

## **Spatial patterning of invasive mice and indigenous weta in an alpine ecosystem**

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A high proportion of New Zealand's endemic animals and plants live above the tree line in the alpine zone. These alpine ecosystems are a significant part of New Zealand's internationally recognised distinctive natural heritage. They have been less modified by humans compared with most of mainland New Zealand, although introduced mammals are present, including omnivorous house mice. We measured the year-round activity of mice in an alpine cirque in Fiordland National Park using inked footprint tracking tunnels. A complex of wētā (Orthoptera) were tracked at the same time. We found mice were active above 1060 metres throughout all seasons including between June and November, a period dominated by snow cover. Two Hemiandrus species wētā and one Raphidophorid species appeared to be spatially disassociated with mice in cooler seasons. This pattern broke down in summer when mouse density based on tracking varied locally across altitudes of 1040-1160 metres. These are only preliminary data, but they suggest the potential for conservation management actions in the future to mitigate putative impacts of pest animals on celebrated alpine invertebrates and other components of upland ecosystems.

