GOODNATURE A24 MECHANICAL RELIABILITY PROJECT REPORT 2 – NOV 2015

Project Summary

The mechanical reliability project was established within the Harts Hill rat control project with the objective to measure the gas use and mechanical reliability of the Goodnature A24 self-resetting trap during operational use over the 6 month periods between CO_2 replacements. This report relates to the second CO_2 canister change 12 months into the project.

In November 2014 a network of 467 Goodnature A24 rat traps was established over 200 hectares of beech forest at Harts Hill, Kepler Track, Fiordland National Park to control rats during the widely publicised beech mast/rat plague event. The A24 traps successfully reduced the rat population from a pre-treatment rat index of 68% to 0% within twelve weeks and then sustained this at 0% for the remainder of the project. 52 of these traps were allocated to this detailed mechanical reliability assessment. The gas use of each trap was accurately measured at the second recommended 6 month CO_2 canister replacement round. All traps were functioning and had an average of 13.92 grams CO_2 remaining.

The A24 traps were measured to be mechanically reliable. All traps had CO_2 remaining at the second 6 month gas use assessment.

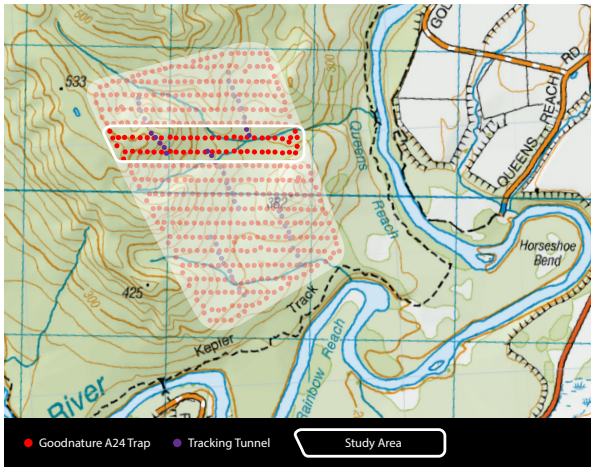
Project Objective

This project was set up to evaluate the CO_2 use and mechanical reliability of the Goodnature A24 self-resetting trap in an operational setting over the 6 month periods between CO_2 canister replacements.

Project Design

The network at Harts Hill was established using DOC current best practice guidelines for ground-based rat control with trap lines 100m apart with traps at 50m intervals on the lines.

Two trap lines (M and N) consisting of 52 traps out of 467 were allocated to this reliability study.



Harts Hill, Kepler Track -45.48, 167.67

Dates: November 2014 – ongoing

Traps: 52 (of 467 network) Goodnature A24 rat & stoat traps

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Maintenance Schedule: Lure refreshed every check.

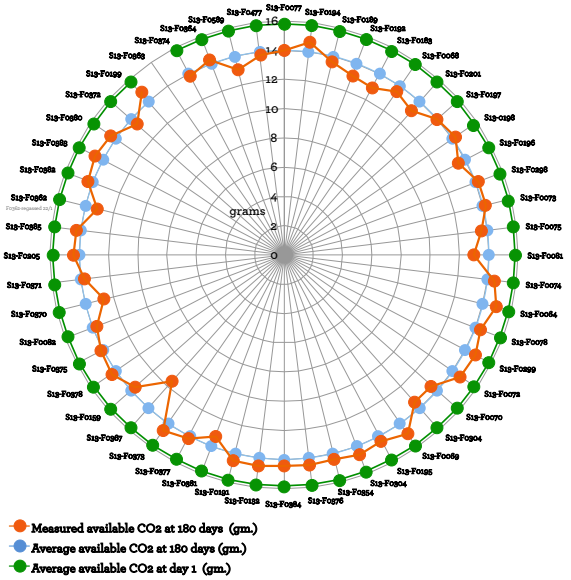
Monitoring Events: Once at each 6 month CO_2 replacement.

Monitoring Method: Every trap was weighed to 1/100 of a gram to establish the remaining CO_2.

Each trap was test-fired and observed after installing new CO_2 canister.

Results

Harts Hill gas use sample data: Lines M and N. Nov 2015



Objective achieved: Yes

Average available CO_2 on establishment:
Nov 2014 **15.9 grams**
Average CO_2 remaining at second 6 month period:
Nov 2015 **13.92 grams**

Max/min CO_2 remaining at second 6 month period:
Min **11.4 grams**
Max **14.9 grams**

NB. A24 average CO_2 use per kill 0.52 grams

Percentage A24s used all available CO_2:
Nov 2015 **0%**

Percentage A24s which successfully re-gassed
Nov 2015 **100%**

Highlights/Learnings

The CO_2 available in the A24 traps at this trap layout density was enough to reduce a beech mast/plague event population of rats from 68% pre-treatment to 0% and sustain control out to the 6 (May 2015) and 12 (Nov 2015) month CO_2 replacements.

As well as reducing the rat population within the project area, other pests including stoats and mice were observed killed by the A24s without exhausting the available CO_2.

The project was established and managed by a range of operators, including volunteers, confirming the ability for volunteers to establish a mechanically reliable and effective network using the A24s in accordance with the manufacturer's recommendations.

References

www.goodnature.co.nz
Goodnature A24 rat & stoat trap

Goodnature A24 Mechanical Reliability Project Report DOCCM-2562029

Rat Control (100m x 50m) Harts Hill – Fiordland Project Report DOCCM-2562031

Rat Control (100m x 100m) Harts Hill – Fiordland Project Report DOCCM-2582594

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