Department of Conservation
Te Papa Atawhai

Our ref: 19-E-0123
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29 March 2019

Claire Ogilwy
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Dear Ms Ogilwy

Thank you for your request to the Department of Conservation, dated 24 February 2019 made under the Official Information Act 1982 (the Act).

Your questions and our responses are set out in turn below:

> **Question 1**
> *"Can you please provide all internal and external correspondence relating to the Whio poisoned as part of the Battle for our Birds 1080 operation Mt Egmont 2016."*

The work required to provide you with the correspondence you seek would involve a considerable effort to compile. The department is likely to hold thousands of emails about whio and the Battle for our Birds 1080 operation Mt Egmont 2016, and it would take much time and resource (i.e. impair efficient administration) to supply these. As such, I have provided you with a summary in accordance with s.16(1)(e) and 16(2)(a) of the Act. This summary is included below.

Whio eating cereal pellets containing 1080 (sodium monofluoroacetate)
During routine whio population monitoring within Egmont National Park, whio were found to be eating cereal pellets containing 1080. On 7 December 2016 a Department of Conservation ranger monitoring whio on the Ngatoro stream noticed an irregularly coloured (green) duck faeces. The colour of the faeces was a sign that a duck may have eaten green cereal pellets containing 1080. A sample of the duck faeces was collected for testing at Landcare Research *Manaaki Whenua* Toxicology Laboratory. Researchers at the laboratory found that the sample contained 1.51 parts per million of fluoroacetate. This was the first time traces of the 1080 toxin had been found in whio faeces following an operation that used 1080.

Additional testing of whio faeces samples for the presence of 1080
Following further monitoring, an additional eleven faeces samples showing similar colorations found within the Maketawa, Little Maketawa, Ngatoro and Waiwhakaiho river catchments were also sent to the laboratory for testing. Of these samples, two

contained traces of fluoroacetate, one with 0.98 and the other with 0.06 parts per million of fluoroacetate respectively. Nine of the samples showed no sign of fluoroacetate (less than the method detection limit which is 0.001µg/g or 1 part per billion with an uncertainty of 95% c.i.).

Impacts on whio that have eaten 1080
The likely lethal dose for a whio is not known but it is thought that ducks are less susceptible to 1080 poisoning than the mammals targeted during Battle for our Birds operations. In this instance, laboratory results show that whio had eaten cereal pellets containing traces of 1080 but there were no recorded whio fatalities. Currently, the most recent annual monitoring shows that we have the highest ever recorded pair numbers (39 confirmed whio pairs on the eight monitored rivers within the park).

Why whio have been eating cereal pellets containing 1080
The reason for whio eating cereal pellets containing 1080 is not known. However, we believe that there would likely have been numerous contributing factors that would have led some whio to eat cereal pellets containing 1080. We believe that the weather could have affected the availability of whio's natural food sources which could have led to some whio adopting a more varied diet. Many of the captive-reared whio that have been introduced to the park had been fed on pellets (similar to chicken feed) before being released. Multiple pre-feeds (the application of cereal pellets containing no 1080) could have familiarized some whio to this alternative food source.

Effects on future operations that use 1080 as a pest control method
We accept there is some potential risk to a part of the whio population within the park but we consider that this potential risk is out-weighed by the need to protect native wildlife and forests from introduced pests. We use 1080 in our work as it is the safest and most effective tool we currently have for large scale pest control. We also have over 2000 A24 self-resetting traps and over 1500 DOC 200 traps that complement the use of 1080 in order to control introduced pests within the park. 1080 is far less toxic to birds than mammals but a number of our native birds are susceptible. To gain a better understanding on the potential impacts of 1080, whio will be monitored closely during future operations within the park.

> **Question 2**
> *"Sample records 20554 from Ngatoro Stream, 20598 and 20599 from Maketawa Stream tested positive for 1080 residues as per DoC's Vertebrate Pesticide Residue Database."*

Records for these samples from Landcare Research *Manaaki Whenua* Toxicology Laboratory have been released (Item 1). This laboratory has accreditation from both International Accreditation New Zealand (IANZ) and the New Zealand Food Safety Authority (NZFSA) laboratory approval scheme (LAS).

> **Question 3**
> *"Copies of DOC field notes in relation to the Whio monitoring that occurred on the following dates: 7, 13, 16, 22 December 2016 and 5, 6, 11 January 2017."*

Field notes in relation to whio monitoring on the specified dates have been released (Items 2-3).

Question 4
"Please confirm the laboratory that tested the samples."

Refer to answer to question 2.

Question 5
"Were these samples frozen before testing and how long were they stored before testing? This information is important as the ERMA 2007 review noted under-reporting regarding freezing samples at -20c. What temperature do you freeze samples and at whose recommendation."

The 2007 Environmental Risk Management Authority review noted that soil samples may need to be frozen at -20c to minimise any microbial activity likely to degrade fluoroacetate. There was a concern about underreporting prior to 2003 when the issue was identified. The review notes that Landcare Research *Manaaki Whenua* Toxicology Laboratory now stores samples at -80c for a maximum of 6 weeks.

The department normally follows Landcare protocols for taking, storing and sending samples for tests. These are publicly available online.

In this case, because there is no protocol for testing faeces, advice about sending the samples was sought from the laboratory by phone. Their instructions were to freeze the samples and courier to the laboratory in insulated packaging with frozen cold packs. The department stored and transported samples under these conditions for between 1 day and 1 week. The amount of time between sample collection and testing can be calculated from the Vertebrate Pesticide Residue Database and the laboratory reports which are all attached.

Question 6
"Why did you not include the 1080 testing of Whio scat samples in your Operational Report to the EPA?"

At the time of submitting the EPA Report for the 2016 operation, the significance of the whio scat tests was still unknown. The EPA requires monitoring reports to be attached only if they are available. Because no dead birds had been found, monitoring reports had not been completed. Future operations will have the benefit of our current understanding, and will be closely monitored and reported.

Question 7
"Why is your VRPD Database so different than Landcares? Why do you not fill in the Mandatory Fields so that the public can see what the sample types relate to rather than a reference number? Please provide an up to date version with missing mandatory fields filled in."

The department does not have unrestricted access to Landcare Research *Manaaki Whenua* databases. Our Vertebrate Pesticide Residue Database (VPRD) relates to the department's own work. Please note that the Vertebrate Pesticide Residue Database is a living document intended for internal reference by department scientists and field staff only. Mandatory fields are filled in when information becomes available. We note that without the appropriate scientific knowledge and understanding, care needs to be taken in drawing any inference or conclusion from the data as it was not intended that it be interpreted by lay people.

An up to date version of the Vertebrate Pesticide Residue Database has been attached to this response (Item 4).

Question 8

"Please provide information relating to the Whio that must have been presented dead after a 1080 drop for Landcare to be testing Muscle tissue for 1080 residues 14/11/16. Please advise if this Whio duck was frozen and how long was it stored before testing."

The whio in question was from the Wangapeka - Fyfe Whio Security Site www.doc.govt.nz/news/media-releases/2019/new-breeding-programme-for-wangapeka-whio/. It was one of 32 whio that were radio-tagged for monitoring during aerial 1080 operations in 2011, 2014 and 2016. It was the only one of these 32 birds that died.

The bird was not frozen. It was stored for four days before testing. It was found on 4 November 2016 on the banks of the Wangapeka River and was estimated to have died approximately two days before. The carcass was kept chilled in a refrigerator overnight, then sent in a chilly-bin to Wildbase, Massey University Institute of Veterinary, Animal and Biomedical Sciences. Wildbase performed an autopsy and prepared the skeletal muscle tissue sample, which was sent to Landcare Research *Manaaki Whenua* Toxicology Laboratory and tested on 8 November 2016.

The Wildbase pathology report noted that the bird was "in at least moderate body condition." The gastrointestinal track had been scavenged therefore stomach contents could not be tested. The diagnosis was "Unknown cause of death. Extensive scavenging, possibly avian", with the comment that "There was no evidence of bruising to the head but since most of the neck was missing, we can't completely exclude the possibility of a mustelid (or feline) predation".

Question 9

"Are you aware of the Montana 1981 study (that wasn't included in ERMA's 2007 "extensive" scientific research) that shows detection levels of 1080 decrease in correlation to freezing samples and increased storage time. 1080 within muscle samples decreased by 79% and stomach and content by 49% over 14 days."

As we have indicated above, the department adheres to protocols supplied by Landcare Research *Manaaki Whenua* Toxicology Laboratory (an accredited toxicology laboratory)

when collecting samples for 1080 assay.

If you are able to provide a full citation of the study you are referring to, we would be happy to bring that to their attention.

Question 10
"Is this why in your Kiwi Best Practice you advise not to freeze samples? www.kiwisforkiwi.org/kiwipractitioners/wp-content/uploads/2017/09/Kiwi-Best-Practice-Manual.pdf."

The advice in the Kiwi Best Practice Manual does not apply to samples taken for toxicological analysis. It concerns dead animals to be sent for autopsy and histopathological examination. The reason for not freezing these specimens is that "freezing will damage cells and tissues and make the diagnosis of cause of death more difficult". The manual details the procedures on page 90.

Question 11
"Are you aware of the following study by Landcare published in 2000 BIOCHEMICAL AND HISTOPATHOLOGICAL CHANGES INDUCED BY SODIUM MONOFLUOROACETATE (1080) IN MALLARD DUCKS .....When Whio ducks have consumed 1080, this is likely to make them more prone to predation and/or ill health. How is DOC going to manage how many poisoned insects Whio eat, or are the Whio eating baits direct?"

Yes, the department is aware of this paper and it is referenced in our *Sodium Fluoroacetate Pesticide Information Review Version 2018/2*

Ataria JM, Wickstrom ML, Arthur D, Eason CT. 2000. Biochemical and histopathological changes induced by sodium monofluoroacetate (1080) in mallard ducks. Proceedings of the New Zealand Plant Protection Conference. 53:293-298.

As recommended by this paper, the department has monitored whio for more than 25 years and has not found them to suffer long-term adverse effects from 1080 operations. This information is publicly available on the department's website www.doc.govt.nz/our-work/blue-duck-whio/.

Department scientists are in agreement that predation is the primary cause of whio population decline. Our monitoring shows that populations of whio without aerial 1080 suffer much higher levels of predation than treated areas. Therefore, the department does not consider that 1080 operations make whio populations more prone to predation or ill health. Research shows their aquatic invertebrate prey are unlikely to be contaminated by 1080. The following Journal may be of interest to you (also referenced below); www.tandfonline.com/doi/abs/10.1080/00288330.2006.9517443.

Suren, A. and P. Lambert (2006). "Do toxic baits containing sodium fluroacetate (1080) affect fish and invertebrate communities when

they fall into streams?" *New Zealand Journal of marine and freshwater research* 40(4): 531-546.

Attached documents
The following documents fall into the scope of your request and are attached:

Item	Date	Document description	Decision
1		A pdf copy of records for whio faeces tests from Landcare Research *Manaaki Whenua* Toxicology Laboratory (our ref docCM 5884449)	Released with name of staff contact redacted to protect privacy of natural persons, s9(2)(a) of the Act applies.
2	7/12/2016 to 11/1/2017	A pdf document of original field notes for Whio monitoring, 7, 13, 16, 22 Dec 2016 and 5, 6, 11 Jan 2017 (our ref docCM 5884454)	Released with names redacted to protect privacy of natural persons, s9(2)(a) of the Act applies.
3.	7/12/2016 to 11/1/2017	A pdf document of original field notes of Whio monitoring 7, 22 Dec 2016 and 5, 6, 11 Jan 2017 (our ref docCM 5884458)	Released with names redacted to protect privacy of natural persons, s9(2)(a) of the Act applies.
4.	19/03/2019	A pdf document of the updated Vertebrate Pesticide Residue Database showing entries for whio samples tested as part of the 2016 Battle for our Birds operation within Egmont National Park (our ref docCM 5889080)	Released with staff contact details redacted to protect privacy of natural persons, s9(2)(a) of the Act applies.

You are entitled to seek an investigation and review of this decision by making a written complaint to an Ombudsman under section 28(3) of the Official Information Act.

Yours sincerely

David Speirs
Director, Operations
Hauraki Waikato Taranaki Region