



27 November 2014

Official Information Request No. 9000132292
(Please quote this in any correspondence)

[REDACTED]

[REDACTED]

Dear [REDACTED]

Local Government Official Information and Meetings Act 1987

Re: 1080 proposal for Hunua Ranges

I refer to your email, which we received on 30 October 2014, requesting information about the proposed use of 1080 in the Hunua Ranges.

In considering a change to the pest control methodology in the Hunua Ranges regional parkland Auckland Council has drawn on information from a wide range of sources including:

- scientific publications
- the advice and support of technical experts throughout the country
- attendance and learnings from technical industry related conferences (Ecological Society of NZ, NZBI)
- national biosecurity and biodiversity working groups (where best practice is discussed)
- participation in Species Recovery Groups (including for kokako)
- monitoring programmes
- field observations and feedback from adjoining landowners
- in-house staff expertise and experience in species protection and pest management.

Responses to the specific requests for information are provided below. All responses need to be considered in the context of all other ways in which information and conclusions have been made for which information is not necessarily held by Auckland Council.

At its meeting on 9 October 2014, Auckland Council's Regional Strategy and Policy Committee decided in favour of a proposal to manage pests in the Hunua Ranges using sodium fluoroacetate (1080).

Officers are now working on the operational plan, which includes seeking approval from the Medical Officer of Health, obtaining independent peer reviews, and setting down a timeframe for the operation. The operation will be carried out in mid-2015.

Council will continue to engage with iwi, local residents and landowners, key stakeholders and interest groups as it develops this plan.

Request 1: Please provide the wild animal population studies and scientific evidence that show increased " *pest numbers and the risk to endangered flora and fauna and indigenous species*" that is specifically related to the Hunua Ranges.

Chapter 2 of the PCE report provides information on the threat posed by introduced pests to New Zealand's native biodiversity including references to relevant technical reports.

<http://www.pce.parliament.nz/publications/all-publications/evaluating-the-use-of-1080-predators-poisons-and-silent-forests>

Parliamentary Commissioner for the Environment, Evaluating the use of 1080: Predators, poisons and silent forests.

Additional references specific to the management of kokako and the Hunua Ranges considered include (and are publically available):

- Basse, B., Flux, I. and Innes, J. 2003. Recovery and maintenance of the North Island kokako (*Callaeas cinerea wilsoni*) populations through pulsed pest control. *Biological Conservation* 50: 143-198
- Innes, J.; Hay, R.; Flux, I.; Bradfield, P.; Speed, H.; Jansen, P. 1999. Successful recovery of North Island Kokako *Callaeas cinerea wilsoni* populations by adaptive management. *Biological Conservation* 87: 201-214
- Innes, J.; Kelly D.; Overton J.; Gillies C. 2010. Predation and other factors currently limiting New Zealand forest birds. *New Zealand Journal of Ecology* 34: 86-114.
- A.R.E. Sinclair, John Innes, and Philip Bradfield 2006. Making endangered species safe: the case of the kokako of North Island, New Zealand.
<http://www.nzes.org.nz/nzje>
- St Paul, J.W. and McKenzie, H.R. 1974. The kokako in the Hunua Range. *Notornis* 21, 205-218.
- Baber, M, Brejaart, R, Babbitt, K, Lovegrove, T, Ussher, G. Response of non-target native birds to mammalian pest control for kokako (*Callaeas cinerea*) in the Hunua Ranges, New Zealand. *Notornis and Birds New Zealand*
- North Island Kokako Recovery Plan 1999-2009, Threatened Species Recovery Plan No. 30, Department of Conservation.
- Innes, J. and Hay, R. 1995. The nesting of the north island kokako (*callaeas cinerea wilsoni*) - review of accounts from 1880 to 1989. *Notornis* 42 79-93

Request 2 – [Revised]. “Why did ARC managers not have all the historical possum, stoat and rat monitoring data at hand when considering a major change in wild animal control policy?”

Monitoring data and field observations were considered. As explained in our previous letter, the historical monitoring data is a large amount of information that is not held in a single database and which cannot be supplied without incurring significant staff time to collate it.

Request 3: Has ARC done any work to find out if the possum and rat populations, in the Hunua Ranges, are bait-averse/poison-shy? If the answer is yes, please provide copies of the bait-aversion/poison-shyness studies.

Auckland Council has not completed any work on bait-aversion or poison-shyness in possum and rat populations specific to the Hunua Ranges, however there is plenty of data on bait shyness and efficacy that can be applied to the Hunua situation.

Request 4: Please provide details of all the information used during ARC's "careful consideration of the issues and options available", particularly, the information consulted when ground control was considered as an option.

Auckland Council considered numerous sources of information when considering a recommendation to change the methodology of pest control in the Hunua Ranges regional parklands. Reference information referred to is listed below (and are publically available):

- <http://www.epa.govt.nz/publications/1080-decision-document-with-amendments.pdf> Environmental Risk Management Authority, Decision Application for the Reassessment of a Hazardous Substance under Section 63 of the Hazardous Substances and New Organisms Act 1996, Name of Substance(s): Sodium Fluoroacetate (1080) and Formulated Substances Containing 1080, Application Number: HRE05002 August 2007, Amended August 2008.
- http://www.epa.govt.nz/Publications/Five_year_review_1080.pdf Environment Protection Authority, Five-year review of the aerial use of 1080, 2008-2012.)
- <http://www.pce.parliament.nz/publications/all-publications/evaluating-the-use-of-1080-predators-poisons-and-silent-forests> Parliamentary Commissioner for the Environment, Evaluating the use of 1080: Predators, poisons and silent forests. **Chapter 7 considers alternatives to 1080 including references.**
- http://www.landcareresearch.co.nz/data/assets/pdf_file/0010/42004/pros_cons_of_poisoning.pdf Possums The Pros and Cons of Different Poisons, Landcare Research.
- Eason, C. and Gooneratne, R. 1993. An evaluation of the risk to man of secondary poisoning with sodium monofluoroacetate (1080). *New Zealand Medical Journal* 106(949): 41.
- Powlesland, R.G., Knegtmans, J.W. and Styche, A. 1999. Impacts of aerial 1080 possum control operations on North Island robins and moreporks at Pureora in 1997 and 1998. *Science for Conservation* 133. Department of Conservation, Wellington.
- Broome, K.G., Fairweather, A.A.C. and Fisher, P. 2009. Sodium fluoroacetate. Version 1.13. Department of Conservation Pesticide Information Reviews series. Department of Conservation, Hamilton).
- Spurr, E. 2000. Impacts of possum control on non-target species. In: T.L. Montague (ed.). *The brushtail possum: biology, impact and management of an introduced marsupial*. Manaaki Whenua Press, Lincoln.
- Veltman, C.J. and Westbrooke, I.A. 2011. Forest bird mortality and baiting practices in New Zealand aerial 1080 operations from 1986 to 2009. *New Zealand Journal of Ecology* 35: 21-29.
- http://www.doc.govt.nz/publications/conservation/threats-and-impacts/animal-pests/the-useof-1080-for-pest-control/5-outcomes-of-1080-use/5_1-outcomes-for-bird-populations/
- <http://www.keaconservation.co.nz/kearesearchprojects/1080repellents.html>
- http://www.doc.govt.nz/publications/conservation/threats-and-impacts/animal-pests/the-useof-1080-for-pest-control/5-outcomes-of-1080-use/5_2-outcomes-for-other-native-species/
- Lyver, P. O. B., J. Ataria, K. Trought, and P. Fisher. 2005. Sodium fluoroacetate (1080) residues in long-fin eels *Anguilla dieffenbachii*, following exposure to contaminated water and food. *New Zealand Journal of Marine and Freshwater Research* 39:1234-1252.
- Suren, A and Bonnett, M. 2006. Consumption of baits containing sodium fluoroacetate (1080) by the NZ freshwater crayfish". *New Zealand Journal of Marine and Freshwater Research* 40, 169-178.
- Nugent, G. and Yockney, I. 2004. Fallow deer deaths during aerial 1080 poisoning of possums in the Blue Mountains, Otago, New Zealand. *New Zealand Journal of Zoology* 31: 185-192.

- Nugent, G., Fraser, K.W., Asher, G.W. and Tustin, K.G. 2001. Advances in New Zealand mammalogy 1990–2000: Deer. *Journal of the Royal Society of New Zealand* 31: 263-298.
- King, D.R., Kirkpatrick, W.E., Wong, D.H. and Kinnear, J.E. 1994. Degradation of 1080 in Australian Soils. In: A.A. Seawright and C.T. Eason (eds). *Proceedings of the Science Workshop in 1080*. Miscellaneous Series 28. The Royal Society of New Zealand, Wellington.
- Fisher, P. and Northcott, G. 2011. *Aerobic transformation of 1080 in soil*. Animal Health Board Project No. R-10695, Wellington.
- Wright, G.R.G., Booth, L.H., Morriss, G.A., Potts, M.D., Brown, L. and Eason, C.T. 2002. Assessing potential environmental contamination from compound 1080 (sodium monofluoroacetate) in bait dust during possum control operations. *New Zealand Journal of Agricultural Research* 45: 57-65.
- O'Halloran, K., Jones, D., Booth, L. and Fisher, P. 2005. Ecotoxicity of sodium monofluoroacetate (compound 1080) to soil organisms. *Environmental Toxicology and Chemistry* 24: 1211-1218.
- Eason C, Twigg L, & Temple W. (2007) *Consequences of slow 1080 breakdown in water in cold conditions*, p6.
- Suren, A. and P. Lambert (2006). "Do toxic baits containing sodium fluoroacetate (1080) affect fish and invertebrate communities when they fall into streams?" *New Zealand Journal of marine and freshwater research* 40(4): 531-546.
- http://www.landcareresearch.co.nz/services/laboratories/toxlab/lab_tests.asp
- Ministry of Health (2000). Drinking water standards for New Zealand 2000. [http://www.moh.govt.nz/moh.nsf/238fd5fb4fd051844c256669006aed57/70727db605b9f56a4c25696400802887/\\$FILE/drinking%20water.pdf](http://www.moh.govt.nz/moh.nsf/238fd5fb4fd051844c256669006aed57/70727db605b9f56a4c25696400802887/$FILE/drinking%20water.pdf)
- Eason, C. Temple W. 2008. Water sampling for sodium fluoroacetate (1080) - how much is enough?. *The NZWWA Journal* 32(36).
- Suren, A. and P. Lambert 2006. "Do toxic baits containing sodium fluoroacetate (1080) affect fish and invertebrate communities when they fall into streams?" *New Zealand Journal of Marine and Freshwater Research* 40(4): 531-546.
- Fairweather, A.A.C.; Broome, K.G.; Fisher, P. 2014. *Sodium Fluoroacetate Pesticide Information Review*. Version 2014/1. Unpublished report docdm-25427, Department of Conservation, Hamilton, NZ. 112p.
- http://www.landcareresearch.co.nz/_data/assets/pdf_file/0015/62502/Mandy_Barron_rapid_reinvasion.pdf
- <http://www.doc.govt.nz/conservation/restoration-projects/project-kaka-tararua-nature-recovery/> (and associated reports)
- Sweetapple, P.; Nugent, G. 2007. Ship rat demography and diet following possum control in a mixed podocarp-hardwood forest. *New Zealand Journal of Ecology* 31: 186–201.
- Sweetapple, P.; Nugent, G.; Poutu, N.; Horton, P. 2006. Effect of reduced possum density on rodent and stoat abundance in podocarp-hardwood forests. *DOC Research & Development Series* 231. Department of Conservation, Wellington.
- <http://www.1080facts.co.nz/> Federated Farmers and Forest & Bird joint initiative

Request 5: What scientific advice was considered that showed 3 yearly applications of aerial 1080, targeting rats during the winter, would be effective at permanently controlling rats for the protection of native birds and bats?

The decision to carry out pest control during late winter took into account a number of factors including susceptibility of pests to the toxin, park visitor usage and the breeding times for vulnerable bird species.

References detailing breeding times for native bird species present in the Hunua Ranges regional parklands are included in response to Question 1 above.

Additional references include (publically available):

- Vertebrate Pest Decision Support System – Landcare Research, March 2011
Possum Control – Aerial Application of 1080 cereal pellets.
- Kerry P. Brown and Stephen C. Urlich. Aerial 1080 Operations to Maximise Biodiversity Protection. Doc Research & Development Series 216.

It is also important to note that while this decision paves the way for an ongoing 1080-based programme, we are currently focussed on the initial (2015) programme and subsequent review of its success. This is underpinned by programme monitoring and best practice project evaluation and review, which will inform our ongoing approach.

Request 6: What scientific advice was considered that showed that 3 yearly applications of aerial 1080 would maintain rat numbers below 5% of the rat monitoring tunnels recording rats present?

Research shows that aerially applied 1080 is effective at significantly reducing rat numbers and that over time rat numbers increase as a result of reinvasion.

Ground-based rat control will continue in the kokako management areas during the intervening years if monitoring indicates it is required. A specific monitoring programme to assess re-invasion rates into the controlled areas will be carried out.

In addition to reference material referred to in other questions the following also apply (and are publically available):

- Basse, B., Flux, I. and Innes, J. 2003. Recovery and maintenance of the North Island kokako (*Callaeas cinerea wilsoni*) populations through pulsed pest control. *Biological Conservation* 50: 143-198
- Innes, J.; Hay, R.; Flux, I.; Bradfield, P.; Speed, H.; Jansen, P. 1999. Successful recovery of North Island Kokako *Callaeas cinerea wilsoni* populations by adaptive management. *Biological Conservation* 87: 201-214
- http://www.landcareresearch.co.nz/data/assets/pdf_file/0015/62502/Mandy_Barron_rapid_reinvasion.pdf
- <http://www.doc.govt.nz/conservation/restoration-projects/project-kaka-tararua-nature-recovery> (and associated reports)
- Kerry P. Brown and Stephen C. Urlich. Aerial 1080 Operations to Maximise Biodiversity Protection. Doc Research & Development Series 216.

Request 7: What scientific advice was considered that showed that stoats would be effectively controlled by 3 yearly applications of aerial 1080?

In recommending a change in pest control methodology the report noted there will be a reduction of stoats from aerially applied 1080 as a result of secondary poisoning however the primary target for a change in methodology is possums and rats.

Stoats currently are and will continue to be actively controlled in the existing kokako management areas using DOC200 traps deployed throughout these areas on an annual basis as monitoring indicates it is required.

Request 8: What scientific advice was considered when the decision to not employ contract trappers, on long term contracts, was made?

In addition to practical and financial factors that apply to this subject and were outlined in the 9 October agenda item (and Question 12), please refer to the scientific references provided under Question 4.

Additional references include (and are publically available):

- <http://www.landcareresearch.co.nz/publications/newsletters/kararehe-kino/kararehe-kino-issue-17/can-the-possum-fur-industry-contribute-to-possum-control>
- <http://www.doc.govt.nz/conservation/threats-and-impacts/animal-pests/methods-of-control/possum-fur-recovery-and-bounties/>
- Jamieson A., Hill L., Waipara N.W. and Craw, J (2012) Survey of Kauri Dieback in the Hunua Ranges and Environs. Auckland Council report

Request 9: Please provide scientific evidence that refutes the effectiveness of the ground control methods, that are working well elsewhere, detailed below.

The only result and cost effective methods for the permanent controlling of possums, stoats and rats is to:

(i) Employ contract possum trappers, on long term contracts, to keep the possums permanently below 5% RTC.

(ii) Set up permanent stoat trapping programs.

(iii) Use rat targeted bait stations, interspersed with traps, with more intensive rat trapping in more sensitive areas such as around individual kokako nesting sites.

(i) This was not considered. Reference material provided in Question 4 and 8 refers.

(ii) Stoats are currently and will continue to be trapped in the kokako management areas.

(iii) Bait stations targeting rats are currently used for the purpose of protecting kokako in the kokako management areas, and if required will continue in the intervening years between aerial control to protect the breeding time of these species.

Request 10: Please provide scientific evidence that winter applications of aerial 1080 will be effective at controlling rats during the spring/early summer.

Please refer to the response and references set out in the answer to Question 5.

Request 11: What stoat specific control methods is ARC going to use to control stoats?

As set out in Question 7 above, stoats will continue to be actively controlled in the kokako management areas using DOC200s.

Request 12: Were 10 year ground control contracts considered by ARC? If the answer was no, why were long term ground control contracts not considered by ARC?

No. Long-term ground control contracts were not considered for a range of reasons including minimising the risk of spreading kauri dieback disease, cost and the health and safety risks associated with safely covering areas of rugged terrain.

Request 13: Please provide a full cost breakdown that justifies ARC's claim that the total cost of an aerial 1080 operation is \$17/ha. These cost breakdowns should include all the indirect costs as well as the direct costs of an aerial 1080 operation.

Auckland Council relied on the Department of Conservation's fully costed and scoped options and advice on the national average cost for aerial 1080 operations as available in the following documents:

- <http://www.doc.govt.nz/conservation/restoration-projects/battle-for-our-birds-beech-mast-2014/1080-facts-and-figures/>
- <http://www.doc.govt.nz/conservation/threats-and-impacts/animal-pests/methods-of-control/1080-poison-for-pest-control/>
- <http://www.doc.govt.nz/Documents/conservation/threats-and-impacts/battle-for-our-birds/battle-for-our-birds-beech-mast-2014.pdf>

Request 14: Please provide the cost breakdowns to back the claim that it will cost \$1,419,000 to control possums, rats and stoats over 1,100 ha by ground control methods.

Paragraph 56 of the *Regional Strategy and Policy Committee Report* states:

"The total cost of a three year pest control programme targeting rats, possums and stoats using the current methodology within 6.5 per cent of the Hunua Ranges is \$1,419,000".

This is based on current average annual expenditure of \$473,000. The majority of this expenditure is for possum control which is undertaken using ground-based methods (cyanide in bait-bags).

Unlike the rat and stoat control programmes annual possum control is not carried out across an established bait station network but is rather targeted to sites of high possum density for the purpose of protecting the kokako management areas.

The current control programme costs are summarised below:

- Rat and stoat control costs (including monitoring) in the KMA is \$75,000pa. Rat control in KMA is currently undertaken by brodifacoum baits in bait stations, and stoat control undertaken using DOC200 traps lured with egg.
- Possum control undertaken in areas of the park where monitoring shows densities exceed the target RTC; the cost of monitoring was \$40,000 and the cost of control in 2013 was \$358,000.
- The current total costs for a pest control programme for possum, stoat and rat control in the controlled areas of the Hunua Ranges is \$473,000. Over a 3 year cycle this is \$1,419,000.

I trust that this information fulfils your request. If you have any further queries please contact me on 09 301 0101, quoting Official Information Request No. 9000132292.

Yours sincerely



James Stephens
Information Advisor
AKLC Electoral Office/Public Info Unit

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