

# Update Report

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

June 2013



Parliamentary Commissioner  
for the **Environment**

Te Kaitiaki Taiao a Te Whare Pāremata

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# 1

## Introduction

In June 2011 the Parliamentary Commissioner for the Environment released a report entitled *Evaluating the use of 1080: Predators, poisons and silent forests*. The aim of the investigation was to undertake an independent and rigorous assessment of the controversial pesticide 1080.

With the exception of two species of bats, New Zealand has no native land mammals. For 65 million years our plants, birds and other animals evolved in isolation, protected by the oceans from mammalian predators like rats. In such remoteness diversity flourished, and many of our 90,000 native species are found nowhere else. But they have evolved with few defences against some of the mammals that arrived with human settlement.

For instance, the enemy of kakapo was the now-extinct Haast eagle. To protect itself against this terrifying predator that would swoop down from above, a kakapo would freeze with its feathers acting as a perfect camouflage against the forest floor. Today a less effective defence mechanism against stoats is hard to imagine.

Today, New Zealand has one of the highest extinction rates in the world due largely to introduced pests, both plants and animals. Three animal pests are especially damaging – possums, rats and stoats devastate our forests and the creatures that live in them. It is not, as is often thought, enough just to kill possums. If the possum population falls, there is more food for rats. As rats increase in number, they provide more food for stoats, and stoats are devastatingly effective predators of our native birds.

Although it was originally introduced to kill rabbits and stop them destroying pasture, the pesticide 1080 is now mainly used to kill mammal pests for two reasons – to protect our native plants and animals and to protect dairy herds against bovine tuberculosis.<sup>1</sup>

Despite various reviews, a considerable body of research, and many regulatory controls on its application, the aerial use of 1080 remains contentious, especially in some parts of the country.





## Main findings of the investigation

The investigation was focused on the use of 1080 to protect native species by killing possums, rats and stoats. Because they are carnivorous, stoats do not eat 1080 baits but are killed by 'secondary poisoning' when they eat poisoned rats.

Both the effectiveness and the concerns about 1080 were assessed by responding to a series of questions.

Regarding the effectiveness of 1080, it was found that it:

- reduces populations of possums, rats, and stoats down to low levels;
- leads to increases in the survival of native birds and trees;
- knocks down the rapid growth in populations of rats and stoats in mast years when trees flower profusely and provide huge amounts of food for pests;
- can be used on a large scale in remote rugged areas that comprise most conservation land;
- is much more cost-effective than ground control when used aerially.

Regarding concerns about 1080, it was found that it:

- does not build up in the environment;<sup>2</sup>
- seldom causes by-kill when applied with modern controls;
- does not endanger people provided it is used as prescribed in regulations;
- is 'moderately humane' in the way it kills pests.

Alternative methods of killing possums, rats and stoats – trapping, other poisons and biological control – were also examined. While they have their place, none come close to replacing 1080.





# 3

## Reaction to the report

The use of 1080 has long been controversial and consequently the report attracted a great deal of media attention and commentary.

### Government and political parties

The report was welcomed by the Government. Minister of Conservation Hon. Kate Wilkinson said *"Only the introduced predators will benefit from a moratorium, which I agree isn't needed"*.<sup>3</sup>

Labour Party Conservation spokesperson, Hon. Ruth Dyson, strongly supported the recommendations, saying *"we now have an evidence base upon which to form our views"*. And Environment spokesperson Charles Chauvel commented *"We must not let our future be one of silent forests. We have the evidence provided in a robust and independent way. Now all that remains is for the Ministers to take action"*.<sup>4</sup>

The Green Party welcomed the report, but said that 1080 should be used only *"as a measure of last resort in hard-to-get places where it is the only cost-effective way to control pests"*.<sup>5</sup>

Maori Party Environment spokesperson Rahui Katene welcomed the report saying *"it is timely that we have an independent report which looks at all the arguments both for and against the use of 1080"*. At the time, the Maori Party had a Member's bill seeking to ban the import, manufacture and use of 1080 in New Zealand, but reviewed the bill after the release of the Commissioner's report and withdrew it.<sup>6</sup>

In contrast, United Future leader Hon. Peter Dunne dismissed the report as a *"kick in the guts for many of our provincial communities"*.<sup>7</sup> However, in late 2011, when questioned about 1080, he said *"There is a lot of evidence about its destructiveness to habitats and species, but we have never been so irresponsible as to suggest it should be phased out in the absence of an alternative."*<sup>8</sup>

## Commentators

Following the release of the report, supportive editorials and feature articles appeared in virtually every newspaper in the country. These included *“Row far bigger than 1080’s few failings”* in the NZ Herald, *“We have no choice on using 1080”* in The Press, and *“But it feels so bad...”* in the Southland Times.

Journalist and commentator Patrick Smellie wrote that the report *“... appears to have done what years of argument ... has failed to achieve – a sharp shift in sentiment to favour the widely derided poison”*.<sup>9</sup>

The report stood up to scrutiny from the scientific community. Professor Dave Kelly said that *“the net effect of recent well-run (1080) operations is overwhelmingly positive”*, and Professor Doug Armstrong said *“most people seem to mistake the ongoing declines of native birds due to predation to effects of 1080.”*<sup>10</sup> Wildlife ecologist John Innes reported *“reading every word of the report, punctuated by uncharacteristic out-loud whoops of delight”*.<sup>11</sup>

Royal Forest & Bird Protection Society spokesperson Nicola Vallance said the report *“showed clearly that 1080 was a lifeline for New Zealand’s endangered native birds and forests”*.<sup>12</sup>

Federated Farmers president Don Nicolson described the report as *“popping the 1080 mythology balloon”* and the Animal Health Board released a statement saying *“Hopefully such a comprehensive report will reassure the New Zealand public that the carefully-regulated use of biodegradable 1080 to control predatory pests, such as possums, is not only safe, but necessary.”*<sup>13, 14</sup>

However, there was also strong criticism from some opponents. South Canterbury Deer Stalkers Association president Tim McCarthy said *“the destruction [1080] does to the land, and to native plants and animals, is indiscriminate...The hunting fraternity simply does not want any poisons in our food chain”*.<sup>15</sup> And Poison Free New Zealand spokesperson Paul Cohen said *“it’s just typical corporate science driven by people who want to drop 1080. It’s fabricated to look good. They have an agenda...to keep dropping 1080 but the true science shows it is dangerous for our environment and humans”*.<sup>16</sup>





# 4

## Responses to the Commissioner's recommendations

The report concluded with six recommendations from the Commissioner.

### **Recommendation 1:**

Parliament does not support a moratorium on 1080.

In the 2008 election, the Maori Party's policies included a moratorium on 1080. As described above the Maori Party submitted a members bill to ban the import, manufacture and use of 1080.<sup>17</sup> After the release of the report, the bill was withdrawn and a moratorium on 1080 was no longer a Party policy going into the 2011 election.

The United Future Party went into the 2008 election with a policy opposing the aerial use of 1080 unless successful ground-based operations were not possible.<sup>18</sup> But in the 2011 election, the Party's policy had changed to a complete ban on the use of 1080 while recognising that this would take time.

The Mana Party's environmental policy in the 2011 election also included a ban on 1080.<sup>20</sup>

No other parties currently support a moratorium on 1080.

### **Recommendation 2:**

The Minister for the Environment investigate ways to simplify and standardise the way 1080 and other poisons for pest mammal control are managed under the Resource Management Act and other relevant legislation.

The labyrinth of laws and regulations that govern the use of 1080 and other poisons used to control introduced pests creates unnecessary complexity and confusion. In particular, different councils control aerial 1080 use differently – in some regions it is a ‘permitted activity’ and in others it is not.<sup>21</sup> This must add unnecessary cost and restrictions to operations, and potentially make it difficult to respond quickly enough to mast events. In some cases, the hurdle of obtaining resource consents may have stopped aerial 1080 operations from taking place at all.

In May 2013, the Commissioner wrote to the Minister for the Environment, Hon Amy Adams. In her response, the Minister said that the Ministry has recently provided updated guidance to councils encouraging them to avoid duplication on matters already covered under the Hazardous Substances and New Organisms (HSNO) Act.<sup>22</sup> However, this guidance does not mention 1080 or indeed refer to any tangible examples of duplication. Moreover, HSNO regulations only deal with some aspects of the use of 1080 that would be considered in an application for a resource consent.

The other aspect of enquiry was whether any work is being done to develop a National Environmental Standard (NES) to make aerial 1080 a permitted activity in all regions. The Commissioner also raised this question with the Minister of Conservation, Hon. Nick Smith, after he took up the portfolio. The pros and cons of an NES on aerial 1080 are being explored by the Department of Conservation, Environment Waikato and the Animal Health Board, and a meeting with Ministry for the Environment officials is imminent.<sup>23</sup>

### **Recommendation 3:**

The Minister of Conservation establishes the Game Animal Council as an advisory body that works collaboratively with the Department of Conservation, but ensures that responsibility for all pest control remains with the department.

During the investigation, the concern arose that the desire of the proposed Game Animal Council to protect deer and other game animals might come into conflict with the Department of Conservation’s role in carrying out pest control.

The Game Animal Council does not yet exist. Its establishment bill had its first reading in March 2012. Subsequently, the Local Government and Environment Select Committee acknowledged the Commissioner’s recommendation, stating in its report back to the House:

*“We recommend inserting new clause 34A to make it clear that ministerial powers relating to the authorisation of hunting could not limit the ability of the Minister or Director-General of Conservation to carry out the killing of wild animals or pests for control or management purposes”.*<sup>24</sup>

#### **Recommendation 4:**

The Minister of Justice introduces an amendment to the Ombudsmen Act 1975 to add the Animal Health Board to Part 2 of Schedule 1 of the Act, and thereby make the Animal Health Board also subject to the Official Information Act 1982.

At the time of the investigation, the Animal Health Board (AHB) was not subject to the Official Information Act (OIA). This meant that people concerned about 1080 could not be confident that the AHB would provide full information about 1080 operations. A lack of transparency in an agency with powers established in legislation can engender mistrust.

The Animal Health Board was made subject to the OIA in 2012 by adding the phrase *“Management agencies under the Biosecurity Act 1993, if they are corporate bodies, in their role under pest management plans...”* to Schedule 1 of the Ombudsmen Act 1975.<sup>25</sup> However, this is so convoluted that many people would struggle to find out that the AHB is now subject to the OIA.

Accordingly, the Commissioner wrote to the Chief Executive of the AHB, suggesting that a statement that the AHB is subject to the OIA be placed in a prominent place on the AHB website. The Acting Chief Executive replied that OIA requests for information have been received and complied with, and that a re-design of the website will soon *“ensure that OIA requests are facilitated through the Contact Us section”*.<sup>26</sup>

Since the AHB has been accused of secrecy regarding its 1080 operations in the past, it would be helpful to see a more explicit acknowledgement on its website that it is now subject to the OIA – for example, *“For a request for information under the OIA, please click here”*.

#### **Recommendation 5:**

The Minister of Conservation asks the Department of Conservation to prioritise the development of national policy and operational procedures on possum fur harvesting.

Well-organised large scale trapping and poisoning possums for fur may be economically viable, although it is unlikely to reduce possum populations enough to benefit native animals and plants. However, it could be used to complement other pest management, particularly in remote back country where there is no pest control.

The development of national policy and operational procedures on possum fur harvesting has not been made a priority by DOC, although the potential for this to happen remains as the new structure of the department is established.<sup>27</sup>

### **Recommendation 6:**

The Minister of Conservation improve information about pest control on the conservation estate by providing consistent and accessible information on the Department of Conservation website, including the purposes and results of different pest control operations.

It became clear during the investigation that the quality and nature of communication about 1080 operations needed improvement.

Standard operating procedures and guidelines have now been made publicly available on the DOC website, and there is greater consistency across conservancies.<sup>28</sup> However, the two reports that are available on each 1080 operation are far from easily readable summaries that would lead to greater public understanding of important matters such as why the operation is being done and what its results are. These reports are technical in nature, and are required for compliance with regulations.

The Pesticide Summaries tell hunters and other people where pesticides are being used on conservation land so they know which areas to avoid. These meet the requirements of the NZ Food Safety Authority (now part of the Ministry for Primary Industries).

The Operation Reports are required for compliance with HSNO regulations, and are on the Environmental Protection Authority's 1080 watch list (the EPA administers the HSNO Act). There appears to be no indication on the DOC website that the 1080 watch list exists and there is no direct link to it, as suggested in the Local Government and Environment Committee's report on 1080.<sup>29</sup>

In May 2013, the Commissioner wrote to Hon. Nick Smith, Minister of Conservation, asking if DOC has further plans to improve communication about 1080 operations.

He replied that some thought has gone into simplifying the Pesticide Summaries, although no resources have been allocated to producing comprehensive non-technical summaries of operations. The Minister has asked for the Pesticide Summaries to be linked to the 1080 watch list on the EPA website.<sup>30</sup>



# 5

## Some continuing issues

### Very inadequate pest control

During the investigation it was found that only on one-eighth of conservation land are populations of possums, rats and stoats controlled to any extent.<sup>31</sup> The corollary must be an ongoing decline in biodiversity over the great majority of conservation land.

DOC is currently prioritising its biodiversity work by developing a Natural Heritage Management System (NHMS). This will lead to more targeted pest control focused on high priority ecosystems and species, although the majority of ecosystems and species on the NHMS rankings are not scheduled to receive any active management. It is also unclear whether the implementation of NHMS will lead to greater or less use of 1080.

However, the fact remains that aerial 1080 is the most cost-effective way of controlling the three key pests of possums, rats and stoats over large areas.

#### *Update at June 2014:*

The situation described above has changed radically in the last year. In December 2013, the Department of Conservation warned that beech trees were flowering prolifically across the country, and would be likely to lead to the largest mast event in a decade with devastating impacts on native birds and animals. In January this year, the Minister for Conservation announced the \$21 million 'Battle for our Birds' programme. Aerial 1080 is to be used to help protect 12 key native species in 500,000 hectares of forest. The Government is to be congratulated for taking this great step forward in the protection of native species from possums, rats and stoats.

## The balance between operations and research

In the 2012/13 year, DOC allocated more funding to research on 1080 and its alternatives than it did to pest control operations using 1080.<sup>32</sup>

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	Funding allocated in DOC's 2012/2013 budget
Operations - ground & aerial 1080	\$2 million
Research:	
- Improving how 1080 is used	\$1 million
- Trials for self-resetting traps	\$1.9 million
- Alternative toxins	\$0.09 million

Judgement on the value of the research would, of course, require an investigation of its own.<sup>33</sup> Doubtless, individual research projects have great merit, but this (and other expenditure by DOC) should be compared with the known benefits that come from using a toxin that has been proven effective and cost-effective in knocking down populations of the three pests that are doing so much damage to our unique plants and animals.

In 2012/13, the AHB allocated \$7 million for 1080 operations and \$0.61 million for 1080 research.<sup>34</sup> Much of this research funding is spent on reducing the cost of aerial 1080 operations.<sup>35</sup>

### *Update at June 2014:*

The \$21 million allocated for pest control in response to the 2014 mast event has dramatically increased the funding for 1080 operations. The 'Battle for our Birds' is also providing valuable opportunities for research, including using monitoring data to increase the effectiveness of future 1080 operations.

## The relationship between AHB and DOC

The AHB, DOC and, indeed, some regional councils, all carry out pest control using 1080 across New Zealand. Coordination of their efforts can achieve better results and reduce costs.

The AHB is generally able to be flexible with the timing of aerial 1080 operations, but does need time to plan and liaise with communities. DOC often has less flexibility because of the need to respond rapidly to the burgeoning populations of rats and stoats that follow mast events. Opportunities for coordination should always be pursued. It is good to see that the AHB and DOC have been coordinating on 1080 drops in Kahurangi National Park and in the Tararua ranges.<sup>36</sup>

Although the AHB is concerned with bovine TB not biodiversity, its 1080 operations do benefit conservation land. What are the implications for conservation when the AHB achieves its goal of eradicating bovine TB?

According to a DOC analysis, this will not become an issue for many years because the earliest the AHB could completely eradicate bovine TB is 2035.<sup>37</sup> But this analysis considers the issue at a national level. Environment Waikato is looking at ways to prioritise and reduce pest control costs, in preparation for the possibility that the AHB might consider bovine TB is no longer a threat in certain places in Waikato.<sup>38</sup>

## A predator-free New Zealand?

The idea of a predator-free New Zealand achieved by eradicating rather than controlling pests was floated by the late Sir Paul Callaghan in his last public lecture in February 2012. This idea has gained much traction within the conservation and scientific communities, sparking much discussion over feasibility.

Sir Paul's vision was inspired by the success of Zealandia – the predator-free sanctuary in the heart of Wellington. He proposed that we should start by making both Stewart Island and Great Barrier Island predator-free and building more sanctuaries on the mainland.

It would be wonderful if this vision could be achieved, but it would involve overcoming many major challenges. Every New Zealander would have to be on board. Undoubtedly it would be expensive. And undoubtedly, 1080 would have to play a major role, unless there are scientific breakthroughs in pest control that go well beyond what has been achieved so far.

It is time the 'bad press' about 1080 was put to rest. It has not always been used wisely and well, and there is always room for improvement. But it should not be viewed as a 'necessary evil'. We are lucky to have it.

## Notes

- 1 Possums are major carriers of bovine tuberculosis. 1080 is also sometimes used to kill rabbits, hares and wallabies.
- 2 There is one exception – 1080 can linger in carcasses of poisoned animals under very cold and dry conditions for some months.
- 3 NZ Herald, *"Government gives backing to 1080 report"*, 8 June 2011.
- 4 Press Release, *"Labour supports findings of Parliamentary Commissioner for the Environment"*, 8 June 2011.
- 5 Press Release, *"Dunne's proposal to ban 1080 unworkable"*, 8 June 2011.
- 6 Press Release, *"Maori Party reviewing its bill to ban the import, manufacture and use of 1080 in Aotearoa"*, 8 June 2011; Stuff Politics, *"Election soapbox: 1080"*, 16 November 2011.
- 7 Dominion Post, *"1080 report 'kick in the guts' – Dunne"*, 8 June 2011.
- 8 The Wellingtonian, *"Peter Dunne looks ahead"*, 1 December 2011.
- 9 NZ Energy & Environment Business Week, *"Tectonic shift in attitude to 1080?"*, 15 June 2011.
- 10 3 News, *"Scientists stick up for 1080"*, 9 June 2011.
- 11 Email to PCE office, 25 June 2011.
- 12 Timaru Herald, *"Backing for continued 1080 use"*, 9 June 2011.
- 13 Sunday Star Times, *"Wright's plain-English report pops the 1080 balloon"*, 12 June 2011.
- 14 Press Release, *"Animal Health Board welcomes 1080 report"*, 8 June 2011. The Animal Health Board is responsible for the control of bovine tuberculosis.
- 15 Timaru Herald, *"Backing for continued 1080 use"*, 9 June 2011.
- 16 Dominion Post, *"Dismay and praise for 1080 report"*, 9 June 2011.
- 17 Maori Party, *"Policy Priorities: He Aha te Mea Nui"*, October 2008, p. 6.
- 18 United Future, *"Department of Conservation Reform"*, 2008, p. 2.
- 19 United Future, *"Outdoor Recreation and Conservation"*, 2011; United Future, *"United Future launches key policies for protecting our outdoor heritage"*, 15 November 2011.
- 20 Stuff Politics, *"Election soapbox: 1080"*, 16 November 2011.
- 21 An aerial 1080 operation is currently planned for the Catlins, spanning both the Otago and Southland regions. Aerial 1080 is a permitted activity in Otago, but needs resource consent in Southland. Otago Regional Council, *"Regional Plan: Water for Otago"*, Rule 12.7.1.4, p. 206.; Environment Southland, *"Regional Water Plan for Southland"*, Rule 6, p. 11
- 22 Letter to the PCE from the Minister for the Environment, 17 June 2013
- 23 Letter to the PCE from the Minister of Conservation, 8 July 2013.
- 24 Local Government and Environment Committee, *"Game Animal Council Bill"*, 2012, p.7.
- 25 Biosecurity Law Reform Act 2012, s89. This also made the AHD subject to the Ombudsmen Act 1975.
- 26 Letter to the PCE from the Acting Chief Executive, 10 June 2013.
- 27 Letter to the PCE from the Minister of Conservation, 1 November 2012.
- 28 Letter to the PCE from the Minister of Conservation, 1 November 2012.



- 29 Local Government and Environment Committee, *"Report on the Parliamentary Commissioner for the Environment on Evaluating the use of 1080: Predators, poisons, and silent forests"*, 2011, p.6.
- 30 Letter to the PCE from the Minister of Conservation, 8 July 2013
- 31 Possums, rats and stoats are not major problems everywhere on conservation land. For instance, these pests will be fewer and do less damage in mountainous areas, and stoats are (fortunately) not present on Stewart Island. But these three pests collectively do enormous damage to plants, birds and other animals on the great majority of conservation land.
- 32 Pers comm., Department of Conservation, 6 December 2012. The amount allocated to all animal pest control in the 2012/13 year was \$18 million.
- 33 For a full list of research on 1080 and its alternatives, see Environmental Protection Authority, *"Annual report on the aerial use of 1080 for the year ended 31 December 2011"*, 29 November 2012.
- 34 Pers comm., Animal Health Board, 11 March 2013.
- 35 For instance, sowing the bait in different ways (randomly or in strips or clusters) could reduce how much bait is needed and could mean that fixed-wing aircraft can be used in place of more expensive helicopters. See Animal Health Board, *"Annual research report 2011/12"*, pp. 20-21.
- 36 There is no formal agreement between the AHB and DOC regarding coordination. The forthcoming Pest Management National Plan of Action intended to clarify the roles and responsibilities of different agencies involved in pest management in New Zealand may provide a more formal approach for coordination between agencies. MAF Biosecurity New Zealand, *"Pest Management National Plan of Action"*, February 2011.
- 37 Advice to the New Zealand Conservation Authority, *"Implications for DOC and conservation if/when the AHB achieves its goal of eradicating TB from NZ"*, 4 April 2013.
- 38 Waikato Regional Council, *"Proposed Waikato Regional Pest Management Plan 2013-2023"*, p. 26.