

Humans, climate change responsible for megafauna extinctions: study

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This is the finding of a study led by Flinders University's Dr. Gavin Prideaux which offers the most detailed insight into the nature of the extinction of Ice Age giants anywhere in the world.

Published this week in the *Proceedings of the National Academy of Sciences*, the study's potential for clarifying the variable impacts of hunting, fire and aridity on mass extinction is unparalleled.

Dr. Prideaux, from Flinders School of Biological Sciences, said that determining the timing and cause of the Pleistocene extinctions remains one of the most charged topics in historical science, particularly given the putative roles of humans and [climate change](#) in the event.

"Australia was the hardest hit of all continents, apparently losing more than 90 per cent of larger species by around 40,000 years ago," Dr. Prideaux said.

“Causes have been intensely debated, with three strongly championed candidates emerging: human hunting, landscape burning by humans and increased aridity,” he said.

“Debates have consistently divided along party lines regarding the ‘ultimate cause’ with no empirical evidence to date emerging for the interplay of different factors in the extinctions.”

The study, which took 15 years to complete, with researchers from the Universities of Western Australia, Wollongong, Melbourne and the Australian National University, analysed bones excavated from the richest deposit of Pleistocene vertebrates known from the western two-thirds of Australia, in the aptly named Tight Entrance Cave in the southwest corner of the continent.

This is the only deposit on Earth known to have sampled a community for 100,000 years leading up to human arrival and beyond.

“First, we show that a diverse mammal fauna bounced back rapidly and thrived after a very harsh climatic phase 140,000 years ago, and that the extinctions preceded the last arid climatic phase that commenced 30,000 years ago. This rules out aridity as a primary driver,” Dr. Prideaux said.

“Second, we reveal that bushfires intensified 30,000 years before the extinctions, undermining the primacy of landscape burning as a cause.

“Third, by showing that humans and doomed species coexisted for at least 9000 years we rule out a ‘blitzkrieg’ extinction scenario.

“We suggest that protracted [hunting](#) by humans, perhaps over 10,000 years or more, was the probably number one extinction driver, but environmental changes happening at the time probably exacerbated the situation. This has led us to conclude that one-factor explanations for the

Pleistocene extinctions are very likely overly simplistic in Australia”.

Provided by Flinders University

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