Woylie (*Bettongia penicillata ogilbyi*) – research for conservation

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Relisted as *Critically Endangered* by the IUCN Redlist and *Endangered* by the State and Commonwealth, there has been an 80% reduction of the species since 2001. The largest and most important populations have been most affected, generally with 90 - 99% reductions occurring within 3- 5 years. All extant indigenous populations have been affected (i.e. Perup, Kingston, Dryandra and Tutanning) and some of the largest translocated populations (including Batalling, Boyagin, Northern Jarrah forest and Venus Bay Peninsula, South Australia). The declines are continuing in some areas and as yet there have been no clear signs of a sustained post decline recovery. Most of the remaining unaffected populations are small (<300 individuals), isolated and inherently vulnerable.

The species decline was unexpected and followed a successful recovery during the previous 25 years to more than 40,000 individuals, due principally to the successes achieved by fox control and more than 50 translocations across Australia. Several DEC-led investigations of woylies are currently integrated within the collaborative Mesopredator research program: principally focussing on the Northern Jarrah Forest (de Tores et al.), indigenous wheatbelt populations (Marlow et al.) and indigenous forest populations (Wayne et al.). The focus of the former two projects is on interactions amongst predators (i.e. introduced fox and cat, and native chuditch and python) and between predators and native prey such as the woylie. These projects are also integrated components of the Invasive Animals CRC. The latter project (Woylie Conservation Research Project) uses a converse bottom-up approach focussing on woylie demographics, survival and mortality and the key putative agents of decline – predators, food resources and disease. Using Caughley's 'Declining Population Paradigm' as the principal research framework and a comparative population approach, the project involves a large, collaborative, multidisciplinary, interagency research team including Murdoch University, Perth Zoo, Australian Wildlife Conservancy, Department of Environment and Heritage (SA), and University of Western Australia.

While different factors appear to be involved in at least some of the declines, based on current evidence, the leading working hypothesis remains that the mortality driven declines are principally associated with predation/scavenging (particularly by cats) of individuals made more vulnerable by some other factor, principally disease.

Threatened Species Research Forum

Western Australian Ecology Centre

9th July 2010

A Review of WA Government Research into Threatened Species