

Where The Giant Weta Are: Survival, behaviour and habitat use of the Mahoenui giant weta.

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Eligible for student prize

The last remaining individuals of the original Mahoenui giant weta (*Deinacrida mahoenui*) population are currently restricted to a 187ha mainland reserve in Mahoenui, southern King Country, New Zealand. These weta have survived here in the presence of introduced mammalian predators for almost 6 decades, having found refuge in the introduced woody shrub gorse (*Ulex europaeus*). However, due to natural succession, the reserve is gradually reverting to native bush and monitoring of weta shows potential signs of population decline. Concerns for the species' future survival have been raised as it is unknown how weta will cope with mammalian predators in an altered habitat. We assessed survival rates of Mahoenui giant weta and predator presence across the reserve, specifically gorse and native vegetation, via radio-tracking of 14 weta and 32 baited tracking cards for predators. We additionally assessed weta behaviour and the use of both habitats. Over the period of observation (3 weeks) no weta were preyed upon in either habitat, however, predator composition differed between habitats: possums dominant in gorse and hedgehogs in native vegetation. Average distance weta moved per day was not significantly different between habitats regardless of sex. Weta in gorse bushes, averaging 3m tall, tended to be found much closer to the ground (1.12m +/-0.09m) than in native vegetation (5m +/-0.34m, in ~5m trees). This result importantly indicated the most probable location of weta, if present, in native vegetation. We recommended further research using a larger sample size and over an extended period to gather conclusive results on survival rates between habitats. Continued predator monitoring was also advised.

