

# Roos have less impact on the environment: study

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A comparative study of the energy requirements of kangaroos and sheep has concluded roos have far less impact on the environment than once thought.

The study, quoted on the University of Sydney's website, has given new weight to calls for the increased use of roos for everything from eco-tourism to human and pet [food consumption](#).

Dr Adam Munn, from the university's School of Veterinary Science, spent weeks tracking kangaroos and recording their [energy](#) needs.

"We found the kangaroos were consuming only 13 per cent as much water a day as sheep," he said.

In the rangelands, a sheep's diet consists mainly of saltbush.

Dr Munn's main collaborator on the project, NSW Department of Primary Industries' Dr Steve McLeod, says sheep feeding on saltbush will drink approximately 12 litres of water a day, as opposed to kangaroos, which drink approximately 1.5 litres a day.

The study also shows kangaroos consume approximately one-third of the energy of sheep and therefore have much less of an impact on the environment, Dr McLeod said.

The researchers injected isotopes into the animals to compare their

energy requirements, with a blood sample taken after 10 days.

The animals' energy levels were then calculated by comparing the quantity of remaining isotopes.

"This showed that a kangaroo will turn over about 5000 kilojoules per day, with sheep turning over about 15,000," Dr Munn said.

As kangaroos have significantly lower energy requirements than sheep, this indicates they need less food than sheep, thus their environmental impact is lower, say the researchers.

"With climate change, most rangelands are going to need to look at diverse options for land management for sustainability," Dr Munn said.

## **...but how to use them in livestock production?**

There have also been suggestions that methane emissions could be substantially reduced by replacing at least some of the sheep and cattle production in the NSW rangelands with kangaroos.

Presently sheep and cattle in the rangelands account for 30 per cent of the national herd.

Are kangaroos a viable alternative to domestic stock such as sheep and cattle?

"The challenge for the future will be how best to integrate kangaroo production into conventional [livestock production](#)," according to NSW DPI research scientist, Dr Steve McLeod.

"[Kangaroos](#) produce relatively little methane," Dr McLeod said.

"Although, like sheep and cattle, they are also foregut fermenters, they have a much shorter retention time, which inhibits the production of methane."

Greenhouse gases, such as methane, are a major contributor to [climate change](#). Methane is produced by herbivores, such as [sheep](#) and cattle, when they digest food.

When vegetable matter is broken down in the stomach of ruminants, short-chain fatty acids are produced that are used as energy.

By-products, such as hydrogen, carbon dioxide and methane, are also produced.

Domestic livestock produce 70pc of total agricultural emissions of methane.

As the second largest emitter of greenhouse gases in the Australian economy, agriculture contributes approximately 16 per cent of total output, of which 11pc is methane.

Source: NSW Department of Primary Industries

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