

FIREBACK CRAYFISH

Cambarus pyronotus

Order: Decapoda
Family: Cambaridae
FNAI Ranks: G2/S2
U.S. Status: none
FL Status: none



Description: Bright orange-red to scarlet bodies characterize adults of this primary burrowing crayfish, which can reach 8–10 cm (3–4 in.) in body length (abdomen plus cephalothorax, excluding the claws); juveniles are dull pinkish-red, the intensity of color increasing with age. As for crayfish in general, specific identification is based on fine morphological features, including structure and ornamentation of the first pleopods of reproductive (form I) males. Bouchard (1978) described and illustrated pertinent characteristics of both sexes; these include rostrum without tubercles or spines, relatively broad antennal scale, uneven sizes of tubercles on dactyl of chela, and areola only moderately to sparsely punctate. Though not likely to be seen at the surface, the presence of this species is revealed by the mud ball chimneys it constructs during burrow excavation. Chimneys and mud balls are proportional to crayfish size, with the tallest chimneys topping 152 mm (6 inches).

Similar Species: No other crayfish in the Florida Panhandle is vivid red to orange-red over its entire body (although *Procambarus geodytes* in the lower St. Johns River basin can be bright orange). However, several other crayfish species construct similar burrows along Panhandle streams, so the presence of mud chimneys alone is not sufficient to confirm this species' occurrence. Morphologically, the species shares characteristics with other members of the subgenus *Depressicambarus*, which was rediagnosed by Bouchard (1978) and also includes *C. latimanus* and *C. striatus*, both of which occur sympatrically along the same seepage streams as *C. pyronotus*. The burrowing crayfish genus *Lacunicambarus* (probably *L. erythrodictylus*: Glon et al. 2022) also inhabits the same streams but tends to live further downstream with only minimal overlap; it reaches a larger size than *C. pyronotus* and is more olive in overall coloration, with narrow dorsal red bands along the abdominal segments and at joints.

Habitat: *Cambarus pyronotus* builds complex burrows at the edges of small seepage streams that lie at the base of steep ravines; the ravine slopes generally support a mixed hardwood slope forest, formerly surmounted by

sandhill vegetation that at many sites has been replaced by sand pine plantations (some now being restored on conservation lands).

Seasonal Occurrence: Crayfish remain in their burrows year-round, although they may plug them with mud during some periods, probably more so in winter. Females reproduce in spring, with young apparently leaving the maternal burrow during the summer (Jackson and Franz 2013).

Florida Distribution: The fireback crayfish is very narrowly restricted to a series of small tributaries along the eastern bank of the upper Apalachicola River, northern Liberty County, between Bristol and Chattahoochee (Jackson and Franz 2013).

Range-wide Distribution: Traditionally, this species has been considered to be endemic to Florida (Deyrup and Franz 1994). However, Taylor et al. (2022) report excavating specimens in Russell County, Alabama (which borders the Chattahoochee River in the Apalachicola River drainage), that they note match *C. pyronotus* closely in color and morphology, and hence assign to this species. Further morphological and genetic analyses of this population may be valuable to confirm species assignment.

Conservation Status: Most known sites are on lands owned by or under conservation easement to The Nature Conservancy and the State of Florida. However, unprotected portions of several occupied seepage streams likely support the species as well. Some of these tracts are on private timber lands that have been proposed for state purchase, which if secured would enhance this crayfish's long-term prospects (Jackson and Franz 2013).

Protection and Management: Continue efforts to acquire remaining private habitat within the range of the species; most important is the Apalachicola River Florida Forever BOT project. Chief management needs are protection of surrounding slope forests from erosion, and restoration of sandhill vegetation that formerly occupied hilltops but which was largely replaced by sand pine plantation. Inhabited stream drainages should be safeguarded from pollution (including road runoff), siltation, and impoundment.

References: Bouchard 1978, Deyrup and Franz 1994, Glon et al. 2022, Jackson and Franz 2013, Taylor et al. 2022.



© Dale R. Jackson