



Windy Hill Sanctuary Citizen Science Series

What works best on Barrier?

In the current absence of a socially acceptable magic bullet to eradicate kiore, ship rats, and mice on Barrier, the Windy Hill Sanctuary over the last 18 years has created a toolbox of options for effectively suppressing these highly invasive species.

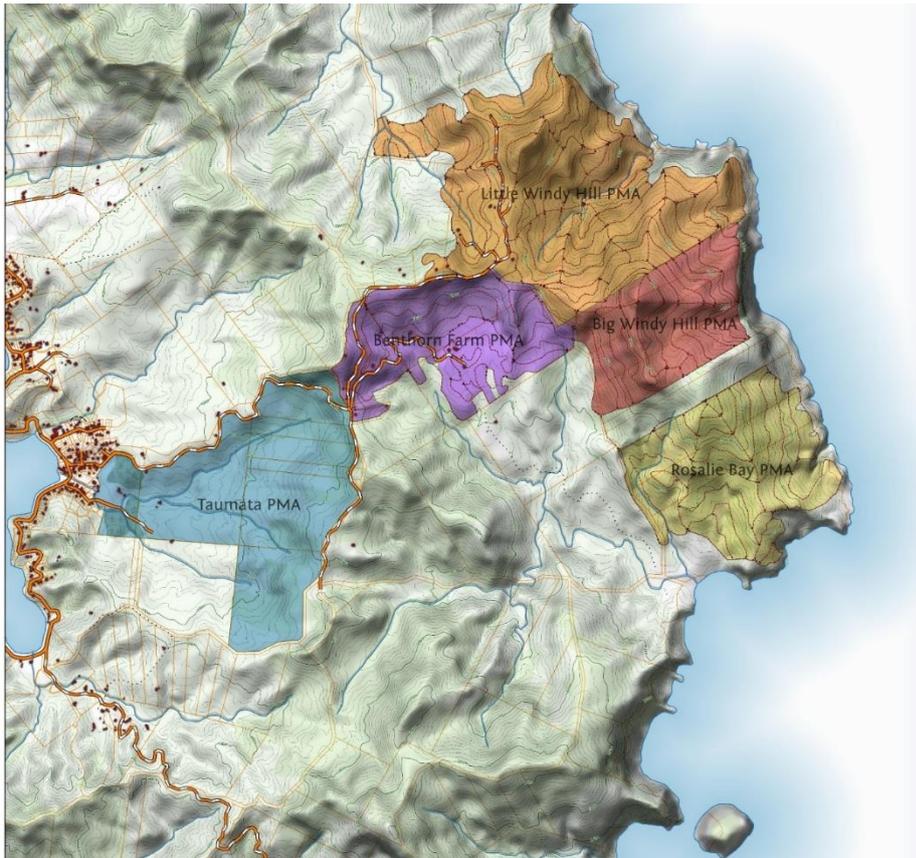
No need to bang on about how much damage these critters do – that’s well known – but how to keep these successful pests at low numbers over time presents a real challenge. Our goal has been to find the most socially acceptable, effective, and cost-effective method of long term pest management.

It takes at least two years trialling a single method backed up with rigorous monitoring to get an indication of how well it is working. There are so many variables at work – climate change, weather events, season, and some forest dynamics we don’t yet know about – these all create rises and drops in rat abundance.

One of the interesting things we have recorded is that with long term suppression of rats there is a significant shift in the relationship between ship rats and kiore. When we first started trapping about 8% of our catches were kiore. They are now around 57% of our catch so this indicates that as you suppress the ship rats the kiore numbers rise. The same thing has happened at Glenfern Sanctuary. We now have a Doctorate student studying the differences in behaviour between these two types of rats so we can better understand and manage them.

There are over 5500 stations for traps or bait set out on over 100ks of track system throughout the 770 hectares of the Sanctuary and these are all checked on a regular basis, generally once a month. This is an expensive business and keeps our field team of 4 people busy so we are also trialling ways to reduce the amount of time taken to service these stations so we can be more cost effective.

The Sanctuary is divided into 5 Pest Managed Areas (PMA) which have evolved as we have expanded into new properties and these areas have created perfect size plots to try things out and compare with historical methods or what’s happening in the next area.



So, what have we tried out over time – trapping only, half of our stations in traps and half bait, baiting only, bait in trees with traps on the ground, four different kinds of bait, bait out all year round, or pulsed for limited periods during the year. We have worked out the average amount of bait that is eaten and what's the best amount of bait to put out. We have trialled many kinds of rat traps, including sensed traps and the Goodnature A24. We have trialled and found we can use worm farms to safely dispose of old bait.

Over the next few months a series detailing these trials will be published – this column will start with the best trap we have identified and what we found out about long life baits.



Pictured L to R – some of the trialled rat traps - Supreme, Victor, Snap-E, and T-Rex Traps

Most traps catch equally well so it comes down to the ones that last the longest, are easiest to use, and can be lightly set so that they catch smaller rats or mice. The Kness Snap-E is our trap of choice

as it can be set so fine you can blow on it to set it off, it lasts a good couple of years in the field, and with the bar mechanism it doesn't create a visual block inside its wooden station like the T-Rex. Peanut butter and macademia nuts are the best trap bait but these are both vulnerable to being eaten by ants over the summer and you end up with a set trap and no bait. Over the last few years scented plastic polymer long life baits have been developed which have been designed to fit snugly into a Kness Snap-E trap. These are not eaten by rats and need refreshing about every three months to remain attractive.



Snap-E trap with a long life vanilla scented lure

We have tested the Alpeco Ltd range of long life baits – vanilla, meat, and fish - against peanut butter. A trial consists of selecting a line of 50 stations and alternating a long life bait with a peanut butter bait and checking this every 3-4 weeks for 3 months and recording catches. In the first trial the peanut butter caught 36 rats and the vanilla lure caught 7. In the second trial, on another track, the peanut butter caught 26 rats and the vanilla lure caught 14. The peanut butter beat the meat lure by 17 to 7 rats, and the fish lure was beaten 16 to 5. So, no go there. Since our rats so love peanut butter we then trialled soaking the vanilla baits in peanut oil (thank you, Oilseed Products) and got quite a different result – 15 rats with peanut butter and 13 with the oil soaked lure. This result was good enough for us to use the soaked lure in our new trial of the locally designed Econode sensed trap.

If you are interested to read about these trials in more detail you will find them on our website under 'Briefs'.

The results of the Econode trial, which started in April, will be the subject of the next article.

Happy trapping

Judy Gilbert

Windy Hill Sanctuary

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