Basic Methodology and Layout Plan for Rodent Control at Tuff Crater, Northcote, Auckland

Version 6

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Prepared on Behalf of: Auckland Council

Prepared By: Kelvin Floyd and Richard Gribble

Te Ngahere

PO Box 71109 Rosebank Post Centre, Auckland 1348

326 Rosebank Road, Avondale 1026

Ph 09 828 4035

www.te-ngahere.co.nz

Te Ngahere

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1 Introduction

Te Ngahere has been asked to prepare a rodent control layout plan and basic methodology for Tuff Crater, Northcote. Maps detailing likely bait line and station locations have been produced to aid in the setup of a control grid.
A basic methodology for bait, stations, scheduling and recording will also assist in the implementation of the rodent control project.

2 Methodology

2.1 Grid layout

The grid has been based on stations at 50m spacing along lines 100m apart.

All stations should have a unique code formed from the line name and number.

Station numbering should follow likely direction of travel and stations should be grouped into distinct lines for ease of identification and navigation.

Bait stations sites should be marked and numbered (not the station itself) so if the station is replaced or lost the station site can still be identified. The sites can be marked with permanent tags such as cattle tags or plastic track markers. Cattle tags can be custom printed with numbering or purchased blank to enable permanent marker to be used. Suggested colour to use is blue to distinguish station sites.

Where navigation between stations is difficult flagging tape can be used to mark the route. Single tape should be used for the route and double tapes for station sites.

Figure 1 shows the proposed bait station grid for Tuff Crater. Green circles are the primary area of influence of the station which is a 50m radius from the site and the 100m radius (in pink) shows the secondary area of influence of the station. However there are many factors which affect the bait station influence area and these buffers are a guide only.

The grid setup should follow the proposed layout but some stations positions are likely to need readjustment based on practical reasons at that location, such as considerations of visibility, distance from property or tracks, accessibility etc.

Once the stations are placed and lines created then maps can be produced to show actual locations of all the bait station sites and warning signs (see Figure 2).

Figure 1: Proposed Grid

3 Bait Stations

Bait Stations used should be tamperproof with the bait able to be secured inside the station. Those stations that can fit rat traps should be considered, as trapping may be an option if rat numbers are low or bait shy rats are suspected.

'Protecta Sidekick' stations or similar are suitable and are being used in similar pest control projects around Auckland.

Depending on their location bait stations may need to be secured to reduce tampering or theft. They can be secured with wire or large cable ties, pegs are an option but ideally stations should be able to be lifted to enable cleaning of bait residue etc.

4 Bait

Two types of anticoagulants are available for rat control.

First generation rodenticides (eg. Ditrac, diphacinone) are slower acting and require the rat to consume multiple feeds of the bait and it may take up to 5 days for a lethal dose to be eaten. Sub lethal doses can lead to bait shyness and over a long period bait resistance. First generation baits have a lower risk of secondary poisoning due to the shorter persistence of the pesticide in tissues and the cumulative feeding requirement. Due to the multifeed requirement of first generation bait, stations will need to be checked

more often.

Second generation baits (eg. Contrac, bromadialone) generally only require a single feed to be but due to the strength and persistence of the rodenticide they have a higher risk of secondary poisoning.

The choice of rodenticide will depend on the resources available for checking bait stations and any concern with secondary poisoning risk.

Block baits are recommended over pellet baits in urban areas as these can be secured within the bait station on wire which reduces likelihood of loss from rats bait caching and spill from tampering.

Click on the links below to view Safety Data Sheets.	
Ditrac	http://www.belllabs.com/user_uploads/uploaded_files/files/0000/0513/ditrac_all_weather_blox_NZ_0612.pdf
Contrac	http://www.belllabs.com/user_uploads/uploaded_files/files/0000/0512/contrac_all_weather_blox_new_zealand_0612.pdf

5 Scheduling

5.1 Baiting

The bait schedule will be determined by the labour available to check stations, the bait type, and rat populations.

Bait should be pulsed and the schedule should include a period of not baiting each year to avoid the risk of bait shyness. Baiting should begin at the end of winter to take advantage of the lower rat numbers. Initially checks will be required more often until bait take decreases and if using first generation rodenticide the stations need to have bait continually available for 5 days so will require extra checks to ensure this. Weather conditions may affect the bait palatability so bait checks will need to adjusted for bait condition as well as bait take.

Suggested schedule is to start with second generation bait and monthly checks and then to extend the period after each check if bait take is low out to a maximum of two months. The amount of bait placed in each station can be adjusted over the season depending on the bait take and monitoring results to reduce wastage. It can also be reduced if bait lines are checked more often.

Table 5.1 Suggested bait schedule (2nd gen bait)

Month	September				October				November				December				January				February				March				April			
Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Bait check																																

The baiting schedule and bait amounts placed should be assessed regularly for most efficient use of bait and time.

5.2 Monitoring

Rat tracking tunnels and cards are a useful tool to determine relative populations of rats and success of the control effort. Monitoring should be undertaken normally during the first weekend in September, December and April. This enables a pre baiting assessment of population and a measure of effectiveness during and at the end of the season. The bait schedule should be adjusted based on the monitoring results.

For further information see http://www.doc.govt.nz/Documents/science-and-technical/inventory-monitoring/im-toolbox-animal-pests-using-tracking-tunnels-to-monitor-rodents-and-mustelids.pdf

6 Recording

While there is no requirement to record bait activity at each station, it is important to have good records to show responsible use of bait and to allow changes of strategy or schedule based upon the results.

Records should include the amount of bait placed in each station, the amount taken and the amount removed at each check.

Table 6.1 Example recording format

Tuff Crater Bait Take Records

Recorder name			
Date		***Hours***	
Bait name			
Safety issues identified			
post or deliver to:			

record bait in 1/4 blocks, eg 1 1/4, 1 1/2, etc

Line	Station	*Estimate how much bait is still in station? (blocks)*	*How much bait did you remove? (blocks)*	*How much bait did you put in? (blocks)*	*Other comments eg. birds seen/heard, lizards seen, slug/snail damage, bait station condition*
1	1				

7 Health and Safety

All volunteers need to be aware of their health and safety obligations and an example hazard identification table is below.

Table 7.1 Hazard identification

OUTCOME	ACTION TO MINIMISE HAZARD
Poisoning from Ingestion/ Inhalation During Handling of Poison	Poison application techniques (placing and removing) and potential hazards will be discussed with volunteers before commencing work. Bags/containers with poison must be accounted for. If sacks/backpacks are used to carry poison, then plastic liners will

	be placed inside them. Food and drink will not be consumed in areas where poison is used or handled. Surplus poison scheduled for storage will be securely contained and labelled. Redundant/weathered poison and contaminated bags or equipment that is scheduled for disposal will be securely contained and labelled. Protective clothing and equipment (gloves) that is used during handling/use of poison will be removed and hands/arms/face thoroughly washed before eating, drinking, smoking and using the toilet. Any person not assisting in the application/handling of poison should not be in the vicinity of the operation. Signs warning of the dangers of poison shall be in place in areas where poison is used/handled.

All persons involved in baiting should have read and have a copy of the relevant Safety Data Sheet (SDS) for the rodenticide used.

Table 7.2 Health & Safety Checklist for Recruitment of New Volunteers

REQUIREMENTS	YES / NO
Volunteers have attended pest control training workshop	☐/☐
Volunteers have been trained in safe use of traps and trap maintenance	☐/☐
Volunteers have been trained in use of bait	☐/☐
Bait is stored in a dry, locked location	☐/☐
Safety Data Sheet specific to bait is on hand at all times and available at bait storage site	☐/☐
Warning signs are displayed at points of public access. Signs should follow national guidelines and be supplied by Auckland Council	☐/☐
Rubber or nitrile gloves, overalls and boots are worn when using bait	☐/☐
Protective clothing is washed before storage or reuse	☐/☐
Hands are washed before eating, drinking, smoking or using toilet facilities	☐/☐
Food and drink is carried in a separate bag from bait	☐/☐

Trainer's signature..... Trainee's Signature..... Date.....

8 Signage

Table 8.1 NPCA Placement of signs guidelines

Substance	Public Access	Minimum Signage Requirements
bromadialone, brodifacoum, diphacinone (for rodent control)	No public access	No signs required
	Public normally have access	Signs at normal points of entry compliant with regulation 28(HSNO)

Table 8.1 shows the minimum requirements for signage where vertebrate toxic agents are laid outdoors for pest control from the National Pest Control Agencies(NPCA) guidelines.

Signs must:

- Identify the person applying the substance (can be the name of a natural person or a person's job title and the company/agency). Provide contact details at least for business hours (recommend after hours also).
- Identify the substance and state that it is toxic to humans
- State that it is ecotoxic to other vertebrates
- Be placed before bait is laid and state the date the substance is to be laid.

Signs have been placed at:

- Exmouth Rd between no. 70 and 74 Exmouth Road
- Entrance at eastern end of Exmouth Road
- Start of track on Heath Reserve
- Entrance at Arahia Street
- Entrance at St. Peters Street
- Access way at View Road inside residential property complex
- Entrance at The Warehouse Way (x2)

  8 in total

Figure 2 Placement of Warning Signs and Bait Stations at Tuff Crater

(Warning sign in red, bait stations in yellow)

For more information on NPCA signage guidelines including HSNO regulation 28 for sign requirements see http://www.npca.org.nz/index.php/publications/b-regulatory/158-b-series.

While the regulatory requirements should be followed it is also beneficial to include additional information of the positive effects of pest control to increase public awareness.