

# The heat is on for Australia's beloved marsupials

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Credit: Pixabay

As Australia's weather heats up, it could have serious consequences for some of our country's most iconic animals, according to new research from The Australian National University (ANU).

The research shows marsupials like koalas, possums and gliders are forced to change their eating habits in [hot weather](#) because of the toxins

found in Eucalyptus leaves.

The study has just been completed by Ph.D. researcher Phillipa Beale.

"Processing the toxins generates [body heat](#), which is obviously not ideal when it's hot," Ms Beale said.

"The animals compensate by eating less, which means they have less energy for everything else—including reproducing.

"It also influences their food selection. Evidence shows when it's cool, koalas choose a mix of low, medium and high toxin leaves. When it gets really hot, they eat less, but they also avoid the higher toxin leaves."

Ms Beale said it's a complicated problem, because toxin levels can vary from tree to tree, even within the one species.

"It's not like you can look at a forest and say 'oh, there's adequate number of that type of eucalypt, so they'll be fine.' That doesn't really cut it, especially if these animals' tolerance to the chemicals changes with the temperature," she said.

"From an animal nutrition perspective, it's also really hard to fix a forest once it's broken.

"Feeding is such a basic function, and yet often the nutritional value of certain trees isn't even considered when planning or assessing a particular area, because it's really difficult to measure."

According to Ms Beale, there's a number of ways the animals know to steer clear of certain leaves.

"A lot of the leaves have a really strong smell," she said.

"It could also depend on how the koalas feel after eating. For example, if the toxin caused them to feel sick once it reached a certain threshold in the bloodstream, if they're metabolizing slower because of the heat, they would feel sick sooner."

If marsupials are consistently choosing lower toxin leaves, it could also limit the number of animals the area is able to support in the future.

"This pressure on certain areas could also become an issue after big fire events like the ones we've just seen in New South Wales and Queensland," Ms Beale said.

"It is likely koalas will have to move away from burnt areas—and their survival could then depend on food selection in surrounding forests.

"The length of exposure to high temperatures is also important. I found a week of high temperatures was enough to make the [animals](#) reduce their intake of high [toxin](#) leaves."

Ms Beale has just submitted her Ph.D. on the effects of temperature on feeding in herbivorous marsupials.

Provided by Australian National University

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