

Extinct carnivorous marsupial may have hunted prey larger than itself

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This is an illustration of Mid Miocene *Nimbacinus dicksoni*. Credit: Anne Musser

The reconstruction of an extinct meat-eating marsupial's skull, *Nimbacinus dicksoni*, suggests that it may have had the ability to hunt vertebrate prey exceeding its own body size, according to results published April 9, 2014, in the open access journal *PLOS ONE* by Marie Attard from the University of New England together with colleagues from the University of New South Wales.

Nimbacinus dicksoni is a member of an extinct family of Australian and

New Guinean [marsupial](#) carnivores, Thylacinidae. Aside from one recently [extinct species](#), the majority of information known about species in this family stems from recovered [skull](#) fragments, which limits species ecology and diversity analysis. Scientists recovered a ~16-11.6 million year old preserved skull of *N. dicksoni* from the Riversleigh World Heritage Fossil Site in northwestern Queensland, Australia, and used it to determine if *N. dicksoni* was more likely to hunt small or large [prey](#). They applied virtual 3D reconstruction techniques and computer modelling to reconstruct the skull of *Nimbacinus*, digitally 'crash-testing' and comparing it to models of large living marsupial carnivores (Tasmanian devil, spotted-tailed quoll and northern quoll), and to the recently extinct Tasmanian tiger, *N. dicksoni*'s close relative.

The authors found that the similarity in mechanical performance of the skull between *N. dicksoni* and the largest quoll, the spotted-tailed quoll, was greater than the similarity to the Tasmanian tiger. The authors suggest that *N. dicksoni*, a medium-sized marsupial (about 5 kg), had a high bite force for its size, was predominantly carnivorous, and was likely capable of hunting vertebrate prey that exceeded its own body mass.



This is a photo of Mid Miocene *Nimbacinus dicksoni* skull and dentition emerging. Credit: Anna Gillespie, University of New South Wales

"Our findings suggest that *Nimbacinus dicksoni* was an opportunistic hunter, with potential prey including birds, frogs, lizards and snakes, as well as a wide range of marsupials. In contrast, the iconic Tasmanian tiger was considerably more specialized than large living dasyurids and *Nimbacinus*, and was likely more restricted in the range of prey it could hunt, making it more vulnerable to extinction." Dr Attard explains.



This is a photo of Mid Miocene *Nimbacinus dicksoni* from Riversleigh half exposed from limestone. Credit: Anna Gillespie, University of New South Wales

More information: Attard MRG, Parr WCH, Wilson LAB, Archer M, Hand SJ, et al. (2014) Virtual Reconstruction and Prey Size Preference in the Mid Cenozoic Thylacinid, *Nimbacinus dicksoni* (Thylacinidae, Marsupialia). *PLoS ONE* 9(4): e93088. [DOI: 10.1371/journal.pone.0093088](https://doi.org/10.1371/journal.pone.0093088)

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