

**AUCKLAND ZOO**

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# **POSITION STATEMENT**

**Supporting the use of 1080 to control introduced predators**



OUR VISION

A future where people *value* wildlife  
and species are safe from extinction.



OUR MISSION

To bring people together *to*  
*build a future for wildlife.*

# The issue.

The toxin known as 1080 (sodium fluoroacetate) is used by Regional Councils and Department of Conservation (DOC) to control a range of introduced predators to protect our native wildlife and their ecosystems. Despite strict controls on its use, and hundreds of published reports and peer-reviewed scientific articles demonstrating the benefits of its use to native wildlife and New Zealand agriculture, there is vocal opposition to its use.

# The scope.

This Auckland Zoo position statement covers both aerial and ground application of 1080 for the control of introduced predators to help restore and ensure a future for Aotearoa's native wildlife and their ecosystems.

The area treated with aerially distributed 1080 for predator control has increased significantly since 2013 (EPA, 2017), as has opposition to its use (Russell, 2014). Some people opposed to the use of 1080 have put forward misleading claims as to the danger 1080 poses to human health and native wildlife (Hansford, 2016) in support of their arguments to reduce or eliminate its use in New Zealand.

As an organisation whose mission is to bring people together to build a future for wildlife, Auckland Zoo values a scientific evidence-based approach to decision making, and is uniquely placed to engage with our visitors and present the evidence regarding the value of using 1080 to protect Aotearoa's native wildlife.

# Auckland Zoo position statement. **Auckland Zoo endorses the 2011 report of the Parliamentary Commissioner for the Environment.**

The Parliamentary Commissioner for the Environment provides independent advice to Members of Parliament regarding matters that impact the environment.

In 2011, following calls from some Members of Parliament for a moratorium on the use of 1080, the then Parliamentary Commissioner for the Environment, Dr Jan Wright, conducted a detailed review into its use in New Zealand – with a focus on its use on public conservation land to protect biodiversity (Wright, 2011).

In her report, Dr Wright concluded that “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”.

Dr Wright also states in the report that while the investigation was taking place she had mentioned it to a friend who responded “*That will be very difficult; there are such good arguments on both sides*”. She continues “What I have discovered in this investigation is that this is not so. While I respect the sincerity of those who oppose 1080, without it our ability to protect many of our native plants and animals would be lost”.

Until such time that a more effective method of controlling introduced predators is found Auckland Zoo also supports the increased use of 1080 for introduced predator control – including the Department of Conservation’s Tiakina Nga Manu predator control programme.

**“While I respect the sincerity of those who oppose 1080, without it our ability to protect many of our native plants and animals would be lost”.**

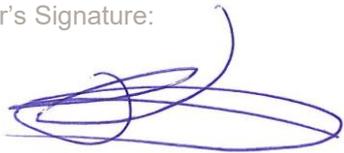
**Dr Jan Wright, former Parliamentary Commissioner for the Environment**

# To support our conservation partners who carry out 1080 operations throughout New Zealand, **Auckland Zoo** will:

- Engage with Zoo visitors to explain why the benefits of 1080 to the survival of native wildlife, far outweigh the costs.
- Prepare and distribute material, including answers to frequently asked questions, to enable Zoo staff and volunteers to confidently respond to public enquiries regarding 1080 – or to direct such visitors to staff or material that can answer their questions.
- Incorporate messaging regarding 1080 into new interpretive/visitor engagement material as appropriate and will consider establishing campaigns or public programmes that articulate the Zoo's position on the subject.
- Make submissions supporting 1080 operations that follow best practice and comply with all relevant regulations will be made as opportunities arise.
- Collaborate with conservation partners, including the Department of Conservation as part of a united approach to engage the public about the benefits of introduced predator control to ensure a future for our wildlife and wild places.

Dated: 13 November 2019

Director's Signature:



Kevin Buley, Director Auckland Zoo

# Supporting information:

## **New Zealand's unique conservation need for pest control**

About 80% of plants and 90-100% of our terrestrial native animal species are found only in New Zealand. New Zealand's plants and animals have evolved over the past 65 million years without the presence of any mammalian herbivores or predators, except three species of insectivorous bat (Innes et. al., 2010). As a result, our fauna and flora lack natural defences to the raft of browsing and predatory animals that have been introduced by humans over the past 800 years. During that time, more than 60 native vertebrate species have become extinct due, in large part, to the combined impact of habitat loss, hunting and predation by introduced mammals (Hitchmough et. al., 2016; O'Donnell et. al., 2017; Robertson et. al., 2017).

Despite ongoing work by a wide range of government and non-government agencies and institutions (including Auckland Zoo), as well as the millions of dollars spent by government, businesses and philanthropists and thousands of hours provided by volunteers to protect native wildlife, many New Zealand native species continue to decline ((Hitchmough et. al., 2016; O'Donnell et. al., 2017; Robertson et. al., 2017).

## **The extent of New Zealand's conservation crisis**

Over 3000 native species are currently classified as threatened according to the Department of Conservation's threat assessments (see [www.nzctcs.org.nz](http://www.nzctcs.org.nz)). In a global assessment of environmental impacts, New Zealand ranked worst of 179 countries in terms of the proportion of native terrestrial species considered threatened (according to the IUCN Red List and Birdlife data) (Bradshaw et. al 2010).

## **The impact of introduced predators on native wildlife**

Scientists from Manaaki Whenua (Landcare Research) have calculated that approximately 26 million eggs or chicks of native birds are killed each year by rats, stoats and possums in native forests (Pest Control Education Trust, 2018). This does not include the additional losses of adult birds or native birds in landscapes other than native forest. Nor does it include the loss of other native species such as bats, reptiles and invertebrates or the damage done to native plants by possums and rats.

**This is the context in which  
1080 is used to control  
introduced predators.**

# Supporting information:

## **Alternative methods of pest control**

The Parliamentary Commissioner for the Environment's report evaluated 1080 and alternative pest control methods using the following criteria:

Assessing effectiveness:

1. Can the method decrease populations of possums, rats and stoats?
2. Can the method increase populations of native species?
3. Can the method knock down rapidly irrupting populations of pests?
4. Can the method be used on a large scale in remote areas?
5. Is the method sufficiently cost-effective?

Assessing human safety and other concerns:

1. Does the method leave residues in the environment?
2. Can by-kill from the method be minimised?
3. Does the method endanger people?
4. Does the method kill humanely?

While not all pest control methods are perfect, 1080 was assessed as better than any other current technology (e.g. trapping and other toxins) for controlling multiple pest species in rugged or inaccessible areas. It is an essential tool for protecting native wildlife.

In terms of addressing human health and other concerns, the report states that "Overall, the presence of 1080 baits in the environment poses very little risk to people. This low risk is due to a combination of the properties of 1080 and the way it is managed. Very small amounts of 1080 are applied in pest control operations. Any residues remain in the environment for a short length of time. The series of controls on the use of 1080 virtually eliminate the chance of the public accidentally coming into contact with 1080 baits or residues".

# Supporting information:

The section of the report dealing with these concerns concludes that “1080:

- leaves residues for very short times in the environment, with one exception – it can linger in carcasses of poisoned animals under very cold and dry conditions for some months
- can still cause by-kill of both native and introduced animals, and although techniques are increasingly being used to reduce this risk, there is no way to protect uncontrolled dogs
- does not endanger people provided it is used as prescribed in regulations
- kills different animals in different ways, but is not the most inhumane pest control poison...”

Further, it notes that 1080 “is the most regulated pest control poison used in New Zealand”.

## Misinformation

1080 is one of a number of predator control methods used in New Zealand today. It is backed by decades of scientific research and evidence and is achieving significant positive results for our native wildlife where it is being used. Despite, this, a lot of inaccurate and misleading information from 1080 opponents is regularly circulated and aired in the public domain. These include:

### Risk of incidental poisoning

Mammals, especially dogs, are much more susceptible to 1080 poisoning than other animal groups (birds, reptiles, fish, amphibians and invertebrates) (Eason et. al, 2011). This is why New Zealand, which has no native land mammals, (apart from two species of bat - and the introduced predators targeted with 1080 are all mammals), uses more 1080 than any other country.

It is true that some birds, including threatened native species, are killed in some 1080 operations. However improved bait quality and coverage and declining sowing rates have reduced the potential risk of incidental poisoning (Velymen & Westbrooke, 2011).

# Supporting information:

Comprehensive monitoring of native bird species by various agencies has shown that the benefits to bird populations (in terms of relief from predation and competition with targeted introduced predators) far outweighs no 1080 predator control (Wright, 2011; Morriss et. al. 2016). Some concerns remain with kea, in which mortality has occurred in *some* operational contexts associated with the feeding of kea by humans (Kemp et al 2019). However, monitoring results of female kea show significant breeding success during the extended period of reduced predation that follows large-scale 1080 (Kemp et al 2018). Moreover, DOC is actively exploring ways to reduce human-kea interactions so that all kea enjoy the benefits of predator control without the propensity to consume baits directly.

In addition, as a result of continuous research, far less poison is used per hectare these days compared with forty years ago. This is due to changes in distribution methods (including the formulation of the baits themselves (cereal based vs chopped carrot) and more targeted distribution enabled by the use of helicopters using precision GPS systems (Wright, 2011). As a result, current sowing rates, of between 1.5 - 3kg/ha equates to just 3 - 6 bait pellets (each containing 0.15% toxin) in an area the size of a tennis court (Wright, 2011).

## 1080 in water

As a salt, 1080 dissolves in water and is diluted very quickly. Out of more than 2500 tests taken over 21 years from waterways exposed to 1080, only four tests from municipal water supplies returned any traces of the toxin at all, and all four were well below the permissible levels set by the Ministry of Health (Wright, 2011; Eason et. al., 2011).

## **For those wishing more detail we highly recommend reading the following:**

- Wright J (New Zealand Parliamentary Commissioner for the Environment) (2011). *Evaluating the use of 1080: predators, poisons and silent forests*. Wellington, New Zealand, Office of the Parliamentary Commissioner for the Environment. 85 p.
- Hansford, Dave. (2016) *Protecting Paradise: 1080 and the Fight to Save New Zealand's Wildlife*. Potton & Burton.

# Further reading:

## Online:

<http://www.1080facts.co.nz/>

## References:

Bradshaw, C. J., Giam, X., & Sodhi, N. S. (2010). Evaluating the relative environmental impact of countries. *PLoS One*, 5(5), e10440.

Hitchmough, R.; Barr, B.; Lettink, M.; Monks, J.; Reardon, J.; Tocher, M.; van Winkel, D.; Rolfe, J. 2016: Conservation status of New Zealand reptiles, 2015. New Zealand Threat Classification Series 17. Department of Conservation, Wellington. 14 p.

Eason, Charles, Aroha Miller, Shaun Ogilvie, and Alastair Fairweather. "An updated review of the toxicology and ecotoxicology of sodium fluoroacetate (1080) in relation to its use as a pest control tool in New Zealand." *New Zealand Journal of Ecology* (2011): 1-20.

EPA. (2017). Annual Report on the aerial use of 1080: For the year ended 31 December 2017 <https://www.epa.govt.nz/assets/RecordsAPI/072f42182e/EPA-annual-report-on-aerial-1080-operations-2017.pdf>

Hansford, Dave. (2016) *Protecting Paradise: 1080 and the Fight to Save New Zealand's Wildlife*. Potton & Burton.

Innes, J., Kelly, D., Overton, J. M., & Gillies, C. (2010). Predation and other factors currently limiting New Zealand forest birds. *New Zealand Journal of Ecology*, 34(1), 86

Kemp JR, Hunter CM, Mosen C, van Klink P, Elliott GP 2019. Kea survival during aerial poisoning for rat and possum control. *New Zealand Journal of Ecology* 43: 3351.

Kemp JR, Mosen C, Elliott GP, Hunter CM 2018. The effects of the aerial application of 1080 to control pest mammals on kea reproductive success. *New Zealand Journal of Ecology* 42: 158–168.

Morriss, G. A., Nugent, G., & Whitford, J. (2016). Dead birds found after aerial poisoning operations targeting small mammal pests in New Zealand 2003–14. *New Zealand Journal of Ecology*, 40(3), 361-370.

O'Donnell, C.F.J.; Borkin, K.M.; Christie, J.E.; Lloyd, B.; Parsons, S.; Hitchmough, R.A. 2018: Conservation status of New Zealand bats, 2017. New Zealand Threat Classification Series 21. Department of Conservation, Wellington. 4 p

New Zealand Threat Classification Database, 2018: NZTCS <https://www.nztns.org.nz/#/home>

Pest Control Education Trust, 2018: *1080: the facts* <http://www.1080facts.co.nz/the-victims.html>

Robertson, H.A.; Baird, K.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; McArthur, N.; O'Donnell, C.F.J.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2017: Conservation status of New Zealand birds, 2016. New Zealand Threat Classification Series 19. Department of Conservation, Wellington. 23 p.

JC Russell (2014). A comparison of attitudes towards introduced wildlife in New Zealand in 1994 and 2012, *Journal of the Royal Society of New Zealand*, 44:4, 136-151

Veltman, C. J., & Westbrooke, I. M. (2011). Forest bird mortality and baiting practices in New Zealand aerial 1080 operations from 1986 to 2009. *New Zealand Journal of Ecology*, 21-29

Wright J (New Zealand Parliamentary Commissioner for the Environment) 2011. Evaluating the use of 1080: predators, poisons and silent forests. Wellington, New Zealand, Office of the Parliamentary Commissioner for the Environment. 85 p.

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