

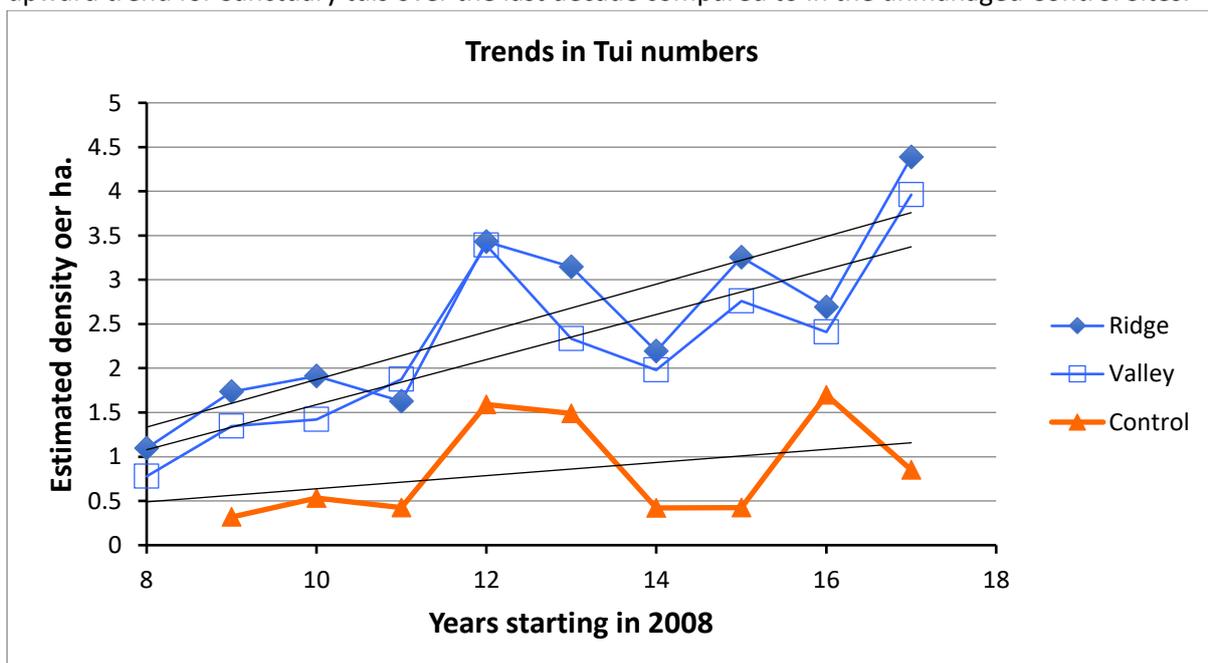
## Windy Hill Sanctuary Citizen Science Series #5

### How do you know your pest management is making a difference?

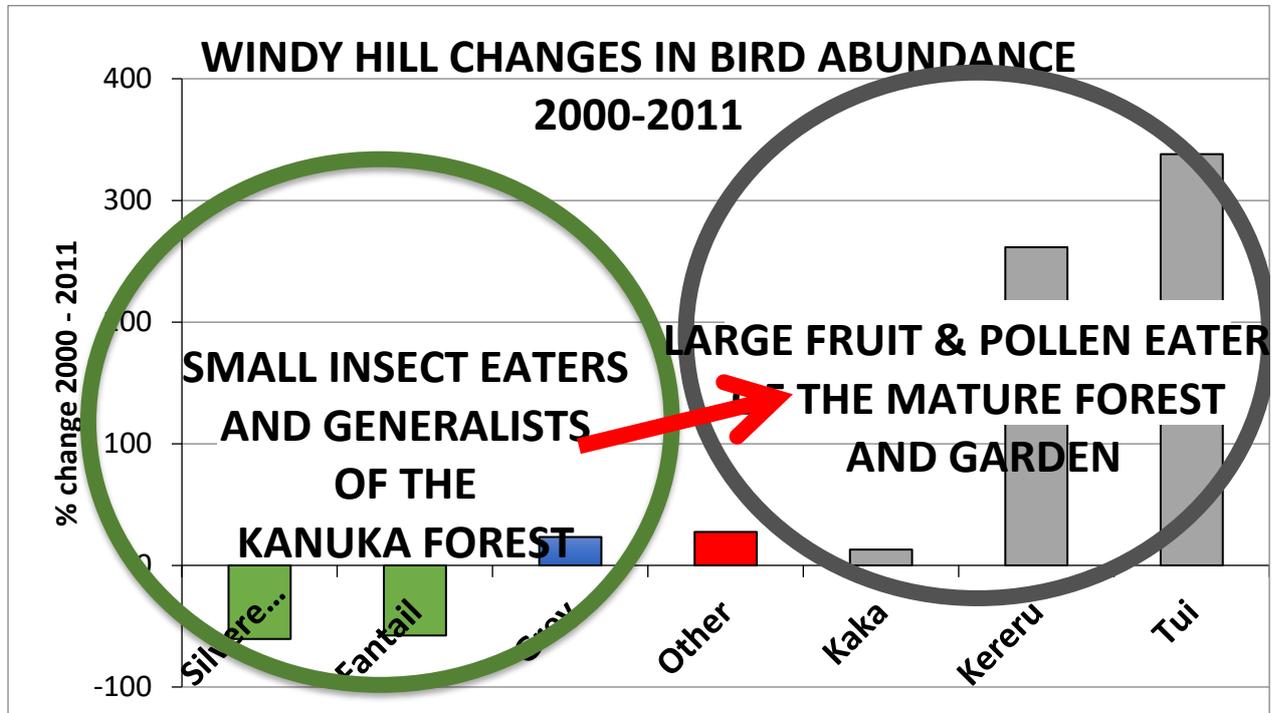
In short, the answer is to count, count, and re-count the species you are trying to protect over long periods of time. In the Windy Hill Sanctuary, we have been counting birds annually since 2000; weta, lizards, invertebrates, and seedlings since 2006; and freshwater stream species since 2008. At the same time, we have been monitoring what our rats are doing five times a year using tracking tunnels and by recording our trap catch. Over 19 years this has given us vast amounts of data against which to measure how well the suppression of rats, mice, feral pigs and cats improves the lot for these native species. The next part of this Citizen Science Series will look at the results of our counting – starting with this article on birds.

Our bird monitoring programme was set up in 2000 by Dr Sam Ferreira who was then the Auckland DoC ecologist. Birds were a good species to begin with being the most conspicuous of our native species, and easy to learn how to identify accurately by sight and sound and to record in a way that means you don't overcount. Over time as the Sanctuary has increased in size we have added more bird count stations – by end of 2016 there were 216 in the Sanctuary and 108 in the unmanaged Control sites - that's 324 three-minute counts done over a week on ridges and valleys each year! Since 2008 the data has been crunched by Prof John Ogden into a report. These reports can be found on [www.windyhillsanctuary.nz/bounty](http://www.windyhillsanctuary.nz/bounty)

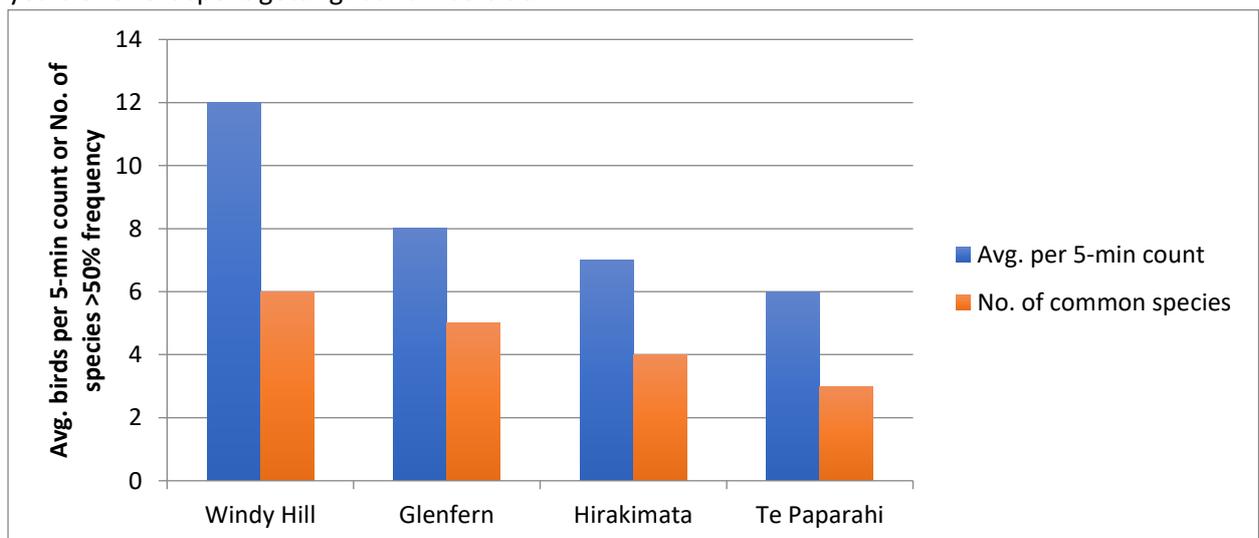
This is how thoroughly a robust monitor of birds needs to be done – a casual stroll through an area 'assessing' birds will give you only a snapshot for that time, on that day, with that weather, within the season. It takes years and years to get a picture of the true trends for each bird species as so many factors can change the count – for example - a dry spring may result in fewer birds because of reduced food, a huge storm in winter may reduce the flowers available for the nectar eaters the following spring and summer as occurred after the storm in winter 2007. The following shows the upward trend for Sanctuary tuis over the last decade compared to in the unmanaged Control Sites.



Our results since 2000 indicate significant rises in tuis, moderate rises in kereru and kaka but some surprises for the smaller insect eating birds. Over this period of time the bush composition is also changing, and with the current climate, growing rapidly. This means more large fruiting trees that suit kaka, kereru and tui, with the smaller insect eating birds moving on to the regenerating manuka and kanuka of which there is less in the Sanctuary.



It's important to get independent counts done as well. In 2013, Auckland University Student Asher Cook undertook Bird counts in 4 different places on the island. Two managed, two not. His five-minute bird counts clearly showed the benefits of rat control. There were higher bird abundances at Windy Hill and Glenfern Sanctuary, where rat control occurs, compared to Te Paparahi (the northern block) and Hirakimata/Mt. Hobson, where there is no rat suppression. The results confirm other studies comparing managed and unmanaged areas at Windy Hill, demonstrating the benefits of the years of effort spent getting rat numbers down.



However, the highest bird diversity (number of species) was in the old-growth forest on Hirakimata, which was the only place where tomtit, kakariki and long-tailed cuckoo were recorded in the study.

Asher's results emphasise again the value the Hiramata summit area, which is also the main nesting area for the endangered black petrel and cook's petrel.

Despite the intensive pest management undertaken in the Sanctuary our bird numbers are dismal compared to that of a pest free island which is why so many of the islands surrounding Aotea and in the inner Hauraki Gulf have had aerial eradications. In all instances these have resulted in profound increases in bird numbers. With a safe haven created the lost species from these islands can be returned – birds like hihi, saddlebacks, kokako, and bellbirds and later on these islands are used as the bird source for translocations to other newly eradicated islands.

Treat yourself to a visit to post eradication Tiritiri Matangi (boats leave from Auckland) to experience a pest free island for yourself. In just three years their counts showed that invertebrates increased 500% once the rats were removed. That's a lot of bird tucker.

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