The Foraging Range of a Central Texas Cave Cricket, Ceuthophilus secretus (Orthoptera: Rhaphidophoridae)

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Abstract

We documented the nocturnal foraging range of the cave cricket *Ceuthophilus secretus* (Orthoptera: Rhaphidophoridae) at a cave in Coryell County, Texas. During 17 nights between May 8 and July 10, 2003, we marked more than 1,000 emerging crickets at the cave entrance with UV-bright paint. Using battery powered ultraviolet lights, we searched the area around the cave logging our search path with a GPS receiver. Over the course of this study, 291 marked crickets were located. Preliminary analyses show that the crickets were found at 38.5 meters from the cave on the average, with distances varying from 2.3 meters up to 105.7 meters. Ninety percent of the crickets were found within 72 meters of the cave entrance. Crickets were active from about 9:00 P.M. to at least 3:00 A.M.

Ceuthophilus secretus is important in central Texas cave communities because it brings significant energy into the cave through its surface forays. On the surface, the red imported fire ant, *Solenopsis invicta*, is an important introduced predator. Possible interactions (competition and/or predation) between cave crickets and red imported fire ant could, therefore, have significant impacts on cave communities. Thus, the foraging range of the cricket has significance for land managers who may wish to control red imported fire ant populations around caves that contain federally endangered terrestrial cave invertebrates.