

Windy Hill Rosalie Bay Catchment Trust

Review of Trapping Pest Management Regime - May 2005

Properties of Little Windy Hill Company Ltd, Benthorn Farm (Peter and Helga Speck), Bruce and Cynthia Macnee

Executive Summary

After a period of six years managing the Little Windy Hill and Benthorn Farm pest management projects the Trust has now completed a comprehensive review of the effectiveness of a trapping only regime. It is clear from the range of monitoring programmes undertaken between 2000-2004 that trapping only has made a significant difference. Our managed properties have slightly higher bird numbers, more and varied seedling densities, good invertebrate numbers, higher levels of skinks, and reduced rat numbers compared to unmanaged properties.

However, through this review process, the Trust has concluded that trapping alone can not maintain rat densities at acceptably low levels. In this temperate climate, in mature and regenerating bush habitat with food abundance all year, and in the absence of mustelids, residual rat numbers have remained high - an annual average of 52% as indicated by quarterly monitoring tunnels. The benchmark for the Department of Conservation is just 5%.

Trapping only, despite an intensive effort to have trapping systems working at optimum, has therefore failed to reduce rat numbers sufficiently. In a recent Department of Conservation review of the current methodology used to control rats, Craig Gillies, Senior Scientist Department of Conservation Northern Area Office, also has concluded the same. It is questionable therefore, in the light of the monitoring tunnel results (52% indicate rat presence) and the impact of rats on the juvenile robins this breeding season, that trapping only be continued as the main method of pest management for the Trusts projects. There can be no continuation of the plan to translocate further species into the managed area until results from the monitoring tunnels indicate an average of around 5% of residual rat presence.

The Trust therefore recommends that a twice yearly 'pulse' of poisoning be introduced to the existing management regime to achieve a substantial knockdown of rats throughout the more than 280 hectares that is now being managed. This to be followed by trapping in the intervening months to maintain the low densities achieved. The pulse method of poisoning keeps the level of toxin use and any side effects to a minimum. For a period of two to three weeks in January and August non-toxic baits would be substituted for toxic baits. The recommended toxin as the Vitamin D based cholecalciferol. This toxin is one of only two approved by the Department of Conservation for use on the public land they manage.

This system will give the bird populations maximum protection over the breeding season and it is expected will improve densities further for all species present. Intensive monitoring will accompany such a change with measurable outcomes recorded.

Background

For the past year the Trust has been undertaking a comprehensive review of its trapping only management methodology. This review has involved :

- ~ a detailed analysis of our trapping data from 1999 to 2004
- ~ in-depth discussions with the project field team
- ~ improved tracking systems, traps and baits
- ~ the introduction of a tracking tunnel system
- ~ intensive monitoring of the outcome of the North Is robin breeding season
- ~ discussions with the managers of other trapping only project areas in New Zealand
- ~ a number of meetings and discussions with relevant conservation professionals
- ~ research into the range of toxins currently available for use in controlling rats and mice.

1. Analysis of Trapping data

This detailed report provides a clear analysis of trapping data and recommendations and is available on request.

2. Field Team Observations

This trapping only style of pest management is unique in northern New Zealand and more so because on Great Barrier there is a much reduced suite of pests present compared to the mainland. It has been difficult then to find suitable comparisons on which to measure outcomes and the input of the field team has been invaluable. As for Trust management, they see the need to reduce residual rat numbers. In continually removing a good percentage of the rat population optimum conditions are then created for the remaining rats. Rats will increase their breeding cycle and size of litters with the increased food availability resulting from lessened competition. The team concludes that it is simply not possible to lure more rats into traps when there is such an abundance of food always present and that the possibilities for reducing rats to lower densities under this system have been exhausted.

3. Improved Tracking Systems, Traps and Baits

Over the past 6 years tracking routes have been constantly upgraded to ensure that the spacing of tracks and traps is denser than that recommended by the Department of Conservation and the Auckland Regional Council. A number of robust trap trials have been carried out and the field team is confident that the best traps available are used. A variety of baits have been trialled and a commercially prepared bait is in use currently. Baits are changed regularly to keep up rat interest. Trap checking is

thorough and more intense than on comparative projects and changes to meet the seasonal fluctuations of rat numbers.

4. Tracking Tunnel Monitoring

Despite the fact that trapping index ratios indicated low densities of rats it was decided to establish another monitoring system which would indicate what was not being trapped. Tracking tunnels with pre-inked pads are used extensively by the Department of Conservation to indicate the presence of rats. Over a year ago 120 tracking tunnels were set up on two random compass bearings passing across almost all tracks in the managed area. Based on four quarterly results an average of 49% of tunnels showed rat markings within the managed area. A high of 71% was recorded for April 2005. This indicates that an unacceptably high level of residual rats remain within the managed area.

There are a number of possible reasons for such high residual rat numbers

- all year food abundance with a temperate climate
- reduced competition from removed rats creates better habitat for those remaining
- lack of any other predators - cats are culled and there are no mustelids
- some rats become trap shy.

5. North Island Robin Monitoring

Five pairs were monitored intensely over the 2004-05 breeding season and high levels of protection given to each nest located. Despite this, four of the nine nests failed with six juveniles and six eggs being predated by rats.

6. Other Trapping Only projects

Discussions have taken place and information exchanged with the Department of Conservation trapping only Rotoiti Nature Recovery Project in Nelson and the Te Urewera Mainland Island in Opotiki. Both these project areas are free of kiore but do have mustelids that significantly impact on rat densities. Their monitoring tunnel results are also seasonally variable but not anywhere near as high as ours.

7. Consultation with Conservation Professionals

A number of meetings and discussions have taken place as part of this review process. Assistance has been received from Darren Peters - Department of Conservation National Predator Officer Wellington, Craig Gillies, Senior Scientist - Department of Conservation Northern Office, Joanne O'Reilly - Department of Conservation Great Barrier Island, and Mick Clout - Ecology Professor - Auckland University.

8. Toxin Research

Based on the results of toxin use in the Department of Conservation mainland islands and on other New Zealand islands, toxins are highly effective at reducing rat densities to close to zero. Many conservation professionals have stated that the introduction of a toxin pulse, rather than continuous poison use, is a most effective way of controlling pests and improving biodiversity. A pulse system minimises both known risks, such as secondary poisoning, and any unknown side effects.

There is a choice between first generation anticoagulants ('Ditrac All-weather rodent block', 'Racumin Mouse and Rat blocks'), second generation anticoagulants ('Pest-Off', 'Talon', 'Rid Rat') and non-anticogulants (Ferocol). All anticoagulants have some risk of secondary poisoning as they reside in living tissue and, particularly for 2nd generation anticoagulants, a residual problem in the environment. The Trust has been recommended the use of Ferocal (cholecalciferol) as it has no secondary poisoning, requires only a single dose to be lethal, and has no known residual issues.

Integrating a Toxin Pulse

It is recommended that toxin pulses are timed initially to when rat numbers are at their lowest (August) and thereafter when other species would most benefit from low rat densities. For the North Island robins, January, was when nest predation was at its worst and so this would indicate best timing for the second pulse.

A twice yearly toxin pulse could be integrated into the current management regime with the cost of the bait and staple guns as the only extra expenditure. Feracol can be distributed by simply stapling the cardboard strip mounted bait to a tree. The existing trapping routes and trap spacing are optimum for toxin distribution. All baits will be removed after the pulse timeframe and trapping resumed, probably with a much reduced checking schedule. Rat densities will be monitored before and after the pulses. Keeping accurate trapping data after the pulses will give a clear indication of reinvasion rates and patterns.

Funds are already at hand to cover the immediate costs of the toxin for the August pulse and will be included in future budgets.

Judy Gilbert
Trust Manager

25 May 2005

Dear Peter and Helga

RE : Review of Trapping Only Pest Management Regime and Trapping data
Little Windy Hill and Benthorn Farm Pest Management Projects

Over the last year the Trust has undertaken a full review of the efficacy of a trapping only pest management regime. We are pleased to present two reports detailing the Trusts findings and recommendations for future management for your consideration. Essentially the Trust recommends that the trapping only approach be made much more effective by introducing a twice yearly toxin pulse. While the Trustees are reluctant to include the use of toxins, it does not consider that continuing with the current approach is sufficiently successful or cost effective.

At this time it is also important to consider the long term viability of such a labour intensive style of pest management. At the end of June WINZ will conclude its long term subsidy scheme for our field managers and ongoing funding from other sources is being applied for. The Trust is also in competition for funding with rising numbers of conservation projects both nationally and in Auckland. We are going to need to be cost efficient in our future work as well as being able to report successful outcomes to ensure viability. One of the advantages of reducing rat densities through the toxin pulses will be a decrease in the number of people required to manage the field work. The Trust will be able to carry out its work with just two people.

In order to maximise the timing for the Trusts recommendations please give these reports your attention at the earliest possible time. I am very willing to discuss any aspect of the findings and the proposal with you and answer any questions you may - I shall phone you for a meeting time in the next week or so.

Should you agree with the Trust's recommendation to introduce a twice yearly toxin pulse **in the bush area only of your property** of the pest managed area based on the information provided by this review then please ph/email me with your approval as soon as possible, otherwise I look forward to talking with you.

Kind regards

Judy Gilbert
Trust Manager