

## SOUTHERN KIDNEYSHELL

*Ptychobranthus jonesi*



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

**Description:** A small to medium-sized freshwater mussel reaching a length of 2.2 inches (55 mm) in Florida, although larger (to 2.8 inches [72 mm]) in Alabama. Shell moderately thick and normally shiny, greenish yellow to olive and sometimes with faint rays when small, olive brown to black when large; generally smooth, elongated oval in shape, moderately inflated (deep); and with margins rounded anteriorly, narrowly rounded posteriorly, and straight to slightly convex dorsally and ventrally. A prominent, triangular ridge runs from umbo to end of shell. Umbo broad, extending slightly above hinge. Internally, two low, triangular teeth (pseudocardinals) below umbo of left valve, and one in right valve; lateral teeth curved and thin; inner lining of valves (nacre) bluish white.

**Similar Species:** Among other Choctawhatchee River mussels, most similar to *Hamiota australis* (southern sandshell), but shell of *P. jonesi* is more inflated, with a more rounded posterior margin and straighter ventral margin, and a more triangular posterior ridge. Also in this river system, small *Elliptio pullata* (Gulf spike) are similar but are more compressed and have a more angular posterior margin and low, rounded posterior ridge. Because many mussels are similar externally, identity should always be confirmed by an expert.

**Habitat:** Medium to large creeks to small rivers with firm sand and fine gravel substrates and slow to moderate currents; commonly associated with bedrock outcroppings.

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

**Florida Distribution:** Historically known from the Choctawhatchee River drainage in Walton County. The only recent record is from Holmes Creek, a tributary of the Choctawhatchee, where the species' presence is documented solely by one shell recovered in 2009.

**Range-wide Distribution:** North of Florida, extends upstream into Alabama not only in the Choctawhatchee River system but also, at least formerly, in the Escambia/Conecuh and Yellow river systems; populations from the latter rivers appear to be extinct.

**Conservation Status:** Because of dramatic range-wide decline, the species has long been considered of high conservation concern, with culmination of federal listing as endangered in 2012. Accompanying critical habitat designation included 1,226 miles (1,975 km) of streams in Alabama and Florida, including most of the main channels of the Escambia and Choctawhatchee rivers as well as some tributaries. Nonetheless, the species' continued existence in Florida is tenuous; it is known from only one stream drainage, where it is extremely rare, and has apparently been extirpated from all historic sites. Regardless of ownership, the species' habitat still faces multiple threats, including from various sources of degradation as well as the introduced Asian clam (*Corbicula fluminea*).

**Protection and Management:** Protect through acquisitions and easements over floodplains all inhabited and formerly inhabited streams and rivers from pollution, siltation, impoundment, and other disturbance; this must start upstream in Alabama. In Florida, much of the floodplain of the Choctawhatchee River mainstem and lower Holmes Creek is publicly owned, but additional protection of private lands is needed, especially along Sandy Creek and upper Holmes Creek. On private lands, establish buffers and streamside management zones for all agricultural, silvicultural, mining, and developmental activities. Protect forests along floodplains and at least 150 ft (ca. 50 m) of adjoining upland from timber harvest, livestock, and development. 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. It is critical to prevent siltation. Important practices in addition to streamside management zones include the siting of roads at least 0.25 mi. (0.4 km) from heads of all tributaries, and even more on steep slopes; the use of silt fencing and vegetation to control runoff at all stream crossings, especially during construction and maintenance; and the prohibition of dredging and damming of streams and rivers. Additionally, avoid introduction of non-native invertebrates, especially other bivalves such as zebra mussel; monitor and attempt to control Asian clam. Use and maintain sewer systems rather than septic tanks and stream-dumping for management of waste

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water. Eliminate use of agricultural pesticides on porous soils near streams. Identify and maintain fish populations (probably darters) that serve as mussel larval hosts. Monitoring programs should focus on water and benthic habitat quality, as well as population sizes and population statuses both of mussels and their host fishes 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. Because of effects on stream faunas, it is critical to initiate and conduct long-term programs to halt or even reverse global warming resulting from human activities.

**References:** Blalock-Herod et al. 2005, U.S. Fish and Wildlife Service. 2012, Williams et al. 2014.



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