Controlling Rats in Our Forest

The next big step forward in pest control for our Northern Forest is to greatly reduce the rat population. Traditional ground-based control methods of poisoning or trapping require a very dense network because female rats don't venture far from home, often staying within 50m of their nest. So, to control rats in the forest behind Eastbourne we would need roughly 2,500 traps or poison feeders. We believe that maintaining such a large network for the long-term would be too time-consuming given current methods and resources. However, there are a number of new possibilities for solving the rat control problem that we are looking at:

1. Protecting the perimeter. Perimeter fencing of sanctuaries is about ten times more expensive than trapping. However, protecting the perimeter with intensified traplines is an option and has been trialled successfully in NZ. For our forest, roughly half of the perimeter could be protected with urban trapping projects. This is in place in Eastbourne and the Bays through ERAT and a similar project is starting up in Wainuiomata. That would leave the northern and southern boundaries as well as the area between the Wainuiomata Golf Course and the urban area. So, this is a future possibility, but one problem remains—having protected the boundary, you need to remove rats from the forest itself. It is very unlikely that widescale aerial poisoning would be allowed near to the urban areas and streams, so you are still faced with intensive trapping everywhere for a period, as well as managing incursions after that.
2. Self-resetting traps. Self-resetting traps mean that you only need to visit the trap every 4–6 months, or even longer. This greatly reduces the labour involved compared to traditional traps, which need checking at least monthly. There are now two brands of NZ-made self-resetting traps on the market. Goodnature's A24 trap has been around for a few years and we have tested it in the forest and as part of our urban trapping. In the urban area results were mixed, with the A24s catching lots in a few places, but often not catching much at all. The results in the forest were also variable and camera evidence showed many encounters by rats with the trap without them being caught. However, late in the recent beech mast, catch rates improved markedly. We have also been testing a few AT220 traps. These have a similar mechanism to a DOC200 stoat trap (widely used), but have a motor drive to reset the trap and are mounted on the side of a tree. Again, camera evidence shows many rat encounters before a successful kill, but the catch rate appears to be good from the 3 traps we are trialling. Both the A24 and AT220 are far more expensive to purchase than simple rat traps and are 2–3 times more expensive than the traditional DOC200. On-going running costs would also be significant.

An AT220 self-resetting trap on test in Gollans Valley

3. Long-range lures. If you had a lure (either a scent or a sound) that could attract a female rat out of her home range, you could then get sufficient coverage to control rats with fewer traps. This is a current area of research, both here and internationally, but is in its early stages with fairly inconclusive results so far.

4. Traps linked by radio. You may have read Oliver Seiler's article on radio links in the May issue of the Herald. Having a large network of low-cost traps linked by radio overcomes the problem of having to visit all traps frequently—you only visit traps that have a catch or that need attention (e.g. a replacement battery). Working with Oliver, we intend testing whether we can get a low-cost radio-linked trap network to operate reliably in our Park.
5. Targeted trapping. Rats don't necessarily live in all parts of our forest all of the time because they need both food and water. Working with local company Kenex, we have written a proposal entitled *Towards Targeted Trapping* where we aim to use our rat catch data from the forest, along with spatial information such as vegetation type, altitude, slope direction, water sources, and soil type to see what influences where rats live. If we can identify areas where rats always live, we can target just those areas and try to get the rat population really low so that when food becomes available elsewhere in the forest (e.g. in a beech mast year) there will be fewer rats to infiltrate those areas. This means we would be able to control rats across the forest with fewer traps, making effective rat control a real possibility.

As you can see, there is still a long way to go, but there are some exciting possibilities!

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