FLORIDA BIG BEND CAVE AMPHIPOD
Crangonyx parhobbsi

Order: Amphipoda
Family: Crangonyctidae
FNAI Ranks: G1G2/S1S2
U.S. Status: none
FL Status: none

Description: Like other stygobiont (aquatic cave-dwelling) amphipods, this tiny crustacean is very small (males 4.1–6.1 mm, females 3.9–9.1 mm) and white to translucent, with a laterally compressed body. Eyes are absent. Antennae 1 are nearly as long as the body and 3–4 times longer than antennae 2. The telson is 1.2–1.3 times broader than long, with cleft 20–25% of length; all uropods are elongate. Cannizzaro et al. (2020) provide extensive descriptions of both sexes.

Similar Species: *C. parhobbsi* is a medium-sized stygobitic species that is distinguished from all other members of the large genus *Crangonyx* except *C. hobbsi* (in which it was included until 2020, when the two were recognized as distinct) by the length of antenna 1 (45-110% of body length), fine structures of the mouthparts, elongate female gnathopods (modified thoracic appendages), and a long uropod 3 (four times longer than wide). Besides molecular differences, it is distinguished from *C. hobbsi* by telson shape, presence of calceoli on the second antennae of males, and greater length of male first antennae accessory flagellla. Because many amphipods are similar externally, identity should always be confirmed by an expert.

Habitat: This is a completely stygobitic form confined to subterranean fresh waters within limestone bedrock (Cannizzaro et al. 2020); these are typically accessible at surface and submerged limestone caves, sinks, spring vents, and artificially dug wells.

Seasonal Occurrence: This amphipod occupies sites year-round although seasonal abundances can be expected to vary. Egg-bearing females have been collected in March and July (Cannizzaro et al. 2020).

Florida Distribution: This species is endemic to the Floridan Aquifer; its known state

range extends from the St. Marks River basin, Wakulla County, eastward to the northern part of the Suwannee River basin. From southern Suwannee County southward, it is replaced by *C. hobbsi*. Evidence of hybridization between the two occurs in a narrow zone from eastern Wakulla County to western Suwannee County; otherwise, their distributions are non-overlapping (Cannizzaro et al. 2020).

Range-wide Distribution: The only confirmed non-Florida record is from just across the state line in Brooks County, Georgia (McIntyre Spring, Withlacoochee [Suwannee] River), although the Georgia range may be broader than is currently known (Cannizzaro et al. 2020).

Conservation Status: Subterranean waters face a variety of potential threats; chief among these are chemical pollution and excessive water withdrawal to support human consumption, agriculture, and industry. Population data are extremely sparse and difficult to obtain given that most of the species' primary habitat can only be visited, if at all, by highly specialized and equipped cave divers. Thus, population declines are likely to go unnoticed.

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. 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. 2020.

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