

Fanged kangaroo research could shed light on extinction

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Credit: University of Queensland

Fanged kangaroos – an extinct family of small fanged Australian kangaroos – might have survived at least five million years longer than previously thought.

A University of Queensland-led study has found the species might have competed for resources with ancestors of modern kangaroos.



Research into species diversity, body size and the timing of extinction found that fanged kangaroos, previously thought to have become extinct about 15 million years ago, persisted to at least 10 million years ago.

The fanged kangaroos, including the species Balbaroo fangaroo, were about the size of a small wallaby.

UQ School of Earth and Environmental Sciences PhD student Kaylene Butler said the research involved Queensland Museum holdings of ancient fossil deposits from the Riversleigh World Heritage Area, where kangaroo fossil evidence goes back as far as 25 million years.

"Fanged kangaroos and the potential ancestors of modern kangaroos are both browsers – meaning they ate leaves – and they scurried, but did not hop," Ms Butler said.

"Northern Queensland was predominantly covered in rainforest when these fanged kangaroos first appear in the fossil record.

"There is a lot of research to be done before we can be sure what their canine teeth were used for but some have suggested they were used to attract potential mates. We do know that despite their large canines they were herbivorous (plant eaters).





PhD student Kaylene Butler with a Balbaroo fangaroo model skull made by the UQ library 3D printing service. Credit: University of Queensland

"We found that fanged kangaroos increased in <u>body size</u> right up until their extinction."

Ms Butler said the research aimed to fill significant gaps in the understanding of kangaroo evolution, and new fossil finds were helping to bring ancient lineages into focus.

"Currently 21 macropod species are listed as vulnerable or endangered on the International Union for the Conservation of Nature Red List of Threatened Species," she said.

She said understanding when and why kangaroos went extinct in the past could help with understanding what drove extinction of such animals.

"Currently, we can only hypothesise as to why balbarids became extinct – the original hypothesis related to events during a change in climate 15 million years ago but the balbarids persisted past that," she said.



"This new finding of their persistence until 10 million years ago means something else must have been at play, such as being outcompeted by other species."

Ms Butler last year discovered two new ancient <u>species</u> of <u>kangaroo</u>, Cookeroo bulwidarri and Cookeroo hortusensis.

More information: Kaylene Butler et al. Species abundance, richness and body size evolution of kangaroos (Marsupialia: Macropodiformes) throughout the Oligo-Miocene of Australia, *Palaeogeography*, *Palaeoclimatology*, *Palaeoecology* (2017). DOI: <u>10.1016/j.palaeo.2017.08.016</u>

Provided by University of Queensland

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