

## Feature

# Mammal trapping in New Zealand

Martin Edwards, lecturer in Game and Wildlife Management at Sparsholt College, explains some of the advances in trapping techniques that he witnessed while in New Zealand.

WITH RECENT CHANGES IN THE WAY THAT rodenticides can be used in open countryside and the continuing need to control rats and other mammalian pests, I set off half way around the world for a month-long tour to see if we could learn a thing or two about controlling pest species from our antipodean cousins in New Zealand.

The Spring Traps Approval Order (STAO 2012) lists a total of 28 kill traps that are currently legal to use for mammalian pests in the UK. This list includes historical traps that were first approved when the Gin trap was banned in the 1954 Pest Act, such as the Juby, Lloyd, Imbra and Sawyer, none of which are available for sale today. It also includes the ever-popular Fenn traps and their clones, which are by far the most favoured by gamekeepers across the country. Incidentally the Fenn trap was approved at the same time as the aforementioned traps, so is 60-year-old technology.

More recently we have seen a range of new traps added to the STAO that

have been developed in other countries for example the Kania from Canada, and the Magnum bodygrips and WCS Tube trap from the USA. It has been relatively easy to make these additions as the EU has signed up to the International Humane Trapping Standards – this means that if a trap meets these international standards, it can be used in the EU for the specific species on which it has been tested. Therefore the STAO not only lists approved traps but which target species each trap is approved for.

So what has this got to do with New Zealand? Well there are two recent additions to the STAO that have been developed in NZ – the Nooski rat and mouse traps ([www.nooski.com](http://www.nooski.com)) and the DOC series of spring traps ([www.predatortraps.com/traps.htm](http://www.predatortraps.com/traps.htm)). The Nooski is an ingenious trap designed to place an elasticated rubber ring over the neck of the rat and choke it to death – if you don't believe me, type 'Nooski' into Google and watch the promotional videos!

The DOC traps were developed by the Department of Conservation (DOC)

in NZ for controlling rats, stoats, weasels and feral ferrets. To understand why a conservation organisation would want to control pest species you need to know a little about NZ's ecology.

The flora and fauna there is unique in that it developed over millions of years in isolation from the rest of the world; and so they have endemic species not found anywhere else on the planet. These include flightless birds like the kiwi, songbirds like the yellowhead and their only two native species of land mammals – the long-tailed and short-tailed bats.

However, in the 1800s when European settlers arrived in NZ, they introduced many birds and mammals from Europe and elsewhere, eg. rabbits for their fur and meat. Without natural predators, the rabbit population in NZ exploded and threatened crops of the early settlers – so ferrets, stoats and weasels were introduced to control the rabbits! Flightless birds are easier prey than rabbits, so these mustelids soon turned upon the native fauna. DOC now lists these non-native mammals as the single biggest threat to NZ biodiversity.

DOC manages nearly 30% of the landmass of NZ and most of this is native forest, which requires little habitat management. Therefore, the majority of DOC's work is controlling these alien species – hence the development of the DOC traps.

It is difficult to appreciate the sheer scale of the task – much of this work is in steep terrain clothed in thick forest (see picture left), through which there are few footpaths let alone vehicular tracks. Therefore some control, especially of possums for TB, is done with aerial application of poisons – carrots laced with 1080. However, this is extremely toxic to anything that eats the carrots and is also deadly to carcass scavengers, particularly dogs.



Eglington Valley: steep terrain clothed in this forest with few footpaths let alone vehicular tracks.





DOC traps in wooden box with rabbit meat and egg lure.

Therefore DOC is moving away from aerial control and opting for ground control solutions where the traps are set in grid patterns using GPS between 100-200m apart. Each area has thousands of these traps set all year round and employs a team of trappers whose sole job is to check these traps, remove kills and replace the bait (see picture above). The sheer magnitude of the operation precludes daily checks on these traps and the shortest period between checks is usually four weeks!

This is one advantage of the DOC trap – it is designed to kill whatever it catches instantly and there is no chance of any mis-catching an animal by its leg. Therefore there are no humanitarian issues with leaving a trap unchecked for long periods. However, once the trap has caught, it is out of service; the longer between checks, the more pests avoid capture.

So a relatively simple solution is to set two traps in a single box. They did a large field trial of these double set boxes and, not surprisingly, the boxes with two traps caught more animals than the single trap boxes. But rather than catching twice as many animals, the double set boxes caught seven times more animals than the single set! One reason postulated for this is that the first catch acts as a fresh lure to attract the second animal to the box.

Even with two traps per box, the time and energy required to check traps continually has led to several companies developing automatic killing devices which, they hope, only require servicing every six months at the most!

The most advanced of these (ie. that are beyond prototype model and are being marketed) are the Goodnature self-setting traps (goodnature.co.nz). These are powered with a small CO<sub>2</sub> canister that drives a spring-loaded rod into the back of the animal's head, delivering a fatal blow. The animal then falls from the trap through gravity and the trap re-sets ready for its next victim (see picture below). They have two sizes of traps available – the A12 for possums and the A24 for rats and stoats. Incidentally, the A stands for 'automatic' and the digit is the number of kills before the CO<sub>2</sub> canister runs out!



The Goodnature A24 trap cut away to show inside workings.

The NZ government is currently undertaking a NZD\$2 million three-year field trial involving over 4,000 of these traps. The first phase of the trial saw a high degree of mechanical failure with leakage of CO<sub>2</sub> being an issue. This has resulted in changes in design and tighter manufacturing standards such that the traps are capable of withstanding the ravages of the NZ wilderness. The final phase, which will be completed later this year, is testing the ability of these new traps to reduce population levels of pest species at a landscape scale.

There is no doubt in my mind that if this final phase proves successful then DOC will gradually start to replace their trapping boxes with Goodnature automatic traps. This will prove costly in terms of the initial capital outlay, but will save in the long run in terms of trapper time to check and service these traps.

The next big problem to solve with the Goodnature traps and other automatic devices are suitable long-life lures. A piece of rabbit meat or an egg barely lasts four weeks between checks, especially in the summer months. A lot of trappers were using Erayz which is an oven-dried rabbit paste produced by Connovation (www.connovation.co.nz). But even this won't continue to draw pests for six to 12 months. Therefore a lot of the univer-

sity departments I visited were trying to identify and then synthesize compounds, such as pheromones, that could be released from drip bottles and would act as suitable long-term lures.

So how does this fit into UK pest control? As stated earlier, if a trap has been approved as humane in another signatory country of the International Humane Trapping Standards then it is relatively easy to get it added to the STAO. The Goodnature A24 has been tested on stoats and ship rats in NZ. Therefore, to make it of any real value in the UK it will also have to be tested on Norway rats and grey squirrels. Goodnature has plans to get it approved in the UK and then I can see the A24 being a really valuable tool in our armoury for controlling rats without having to resort to rodenticides. It could also be the answer to eradicating the grey squirrel to allow the red squirrel to recolonise much of England. The issue that we have (not as apparent in NZ) is the number of non-targets. So, we will have to develop suitable sets for the A24 that will prevent non-targets gaining access (see picture below).

The Goodnature A24 trap set on a tree.



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