Monitoring a cryptic burrowing marsupial using DNA extracted from scats: greater bilby populations in the Pilbara region of north-western Australia.

Martin A Dziminski[1], Fiona M Carpenter[1]

1. Department of Parks and Wildlife Western Australia, Bentley Delivery Centre, Western Australia, Australia

The greater bilby (*Macrotis lagotis*) is a burrowing marsupial that was once found across most of arid and semi-arid Australia; however, since European colonisation, bilbies have disappeared from at least 80% of their former range. The lesser bilby (*Macrotis leucura*), a closely-related species, has become extinct. Introduction of the cat (*Felis catus*) and fox (*Vulpes vulpes*), changed fire regimes, the degradation of bilby habitat through pastoralism, introduced herbivores, and clearing, have all contributed to the range contraction. Bilbies are cryptic and not easily observed or trapped, they are distributed across large areas, and populations can move across the landscape. Therefore, detection has relied on observation of sign, such as tracks, scats, diggings and burrows. No reliable technique for monitoring abundance within populations was available. We developed a technique using DNA extracted from faecal pellets to obtain a measure of abundance at populations remaining in the Pilbara region in the north-west of Australia. After three years of monitoring, two populations were lost to large scale wildfires. We found that populations in the Pilbara are small and isolated geographically, which may make them particularly vulnerable to the threats described above.

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ABSTRACT BOOK