

Fossil kangaroo teeth reveal mosaic of Pliocene ecosystems in Queensland

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The teeth of a kangaroo and other extinct marsupials reveal that southeastern Queensland 2.5-5-million-years ago was a mosaic of tropical forests, wetlands and grasslands and much less arid than previously thought. The chemical analysis of tooth enamel that suggests this diverse prehistoric habitat is published June 12 in the open access journal *PLOS ONE* by Shaena Montanari from the American Museum of Natural History and colleagues from other institutions.

The carbon isotope ratios present in these [fossil teeth](#) revealed that the extinct kangaroo ate plants similar to those consumed by present-day kangaroos in temperate and tropical regions, rather than the plants that now grow in this region. The fossils examined also suggest that different animals in the area occupied specialized dietary niches and did not rely on identical sources of food. As the authors explain, "This period, the Pliocene, is critical to understand the origins and evolution of Australia's unique modern animals. It is during this time that the Australian fauna first began to take on its modern appearance and distinctiveness, with many modern Australian marsupials, such as the agile wallaby *Macropus gracilis*, first appearing in Pliocene fossil deposits."

Montanari adds, "It is vital for us to understand what types of environments Australian megafauna thrived in during the Pliocene. Obtaining detailed environmental records from this time can help us find the drivers of the subsequent extinctions of many of these large marsupials."

More information: Montanari S, Louys J, Price GJ (2013) Pliocene Paleoenvironments of Southeastern Queensland, Australia Inferred from Stable Isotopes of Marsupial Tooth Enamel. PLOS ONE 8(6): e66221. [doi:10.1371/journal.pone.0066221](https://doi.org/10.1371/journal.pone.0066221)

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