

POSTER

ARTHROPOD ECOLOGY IN A BAT MATERNITY CAVE

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PHOTO: GARRY K SMITH

Bentwing bat, Miniopterus schreibersii.

Photo Competition Third Prize for a Digital photograph in Scientific Category.

BAT CAVE, Naracoorte, South Australia, is the larger of only two maternal sites for the large bent-wing bat (*Miniopterus schreibersii bassanii*). Guano dropped by these bats in the maternity chamber provides a habitat for an extremely diverse arthropod community.

Despite a comprehensive species inventory from previous invertebrate surveys, the ecology of arthropod species in the cave remains completely unknown.

This study seeks to elucidate and explain temporal and spatial patterns of arthropod diversity and abundance in the maternal chamber.

Pitfall traps, open for 48 hours, bimonthly, have been positioned in 18 guano piles throughout the maternal chamber. The traps have been placed in pairs at the top and bottom of piles to ascertain the importance of fresh guano to the arthropod populations. A range of environmental factors including pH, moisture content and guano deposition rates

are being examined to evaluate their micro- and meso-scale affects on arthropod populations.

Preliminary data indicate that guano is usually slightly acidic, with the tops of guano piles strongly basic (pH 8.0-9.0). The abundance of species of Acarina, Coleoptera (Carabidae, Histeridae and Anobiidae), Diptera (Phoridae), and Pseudoscorpionida (*Protochelifer naracoortensis*), has been found to be higher on the tops of piles where guano deposition and moisture content are higher. Arthropod abundance and diversity are postulated to be strongly linked to seasonal guano deposition, peaking over summer months. Further studies, beyond the scope of this project, should include research on fungal and microbial diversity which, apart from guano, form the basis of the maternal chamber food web. Detailed ecological information on species endemic to the maternity chamber would also greatly enhance management and conservation practices for this fragile environment. ■