Monitoring the impacts of invasive mammals on arboreal geckos' habitat use, cell foam retreat use, and the effectiveness of different monitoring techniques.

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DOC: AK 20666-FAU; General handling Permit (includes Iwi consultation) (under Dianne Brunton)

Ethics approval: Standard research handling of geckos, i.e. measuring demographics only, which does not require animal ethics approval.

“Four things on earth are small, yet they are exceedingly wise... A lizard grasps skillfully with its hands, and it is found in kings’ palaces”

Proverbs 30 vs. 24...28

For Adonai

ABSTRACT

Gecko ecology was studied in areas of pest control and no control in four areas around Auckland. The density index of geckos was highest at Waiheke (treatment, i.e. pest control) with an average of 137.5 geckos ha^{-1} compared with Waiheke (control, i.e. no pest control): 56 g/ha^{-1}, Tawharanui: 20.3 g/ha^{-1} and Shakespear: 9.5 g/ha^{-1}. The Waiheke sites were then studied further; gecko condition was measured and males were found to have lower body conditions at the non pest controlled sites, rats were also found to be more abundant at these sites and large invertebrates less abundant. Habitat was also analysed and geckos were found to be captured under cell foam retreats (CFRs) in areas with lower canopies, higher forest density, a higher proportion of undergrowth cover and smaller canopy areas and tree diameters. These parameters were then used to compare the detectability of geckos with their densities and areas with the lowest densities were also found to have the lowest detectability. The efficiency of CFRs was then compared with VES nightspotting, Onduline artificial cover objects (ACOs) and tracking tunnels. CFRs and VES were found to be similarly efficient with 1.66 geckos $hour^{-1}$ for CFRs compared with 1.10 geckos $hour^{-1}$ for VES. ACOs and tracking tunnels did not detect any geckos during this study. The humidity at the time of capture correlated with the number of geckos captured per check, with less geckos captured as the humidity increased.

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