WINDY HILL ROSALIE BAY CATCHMENT TRUST

Windy Hill Sanctuary Newsletter #42 June 2022

One of the elements of the Windy Hill Sanctuary that I have much enjoyed over the past 20 years has been the steady stream of university students undertaking all or part of their study here. We learn a lot from them and, they in turn, learn from us – it's a great exchange.

This newsletter is focussed on those people and the research work they have undertaken.

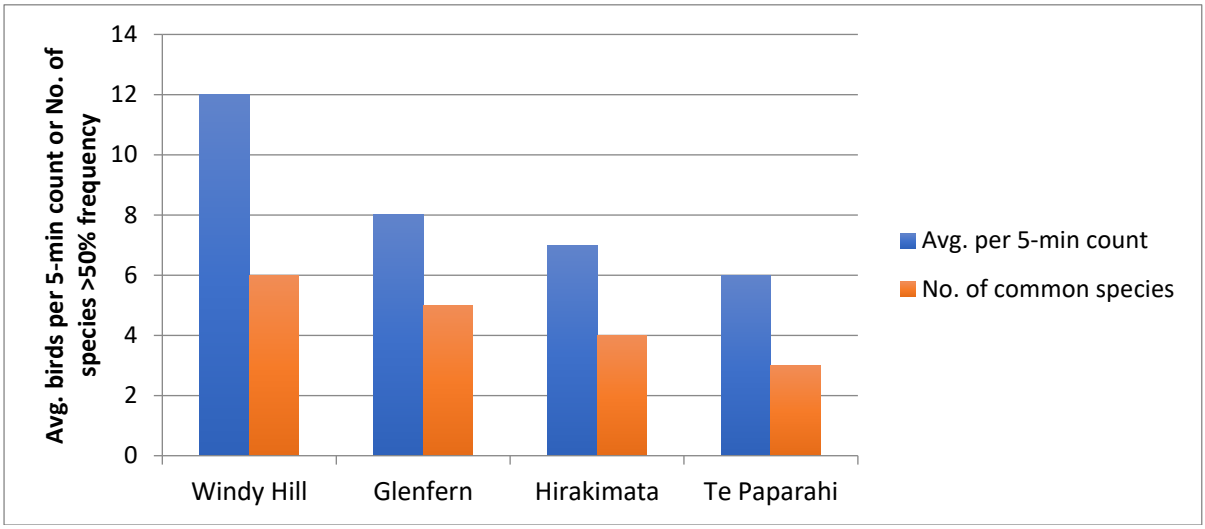
2003 –2004 Deline **Samaka** - Masters Auckland University - The Benefits and Costs of Community-Based Conservation: A Case Study on Great Barrier Island, New Zealand
The objectives of the study were to measure the effectiveness of pest control on private land, to determine which species can act as an indicator of change, and to determine issues that influence the long term sustainability and development of community-run pest management projects. His study found that pest control clearly enhanced the livelihood of both native plants and species. At that time funding for Conservation on private land was in its infancy and he recommended further assistance with funding and more co-management between local communities and government agencies. Nearly 20 years later this has been achieved.

2007–2008 Lucy **Davy** – Masters Auckland University - The Temporal and Spatial patterns of rodents at Little Windy Hill, Great Barrier Island. Lucy worked exclusively at Windy Hill trapping rats and analysing our rat field data. The results of her work triggered more intensive use of toxins to combat the persistent rat abundance that was evident.

2009 Ben Barr - Masters Massey University - Basic ecology and effect of rat control on Chevron skink populations on Great Barrier Island. Interestingly the stream beds at this end of Aotea Great Barrier don't form large debris dams which is where many chevron skinks are trapped in the northern part of the island. After much trial and error Ben moved most of his study to Glenfern Sanctuary where he tracked chevrons that had radio transmitters attached. He found the chevrons moved from the stream edges into the tops of ponga fronds when the water levels rose following heavy rain. Clever.

2010 – 2011 Liz Parlato - PhD Massey University – Predicting Outcomes of Passerine Reintroductions to NZ Mainland Reserves and An Integrated Approach to predicting fates of reintroductions with Demographic data from Multiple Populations. Liz worked with our team translocating North Island Robins in 2009 from Mokoia Island in the middle of Lake Rotorua. Her follow up study from fourteen sites found that when robins are released into contiguous bush, like Windy Hill and Glenfern, the translocations eventually fail despite high nest and fledgling success. This is due to the aggressive behaviour of the parent birds chasing the young out of their territory resulting in no recruitment of young birds. Eventually the adult birds die of old age with no young to keep the population going in that area.

2013 Asher Cook – Bachelors Auckland University – An investigation into the population size and distribution of Tomtit and red Crowned Parakeet and the results of 5 minute bird counts at different sites on Great Barrier Island. Of the four sites that Asher surveyed for birds at this time, Windy Hill had the most abundant birds. Asher also confirmed a population of about 70 tomtits in one area on Hirakimata – this was a real find as it was thought they were nearing local extinction.



2017 Markus Gronwald- PhD Auckland University – Measuring abundance and monitoring behaviour of invasive rats around control devices using camera traps.
Markus's research suggests that the presence of ship rats seemed to affect the trappability of Pacific rats on Aotea/Great Barrier Island. Pacific rats needed longer to be caught in a trap than ship rats, which were captured immediately at the same sites. This is most likely the results of interspecies competition. There are several engaging stories from the work Markus did here. He captured on camera a kiore doing a Houdini escape through the tiniest of gaps in one of his cage traps and captured a 6 hour visit by a kiore to a trap with a rat trapped inside it– what was their relationship one wonders….?

On two occasions after Markus had trapped, carefully anaesthetised, ear tagged, and released a kiore he was surprised by a ruru (morepork) swooping in over his shoulder and taking off with the rat.

2019 Jessa Barder – Masters in Science and Communication Otago University - recorded story of Windy Hill Sanctuary.

2019 Thomas Body - Post Doctorate Auckland University - project on individuality in invasives, specifically rats. Thomas had to catch them, test them (behavioural & cognition trials based on what folk do with lab rats) and then release them with the hope of re-catching and re-testing to look at consistency of behaviour, and tying this into work on their diets and relatedness.

Current 2022

Haley Alens - PhD Auckland University - The effectiveness of lizards as seed dispersers in New Zealand. Hayley is examining the role of lizards (geckos and skinks) as seed dispersers. It is widely known that lizards consume fruits of native species, but there is knowledge lacking on the number of species and the extent to which lizards function as seed dispersers. Hayley started her work at Windy Hill Sanctuary in January 2022 after many lockdown delays, and her focus in the sanctuary is collecting lizard scats (yes, poos!) to see which plant species lizards may be dispersing, as well as looking at how many fruits lizards remove from plants, proportional to birds. Outside of the sanctuary, Hayley is working on a method to identify lizard species through the DNA in their scats, as well as creating a computational model to see how far lizards could disperse seeds. Most of her fieldwork has wrapped up for the year, but she will be back intermittently until summer when she will be back on the island full time looking for more lizard scats.

Coming soon

Professor Amanda Black and Dr Alexa Byers are scientists researching kauri forest health and landscape ecology, based down at Lincoln University | Whare Wānaka o Aoraki. They are interested in investigating how the loss of significant seabird populations, successive human disturbances, and emerging pathogens over time has impacted critical soil ecosystem functions, and what lessons can be learnt from these stressors to guide the protection of kauri forests into the future. Amanda and Alexa are studying kauri forests all across the North Island of New Zealand and recently undertook a recce across Great Barrier Island to identify areas of kauri forest that are of key interest for their research. They are excited to return to the island later in the year to start sampling! One site in the Sanctuary has been selected.

Maui Duley (bottom left), Alexa Byers (top left), Amanda Black (centre), and Nick Waipara (right) are pictured on their visit to Great Barrier Island where they identified sites of interest for their research on kauri forest health and ecology.

And, we have just been contacted by **Amy Martin**, a post-doctoral researcher from Landcare Research who is planning to visit the Sanctuary in July with students from Auckland University to check out potential work on truffle like fungi.
Its endlessly fascinating!

I'd like to wind up this newsletter with a huge thank you to Kelvin Floyd who has just spent five days here updating all our Sanctuary maps, sorting gps, putting maps into our new team phones (supplied by Auckland Council). Kelvin has just returned from 4 months on South Georgia island eradicating weeds following on from the earlier eradication of rats and reindeer. You can spot him in this amazing video narrated by David Attenborough -https://www.gov.gs/south-georgia-a-visitors-guide/

Many thanks to all our funders, sponsors, and supporters.
Without you the restoration and amazing research work carried out in the Sanctuary would not be possible.

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Kindest regards

Judy

Trustee and Trust Manager
On behalf Trustees Rose Harland, Derek Bell, John Ogden