

ENVIRONMENTAL RISK MANAGEMENT AUTHORITY

**ERMA**  
*New Zealand*



NGĀ KAIWHAKATŪPATO WHAKARARU TAIAO

ENVIRONMENTAL RISK MANAGEMENT AUTHORITY

# ANNUAL REPORT ON THE AERIAL USE OF 1080

**For the year ended 31 December, 2007**

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## | SUMMARY

This is the first Annual Report on the Aerial Use of 1080, covering activities to 31 December, 2007. It reports on the progress of the 1080 watch list, research developments and best practice guidance.

The requirement for aerial 1080 operators to report on operations did not come into effect until 1 January 2008. This means there were no reports received in the period of this annual report.

However, post-operational reports are being progressively posted on the ERMA New Zealand website, [www.ermanz.govt.nz/1080/](http://www.ermanz.govt.nz/1080/), as they come to hand.

The implementation of the watch list is well underway and ERMA New Zealand staff are collecting information on 1080 operations – including complaints, incidents and other activities associated with the use of 1080 in New Zealand. This information is being combined with post-operational reports submitted by operators, and is also being posted on the website.

It is encouraging to note that several of the research recommendations from the Authority's August 2007 Decision on 1080 (see Box 1) are already being implemented. These include three completed projects looking at alternatives to 1080 and a further six ongoing projects.

There have also been more than 10 research projects examining ways of improving the use of 1080.

ERMA New Zealand has also developed a Communications Guideline for Aerial 1080 Operations, which is being published and distributed at the same time as this report.

## | BACKGROUND

The Environmental Risk Management Authority completed a reassessment of 1080 for use in pest control in August 2007. After careful consideration, it concluded that the benefits of using 1080 outweighed the adverse effects, and it released its decision to allow the continued use of 1080, with additional controls. It also made recommendations for the development of "best practice" guidelines, and for further research.

In reaching its decision, the Authority was mindful that the use of 1080 was a polarising issue about which many New Zealanders had deeply felt concerns. It recognised the importance of engagement through better communication and consultation with the public, local communities, Māori and special interest groups; and made a commitment to a new management regime for 1080 operations to address an urgent need for further improvements in the way this vertebrate toxic agent is used.

Progress is detailed in this annual report.

**BOX 1: THE 1080 REASSESSMENT DECISION**

In February 2002, the Department of Conservation (DoC) and the Animal Health Board (AHB) made an application to the Authority for a decision on whether there were grounds for a reassessment of 1080 and the substances containing it. The Authority decided in March 2002 that there were grounds for a reassessment, namely:

- the large increase in the amount of 1080 being used and planned for use;
- new information relating to the effects of 1080 since it was first registered in 1964; and
- considerable public concern about the use of 1080.

In October 2006, DoC and the AHB submitted a joint application for the reassessment of 1080.

The public was invited to make submissions on the application and a number of public hearings were held throughout the country. An evaluation of the submissions and the scientific evidence provided by both applicants and submitters was prepared by ERMA New Zealand staff. The Authority considered the report and the evidence presented at the hearings and issued its decision on the reassessment (the 1080 Decision).

The Authority decided to allow the continued use of 1080 for ground and aerial operations. The controls that previously existed were strengthened and new controls on aerial application were added because of the higher levels of risk involved.

The additional controls are part of a tighter management regime imposed by the Authority for aerial drops of 1080. The new regime consists of four main elements:

1. A watch list requiring reports on aerial 1080 operations (to include information on consultation, incidents, and the results of any post-operational monitoring) to be provided to the Authority to enable active monitoring of all 1080 aerial operations.
2. Strengthened controls to further mitigate the risks involved in 1080 aerial drops.
3. Application of best practice in relation to pre-operation planning, consultation and notification as well as the management of 1080 aerial operations.
4. Further research into alternatives to 1080 for pest control and, where there remains a lack of knowledge and a degree of public concern, about the effects of 1080.

Additional information about the Authority's decision can be found in *The Reassessment of 1080: An Informal Guide to the August 2007 Decision of the Environmental Risk Management Authority*, available on our website, <http://www.ermanz.govt.nz/news-events/1080/ERMA%201080%20Reassessment%20FINAL.pdf>.

## | INTRODUCTION

This report includes information on the following:

- reports of incidents from the public and through media monitoring;
- implementation of the Authority's research recommendations; and
- implementation of the Authority's best practice recommendations.

There were no post-operational reports required for this reporting period. However, information gathered on operations will be shared with the public via the ERMA New Zealand 1080 webpage, [www.ermanz.govt.nz/1080/](http://www.ermanz.govt.nz/1080/) and will be used to inform any future reassessment of 1080 by the Authority.

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### Information from post-operational reports

The requirements for post-operational reporting are set out in the Decision. ERMA New Zealand has been working with industry on a standardised format for reporting to ensure that the information required is submitted.

This requires 1080 operational managers to submit the following:

- information about the management of the operation, including why the operation happened, who paid for the operation and who carried out the operation;
- the location and size of the operation;
- information about statutory authorisation of the operation;
- a timeline overview of who was consulted and how they were consulted during the pre-operational consultation, and the outcomes of that consultation;
- an overview of any incidents and complaints related to the operation and the actions that resulted from those incidents and complaints;
- information about how the areas were treated, when they were treated and with what they were treated;
- an assessment of the outcomes of the operation;
- a map of the operational area;
- copies of water sampling reports, if these were required for the operation; and
- copies of any applicable species monitoring report(s).

Post-operational reports received after this reporting period will be posted on the ERMA New Zealand website, at [www.ermanz.govt.nz/1080/](http://www.ermanz.govt.nz/1080/) as they come to hand.

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### Complaints, incidents and other activities

ERMA New Zealand is advised of complaints, incidents and activities associated with 1080 use in three ways:

- The public registering their concerns. A member of the public contacts ERMA New Zealand to express concerns about particular 1080 operations or related practices.
- Incident reporting. An operator or agency contacts ERMA New Zealand to express concerns about particular 1080 operations or related practices.
- Media monitoring. We learn through our media monitoring service of incidents or concerns reported in the media.

ERMA New Zealand assesses this information to determine the required response. The matter may be passed on to an enforcement agency to be investigated. When a person asks for a complaint to be noted (rather than for action to be taken) this information is filed against the operation in question for future reference.

Incidents related to *specific operations* will be tracked and are expected to be reported in post-operational reports. A summary will be included in each year's annual report, starting in 2010.

Information on *general incidents* related to 1080 use or those that are for specific operations that occurred before 1 January 2008 (before the timeframe for inclusion in post-operational reports) is provided in Table 1 below.

**Table 1.**

DATE	REGION/ OPERATION	COMPLAINT TYPE/ DESCRIPTION	ACTION	OUTCOME
November 2007	Turangi	<b>Vehicle accident:</b> <i>Truck containing a container of 1080 lost its load on a public highway as a result of a traffic accident.</i>	Investigated by Police Commercial Vehicle Investigation Unit.	Container recovered undamaged. Driver found to be at fault; prosecuted for traffic offences and fined.
November 2007	Rotoaria Operation	<b>Stock losses:</b> <i>Horse deaths as a result of 1080 application in paddock.</i>	Independent investigation commissioned by Environment Waikato.	Horse deaths attributed to miscommunication by several parties, including operator. Operator cautioned on communication expectations for future operations.
November 2007	Rotoaria Operation	<b>Stock losses:</b> <i>Sheep deaths.</i>	Independent investigation commissioned by Environment Waikato.	Sheep deaths attributed to 1080 poisoning as a result of sabotage by unknown third party. Referred to police.
November 2007	Rotoaria Operation	<b>Alleged drinking water contamination:</b> <i>1080 allegedly added to drinking water.</i>	Independent investigation commissioned by Environment Waikato.	Determined to be unfounded; testing found no contamination.

## | BEST PRACTICE GUIDANCE

In its decision on 1080, the Authority acknowledged a need for further improvement in the way 1080 is used, and recommended that management practices around aerial drops of 1080 be standardised around best practice to ensure consistency.

Areas identified for the development of best practice guidance included:

1. Communication and consultation.
2. Management of aerial 1080 operations.

In 2008, ERMA New Zealand met with industry representatives to discuss the development and implementation of best practice guidelines. These guidelines will help operators to meet or exceed all mandatory controls. The guidelines will also help communities and concerned parties identify whether an operator's practices meet the expected standards.

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### **Communication and consultation**

ERMA New Zealand has taken the lead in developing standards for communication using the Department of Conservation's (DoC) Standard Operating Procedures for Consultation and Notification as its guide.

Modifications were made to reflect feedback from the consultation process and the resulting guideline has been published. <http://ermanız.govt.nz/resources/publications/1080/commsguideline.pdf>

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### **Management of aerial 1080 operations**

Guidance on the management of aerial 1080 operations will include information on signage, bait preparation and distribution, as well as other parts of the life-cycle of an aerial 1080 operation.

Current guidance on the management of 1080 operations is found in a diverse range of documents (Standard Operating Procedures (SOPs), guides and codes), which vary in quality and relevance to current legislation and practices.

The National Possum Control Agencies (NPCA) are leading a project where existing industry SOPs and guidelines are being reviewed in order to develop industry-wide guidelines for the management of 1080 operations. This project is in an early stage and should progress in 2009.

## | RESEARCH

During the reassessment, ERMA New Zealand identified several areas that would benefit from additional research. It recommended that the agencies involved in pest control undertake further research in the following areas:

- alternatives to 1080 for pest control;
- improvements to the use of 1080;
- stability of 1080 in stored environmental samples;
- OECD Test 309: Water Biodegradation;
- OECD Test 307: Aerobic and Anaerobic Transformation in Soil; and
- the effects of 1080 on Rongoa Māori.

In September 2007, the Authority wrote to the then Acting Environment Minister stressing the importance of more focussed and better-funded research into the adverse effects and alternative methods of pest control. It sought Government support for the development of a research programme to ensure continued public confidence in the use of 1080. This was met with a positive response from the Government.

The research summarised in this section occurred or concluded after the research provided in 2007 as part of the 1080 reassessment and represents the latest information at the time of publication.

Research into alternatives to 1080 is summarised in Table 2; into improvements to the use of 1080 in Table 3; and on the effects of 1080 on Rongoa Māori in Table 4.

Research into the stability of 1080 in stored environmental samples has been questioned by the Animal Health Board (AHB) and Department of Conservation (DoC), as the results would not be easily applicable to other studies where stored samples are analysed for 1080. Instead, Landcare Research has established quality assurance measures to reduce the risk of storage having an effect on samples.

A research project on 1080 transformation in soil (OECD Test 307) has been commissioned by the AHB and DoC.

The AHB proposes to undertake modelling to determine the levels of 1080 that may get into drinking water supplies from an aerial drop, and to determine if the Tolerable Daily Intake could be exceeded and (if so) for how long. A research proposal is currently being assessed for this project. The AHB considers that to assess risk, this research is more relevant than studies on water biodegradation, as the effects of dilution far outweigh any biodegradation effects.



**Table 2. Research into alternatives to the use of 1080 for pest control**

ORGANISATION(S)	RESEARCH	DESCRIPTION	STATUS	OUTCOMES
AHB/FRST	Extending the use of cyanide	Research towards the development of encapsulated cyanide baits for control of wallabies, ferrets and feral pigs.	<b>Completed.</b> Trials have shown the toxin to be effective against the target pests whilst being humane.	This project is intended to progress towards field trials.
AHB	Development of zinc phosphide paste bait for possums	Research towards the development of a microencapsulated zinc phosphide bait.	<b>Completed.</b> Zinc phosphide is seen as a potential alternative for 1080 in some situations as the risks to dogs of secondary poisoning are extremely low.	Applications have been filed for approval for the use of zinc phosphide with ERMA New Zealand and the New Zealand Food Safety Authority.
DoC	Development of a new toxin, para-aminopropiophenone (PAPP)	Research towards the development and testing of PAPP as an alternative to 1080 for control of feral cats and stoats.	<b>Completed.</b>	Dossiers on PAPP have been prepared for assessment by ERMA New Zealand and the New Zealand Food Safety Authority.
AHB	Cholecalciferol and synergists	Research into cholecalciferol showed that the addition of a synergist could significantly enhance the effectiveness of this toxin.	<b>Ongoing.</b> Research will continue into 2008/09.	N/A
AHB	New "C+C" bait	A new toxin that has low primary and secondary poisoning risks is being developed.	<b>Ongoing.</b> Research into chemistry and risk to birds will continue into 2008/09.	N/A

ORGANISATION(S)	RESEARCH	DESCRIPTION	STATUS	OUTCOMES
AHB	Investigation of feasibility of cyanide and cholecalciferol as an alternative to aerial 1080	The regulatory hurdles to aerial application of cyanide or cholecalciferol were assessed.  Field trials (using non-toxic baits) were undertaken in 2007/08 to determine the optimal bait size/type and sowing pattern/rate for cholecalciferol baits.	<b>Ongoing.</b>	This study indicated that the successful registration of cyanide for aerial use would be unlikely. However, aerial application of cholecalciferol may be worth considering.
DoC	Cholecalciferol	Trials have been carried out with manufacturers using cholecalciferol on rodents to extend the use of Feracol to possums and rats.	<b>Ongoing.</b>	N/A
AHB/FRST	New possum-specific toxins	Research into the development of a "possum-specific toxin" has identified a mechanism in the possum gut responsible for switching on and off secretion that is unique. A compound that could activate this mechanism could potentially result in a bait that could specifically target possums without affecting non-target species.	<b>Ongoing.</b>	The focus of research in the 2007/08 year was on screening compounds that may be able to activate this mechanism.
DoC	Self re-setting possum kill trap	DoC is funding the development of a self re-setting possum kill trap.	<b>Ongoing.</b>	N/A

**Table 3. Research into improvements to the use of 1080**

ORGANISATION	RESEARCH	DESCRIPTION	STATUS	OUTCOMES
AHB	Local elimination project	Research into "elimination" of possums from an area through: maximising initial (aerial) control; mapping survivors and eliminating them; protecting the perimeters of the control area from reinvasion.	<b>Ongoing.</b> In the 2007/08 year period the research focussed on how to achieve good initial control. It investigated pre-feeding, sowing rate and sowing pattern as the main factors.	Conclusions from the research included that pre-feeding is important, especially in areas where rats may compete for baits and/or forested areas. This is due to the need to "teach" possums to come to the ground to search for food. By using "trickle sowing", baits may be applied at lower sowing rates.
AHB	Molesworth project	Research in a high country environment to assess if the amount of 1080 applied could be lowered by specifically targeting "possum habitat".	<b>Completed.</b>	The outcome was a model that could be used to map where to target possum control, based on habitat type and altitude. This approach may reduce the size of treatment areas in the high country by as much as 80%. Further operational trials will be required to validate the findings.  Findings included: that generally the higher in altitude the less possums there are; and that particular habitat types were more likely to harbour possums than others.
DoC	Operation Ark	DoC has been investigating how to use 1080 to achieve greatest biodiversity benefit. This includes research to determine how to use 1080 effectively to control rats in a beech mast year and determining whether stoat trapping is necessary every year to protect threatened bird species.	<b>Ongoing.</b>	N/A

ORGANISATION	RESEARCH	DESCRIPTION	STATUS	OUTCOMES
DoC	Optimising 1080	A DoC research project looking at the use of aerial 1080 operations to control both possums and rats. This involves field trials to assess the role of pre-feeding in reducing the amount of 1080 applied whilst maintaining a high kill rate of target pests.	<b>Ongoing.</b>	N/A
DoC/AHB	Kea by-kill study	Research by DoC and AHB into the non-target effects of 1080 on kea.	<b>Ongoing.</b>	An initial study was carried out following the fate of kea with radio transmitters. Initial results showed that all of the monitored kea survived two operations. In the Franz Joseph Glacier operation, six kea (of seventeen monitored) were poisoned. A subsequent study is planned to establish the level of risk to New Zealand kea population from 1080 operations and options for risk mitigation. This monitoring is part of a long-term study so any substantive update will not be available for several years.
DoC	Optimising possum control	Research into the effects of using different rules for initiating possum control on kamahi and other canopy populations including cost/benefit analyses.	<b>Ongoing.</b>	DoC is using results of the research as they come to hand to develop pest management models for managers to use to determine the consequences of varying possum control intervals.

ORGANISATION	RESEARCH	DESCRIPTION	STATUS	OUTCOMES
FRST	Multi-species control from aerial 1080 operations	Investigation into the sequence of events of multi-species pest control at one site. This research programme is designed to deliver better solutions for reducing the impacts of small mammal pests (possums, rats, mice and stoats) on the New Zealand mainland. The overall aims of the three projects are: to predict what species of pests should be controlled and when; to predict how control can be most efficiently and effectively targeted in time and space; and to develop new ways of using current tools to deliver control most cheaply and reliably.	<b>Ongoing.</b>	N/A
DoC	Meta-analysis of tree survival in relation to possum control	Monitoring of the canopy condition of trees at sites where possum control occurs at five- to seven-year intervals is being compared with the canopy condition of trees at sites where no possum control is done. The objective is to determine if infrequent possum control improves the resilience of forests. Analysis of available data will help estimate the size of the effects that possums have on canopy condition.	<b>Ongoing.</b>	N/A

**Table 4. Research on the effects of 1080 on Rongoa Māori**

ORGANISATION	RESEARCH	DESCRIPTION	STATUS	OUTCOMES
AHB	Studies on watercress and puha	A study to look at 1080 uptake in watercress and puha.	<b>Ongoing.</b>	N/A
AHB	Development of a database on the impacts of 1080 on taonga species	In the 2006/07 year, the AHB contracted researchers to develop a database on the impacts of 1080 to native species. The researchers reviewed relevant available publications/studies in collaboration with Māori to ensure that they were satisfied with the way the research was undertaken before adding them to the database.	<b>Completed.</b>	<p>Communication of the results of the reviewed information and provision of education on how to access and use the database.</p> <p>This was done through a number of hui held throughout the country. This project was continued in the 2007/08 year, with the scope of the database being expanded and new avenues of communication being pursued.</p> <p>The database can be found at: <a href="http://campus.lincoln.ac.nz/1080">http://campus.lincoln.ac.nz/1080</a>.</p>

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