

For male weta, big is better

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Dr Cilla Wehi with a male tree weta.

(PhysOrg.com) -- For a male tree weta, size really is everything. In six of the seven species in New Zealand the males all sport a distinctly large head, and the bigger the head, the better the chance of mating.

Massey University post-doctoral researcher Dr Cilla Wehi has been studying whether there is a downside to this evolutionary feature.

But she found that, despite their size, males are at no greater risk of being spotted and attacked by [predators](#) than [females](#).

“Having the big head is a plus in terms of getting and guarding females,” she says. “The big head means a male has a larger mandible that helps win the battles with other males for control of females,” she says. “But it also means that adult males are conspicuous, as they come out at night to

feed and fight.”

The downside, according to theory, is that there should be some disadvantage, such as higher predation because adult males are out in the open being more active and visible. “So are they more likely to be snapped up by a morepork or a rat, for example?”

Dr Wehi and her colleagues wanted to test this theory of sex-biased predation to see whether it was evident.

Dr Wehi looked at the sex ratios in different populations to see if the numbers of adult males and females were the same. “If there were more females than males, then we would know that there is a cost to having that big head.”

They gathered data from all around the country covering 58 populations, and surprisingly found there wasn’t a higher predation rate in males.

“So we’ve found something quite different from what theory predicts. It turns theory upside down.”

However, Dr Wehi says there must be some cost, otherwise the size of male weta heads would just keep getting bigger and bigger. More work is needed to identify what that cost is.

Dr Wehi worked with colleagues in Massey’s Ecology group, including Dr Mary Morgan-Richards and Dr Steve Trewick. The paper was published in the *Journal of Evolutionary Biology*.

Provided by Massey University

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