

**IL243: The ecology of Sulawesi Bear Cuscus (*Ailurops ursinus*);
arboreal marsupials of Sulawesi**

Dave Tosh (Queen's University, Belfast)

The Bear cuscus (*Ailurops ursinus*) is one of only two members of the phalangeridae family (Possums and cuscus) that occurs on Sulawesi. The phalangeridae has the most extensive range of any Australian family of marsupials and Sulawesi forms the North-west limit of their distribution. The largest of all the 24 species of Phalangeridae, the bear cuscus represents a monotypic genus (sub-family Ailuropinae) due to its relatively primitive characteristics and distinct morphology that set it apart from other cuscus species.

At present, the ecology of the bear cuscus and Sulawesi's other endemic cuscus, the Sulawesi dwarf cuscus (*Strigocuscus celebensis*) are poorly understood. Only one published study documenting the behavioural and feeding ecology of the bear cuscus on mainland Sulawesi exists. Due to the lack of information on the bear cuscus combined with the widespread deforestation that has taken place on Sulawesi, its population has been classed as vulnerable by the IUCN and is included in the Zoological Society of London's Evolutionary Distinct and Globally Endangered (EDGE) list. Therefore, if the species is to be conserved as part of Sulawesi's unique endemic fauna then a greater understanding of the species ecology is required.

In order to improve our understanding of this enigmatic species, research will be conducted on the island of Buton within the Lambusango Forest Reserve. Three aspects of the species ecology will be investigated:

1. *Population ecology.* DISTANCE sampling transects will be established and walked repeatedly over a number of weeks in a variety of habitats within and outside of the reserve. This will allow population densities of the species to be estimated and inform on the effect of habitat on numbers.
2. *Feeding ecology.* Basic ecological surveys will be undertaken to identify trees of which cuscus eat leaves. Many trees within the reserve have not been identified therefore, a combination of local and expert knowledge will be used to determine tree preference of the species. Characteristics of preferred trees and surrounding habitat structure will also be recorded to improve our understanding of feeding preferences.
3. *Behavioural ecology.* As the bear cuscus, is diurnal, its behaviour will be monitored via direct observation during daylight hours. Cuscus will be located via searching and the behaviours: resting, eating, sleeping, moving, grooming and interacting with other cuscus will be recorded every minute. This will provide further insight into the species daily activity budget and inform on interspecific social interactions.

Reading List:

Asri A. Dwiyahreni, Margaret F. Kinnaird, Timothy G. O'Brien, Jatna Supriatna, (1999). Diet and Activity of the Bear Cuscus, *Ailurops ursinus*, in North Sulawesi, Indonesia. *Journal of Mammalogy*, Vol. 80 (3), 905-912

Lindenmayer, D.B. (1997). Differences in the biology and ecology of arboreal marsupials in forests of southern Australia. *Journal of Mammalogy*, 78 (4), 1117 – 1127.

Reudas, L.A., Morales, J.C. (2005). Evolutionary relationships among genera of phalangeridae (Metatheris: Diprotodontia) inferred from mitochondrial DNA. *Journal of Mammalogy*, 86(2), 353–365.

Websites:

Zoological Society of London's Evolutionary distinct and globally endangered list:
http://www.edgeofexistence.org/mammals/species_info.php?id=529

International Union for Conservation of Nature (IUCN):
<http://www.iucnredlist.org/apps/redlist/details/40637/0>

Distance sampling:
<http://www.ruwpa.st-and.ac.uk/distance/>