

LAKE JACKSON AMPHIPOD

Crangonyx apalachee



Order: Amphipoda
Family: Crangonyctidae
FNAI Ranks: G1/S1
U.S. Status: none
FL Status: none

Description: *Crangonyx apalachee* is a small to medium-size epigeal (surface) amphipod. Females measure 3.6–8.6 mm in length, and the slightly smaller males 3.3–5.2 mm. Eyes are fully pigmented and ovate to mildly reniform (kidney-shaped). The interantennal lobe is narrow, with rounded upper and lower margins. Live specimens are clear to yellowish. Cannizzaro et al. (2022) provide detailed descriptions of antennae, mouthparts, gnathopods (claws on the second thoracic segment used to grasp females during copulation), pereopods (thoracic “legs” used in locomotion), gills and brood plates, pleopods (abdominal swimmerets), uropods, and telson, all structures important to distinguishing amphipod species.

Similar Species: This species is distinguished from all other members of the large genus *Crangonyx* except *C. floridanus*, *C. ephemerus*, *C. manubrium*, and *C. pseudoephemerus* by deep serrations on posterodistal margins of bases of pereopods 5-7, strongly produced posterodistal corners of epimera (part of sidewall of thoracic segment) 1-3, comb spines on the outer ramus of male uropod 2, and absence of ventral spines on the inner margin of uropod 2. *C. apalachee* differs from the other four species in fine structural details of gnathopods, epimera, uropods, and telson, as well as the reduced eyes of the stygobitic (hypogean) *C. manubrium* (Cannizzaro et al. 2022). The genus *Crangonyx* is distinguished from other potentially co-occurring amphipods (i.e., *Hyaella*) by shape of the eye (ovate/reniform as compared to round), relative lengths of antennae 1 and 2 (antenna 1 longer than antenna 2, vs. antenna 1 shorter than antenna 2), and by lacking dorsoposterior carina (spine-like structures) on the first two abdominal segments.

Habitat: The only known site (Lake Jackson) is a prairie lake that drains periodically (on the order of two decades) through karst sinkholes during times of low rainfall. *Crangonyx apalachee* was found in tall grasses and aquatic vegetation in the lake’s marshy perimeter. It seems to be restricted to the upper littoral zone and is replaced in the lower littoral and limnetic zones by other amphipods (Cannizzaro et al. 2022).

Seasonal Occurrence: No data are available, but it is expected that this amphipod would occupy sites year-round if hydrological conditions remain appropriate; however, seasonal abundances likely vary, and it is possible that the species lives interstitially part of the year but emerges seasonally to reproduce (Cannizzaro et al. 2022). Individuals were common locally when first collected in October 2017 but oddly could not be found at the same site during July 2021 and June 2022.

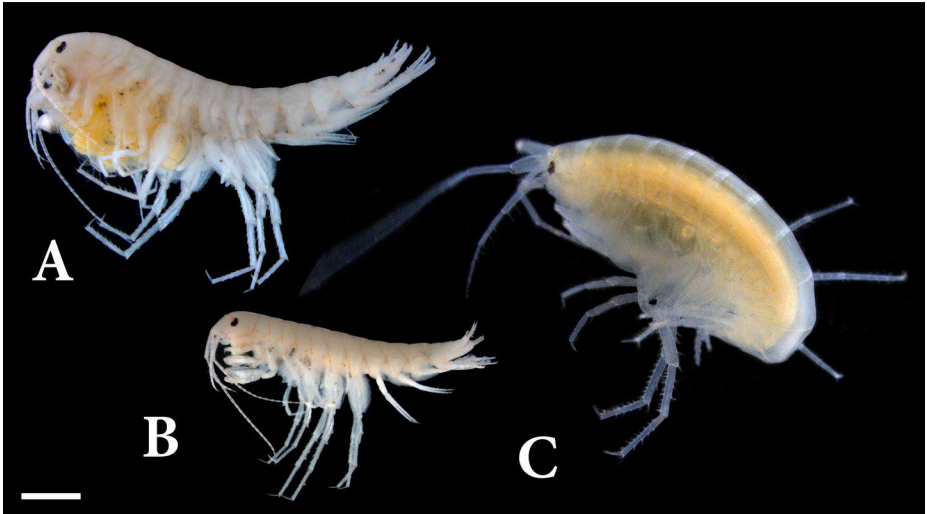
Florida Distribution: As of its description in 2022, *Crangonyx apalachee* was known from a single site, Lake Jackson in Leon County in the central Panhandle (Cannizzaro et al. 2022).

Range-wide Distribution: The species as known is endemic to a single site in Florida (Cannizzaro et al. 2022).

Conservation Status: Lake Jackson is considered submerged aquatic land and is hence under state jurisdiction. It is subject to periodic, natural drydowns, with much of the basin draining into the aquifer principally through two large sinkholes that eventually become plugged and permit gradual refilling. How this affects amphipod populations is unknown, but it may be that they are substantially reduced during dry conditions. Failure to find *Crangonyx apalachee* in 2021 and 2022 at the same site where it was abundant in 2017 raises questions but provides nothing definitive about its long-term status.

Protection and Management: Much of Lake Jackson is bordered by private lands that support residential development, although some tracts are publicly protected as county and state water management district parks with natural lakeside vegetation. Protection of any remaining undeveloped private sites by fee simple or less-than-fee simple legal measures would be appropriate. As with all freshwater wetlands, efforts to reduce or eliminate the entry of pollutants are important to protecting biodiversity; this is especially germane to Lake Jackson, which is crossed by a four-lane highway within 0.5 km of the collection locality of *Crangonyx apalachee*. Populations of this and other amphipods, in addition to water quality, should be regularly monitored throughout the lake basin.

References: Cannizzaro et al. 2022



A, Female. B, Male. C, Coloration in live female. Scale bar = 1 mm. © Andrew Cannizzaro