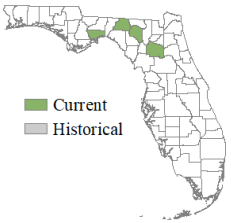
SWIMMING LITTLE FLORIDA CAVE ISOPOD
Remasellus parvus



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

Description: Like other stygobiont (aquatic cave-dwelling) isopods, this tiny (3–9 mm) 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. There are two pairs of antennae and seven pairs of pereopods (legs); pereopod 1 is simple, and the remainder are broad (oar-like) and fringed with long setae, which facilitates weak swimming. Specific identification is based on fine morphological features of the body and appendages (Steeves 1964, Bowman and Sket 1985), including the male copulatory structure (second pleopod).

Similar Species: This species appears to be allied with the *forbesi* species group of the large genus *Caecidotea* (Lewis 2013), and it may eventually be moved to that genus (J. Lewis 2018 in litt.). The fringed, oar-like pereopods distinguish it from other Florida *Caecidotea*, which also may be slightly larger overall. Because many isopods are similar externally, identity should always be confirmed by an expert.

Habitat: Subterranean fresh waters in limestone bedrock; these are typically accessible at surface and submerged limestone caves, sinks, spring vents, and artificially dug wells. Specimens have been observed on the walls and in the water column just above the silt layer.

Seasonal Occurrence: Isopods presumably are present at sites year-round, though nothing is known of movements or life history.

Florida Distribution: This cave species is known from four counties in northern Florida (Deyrup and Franz 1994, Franz et al. 1994), although it likely occurs in more.

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

Conservation Status: Like many of Florida's stygobitic species, *R. parvus* has been of conservation concern for decades. Two of the its known localities are within state parks (Peacock Springs and Wakulla Springs). 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.

References: Bowman and Sket 1985, Deyrup and Franz 1994, Franz et al. 1994, Lewis 2013, Steeves 1964.