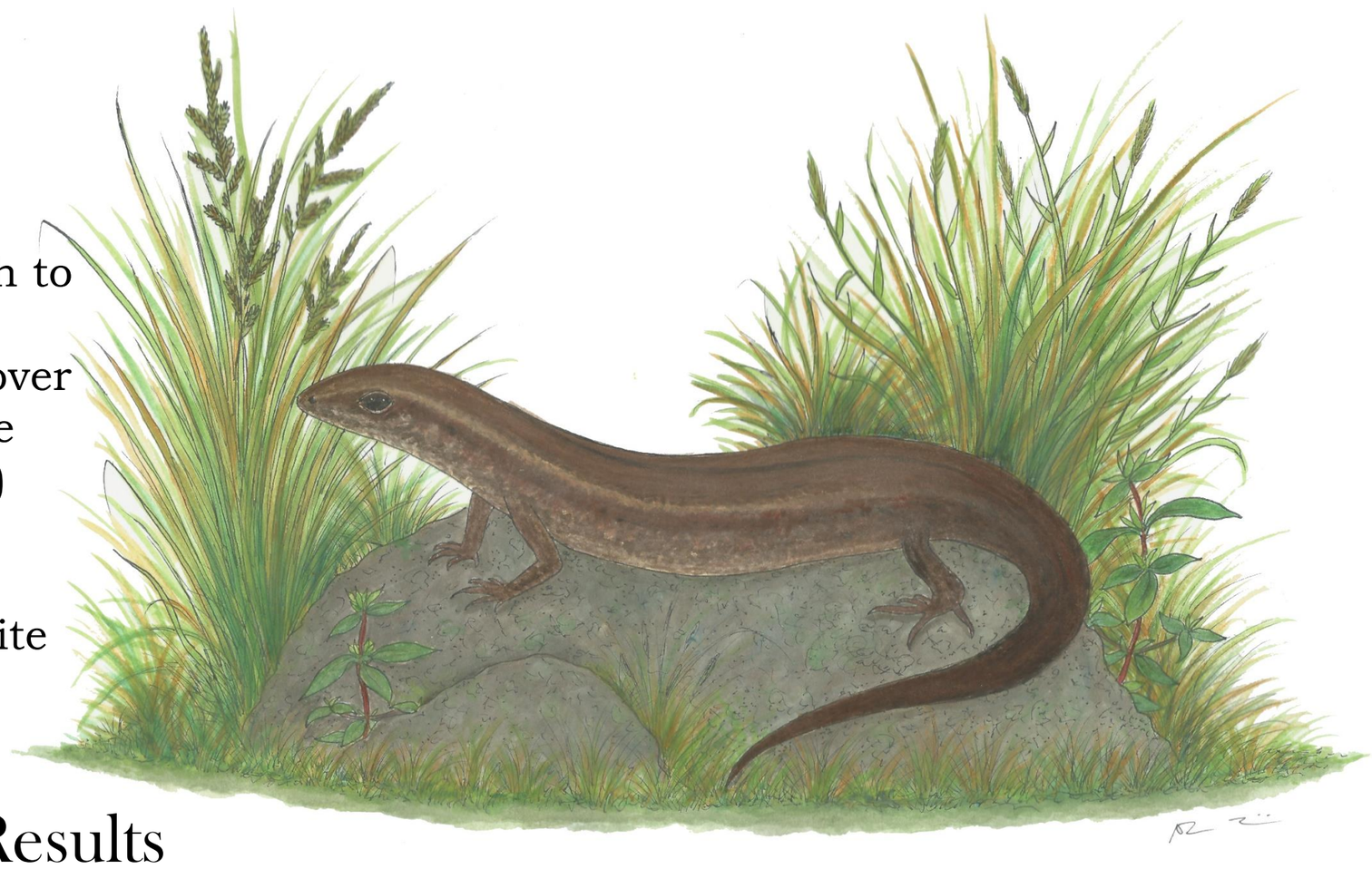
Monitoring Lizard Fauna in the Aorangi Ranges

Liam Daly
liam.daly@vuw.ac.nz
Supervised by
Nicola Nelson

Context of Research

Until now there has been no research to measure the extent, or presence, of lizards in Aorangi Forest. There are over 100 endemic species in the Scincidae (skinks) and Diplodactylidae (geckos) families[1,2]. Therefore they can be considered an important part of New Zealand's ecological landscape, despite often being overlooked.

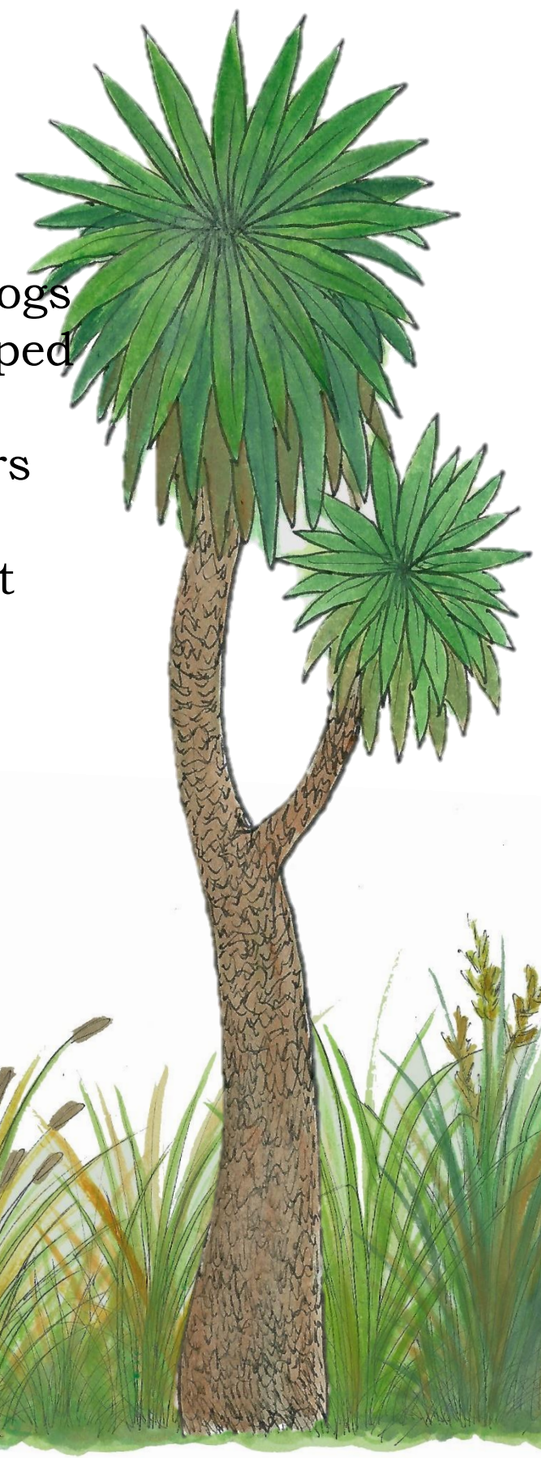


Sampling Method and Results

Two sites were used in this study. One site is a known lizard hotspot, surrounded by a predator-proof fence, north of Martinborough and was used as a positive control. The other site is a bush block that backs onto the Aorangi Forest. Four sample sites from a range of habitats were used to gather data from the bush block. This involved using two lines of five pitfall traps at each site, each covered by an ACO (artificial cover object). Only ACOs were used at the control site. Across a 19-day sampling period, only two common skinks (*Oligosoma polychrome*) were found – whereas a sight survey found eight spotted skinks (*Oligosoma lineoocellatum*) within fifteen minutes at the control site.

Why are They at Such Low Numbers?

The Aorangi Restoration Trust (a community-based organisation) engages in predator control at the edges of the park. Rats and hedgehogs made up 82% of the predators trapped over the winter of 2017, and are caught in consistently high numbers throughout all seasons[3]. It is likely that the scope of predator control at the bush block is not sufficient enough to allow for the recovery of lizard populations, as evidenced by the increased abundance of *O. lineoocellatum* at the control site – which had a predator-proof fence.



What Next?

It seems that lizard populations are persisting in places that are absent of predator control, albeit at low numbers. Thus further study is required in order to understand the effects that these populations are experiencing and how best to conserve them. Due to the remoteness of many of these locations, this can make research difficult. However, it may be possible to employ citizen science methods to monitor populations on private property surrounding Aorangi Forest. One such method could be the establishment of a database where members of the public can record numbers and types of lizards that they find in their area.

Art by Amber Sisarich.

References:
1. Nielsen, S. V., Bauer, A. M., Jackman, T. R., Hitchmough, R. A., & Daugherty, C. H. (2011). New Zealand geckos (Diplodactylidae): Cryptic diversity in a post-Gondwanan lineage with trans-Tasman affinities. *Molecular Phylogenetics and Evolution*, *59*(1), 1-22.

2. Chapple, D. G., Ritchie, P. A., & Daugherty, C. H. (2009). Origin, diversification, and systematics of the New Zealand skink fauna (Reptilia: Scincidae). *Molecular Phylogenetics and Evolution*, *52*(2), 470-487.

3. Trapline Buffer Catch Report, Winter 2017 (email communication from Robert Burgess).