

## SHINY-RAYED POCKETBOOK

*Hamiota subangulata*



**Order:** Unionoida  
**Family:** Unionidae  
**FNAI Ranks:** G2/S1  
**U.S. Status:** Endangered  
**FL Status:** Endangered

**Description:** A medium-sized bivalve mollusk reaching a length of 3.3 in. (85 mm). Valves (shell) a shiny light yellowish brown with medium-wide emerald green rays (darker brown with rays obscured in some older individuals) over entire surface; smooth, roughly elliptical, and solid but fairly thin. Umbos (raised areas on valves near hinge) broad and somewhat inflated (deep or broad); posterior ridge extending from umbo to posterior margin rounded, not angular. Internally, two large, erect teeth below umbo of left valve, and one large and one flatter tooth in right valve; nacre (inner lining of valves) white, sometimes with salmon tint in cavity of umbo.

**Similar Species:** The yellow shell with fairly wide, bright green rays is unique among Florida mussels. Gulf moccasinshell (*Medionidus penicillatus*; see species account), which rarely exceeds 2 in. (51 mm), is yellowish to greenish brown and has fine but typically broken green rays. Because many mussels are similar externally, identity should always be confirmed by an expert.

**Habitat:** *H. subangulata* inhabits rivers to medium creeks with slow to moderate current and substrates of sand, sandy clay, and gravel (Williams et al. 2014).

**Seasonal Occurrence:** Present year-round.

**Florida Distribution:** Within Florida, *Hamiota subangulata* occurs principally in the Chipola and Ochlockonee rivers, with one historic site in a tributary of the upper Apalachicola River; the Chipola River population extends into Alabama (Garner et al. 2009). The species also has been recorded in Econfinia Creek, Bay County. A report from the Choctawhatchee River basin is considered erroneous (Williams et al. 2014). A convex polygon encompassing all Florida sites measures ca. 6,700 km<sup>2</sup>.

**Range-wide Distribution:** Apalachicola (including Chipola, Flint, and Chattahoochee rivers) and Ochlockonee river systems of Florida, Alabama, and Georgia. Also Econfinia Creek, Bay County, Florida.

**Conservation Status:** Declining; public lands protect part of Chipola and Ochlockonee river floodplains, but rivers still face multiple threats, including introduced Asian clam (*Corbicula fluminea*).

**Protection and Management:** Additional protection via acquisition or easement is needed for those portions of Econfinia Creek and the Apalachicola/Chipola and Ochlockonee river floodplains and adjacent uplands that remain private, including along headwaters in Alabama and Georgia. Managing for viable populations of freshwater mussels requires focusing on the 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 proper wastewater management; the 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, and population sizes and statuses of both mussels and their host fishes (potentially including multiple centrarchids, particularly largemouth and spotted bass: Williams et al. 2014) 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 relatively small Gulf Coast drainages such as Econfinia Creek and the Ochlockonee River, 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:** Brim Box and Williams 2000, Deyrup and Franz (eds.) 1994, Georgia DNR 1999, U.S. Fish and Wildlife Service 1998b.



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