

Giant bird feces records pre-human New Zealand

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Credit: AI-generated image ([disclaimer](#))

(PhysOrg.com) -- A treasure trove of information about pre-human New Zealand has been found in faeces from giant extinct birds, buried beneath the floor of caves and rock shelters for thousands of years.

A team of ancient DNA and palaeontology researchers from the

University of Adelaide, University of Otago and the NZ Department of Conservation have published their analyses of plant seeds, leaf fragments and DNA from the dried faeces (coprolites) to start building the first detailed picture of an ecosystem dominated by giant extinct species.

Former PhD student Jamie Wood, from the University of Otago, discovered more than 1500 coprolites in remote areas across southern New Zealand, primarily from species of the extinct giant moa, which ranged up to 250 kilograms and three metres in height. Some of the faeces recovered were up to 15 centimetres in length.

"Surprisingly for such large birds, over half the plants we detected in the faeces were under 30 centimetres in height," says Dr Wood. "This suggests that some moa grazed on tiny herbs, in contrast to the current view of them as mainly shrub and tree browsers. We also found many plant species that are currently threatened or rare, suggesting that the extinction of the moa has impacted their ability to reproduce or disperse."

"New Zealand offers a unique chance to reconstruct how a 'megafaunal ecosystem' functioned," says Professor Alan Cooper, Director of the Australian Centre for Ancient DNA, which performed the DNA typing.

"You can't do this elsewhere in the world because the giant species became extinct too long ago, so you don't get such a diverse record of species and habitats. Critically, the interactions between animals and plants we see in the poo provides key information about the origins and background to our current environment, and predicting how it will respond to future climate change and extinctions."

"When animals shelter in caves and rock shelters, they leave faeces which can survive for thousands of years if dried out," Professor Cooper says. "Given the arid conditions, Australia should probably have similar

deposits from the extinct giant marsupials. A key question for us is 'where has all the Australian poo gone?' "

The team's findings have recently been published in *Quaternary Science Reviews*, an international geological research journal.

Journal: www.elsevier.com/wps/find/jour... cription#description

Provided by University of Adelaide

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