FLORIDA CAVE AMPHIPOD
Crangonyx grandimanus

Order:	Amphipoda
Family:	Crangonyctidae
FNAI Ranks:	G2G3/S2S3
U.S. Status:	none
FL Status:	none

Description: Like other stygobiont (aquatic cave-dwelling) amphipods, this tiny crustacean is very small (< 2 cm) and white to translucent, with a laterally compressed body; the vestigial eyes are greatly reduced in size to essentially absent.

Similar Species: This species is distinguished from other Florida *Crangonyx* by its relatively large size (to 19 mm), reduced mouthparts, and other morphological features of its antennae, gnathopods, and pereopods (described and illustrated by Zhang and Holsinger 2003 and Cannizzaro et al. 2018). A smaller related species, *C. hobbsi*, occurs at most of the same sites as *C. grandimanus*. Because many amphipods are similar externally, identity should always be confirmed by an expert.

Habitat: Subterranean fresh waters in limestone bedrock (Zhang and Holsinger 2003, Cannizzaro et al. 2018); these are typically accessible at surface and submerged limestone caves, sinks, spring vents, and artificially dug wells.

Seasonal Occurrence: Amphipods are present at sites year-round. It appears that reproduction may occur throughout the year, as ovigerous (egg-bearing) females have been found in February, March, May, and December (Holsinger 1972, Cannizzaro et al. 2018).

Florida Distribution: This species is known from more than a dozen counties, chiefly in the northern part of the peninsula and the eastern panhandle but with an odd southern outlier from a well in Miami-Dade County (Deyrup and Franz 1994, Franz et al. 1994, Zhang and Holsinger 2003, Cannizzaro et al. 2018). Thus far, no occurrences have been recorded west of the Ochlockonee River. Documented sites are clustered chiefly within the Suwannee River drainage, the Woodville Karst region south of Tallahassee, and along the Gulf coast north of Tampa Bay. Including the latter, the range spans a linear distance of approximately 625 km, but with a large disjunction of

about 370 km between the southernmost record and the nearest record in west-central Florida (Zhang and Holsinger 2003; Cannizzaro et al. 2018). Should future studies recognize panhandle populations as a distinct species (Cannizzaro et al. 2018), the range of *C. grandimanus* will be correspondingly reduced.

Range-wide Distribution: The species is endemic to Florida.

Conservation Status: Like many of Florida's stygobitic species, *C. grandimanus* has been of conservation concern for decades. 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, though thus far unreported, are likely to go unnoticed.

Protection and Management: Although some sites for this species lie within publicly owned conservation lands, the majority are not. 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. This is especially important in the peninsula, as future studies may remove panhandle populations from this species (Cannizzaro et al. 2018). 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. 2018, Deyrup and Franz 1994, Franz et al. 1994, Holsinger 1972, Zhang and Holsinger 2003.

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