JACKSON COUNTY CAVE AMPHIPOD
Crangonyx manubrium

Order: Amphipoda
Family: Crangonyctidae
FNAI Ranks: G1G2/S1
U.S. Status: none
FL Status: none

Description: Like other stygobiont (aquatic cave-dwelling) amphipods, this tiny crustacean is very small (3–6.5 mm) and white to translucent, with a laterally compressed body. The eyes vary greatly in level of reduction, from slight to extreme, being nearly absent in some individuals. Cannizzaro et al. (2019) provide extensive descriptions of both sexes.

Similar Species: This species is distinguished from all other members of the large genus *Crangonyx* except *C. floridanus* (a non-cave-dwelling species) by deep serrations on the bases of pereopods (legs) 5–7, a single seta on posterior margins of epimera (side of thoracic segment by basal joint of appendages) 1–3, and comb-spines but no ventral spines on the inner margin of the outer ramus of the male uropod 2. It differs from *C. floridanus* by having reduced eyes, longer antennae 1, and more numerous comb-spines on the outer ramus of the male uropod 2. Because many amphipods are similar externally, identity should always be confirmed by an expert.

Habitat: Subterranean fresh waters in limestone bedrock (Cannizzaro et al. 2019); these are typically accessible at surface and submerged limestone caves, sinks, spring vents, and artificially dug wells. Specimens have been observed in bottom sediment and silt and in the water column 60–300 m into flooded caves.

Seasonal Occurrence: This amphipod occupies sites year-round. It appears that reproduction may occur throughout the year, as females with enlarged brood plates (but no eggs) have been found in May, July, October, and November (Cannizzaro et al. 2019).

Florida Distribution: Though at the time of description in 2019 the species was known from only 7 aquatic caves in a localized area (95 km^2 minimum convex polygon)

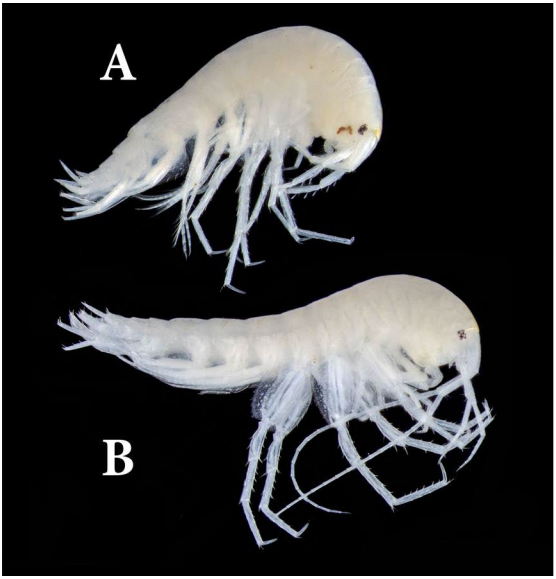
of Jackson County, the authors (Cannizzaro et al. 2019) believed it likely that the range extends throughout the Dougherty Karst Plain as far as southwestern Georgia. Hence, it is not considered to be endemic to Florida.

Range-wide Distribution: Although endemic to Jackson County, Florida as currently known, Cannizzaro et al. (2019) suggest that the species likely occurs throughout the Dougherty karst plain as far as southwestern Georgia.

Conservation Status: Although documented from at least seven sites, these all lie within the same relatively small local aquifer and potentially represent one principal occurrence because of shared groundwater connection. As a cave species, *C. manubrium* is probably quite fragile and sensitive to changes in habitat, especially water quality. The Dougherty Karst Plain lies within a region where agricultural, industrial, and residential uses are likely to contribute pollutants to and make unsustainable use of the aquifer.

Protection and Management: At least some sites for this species lie within publicly owned conservation lands. Where possible, currently unprotected private sites should be secured by fee simple or less-than-fee simple legal measures through a conservation entity or public agency. Whether public or private, it is critical to protect land around all karst features (sinks, caves, springs) within the range of this species, particularly as this small area of Jackson County supports one of the highest diversities of stygobitic crustaceans known. Land managers should retain natural vegetation and avoid use of chemical pesticides and herbicides within at least 50 m of recorded sites, including associated subterranean conduits. Entrances to caves may be gated or fenced as needed at sites where human visitation is unduly disturbing natural resources. Populations of amphipods and other associated cave crustaceans, in addition to groundwater quality, should be regularly monitored at sites known to support this species.

References: Cannizzaro et al. 2019



(A-male, B-female) © Andrew G. Cannizzaro