

Human role in megafauna extinction: study

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The case is mounting for a human role in the mass extinction of giant animals that once ranged across Australia according to new research which challenges results from a site long claimed to clear people as the main cause of the beasts' demise.

Radiocarbon dating expert Dr Richard Gillespie, of The Australian National University, and population ecologist Dr Barry Brook, of Charles Darwin University, have analysed dates from the site, Cuddie Springs, in the semi-arid zone of western NSW.

The site is packed with stone tools and the bones of megafauna, including the two-tonne wombat-like Diprotodon, the two-metre-tall flightless bird Genyornis and giant kangaroos. Some researchers claim that the site points to a long overlap of humans and megafauna, suggesting that aridity during the last Ice Age, not people, pushed the animals into oblivion.

But Dr Gillespie and Dr Brook, reporting in the journal *Archaeology in Oceania*, have reanalysed the data to show that the site has been disturbed, suggesting that the artefacts and bones are unlikely to date from the same period.

Cuddie Springs is at the centre of the megafauna extinction debate, which has polarised researchers. Some argue that people wiped out the animals, either with a hunting blitzkrieg or through habitat destruction. They point to studies dating the extinction to about 46,000 years ago as support for their view. Others blame major climate change.

Layers of artefacts and bones between 1 and 1.7 metres below the surface of the Cuddie Springs claypan have been dated indirectly at 27,000 to 36,000 years old. The ages were obtained through radiocarbon analysis on charcoal and luminescence dating of sand grains from the same levels.

With people thought to have arrived on the continent about 50,000 years ago, these results, if confirmed, would suggest long coexistence of humans and the beasts. Many researchers have remained skeptical, however.

In their latest research, Gillespie and Brook performed statistical analyses on 20 published dates on material from the layers bearing bones and artefacts. If the layers were undisturbed, as the site's excavators contend, the ages should have increased with depth.

However, the scientists found that all the charcoal dates were statistically the same age, about 36,000 years old. And sand in the two upper layers was much younger than charcoal from the same levels, suggesting that the sediments had been mixed, and some of the charcoal redeposited.

Meanwhile, the excavators found hair and blood protein on some artefacts. If the bones were the same age, they too should have contained preserved protein, but they did not.

“This supports our case that the stones and bones are of different age,” Dr Gillespie said.

Source: Australian National University

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