FLORIDA CAVE ISOPOD
Caecidotea hobbsi

Order: Isopoda
Family: Asellidae
FNAI Ranks: G1G2/S1S2
U.S. Status: none
FL Status: none

Description: Like other stygobiont (aquatic cave-dwelling) isopods, this small (to 15 mm, or 0.6 in) crustacean is white to translucent and lacks eyes. The body is dorsoventrally compressed, the head and thorax are fused into a cephalothorax, and the remaining body segments are flattened and extend out over the bases of the legs; abdominal segments are fused to form a shield. There are two pairs of antennae and seven pairs of pereopods or walking legs (Deyrup and Franz 1994). Specific identification is based on fine morphological features of the body and appendages (Steeves 1964), including the male copulatory structure (second pleopod).

Similar Species: Some of this isopod's closest relatives live outside of Florida. The fringed, oar-like pereopods and smaller body size of *Remasellus parvus*, the swimming little Florida cave isopod, distinguish it from *C. hobbsi*. Two other stygobitic isopods, *C. putea* and *Mexistenasellus floridensis*, are known in Florida only from west of the Apalachicola River and hence do not overlap geographically with *C. hobbsi* (T. Sawicki, personal communication). Because many isopods are similar externally, identity should always be confirmed by an expert.

Habitat: This stygobitic species is principally known from subterranean fresh waters in limestone bedrock. These are typically accessible at surface and submerged limestone caves, sinks, spring vents, and artificially dug wells; decayed wood and leaves are often present. Isopods have been observed in the water column just above the silt layer.

Seasonal Occurrence: Isopods presumably are present at sites year-round, though little is known of movements or life history.

Florida Distribution: The species has been collected principally from aquatic caves in Alachua, Citrus, and Marion counties in the northern peninsula, with an additional

observation from farther south in Orange County (Morris 2006). *Caecidotea* from west of the Apalachicola River were formerly ascribed to *C. hobbsi* (Maloney 1939, Franz et al. 1994, Morris 2006), but these now appear to be *C. putea* (Lewis 2009, Lewis and Sawicki 2016, T. Sawicki personal communication).

Range-wide Distribution: The only non-Florida location known is a spring at Emory University, DeKalb County, Georgia (Franz et al. 1994). Studies are needed to determine if this truly represents *C. hobbsi*, as there may be unrecognized diversity within the species.

Conservation Status: Like many of Florida's stygobitic species, *C. hobbsi* has been of conservation concern for decades. The entrances of several caves where the species has been observed lie within state or county lands. However, regardless of legal protection of the land surface, 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: Where possible, currently unprotected private sites, as well as undeveloped private lands within 1 km of protected 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 habitats 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 karst features may be gated or fenced as needed at sites where human visitation is unduly disturbing natural resources. Populations of isopods and other associated cave crustaceans, in addition to groundwater quality, should be regularly monitored at sites known to support this species. Consider state and/or federal listing.

References: Deyrup and Franz 1994, Franz et al. 1994, Lewis 2009, Lewis and Sawicki 2016, Maloney 1939, Morris 2006, Steeves 1964.

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