

DETECTION DEVICES PROS AND CONS

DETECTION DEVICES FOR POSSUMS

Possum detection devices are tools that indicate whether possums are present in an area without physically capturing them.

OSPRI staff and contractors use two devices (waxtags and chewcards) that are standard protocols used to detect and research possum populations.

- Waxtags (PCR WaxTags®) have a 2-cm³ wax block on a 12-cm long, orange plastic tag, and are used together with a small, glow-in-the-dark tag ('glo-tag').
- Chewcards are made of white 18-cm plastic core board with palatable bait, such as peanut butter, pressed into the channels (see photos). Both are attached to trees and left for up to 7 nights depending on the situation. Possums or other species biting or chewing on the devices leave distinctive, tell-tale tooth impressions. Both devices are commercially available.



WHY WE USE DETECTION DEVICES

Detecting the presence of possums is essential for effective possum management, especially where their abundance is low (e.g. areas with ongoing control programmes). It is needed for monitoring the success of

possum control operations, informing managers where to apply future control (i.e. only to those sites that require it), and ongoing surveillance for TB in possums.

Historically, possum monitoring and ground-based control heavily relied on leg-hold traps. These are relatively expensive to use because they have to be serviced daily over several days.

Furthermore, in remote locations, their weight and bulk restricts the number that can be carried, particularly in remote locations where access on foot over difficult terrain is required. In the latter stages of control campaigns, when possum numbers are very low, the usual whole-of-area approach to control means much of the effort is applied to areas where it is not needed.



Initially using detection devices, followed by trapping only at locations where possums have been detected, will substantially reduce the number of site visits, the weight and bulk of equipment carried, and the size of the area to be covered by control devices, thereby significantly reducing the costs of monitoring and ground-based control operations.

ADVANTAGES OF DETECTION DEVICES

- **Light and compact.** Waxtags and chewcards are small and weigh only 17–20g each, so several hundred can be carried in a pack. By comparison, a No. 1 leg-hold trap weighs 340–450g (depending on make), so just 50 traps, and associated gear, comprises a full pack-load.
- **Low cost.** Chewcards cost \$0.30–0.45 each and waxtags cost \$1.09 with a further \$1.09 for the reusable glo-tag. Both can be reused if not bitten or damaged (or, for chewcards, if the bait is not weathered). Traps cost \$6.00–20.00 but are reusable indefinitely if well cared for.
- **Set once and retrieve.** Detection devices require just two site visits (to set and retrieve the device) compared with at least four daily visits for standard monitoring using

leg-hold traps. As a result, labour costs, the most expensive part of any monitoring programme, are at least halved.

- **More sensitive than traps.** Detection devices have a higher probability of detecting possums than traps making them particularly useful when possum numbers are very low.
- **Multiple species detections.** More data on rat, mouse, cat, ferret, hedgehog and other species presence is recorded than for traps, and these additional data may be useful for conservation management.
- **No non-target kills.** Vulnerable native species such as weka and kiwi are not endangered by detection devices.

DISADVANTAGES OF DETECTION DEVICES

- **Rat interference:** Rats may destroy possum bite marks after they have been made or remove bait from chewcards, reducing their attractiveness to possums. Recent research has shown that this is not a significant problem.
- **Inferring possum densities:** Less data relating detection device indices to actual possum abundance are available, so the data collected are considered less reliable than for

leg-hold traps. Nevertheless, available data from detection devices indicate they can be used to infer possum abundance with an acceptable reliability.

- **Additional operator skills required:** Field operators must be able to accurately identify marks on detection devices at the time of collection, including non-target species as well as possums. Furthermore, the detection surfaces on devices must be handled carefully by operators to avoid damaging them.

LINKS TO RELATED TOPICS

A detailed guide on interpreting bite marks on chewcards is available online:

<http://www.landcareresearch.co.nz/science/plants-animals-fungi/animals/vertebrate-pests/pests-in-forests/chew-track-cards>

Possum monitoring protocol:

NPCA 2015. A1 Possum population monitoring using the trap-catch, waxtag and chewcard methods:

<http://www.npca.org.nz/index.php/a-series-best-practice>

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