



## Evaluating the use of 1080: Predators, poisons and silent forests

### Frequently Asked Questions

#### What is 1080?

1080 (sodium fluoroacetate) is a poison that is mixed into baits and used to control a range of pests, especially possums, rats and stoats.

1080 is biodegradable and does not build up in the food chain. The active component of the poison occurs naturally in many plants found in Western Australia and parts of Africa. These plants evolved the poison as a defence against browsing animals.

#### Why do we use 1080?

The main threat to many of New Zealand's native plants and animals is introduced pests such as possums, rats and stoats. New Zealand has no native land mammals (except for native bats), so our ecology is especially vulnerable to the effects of these introduced pests.

1080 is very effective at controlling these pests. It can be applied aerially, which is the only practical way to control pests over large areas of rugged terrain. This also makes it the most cost effective method of pest control available.

A fast, tactical knockdown of possums, rats and stoats is often needed in the spring to protect birds during the nesting season. This is especially important in 'mast years' when some native trees (especially beech) produce huge numbers of seeds. This abundance of food can lead to a plague of rats, which in turn leads to an increase in stoats – both of which eat vulnerable native birds, insects and lizards.

#### Is 1080 safe?

1080 has proved to be a safe form of pest control given the way it is used and controlled in New Zealand.

1080 does not bioaccumulate – it naturally breaks down in the environment and does not leave permanent residues in water, soil, plants or animals.

Although 1080 baits can enter waterways during aerial applications, dilution will usually reduce 1080 quickly to very low concentrations in water. Once in water, 1080 is biodegraded into non-toxic by-products within two to six days.

More than 500 water samples were taken after 1080 operations in the last five years. 1080 was detected in only 2% of these samples. The highest concentration recorded was 0.3 micrograms per litre – well below the level that would pose a risk to human health. No 1080 was detected in drinking water supplies.

## **Have there been serious and credible scientific studies on aerial 1080 use?**

There is a clear and credible scientific body of evidence that aerial 1080 is very effective at killing possums, rats and stoats and increasing populations of native species. There have also been studies on the risks associated with 1080 use, showing these are very small.

## **What are the alternatives to 1080?**

Traps, shooting and other poisons can be effective in small and easily accessible areas, but are not as effective (or as cost-effective) as 1080 in large and inaccessible areas. In addition, ground control methods cannot effectively control the rapidly growing populations of rats and stoats that occur after trees 'mast' and produce huge numbers of seeds.

## **Where else is 1080 used?**

In Western Australia, 1080 is used over hundreds of thousands of hectares to control foxes, cats and wild dogs. It is also used in Mexico, Japan, Korea, Israel, and for coyote control in the United States.

Because New Zealand's ecology has evolved without mammals, our native birds and other animals lack defences against possums, rats and stoats. 1080 baits are designed to appeal to the mammal pests we want to control.

## **What does a mast year mean?**

Approximately every few years some trees flower abundantly and produce much larger numbers of fruit and seeds than usual. This phenomenon is greatest in beech forests, but trees such as rimu also undergo mast seeding.

Some native birds have evolved to lay more eggs than usual in mast years because these are years when there is plenty of food. For instance, kakapo will only breed in years when rimu trees mast. Yet, ironically, it is the mast years when rats and stoat populations also boom.

## **Isn't ground control almost as affordable as aerial 1080?**

No it isn't. Ground control is very important, but it can't be used over the vast tracts of native forest in rugged country where there is no control of possums, rats and stoats. In particular, in years when there is abundant seeding (masting) in forests you need to be able to knock down rats and stoats very quickly and effectively. This can't be done with ground control. Aerial 1080 kills all three of the big pests (stoats, rats, and possums) at the same time, making it much cheaper than ground control where up to three different control methods are needed.

## **Does aerial 1080 kill certain native bird species when dropped?**

Concerns are often raised about bykill. One example often used is a 1080 operation in the 1990s in which 12 of the 28 monitored robins were killed. What is often not pointed out is that the population of robins increased by 29% - with eight times more chicks surviving to adulthood. This operation used carrot bait which had a higher risk of bykill because little bits of carrot could be eaten by birds. DOC now uses cereal baits, not carrot baits - and the baits are coloured green or blue so the birds aren't interested.