

SANTA FE CAVE CRAYFISH

Procambarus erythroptus



Order: Decapoda
Family: Cambaridae
FNAI Ranks: G1/S1
U.S. Status: none
FL Status: Threatened

Description: This medium-sized, white crayfish can reach a total body length (cephalothorax plus abdomen) of 90 mm (3.5 in.). Eyes are reduced, lack facets, and in about half of specimens bear a reddish pigment spot. Specific identification is based on fine morphological features, including structure and ornamentation of the first pleopods of reproductive (form I) males. Characteristics include: only one cervical spine present, postorbital ridge without spines caudally, cephalic process of first pleopod of male situated anteriorly to central projection, and female lacking caudally directed tuberculiform process on caudal margin of sternum immediately anterior to annulus ventralis (Franz and Hobbs 1983). Relyea and Sutton (1975) provide extensive descriptions and illustrations of both sexes.

Similar Species: Morphologically, the species shares characteristics with other members of the subgenus *Ortmannicus* (including the troglobitic species *P. attiguus*, *P. delicatus*, *P. franzi*, *P. horsti*, *P. leitheuseri*, *P. lucifugus*, *P. orcinus*, and *P. pallidus*; see other field guide accounts), particularly those in the *lucifugus* complex. Relyea and Sutton (1975) include comparative drawings of this species and *P. horsti* and *P. orcinus*, which occur further west in the central Panhandle. Several characteristics noted above distinguish *P. erythroptus* from *P. orcinus*, which also can have red pigment in the eyes (Franz and Hobbs 1983). A second cave crayfish, *Troglocambarus maclanei*, co-occurs in at least two sites with *P. erythroptus*, but the former is much smaller (only 1.3 in./35mm) and bears very slender legs, extremely long antennae, and unpigmented reduced eyes. Because of similarities among Florida's many species of crayfishes, identification should be confirmed by an expert.

Habitat: Like other cave crayfishes in Florida, *P. erythroptus* inhabits groundwater in karst limestone formations. The species is known from only a few flooded caves and sinkholes in a very small region. Although it occurs where organic detritus accumulates because of lack of water flow, it does not seem to be associated with bat colonies (Deyrup and Franz 1994).

Seasonal Occurrence: Crayfish, including reproductive males, are present at

sites year-round (Franz 1982, Streever 1996). Copulation has been noted March-July, although females bearing eggs or young have not been observed (Franz 1982, Deyrup and Franz 1994, Streever 1996).

Florida Distribution: The Santa Fe cave crayfish is known from several sites in southern Suwannee County and adjacent western Columbia County, but only two (Sims and Azure Blue sinks) are known to contain significant populations (Deyrup and Franz 1994, Franz et al. 1994).

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

Conservation Status: One of the two most important sites, Sims Sink, is owned by the National Speleological Society and managed specifically for protection of this crayfish, although the safety even of this population could be compromised by water table withdrawal or disruption from mining or potential groundwater pollution from pesticide or herbicide use in surrounding areas. Garbage dumping in the early 1970s may have extirpated the population from at least one site. Current status of other sites and their crayfish populations is in need of documentation.

Protection and Management: Secure legal protection, by acquisition and/or perpetual conservation easement, of land around Azure Blue Sink, and additional land around Sims Sink if available; including substantial buffer areas can help to minimize adverse hydrological impacts. As for all cave-inhabiting crustaceans, protection of groundwater quality and quantity must be the primary focus of conservation, management, and monitoring. The population and groundwater quality at Sims Sink and other sites should be regularly monitored. Essential management actions at all sites include retention of natural vegetation, avoidance of chemical pesticide and herbicide use within at least 50 m, control of human access, and prevention of dumping. Potential state and federal listing as threatened merits consideration.

References: Deyrup and Franz (eds.) 1994, Franz 1982, Franz et al. 1994, Franz and Hobbs 1983, Relyea and Sutton 1975, Streever 1996.



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