

PEST CONTROL FOR THE 21ST CENTURY:

humane, effective tools for multiple invasive species



Invasive species have been recognised by the Convention on Biological Diversity (CBD) as a major threat to global biodiversity and the Secretariat of the Pacific Regional Environmental Programme says they are the single biggest threat to biodiversity in the Pacific.

New Zealand hasn't escaped the significant negative impacts that invasive species such as possums and stoats have had on our endemic species, but in response to these threats we have become a world leader in the eradication of invasive species from offshore islands, and in the establishment of fenced mainland islands.

Despite this, large parts of mainland New Zealand remain unmanaged. This causes further population declines of endemic species and leads to geographic extinctions, such as the loss of mohua from the Marlborough Sounds in 2000.

Consequently, there is a need for more cost-effective tools for invasive species control. With the development of such tools comes the obligation that they are humane, environmentally sound, and do not impact non-target species.

Lincoln University recently launched the Centre for Wildlife Management and Conservation (CWMC). The Centre's vision is for increased recovery of native biodiversity through enhanced wildlife management and effective land-based conservation. A major recent achievement for centre staff and collaborators has been the registration of para-aminopropiophenone (PAPP) as a vertebrate toxin for predator control. This is a significant achievement as it is the first vertebrate toxin to be registered in New Zealand in 30 years.

Although still requiring extensive field testing to fully understand its utility and effectiveness, PAPP has several

positive qualities. Firstly, welfare has been a primary consideration in its registration. PAPP produces high levels of methaemoglobin, reducing the oxygen carrying capacity of the blood. Once ingested, effected animals quickly experience lethargy and fall asleep before death.

Additionally, PAPP is carnivore specific which means it can be used to directly target predators with low risk of non-target poisoning to birds and other wildlife. Another advantage of PAPP is that it has an antidote in case of accidental poisoning.

The CWMC is currently developing a set of tools for delivering PAPP in the field. These include a long-life meat bait (for use in bait stations) and resetting tunnels that work on the concept of spraying PAPP on the fur of predators, meaning they will ingest a lethal dose during self-grooming.

Such tools may dramatically increase

the rate at which invasive predators are controlled in an area, allowing for increased recovery of threatened endemic species. These systems are being designed to target feral cats, stoats, weasels and ferrets.

The CWMC has strong links with other organisations in New Zealand and overseas, including through its industry advisory group that MAF is represented on. Key research collaborators include the Department of Conservation, Auckland University, Otago University, Plant and Food Research, Connovation Ltd and community conservation groups. Other new developments currently being researched by CWMC and its collaborators include possible alternative toxins to 1080 and smarter bait delivery systems and monitoring tools to target multiple invasive species.

For more information, please visit www.lincoln.ac.nz/cwmc.

Des (Derek) Smith
Postdoctoral Fellow
Centre for Wildlife Management and Conservation, Lincoln University
derek.smith@lincoln.ac.nz

Charles Eason
Professor in Wildlife Management
Research Director, Connovation Ltd
Director, Centre for Wildlife Management and Conservation, Lincoln University
charles.eason@lincoln.ac.nz

Shona Sam
Postdoctoral Fellow
Centre for Wildlife Management and Conservation, Lincoln University
sams2@lincoln.ac.nz

