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THE USE OF DOGS TO DETECT NEW ZEALAND REPTILE SCENTS

A thesis presented in partial fulfilment of the requirements for the degree of Master of Science in Zoology at Massey University, Palmerston North, New Zealand.

Clare Melody Browne

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ABSTRACT

This study examined the ability of domestic dogs (*Canis familiaris*) to detect the scent of the Cook Strait tuatara (*Sphenodon punctatus*), Marlborough green gecko (*Naultinus manukanus*) and forest gecko (*Hoplodactylus granulatus*).

Handlers from two local dog training clubs with a total of 20 dogs participated in this study. The dogs' capacity to detect human and reptiles scents was evaluated in a series of trials. Each trial required the dogs to identify a different target scent, and consisted of nine replicate scent discrimination exercises. In the exercises the dogs were presented with a line of cloths. One or more of the cloths contained scent and the dogs were commanded to locate a specific scented cloth. Tuatara and gecko scats, sloughed skins and paper towels captive individuals had been sitting on were used to imbue the cloths with reptile scent.

The dogs were able to identify human, tuatara and gecko scents with average success rates of up to 96.3%, 93.7% and 86.7%, respectively. The dogs could detect fresh reptile scats, scats that had been exposed in native forest for two weeks and discriminate between several different reptile scents. The detection successes were significantly higher than would be expected if the dogs were selecting cloths at random ($p = 0.05$). The average results of each trial and the success rates of individual dogs were significantly different at both dog clubs ($p = 0.000$).

The results indicate that the methods used in this study are a good model for scent discrimination research, and dogs could be used to detect tuatara and gecko species for conservation work. Dogs may provide an alternative to the visual methods currently used to locate these reptiles.

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