

# Distribution of mammalian pests in the Waikato Region by ecotype

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Many introduced mammals are considered pests, and cause significant damage to New Zealand's native biota and economy. Removal of these pests are thus a priority, yet for a pest species to be effectively controlled, and eventually eradicated, information is needed on where to focus control efforts. The importance of this is highlighted in one of the 11 National Science Challenges – New Zealand's Biological Heritage.

Pasture constitutes the majority of vegetation in the Waikato Region (52.2%), followed by Native Forest (18.5%) and Exotic Plantations (11.2%). The aim of this project is to use motion-activated cameras as an alternative, more efficient method for determining the distribution and abundance of four important mammalian pests (possums, hedgehogs, rats and mice) across these ecotypes. The project will investigate inter- and intra-species differences in distribution and activity levels between ecotypes, and whether this is influenced by the seasons.

The site-occupancy analyses show significant differences between ecotypes. Rats dominate in native forest, with few possums and hedgehogs recorded. In contrast, cameras on pasture sites recorded almost exclusively rodents and hedgehogs, with possums only present when there are trees or shrubs nearby. Closed-canopy pine forest sites are more average, with all species present in more similar abundances. Mice are mostly limited to pasture and pine forest, but only where there is little to no rats.

The results should significantly improve the efficiency and targeting of mammalian pest eradication projects, not just in the Waikato Region, but possibly in the equivalent vegetation types elsewhere in the North Island. Further, an announcement by the government on July 25th 2016, of a plan for a predator free New Zealand by 2050, has made the results of this study of possibly national significance.