

Using PIT tag technology at a maternity site of the critically endangered southern bent-wing bat

Ms Emmi Scherlies¹, Dr Ruth Lawrence¹, Dr Lindy Lumsden², Prof Noel Meyers¹, Mr Terry Reardon³

¹*La Trobe University*, ²*Arthur Rylah Institute, Department of Environment, Land, Water and Planning*, ³*South Australian Museum*

Passive integrated transponder (PIT) technology is one of the most promising, yet under-utilised, tools in Australasian ecological bat research. Roost site fidelity of many bat species enables the use of this technology to track tagged bats over their lifetime with just a single trapping. This study is employing PIT tag technology in a large-scale cave system to research the critically endangered southern bent-wing bat (*Miniopterus orianae bassanii*) at Bat Cave, Naracoorte, South Australia. Almost 1000 bats were tagged in early 2016 in order to investigate the population dynamics of the southern bent-wing bat at this critical maternity site. This paper will discuss PIT tag technology as an ecological research tool for microbats and report the preliminary results to-date, including winter bat activity at the maternity site, and the proportion of tagged bats that survived and returned to Bat Cave in spring 2016 after dispersing for the winter. It is anticipated that the ongoing results of this study will inform management of the maternity cave – and surrounding environment – and facilitate targeted recovery of this critically endangered bat.