

Stoats: Renewed Efforts to Control Tiny But Master Predators

If you think the possum is the perfect pest and predator, take a moment to consider the stoat. Recent research has confirmed suspicions that stoats have contributed critically to the decline of native wildlife including kiwi, kaka, kokako, kereru, parakeets, black stilts, yellowheads and giant weta.

'There has been a growing concern about the plight of native species like the kiwi,' says the manager of the national stoat research programme, Elaine Murphy of the Department of Conservation.

'Forest and Bird highlighted these concerns. In the past the scientific community didn't realise the impact of predation on native species, but in the 1990s it became clear that controlling stoats did make a difference to breeding success.'

First introduced and protected under Government policy to control rabbits in 1884, it was not until 1936 that the importation of stoats was finally banned. By then stoats had colonised the North and South Islands from sea level to alpine areas.

Over the years the main control for stoats has been labour-intensive trapping, but in 1999 the Department of Conservation was given an extra \$6.6 million to run a five-year integrated research programme.

After a review of knowledge

and assessment of research directions, some four dozen projects have been funded to investigate more effective baits, lures and traps, and improving understanding of stoat reproduction and interaction with other pests.

Research is revealing more about the interactions between stoats and their prey in different habitats.

'In a Mackenzie Basin braided-river valley where rabbits and birds are the main prey, it was a surprise to find that stoats and ferrets use common den sites, though not at the same time,' says Dr Murphy. 'However it was depressing to find large numbers of preyed-on riverbed birds in the dens, including quite a number of adult wrybill, as well as their eggs and chicks.'

Researchers are still trying to unravel the complex relationships between stoats, rats, mice and birds in major beech-seeding years (called mast years). The high numbers of stoats in the year following mast years can decimate a native bird population, while after a rat-poisoning operation it was found that stoats switched their diet to birds.

Dr Murphy says some of the more 'biotech' control options being investigated will need longer than five years to test, but will help towards a better foundation for sustainable and effective stoat control.

'We can control possums and rats, but we don't seem to have the same armoury against stoats. We're seeing some promising results for lighter, inexpensive traps, and more effective species-specific baits and lures, but we need to do risk analysis for each option. We've looked at how stoats are controlled on game estates in the UK and we're also working



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Radio transmitter affixed to a stoat. In this way, a pregnant female was tracked over 64 kilometres, crossing three mountain ranges in Fiordland, in just four weeks.



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The tiny, 250-gram stoat is a serious predator of native wildlife. A five-year research programme costing \$6 million is aimed at controlling the introduced pest. Four dozen projects have been funded to investigate more effective baits, lures and traps, and improving understanding of stoat reproduction and interaction with other pests. with research centres in Australia, but as stoats are only a conservation pest in New Zealand, we are largely on our own.'

So far researchers have tried lures with odours and freeze-dried rats, ultrasonic repellents, and hen eggs stuffed with 1080 poison. They are looking for weak links in the stoats' defences, and whether diseases like canine distemper can reduce populations.

While stoats can proliferate in the wild, it was not until November 2001 that the first litter of stoats was born in captivity, at Landcare Research's

special research facility.

'With huge population fluctuations from year to year in natural populations you can't just go out and get stoats for research anytime you need them,' says stoat researcher Cheryl O'Connor of Landcare Research.

'It's important to fully understand the mechanism of stoat reproductive biology before it can be manipulated,' she says. 'One of the fascinating things about stoats is that the females after mating delay implantation of the embryos for eight to nine months.'

Not only do females carry latent embryos, but they also travel and invade large tracts of land. A radio-tracked pregnant female has been found 64 kilometres away after four weeks in Fiordland. Stoats can swim more than 1.6 kilometres to islands. The solitary creatures hunt by day or night using acute senses to detect a wide range of prey on the ground or in trees, from invertebrates to rabbits and possums. They are ferocious, killing more than they need and then storing the food, researchers find.

'We want to make a difference,' says Dr Murphy of the research programme. 'Otherwise we are going to lose yet more species.'

— KEITH LYONS



LANDCARE RESEARCH

A stoat emerges from its den.