ROUND EBONYSHELL
Reginaia rotulata

Order: Unionoida
Family: Unionidae
FNAI Ranks: G1/S1
U.S. Status: Endangered
FL Status: Endangered

Description: Formerly assigned to the genera *Fusconaia* and *Obovaria*, this medium-small bivalve mollusk reaches a length of 77 mm (3.0 inches), although most Florida specimens are smaller, usually less than 55 mm (2.2 inches). The shell is thick, smooth, moderately inflated (width 45-60% of length), and usually round, occasionally oval, in shape, with all margins being generally rounded. The posterior ridge is rounded and indistinct. The broad umbo is inflated and slightly elevated above the hinge line, and its internal cavity is moderately wide and deep. External shell color is typically dark olive brown to black, while the inner lining of the valves (nacre) is white and shiny. Pseudocardinal teeth are thick, low, and triangular, with two in the left valve (anterior tooth smaller) and one in the right valve. Lateral teeth are short and straight to slightly curved, with two in the left valve and one in the right valve. The interdentum (area between lateral and pseudocardinal teeth) is short and wide (Williams et al. 2008, Williams et al. 2014).

Similar Species: *Reginaia rotulata* resembles small *Glebula rotundata* (round pearlshell) but is distinguished by a wide interdentum, deep umbo cavity, and triangular pseudocardinal teeth (vs. serrate ridges). *Cyclonaias* (= *Quadrula*) *succissa* is also similar, but *R. rotulata* has a more inflated shell, slightly less pronounced posterior ridge, and white nacre without a purplish tint (Williams et al. 2008, Williams et al. 2014, Williams et al. 2017). Most other Escambia River mussels are not as rounded in overall shape and have a more pronounced posterior ridge.

Habitat: This species is found in the main river channel and possibly lower portions of large tributary creeks; it typically occurs in slow to moderate currents on sand, gravel, and, on occasion, sandy mud substrates.

Seasonal Occurrence: Adults are present in the substrate year-round. Females are

presumed to be short-term brooders and may be gravid in spring and summer (Williams et al. 2008, Williams et al. 2014).

Florida Distribution: This mussel is known only from the Escambia River in western Florida, from the Alabama state line to Molino, Florida.

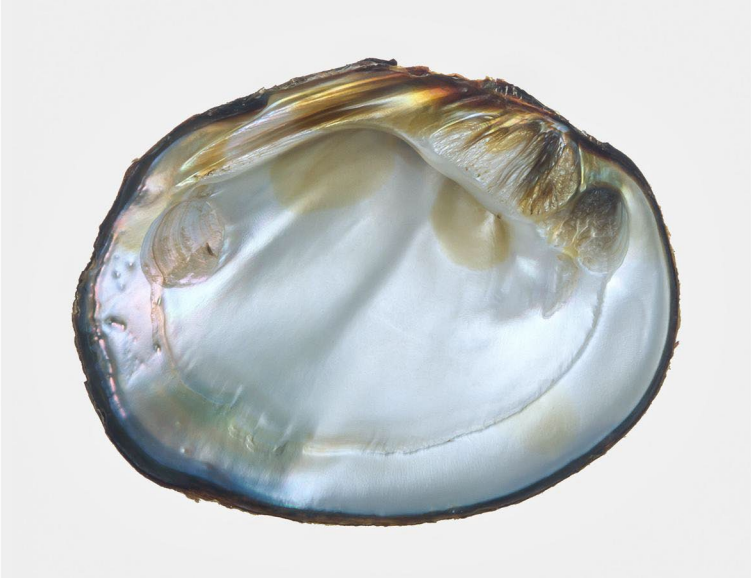
Range-wide Distribution: *R. rotulata* is narrowly endemic to the relatively small Escambia River system that arises, as the Conecuh River, in south-central Alabama and drains through western-most Florida to the Gulf of Mexico. This is one of the smallest distributions of all North American mussels.

Conservation Status: Like most of Florida's native freshwater mussels, the round ebonyshell has declined throughout its very limited range, including in Florida. Though still extant in the Escambia River system, the species is extremely rare and was listed in 2012 as Endangered under the U.S. Endangered Species Act, with 558 km of streams in Alabama and Florida designated as Critical Habitat, including most of the Escambia River mainstem in Florida (U.S. Fish and Wildlife Service 2012, Williams et al. 2014). Within the state, all but a small portion of the river floodplain is in the Lower Escambia River Water Management Area; although this provides important protection, it does not prevent pollution from upstream sources (a known problem), nor does it prevent impacts of invasive species such as the introduced Asian clam (*Corbicula fluminea*).

Protection and Management: Additional protection via acquisition or easement is needed for the Escambia River floodplain and adjacent uplands that remain private, particularly just south of the Alabama border and into Alabama. The major focuses in managing for viable populations of freshwater mussels are maintenance of high-quality waters and benthic habitats, as well as ample stream and river flows (damming, dredging, and excessive water consumption are strongly discouraged); this requires multi-state cooperation. Valuable tools include establishment of buffers and streamside management zones for all agricultural, silvicultural, mining, and developmental activities, and elimination or reduction of invasive species (especially other bivalves) if possible. Monitoring programs should focus on water and benthic habitat quality, as well as population sizes and population statuses of both mussels and their host fishes (currently unknown for *R. rotulata*) at all occupied sites. Additionally, it is important to promote responsible watershed land

use practices by implementing aquatic habitat education programs for land use planners and resource managers, and to conduct periodic reevaluations of the effectiveness of habitat protection measures and watershed land use practices. Finally, for small Gulf Coast rivers such as the Escambia, it is imperative to do everything possible to limit global warming and consequent sea level rise to limit saltwater intrusion and inundation of lower reaches.

References: Deyrup and Franz 1994, U.S. Fish and Wildlife Service 2012, Williams et al. 2017, Williams et al. 2008, Williams et al. 2014.



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