

# New evidence links humans to megafauna demise

January 21 2010

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Artist's reconstruction of the half-tonne *Palorchestes azael*, an extinct Australian giant marsupial which was similar to a ground sloth (Picture credit: Peter Schouten).

(PhysOrg.com) -- A new scientific paper co-authored by a University of Adelaide researcher reports strong evidence that humans, not climate change, caused the demise of Australia's megafauna -- giant marsupials, huge reptiles and flightless birds -- at least 40,000 years ago.

In a paper published today in the international journal *Science*, two Australian scientists claim that improved dating methods show that humans and megafauna only co-existed for a relatively short time after people inhabited Australia, adding weight to the argument that hunting led to the extinction of large-bodied species.

According to Professor Richard 'Bert' Roberts from the University of Wollongong and Professor Barry Brook from the University of Adelaide, new methods to directly date bones and teeth of extinct species show that megafauna fossils and Aboriginal tools do not all date from the same period.

"Debate about the possible cause of these late Pleistocene extinctions has continued for more than 150 years, with scientists divided over whether climate change or the arrival of humans has been responsible for their demise," Professor Brook says.

"Australia was colonised during a time when the climate was relatively benign, supporting the view that people, not climate change, caused the extinctions here," he says.

But one site in western NSW - Cuddie Springs - stood out as an anomaly. Fossils of super-sized kangaroos, giant birds and the rhino-sized Diprotodon (the largest marsupial ever to roam Australia) were found in the same sedimentary layers as stone tools, leading some scientists to previously claim "unequivocal evidence" of a long overlap of humans and megafauna.

However, Professor Roberts -- the lead author of the *Science* paper "And Then There Were None?" -- says direct dating of fossils shows that the artefacts and megafauna fossils at the Cuddie Springs site were mixed together over many thousands of years, long after the giant animals had died.

"These results provide no evidence for the late survival of megafauna at this site," Professor Roberts says.

"Given that people arrived in [Australia](#) between 60,000 and 45,000 years ago, human impact was the likely extinction driver, either through hunting or habitat disturbance," he says.

Professor Brook says previous claims for sites containing younger megafauna - such as in Kangaroo Island, eastern Victoria and the highlands of Papua New Guinea - should also be considered suspect in the light of these revised, older dates for the Cuddie Springs fossils.

Provided by University of Adelaide

Citation: New evidence links humans to megafauna demise (2010, January 21) retrieved 22 September 2024 from  
<https://phys.org/news/2010-01-evidence-links-humans-megafauna-demise.html>

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