



OIA 19-E-0153 DOC 5880154

3 April 2019

[REDACTED]
[REDACTED]

Dear [REDACTED]

Thank you for your Official Information Act request to the Department of Conservation, dated 6 March 2019.

You have asked a number of questions in response to our answers to your prior OIA request, 19-E-0071. Before dealing with each of those in turn below, we note the following.

In responding to a request for official information an agency is not required to form an opinion or create new information. Nor are they obliged to provide information that is already publicly available. We note that a number of your questions either seek, or would require us to form, an opinion to answer them. As we also indicate below, aspects of the information you seek are already publicly available. Up until this point we have sought to answer your questions as helpfully as we can, and while we appreciate that you may not agree with the substance of much of the information we have released to you, the Official Information Act is not intended to be used as a mechanism to debate the content of information following proper release.

Accordingly, beyond this response we do not propose to engage in any further comment or debate on matters that have already been responded to and in relation to which we have provided all relevant information held by the department. In taking this position we note that the scientific evidence in support of the use of 1080 in our pest control programmes is overwhelming and that it is not for us to disprove the mainstream consensus on the issue.

We will of course continue to respond to any legitimate request you make for official information and will assist you with that in accordance with the Act.

In view of this, your questions 1a, 2a, 3 and 5b have been transferred to the Environmental Protection Authority (EPA) under section 18 (g) (ii) of the OIA, as the information requested is more closely connected with their functions.

Your other questions and our responses are listed below:

1.b. What research has been carried out into the persistence of 1080 in the bones, liver or fat of sub-lethally poisoned animals?

All the literature the department holds on this research are in the public domain and available in scientific publications, which you can source for yourself. We are therefore entitled to refuse your request under 18(d) of the OIA. Nevertheless, for your information, examples of this literature include:

Eason, C.T.; Gooneratne, R.; Wright, G.; Pierce, R.; Frampton, C. 1993: The fate of sodium monofluoroacetate (1080) in water, mammals, and invertebrates. *Proceedings of the 46th New Zealand Plant Protection Conference*: 297–301.

Eason, C.T.; Gooneratne, R.; Fitzgerald, H.; Wright, G.; Frampton, C. 1994: Persistence of sodium monofluoroacetate in livestock animals and risk to humans. *Human and Experimental Toxicology* 13(2): 119–122.

Eason, C.T.; Wright, G.R.; Meikle, L.; Elder, P. 1996b: The persistence and secondary poisoning risks of sodium monofluoroacetate (1080), brodifacoum, and cholecalciferol in possums. Pp. 54–58 in Timm, R.M.; Crabb, A.C. (Eds): Seventeenth Vertebrate Pest Conference, University of California, California.

Gooneratne, S.R.; Eason, C.T.; Dickson, C.J.; Fitzgerald, H.; Wright, G. 1995: Persistence of sodium monofluoroacetate in rabbits and risk to non-target species. *Human & Experimental Toxicology* 14: 212–216.

Gooneratne, S.R.; Eason, C.T.; Milne, L.; Arthur, D.G.; Cook, C.; Wickstrom, M. 2008: Acute and long-term effects of exposure to sodium monofluoroacetate (1080) in sheep. *Onderstepoort Journal of Veterinary Research* 75: 127–139.

Hagan, E.C.; Ramsey, L.L.; Woodward, G. 1950: Absorption, distribution, and excretion of sodium monofluoroacetate (Compound 1080) in rats. *Journal of Pharmacology and Experimental Therapeutics* 99: 426–441.

Sykes, T.R.; Quastel, J.H.; Adam, M.J.; Ruth, T.J.; Nonjawa, A.A. 1987: The disposition and metabolism of fluorine-18 fluoroacetate in mice. *Biochemical Archives* 3(3): 317–324.

Tecele, B.; Casida J. 1989: Enzymatic defluorination and metabolism of fluoroacetate, fluoroacetamide, fluoroethanol, and (-)-erythro-fluorocitrate in rats and mice examined by fluorine-19 and carbon-13 NMR. *Chemical Research in Toxicology* 2(6): 429–439.

2.b. How does the recent “modified” practice of increased 1080 poison spreading using double sowing, then re-sowing baits if any rats remain (ZIP, 2017) impact these outcomes and conclusions?

The department follows the advice of the Environmental Protection Authority, which has set the maximum allowable rate of sowing 1080 at 30g of toxin per hectare. ZIP’s double sowing practice equates to 6g per hectare, and therefore, even if applied for a second time, will still be well under the EPA limit.

***4.a. With regard to my question about the human health section of the unpublished working document, the questions still outstanding are:
What information is likely to be missing from this review document?***

We do not consider any information pertinent to the purpose of the DOC Pesticide Information Reviews to be missing. The regulator for 1080 in the New Zealand environment is the Environmental Protection Authority. The department does not hold information pertaining to public health and safety or environmental risk assessment research. Our Pesticide Information Reviews are intended for use in planning animal pest operations. The Reviews are only one of a series of documents used for this purpose. Other documents provide information necessary to minimise worker exposure and meet legal requirements relating to the field use of vertebrate pesticides.

4.b. Why is this information not available to DoC staff and contractors?

The department supplies its staff and contractors with the Hazardous Substances and New Organisms (HSNO) Hazard Classification information about toxicity to humans and adverse effects of 1080.

4.c. How does DoC address all its responsibilities under legislation such as the Health and Safety at Work Act, including health monitoring the health of staff employed to work with 1080 poison, if the above information is not made explicitly available to the staff that need it?

Please see above. The department complies with EPA controls and Worksafe regulations to ensure protection for operational staff and contractors. This includes following a Standard Operating Procedures (SOP) document for Safe Handling of Pesticides, which minimise worker exposure and meet legal requirements relating to the field use of vertebrate pesticides. The SOP applies to all animal pest operations using vertebrate pesticides and insecticides undertaken by

DOC staff, contractors to DOC and DOC volunteers on both land managed by DOC and on private land.

5.b. Were you aware of the aim of, and fluorocitrate assay developed in, the twenty year old study you cited (Booth et al. 1999)?

The aim of the study was to develop a method for the analysis of fluorocitrate in water. We also note the study concluded it was more important to monitor 1080 residues than fluorocitrate:

“if 1080 is absent from a water sample collected after a 1080 control operation, then fluorocitrate is likely to be absent also. Therefore it is legitimate to measure 1080 only, and not fluorocitrate, when evaluating possible 1080 contamination of waterways after 1080 control operations. In addition, fluorocitrate has lower oral toxicity than 1080 (Peters et al, 1972; Savarie, 1984), due to its large molecular size. Fluorocitrate, therefore is not readily absorbed and distributed throughout the body, in contrast to 1080 which is readily absorbed and converted intracellularly to fluorocitrate (Peters et al, 1972; Savarie, 1984). In conclusion, this research has shown that fluorocitrate is a product of 1080 degradation, but it is rapidly degraded and due to its lower oral toxicity compared with 1080, it is more important to monitor 1080 residues than fluorocitrate after a possum control operation using 1080 bait.”

6.a. Were you aware that species differ markedly in their response to 1080?

Yes. Birds are generally less susceptible to 1080 than mammals, while lizards and fish appear relatively tolerant of 1080.

6.b. Given the above facts, do you think it would be responsible to investigate any potential sub-lethal effects on humans, especially those who may be vulnerable to these effects [e.g. pregnancy women] and those most exposed to contaminated water and 1080 poison pellet dust?

The department does not have an opinion on this matter. It is not in DOC's legislative mandate to investigate potential health effects of chemicals approved under the Hazardous Substances and New Organisms (HSNO) Act 1996. This is the responsibility of the Environmental Protection Authority.

7.a. Given the above factual evidence, what level of confidence do you have in your quoted results from water testing and why?

The department has high confidence in results of water tests from Landcare Research Toxicology Laboratory, because the Lab meets requirements specified by the International Accreditation New Zealand (IANZ) and the New Zealand Food Safety Authority (NZFSA) laboratory approval scheme (LAS). I note further that:

- the “factual evidence” you have quoted is in relation to testing soil, not water
- your citation from the ERMA report p. 350 omits the end of their statement about Landcare Research Toxicology Laboratory (**highlighted in red**)

“Their response highlights the uncertainty around the loss of 1080 from stored samples and suggests that concentrations of 1080 in such samples may have been under-reported by Landcare Research prior to changes in its internal procedures since the issue was identified in 2003. Samples are now stored at -80° C for a maximum of six weeks prior to analysis”.

7. b. Can you please provide the source of your quoted figures, so that I can verify they are reliable?

The figures quoted are supplied by Manaaki Whenua Landcare Research Toxicology Laboratory. These figures have since been updated on our website www.doc.govt.nz/nature/pests-and-threats/methods-of-control/1080/1080-and-water/

You are entitled to seek an investigation and review of my decision by writing to an Ombudsman as provided by section 28(3) of the Official Information Act.

Please note that this letter (with your personal details removed) will be published on the Department’s website.

Yours sincerely



Amber Bill
Director Threats, Biodiversity
for Director-General