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## Sizing up extinction theory

Adelaide Advertiser, Adelaide

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**CHRIS RUSSELL**

BEING a large, slow-moving target for meat eaters wasn't necessarily the cause of Australia's huge ancient beasts going extinct, Flinders University researchers say.

A much more complex interplay of local issues combined with the animals' anatomy to determine when they died out.

The researchers modelled what happened to 13 of Australia's megafauna – wombat-like creatures as big as a car, birds that stood 2m tall and lizards as long as 7m – which were wiped out some 42,000 years ago.

The creatures had roamed the continent of Sahul, which comprised mainland Australia, Tasmania, New Guinea and surrounding islands.

Researchers also looked at eight species alive today to help inform the long-term protection of animals in the modern world.

"We found no clear relationship between a species' inherent vulnerability to extinction, such as being slower and heavier and/or slower to reproduce, and the timing of its extinction in the fossil record," Professor Corey Bradshaw said.

"In fact, we found that most of the living species used for comparison, such as short-beaked echidnas, emus, brush turkeys, and common wombats, were more susceptible on average than their now-extinct counterparts."

The researchers concluded the extinction cascade was likely the result of complex, localised scenarios, including regional climate variation and different pressures from peo-

ple across regions such as the flightless bird *dromornis stirtoni* possibly having its eggs taken by humans.

Researchers tallied characteristics such as body size, weight, lifespan, survival rate and fertility. They tested this against various scenarios of different disturbances, such as droughts and hunting.

Some expected results came out: fast-hopping red kangaroos still alive today had an escape advantage over slower-striding, short-faced kangaroos that went extinct.

Small wombats might have found it easier to hide from hunters than bigger, non-burrowing megafauna.

However, the overall expected extinction pattern based on vulnerability did not match the actual outcome.

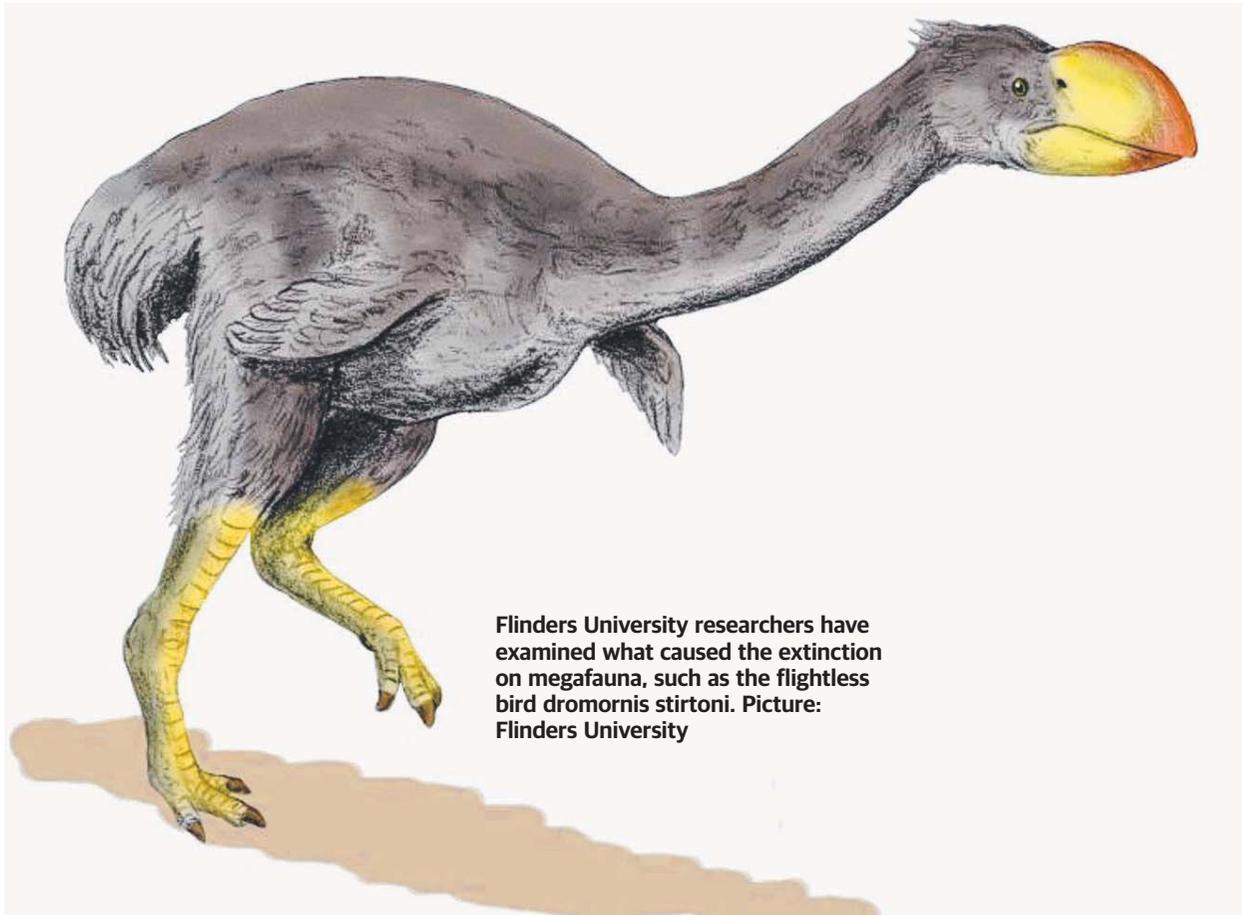
"Our results support the notion that extinction risk can be high across all body sizes depending on a species' particular ecology, meaning that predicting future extinctions from climate change and human impacts aren't always straightforward based on the first principles of biology," Prof Bradshaw said.



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Flinders University researchers have examined what caused the extinction on megafauna, such as the flightless bird *dromornis stirtoni*. Picture: Flinders University