

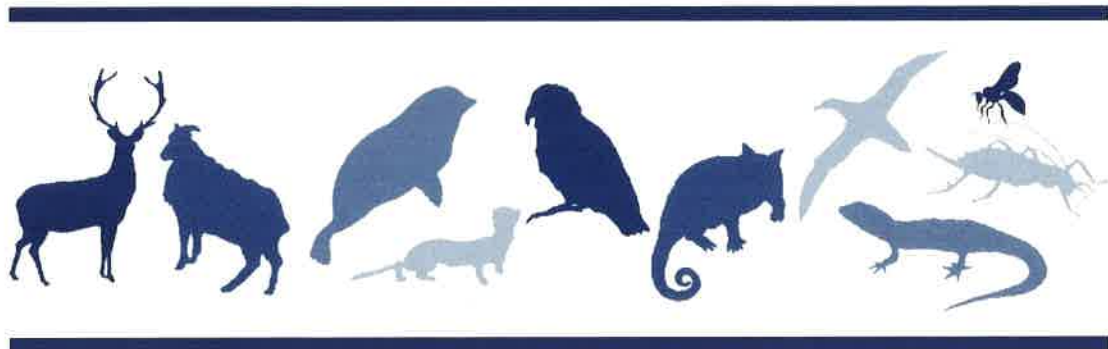


“Possumbuster” bait stations for possum control in water catchment areas

Graham J. Hickling

Ecology and Entomology Group,
PO Box 84, Lincoln University
Canterbury, New Zealand

Prepared for: Possumbusters, Dunedin



**Lincoln University
Wildlife Management Report**

No. 6

**"POSSUMBUSTER" BAIT STATIONS
FOR POSSUM CONTROL
IN WATER CATCHMENT AREAS**

Graham J. Hickling

Ecology and Entomology Group, PO Box 84, Lincoln University

Prepared for:
Possumbusters, Dunedin

October 1995

1. SUMMARY

1.1 Project and Client

This report summarises a field trial to investigate how the spacing of large bait stations influences their efficacy in controlling possums in a Dunedin district water catchment area. The work was done in April/May 1995 and the report prepared by the Wildlife Management group at Lincoln University for Possumbusters, Dunedin.

1.2 Objective

- To determine the percentage kill of possums achieved by "Possumbuster" bait stations spaced at 200m, 300m and 400m intervals in Otago scrubland.

1.3 Methods

- Three grids of bait stations (at 200m, 300m and 400m spacings) were established in scrubland at Whare Flat, where possums had previously been controlled by trapping.
- The bait stations were prefed for 3 weeks, then filled with toxic (0.08% 1080) cereal baits for 2 weeks.
- The % kill of possums on each grid was assessed from the change in the take of non-toxic bait at monitor station, and by leg-hold trapping.

1.4 Results

- The kill achieved by the bait stations declined slightly as station spacing increased (from 76% at 200m spacing to 62% at 400m spacing).
- Most of the surviving possums (70%) were female.

1.5 Conclusions

- The Possumbuster stations achieved a significant reduction in the possum population remaining in the area after previous trapping.
- Some possums that survived may have eaten sublethal doses of the toxic bait and thereafter been "shy" of the bait.
- Based on previous studies, the kills reported here could probably be improved if 0.15% 1080 baits were used in the bait stations.

1.6 Recommendations

- Possumbuster stations at 200m - 300m spacings are suitable for scrubland areas where possum kills of $\approx 70\%$ are considered satisfactory.
- Ongoing control based on repeated use of bait stations would need to be monitored to check for declining kills due to bait shyness.
- A further trial should be undertaken to determine whether 0.15% 1080 bait stations would achieve higher kills in these water catchment areas.

2. INTRODUCTION

Bait stations were first suggested for possum control in the 1960s and in recent years their use as a ground-based control technique has become widespread. The use of 1080 cereal baits in such stations has recently been evaluated on farmland (Thomas and Hickling, 1995) and in native forest (Thomas, 1994).

Possum control is needed in water catchment areas to minimise their potential contamination. In the catchment areas surrounding Dunedin city, trapping has been the primary means of achieving such control (D. Hayes, pers. comm.). Bait stations have the potential to be useful as an additional method of control in such areas.

A private pest control company "Possumbusters" commissioned the Wildlife Management group at Lincoln University to assess the efficacy of their bait stations for controlling possums in these catchment areas. Possumbusters also requested information on how far apart the bait feeders should be spaced.

3. OBJECTIVE

- To determine the percentage kill of possums achieved by "Possumbuster" bait stations spaced at 200m, 300m and 400m intervals in Otago scrubland.

4. METHODS

Three grids of Possumbuster bait stations (at 200m, 300m and 400m spacings) were established in scrubland at Whare Flat, part of a water catchment area where possums had previously been controlled by trapping.

Monitor stations (30) were then laid out at 100m intervals through the middle of the three grids. A further 6 monitor stations were placed within 10m of Possumbuster stations. The layout of the three grids is shown in Figure 1.

Ten monitor stations, spaced 100m apart, were placed in a "non-treatment" area 1 km away from the Possumbuster stations to assess any natural change in possum bait take during the study.

Control work: The Possumbuster stations were prefed for 3 weeks, then filled with toxic bait for 2 weeks. The bait used was cinnamon-lured RS5 cereal pellets loaded with 0.08% 1080 (supplied by Animal Control Products, Waimate).

Monitoring: The monitor stations were prefed for 1 week with orange-lured RS5 bait, then the "pre-control" bait take was recorded over 3 nights (2-4 April 1995). After the control work the monitoring stations were refilled with prefeed for one week. The "post-control" take was then

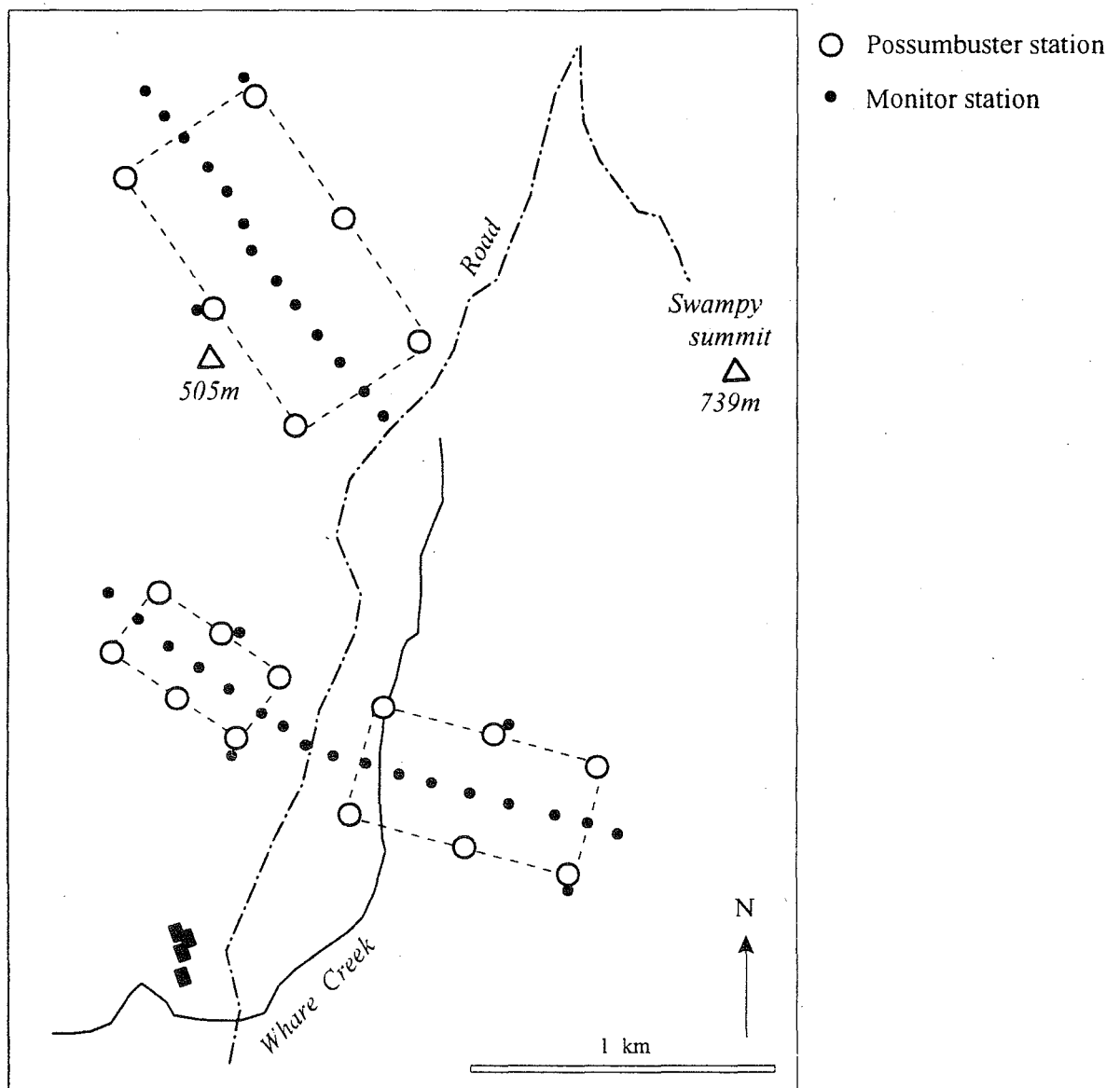


Figure 1. Locations of toxic Possumbuster bait stations, and non-toxic monitoring stations, on the three grids at Whare Flat (map reference NZMS 260 - IJ44).

recorded over a further three nights (20-22 May 1995). The % kill on each grid was assessed by comparing the pre- and post-control takes, correcting for any natural change in bait take in the non-treatment area.

On the final day of post-control monitoring a leghold trap was set for one night beside each monitor station. The sex of each possum caught in these traps was recorded.

5. RESULTS

The monitoring data indicated an overall 70% kill of possums in the area encompassed by the three grids of Possumbuster stations. The kill declined slightly as station spacing increased (from 76% at 200-m spacing to 62% at 400-m spacing; Figure 2a).

On last day of the trial more than half the leg-hold traps caught possums, confirming that some possums had survived the control work. Most of these trapped possums were female, with the proportion of females rising from 50% at 200-m spacing to 90% at 400-m spacing (Figure 2b). In comparison, only 25% of the possums caught in the non-treatment area were female.

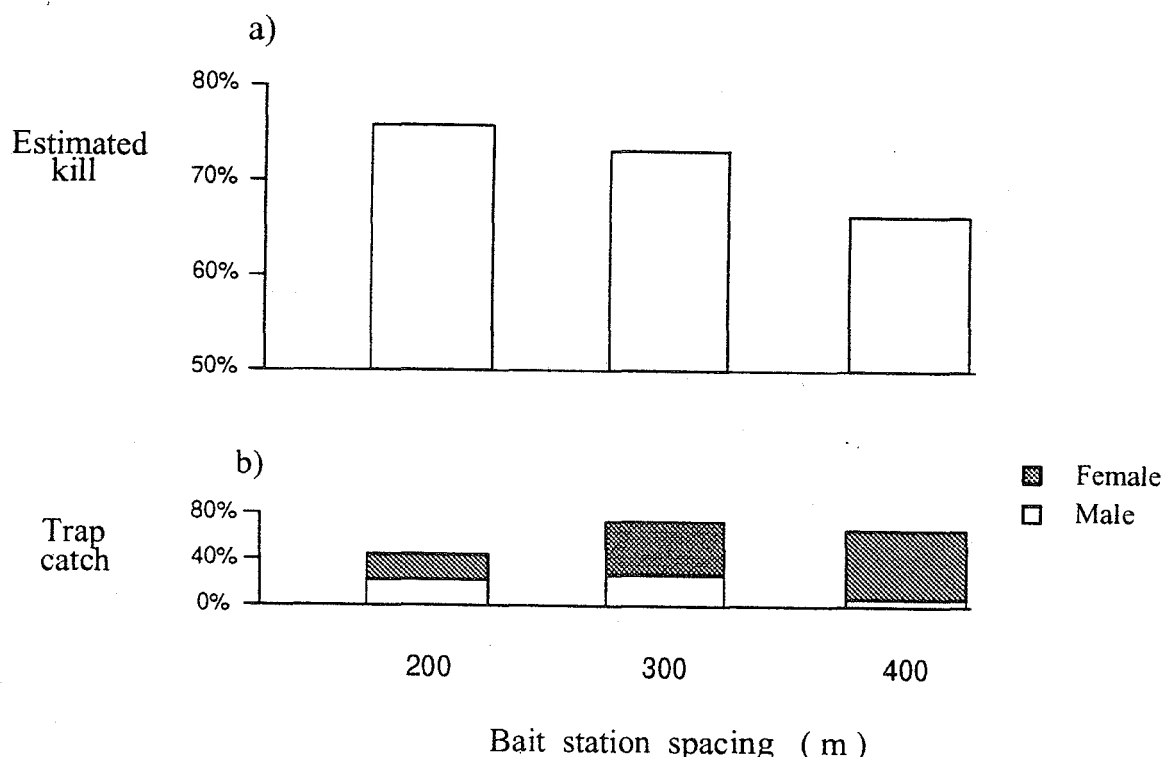


Figure 2. Decline in % kill, and increase in proportion of females among the surviving possums, as the spacing of Possumbuster bait stations increased.

6. CONCLUSIONS

The overall kill of about 70% on the three grids is similar to that recorded in previous bait station trials using 0.08% 1080 baits in farmland and scrub habitats (e.g., Hickling *et al.* 1991, Thomas and Hickling 1995). Given that the possums in the trial area were already being controlled by trapping, it is clear that the Possumbuster stations can provide significant level of control over and above the current trapping regime in these water catchment areas.

Nevertheless, increasing the spacing of Possumbuster stations from 200m to 400m tended to reduce the possum kill, and the high proportion of females trapped at 300m and 400m spacing indicates that widely-spaced stations are prone to missing female possums (which have smaller home ranges than males). This is of concern, as breeding by these females will help possum numbers build up again after the control work.

More than 20% of possums survived the control work even at the closest spacing (200m). The location of the Possumbuster stations was determined by the dimensions of the grid layout, whereas in a normal control operation the stations would be placed at the best sites for attracting possums which would probably increase the kill (D. Hayes, pers. comm.). However, even at the monitoring stations located only 10m from the toxic stations the estimated kill was only 75% which suggests that some possums that fed at the Possumbuster stations were not killed there. It seems that some possums either avoided the toxic bait entirely or failed to eat a lethal dose and thereafter became "shy" of the bait. If so, it is possible that the level of kill reported here would not be sustained in an ongoing control programme because increasing numbers of possums would become bait shy.

Recent trials by Landcare Research have suggested that the risk of sublethal dosing and subsequent shyness can be greatly reduced by increasing the 1080 bait loading from 0.08% to 0.15% (Thomas 1994).

7. RECOMMENDATIONS

- Possumbuster stations at 200m - 300m spacings are suitable for scrubland areas where possum kills of $\approx 70\%$ are considered satisfactory.
- A control programme based on repeated use of bait stations would need to be monitored to check for declining kills due to bait shyness.
- A further trial should be undertaken to determine whether 0.15% 1080 bait stations would achieve higher kills in these water catchment areas.

8. ACKNOWLEDGEMENTS

I thank R. Walker (MAF Quality Management) for coordinating the study and D. Hayes and L. Walsh of Possumbusters undertaking the requested fieldwork in a prompt and professional manner.

9. REFERENCES

Hickling, G.J.; Heyward, R.; Thomas, M.D. (1991) An evaluation of possum control using 1080 toxin in bait feeders. *Forest Research Institute Contract Report 91/61* (unpublished) 18p.

Thomas, M. (1994) Possum control in native forest using sodium monofluoroacetate (1080) in bait stations. *Proceedings of the 47th Plant Protection Conference 1994: 107-11.*

Thomas, M.D.; Hickling, G.J. (1995) An evaluation of bait stations containing sodium monofluoroacetate (1080) for sustained control of possums on farmland. *Proceedings of the 10th Australian Vertebrate Pest Conference 1995: 48-52.*