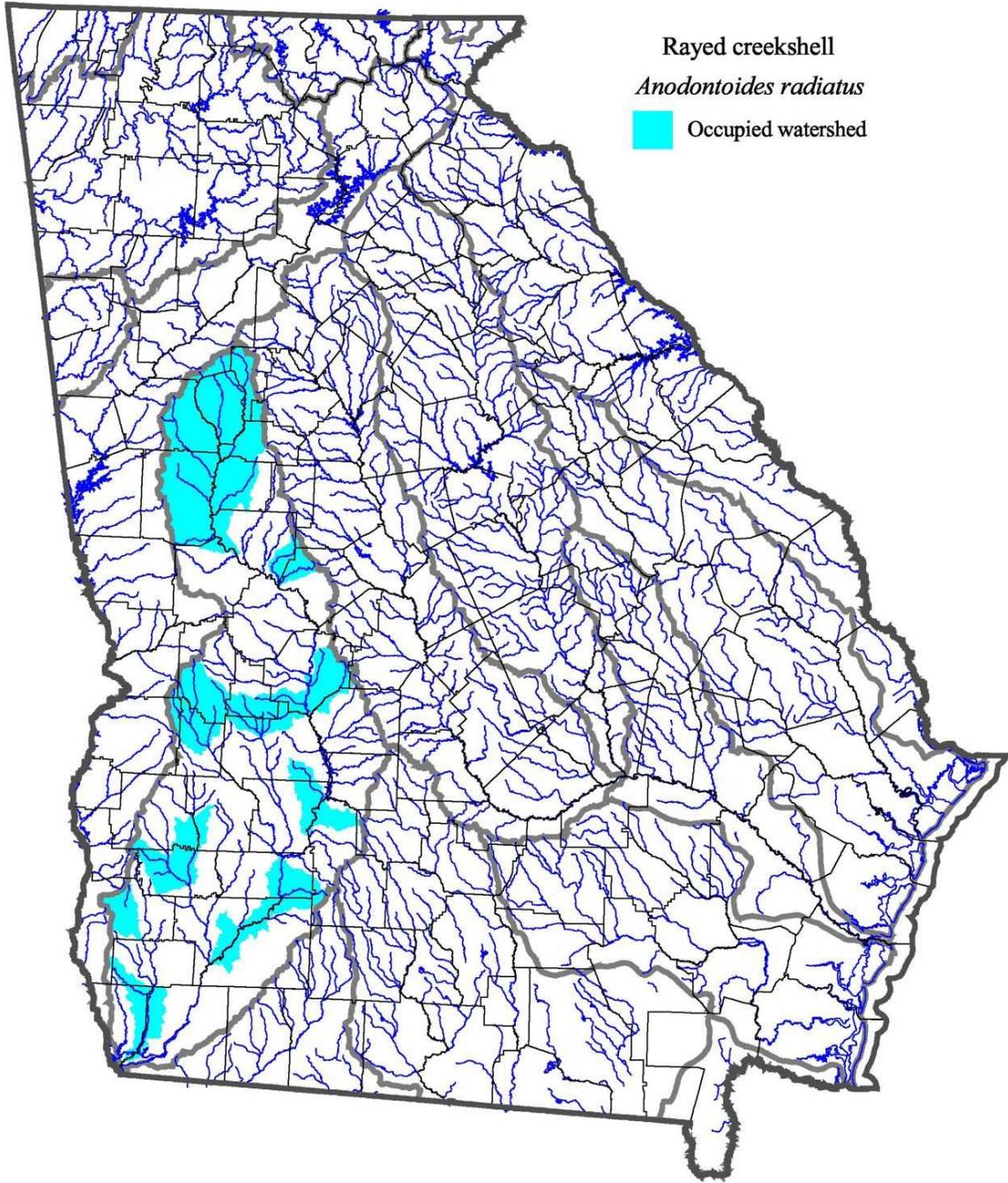
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Author of Species Account: Jason Wisniewski

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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 2009.