

1080 – The Commissioner’s Overview

By Dr Jan Wright

In June 2011, Dr Jan Wright, the Parliamentary Commissioner for the Environment, released a report entitled “Evaluating the use of 1080: predators, poisons and silent forests”. The Journal is grateful for permission to reproduce the Commissioner’s overview here.

As I write this overview it is business as usual in the bush. This might conjure up images of tui popping open mistletoe flowers, fantails flitting from tree to tree behind trampers and the calm of a grove of tree ferns. But in much of our great forests, the reality is far less halcyon. Sadly business as usual is more likely to mean stoats patrolling kiwi nests waiting for chicks to hatch, rats hunting down frogs, geckos and insects, and possums stripping mistletoe, fuchsia and rata.

Last summer while on holiday I mentioned to a friend that I was investigating the use of the pesticide known in New Zealand as 1080. She responded “That will be very difficult; there are such good arguments on both sides.” What I have discovered through this investigation is that this is not so. While I respect the sincerity of those who oppose the use of 1080, without it our ability to protect many of our native plants and animals would be lost. And without 1080, keeping bovine tuberculosis at bay to protect dairy herds, and protecting young trees in plantation forests would be much more difficult and expensive.

In New Zealand, 3,500,000 kilograms of pesticide is used every year, and the amount of 1080 used is less than one-thousandth of this - about 3000 kilograms. Yet despite this, despite years of research, exhaustive reviews and the setting of many controls governing its use, 1080 remains controversial, and the call for a moratorium on 1080 from some Members of Parliament was a major impetus for this investigation.

Along with a number of other poisons, 1080 is used in bait stations on the ground, but it is the dropping of it from helicopters that elicits the greatest concerns. And this is understandable; scattering poison from the skies just feels like a really bad thing to do. So why is it done?

The great majority of our native plants and animals occur naturally nowhere else in the world. This makes them especially vulnerable to invaders from other countries, since there was no need to evolve defences against them. Birds did not need to fly if there were no ground predators to hunt them down.

This investigation is focused on three pests that do immense damage to our great native forests, as well as to other ecosystems and to the economy more generally – possums, rats and stoats. Most of us still think of possums as the major enemy, but over the last



Dr Jan Wright, the Parliamentary Commissioner for the Environment

15 years or so, scientists have developed a much deeper understanding of the destruction caused by rats and stoats. Increasingly, stoats, not possums, are spoken of by conservationists as ‘enemy number one’.

The interaction between rats and stoats is particularly important. When there is plenty of food, rodent populations boom, providing meat for the carnivorous stoats. So-called ‘mast events’ are particularly tragic. In the very years when certain tree species flower profusely, when millions of seeds drop to the ground to enable birds to lay more eggs than usual, the rat and stoat populations irrupt and the chicks are doomed.

It was a surprise in this investigation to discover that possums, rats and stoats are only controlled on one eighth of Department of Conservation land. We may well be looking at a future where many of our special plants and animals can be found only on offshore islands with extremely limited access to the public and in sanctuaries behind big fences. Without active pest management, kiwi chicks have a one-in-twenty chance of making it to adulthood.

1080 is a substance that occurs naturally in many plants in Western Australia and other countries. That it exists naturally is no argument in its favour – so

does hemlock. Plants that contain 1080 evolved it as a defence against browsing animals. Consequently, possums and other native animals in Western Australia have become immune over eons of evolutionary time. This has made it possible for 1080 to be aerially dropped over millions of hectares in Western Australia to kill foxes, feral cats and wild dogs.

An ideal method for controlling possums, rats and stoats would kill them effectively and enable native trees and animals to flourish, it could be used tactically to rapidly knock down irrupting populations of rats and stoats during mast events, and it could be used cost-effectively over large remote rugged areas as well as on small accessible reserves.

Such an ideal method would also have no unwanted effects. It would not kill or harm native birds, fish, lizards and insects, and it would not kill introduced animals that are not pests. It would not leave long-lasting residues in water and soil or endanger public safety. And it would kill possums, rats and stoats humanely as well as effectively.

In this investigation, 1080 and its alternatives (to the extent possible) are compared with this imaginary ideal, and 1080 scored surprisingly well. It is not perfect, but given how controversial it remains, I for one expected that it would not be as effective and safe as it is. In large part this is due to the many improvements in practice and controls that have been put on its use over the years.

In order to fully understand the concerns about 1080, my staff and I have had lengthy discussions with a variety of people at the forefront of the opposition to its use. We have striven to understand the nature of their concerns and studied the written material they have produced. Certainly some operations have not been well done; there is always room for improvement and there is always the possibility of human error, intentional or otherwise.

It must be extremely upsetting to lose a cherished dog to 1080, but only eight dogs have died this way in the last four years. The sad reality is that many many more will die on roads each year and no one is proposing a moratorium on traffic. It is important to keep risks in perspective.

The Department of Conservation often refers to 1080 as "one of the tools in the toolbox". This may give the impression there are alternatives that can do the same job, but this is not the case.

Indisputably trapping has a role to play, particularly in bush margins and reserves, along with a number of other poisons besides 1080. But ground operations can never be as effective or as cost-effective as aerial

operations in large rugged remote areas.

One commonly used poison is cyanide. It has the advantages of killing humanely and breaking down quickly in the environment, including in the carcasses of poisoned animals. But because of this it cannot kill stoats; because stoats are carnivores, the only way to kill them in large numbers is secondary poisoning, that is, feeding on poisoned possums and rodents.

Another commonly used poison is brodifacoum, but brodifacoum has a higher risk of by-kill than 1080 because it persists in the environment for a long time, and it is particularly inhumane.

There are other alternative poisons to 1080 under development, but while they have some advantages over 1080, they cannot replace it. Biological control options held promise for a time, but research funding has stopped due to lack of progress, and probably also because most of the options involved genetic engineering.

The Prime Minister's Chief Science Adviser Sir Peter Gluckman frequently calls for policy decisions to be based on evidence. A solid body of evidence supporting the continued use of 1080 has been built up over the years; the large number of notes and references at the back of this report are testament to this.

It is my view based on careful analysis of the evidence that not only should the use of 1080 continue (including in aerial operations) to protect our forests, but that we should use more of it. And it is not as if much is being used now. Currently there is more Crown funding given to the Animal Health Board to kill carriers of bovine TB than the Department of Conservation spends on controlling possums, rats and stoats over the entire conservation estate.

It is seldom that I come to such a strong conclusion at the end of an investigation. But the possums, rats and stoats that have invaded our country will not leave of their own accord. Much of our identity as New Zealanders, along with the clean green brand with which we market our country to the world, is based on the ecosystems these pests are bent on destroying. We cannot allow our forests to die.