

GOODNATURE A24 MECHANICAL RELIABILITY PROJECT REPORT 3 – JUN 2016



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 CO₂ replacements. This report relates to the third CO₂ canister change 20 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 a detailed mechanical reliability assessment. The gas use of each trap was accurately measured at the third recommended 6 month CO₂ canister replacement round. All traps were functioning and had an average of 13.92 grams CO₂ remaining.

The A24 traps were measured to be mechanically reliable. All traps had CO₂ remaining at the third 6 month gas use assessment.

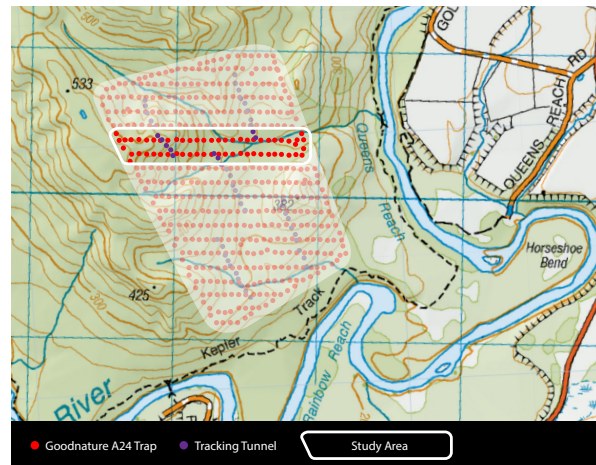
Project Objective

This project was set up to evaluate the CO₂ use and mechanical reliability of the Goodnature A24 self-resetting trap in an operational setting over the 6 month periods between CO₂ 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 100 m apart with traps at 50 m intervals on the lines. Since April 2015 the Harts Hill project grew to 600 ha and 100 m x 100 m spacing's.

The two trap lines (M and N) consisting of 52 traps were continued to be 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

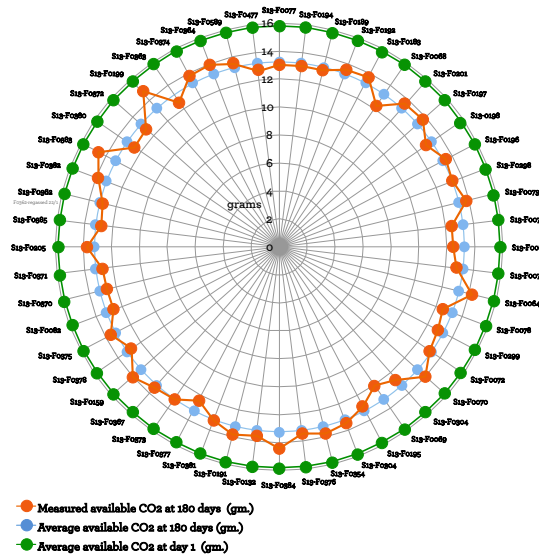
Maintenance Schedule: 6 month ALP installed.

Monitoring Events: Once at each 6 month CO₂ replacement.

Monitoring Method: Every trap was weighed to 1/100 of a gram (using a Ohaus digital balance) to establish the remaining CO₂.

Results

Harts Hill gas use sample data: Lines M and N. Jun 2016



Objective achieved: Yes

Average available CO₂ on establishment:

Nov 2015 **15.9 grams**

Average CO₂ remaining at third 6 month period:

Jun 2016 **13.3 grams**

Max/min CO₂ remaining at third 6 month period:

Min **12 grams**

Max **14.7 grams**

NB. A24 average CO₂ use per kill 0.52 grams

Percentage A24s used all available CO₂:

Jun 2016 **0%**

Percentage A24s which successfully re-gassed

Jun 2016 **100%**

Highlights/Learnings

The CO₂ 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), 12 (Nov 2015) and 20 (Jun 2016) month CO₂ 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 CO₂.

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

Goodnature A24 Mechanical Reliability Project Report 2 DOCCM-2800562

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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