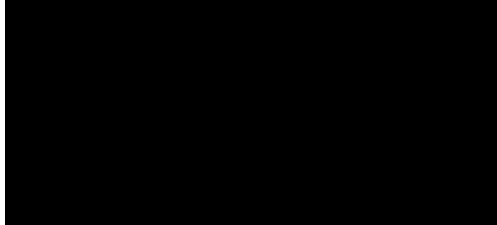




OIA 19-E-0251/docCM 5924921

24 May 2019



OFFICIAL INFORMATION REQUEST

Thank you for your Official Information Act request to the Department of Conservation, dated 28 April 2019. We understand you also sent the request to the Minister of Conservation, which was transferred to the Department. This response is also provided on the Minister's behalf.

You requested the following:

- 1. The scientific definitions of "mast year" and "mega mast year" that are used by DoC and the published research relied on for these.*
- 2. The indicators, criteria and monitoring program used by DoC to a) predict, and b) confirm a mast year and a mega mast year including a map or schedule showing each location in New Zealand where these indicators are assessed.*
- 3. A schedule of each year that DoC identified to be a mast year and or a mega mast year since 1992 and as far back as DoCs records go.*
- 4. Copies of all advice from DoC to its Minister about predicted or confirmed mast or mega mast years since 2008 and resources requested by DoC.*
- 5. Copies of all monitoring undertaken to assess if predicted mast years in fact met the criteria as mast years.*
- 6. Information to show the extent to which mast years relate to beech masts cf. other species, and also assessment of a breakdown between different species of beech i.e. red, silver, mountain etc.*
- 7. A map showing the location of beech dominant forest over New Zealand broken down into different beech species.*
- 8. a schedule to show the locations identified for 1080 poison in 2019 and how these correlate with each type of beech forest and monitoring to predict mast years.*

We note that a considerable amount of the material you have requested is already publicly available and that a significant proportion of your request could be construed to be frivolous as a result. We make this statement in the context of your extensive involvement in 1080 related matters.

On this occasion we have decided to refer you to the sources where the information can be found. However, we need to be mindful of how to best use our time and resources in dealing with requests the public make under the Act.

In order to ensure we are able to properly attend to all the requests we receive, we do not propose to continue to provide what are obviously publicly available sources of information to you and will simply decline such requests under section 18(d) of the OIA. We take this position in the context of the very large volume of complex requests you make.

We will of course continue to respond to any reasonable request you make under the OIA.

In this case, the context for your request is your statement that “*I have been unable to find any ecological definition of mega mast year or even any clear information to define what is a mast year*”.

Nevertheless, these terms are widely used in ecology literature.

- Masts are described as “synchronous, highly variable seed production among years in a population of perennial plants”.¹
- Mega mast refers to mast events that are synchronous across very large areas of the country. The term has been used in New Zealand to indicate masts that occur over greater than 50% of beech-dominated forests:
www.landcareresearch.co.nz/publications/newsletters/kararehe-kino/kararehe-kino-issue-25/mega-masts.

Please note that masting refers to variables that cannot be standardized across different events. It is not possible to quantitatively define a typical mast, or typical mega mast year.

The Department uses the term to indicate years in which there is widespread, heavy seed fall in spring and summer, which trigger rodent and mustelid irruptions.

Mast events are forecast through climate predictions, using the ‘delta T’ (ΔT) model which has been internationally reviewed and published.²

These climate predictions are only one of the sources of data we consider when planning to manage mast-induced predator irruptions. Other data come from

- Observations of flowering in October and November.
- Seed sampling by helicopter and shooting: January to March.

¹ Kelly, D., Geldenhuis, A., James, A., Penelope Holland, E., Plank, M.J., Brockie, R.E., Cowan, P.E., Harper, G.A., Lee, W.G., Maitland, M.J., Mark, A.F., Mills, J.A., Wilson, P.R., and Byrom, A.E. (2013) Of mast and mean: differential-temperature cue makes mast seeding insensitive to climate change. *Ecology Letters* 16(1): 90–98. doi:10.1111/ele.12020

² Kelly et al. (2013)

- Seed fall monitoring in January to April: collected from a wide range of sites.
- Rodent monitoring in February to June: using tracking tunnels.

Analysis of these data accurately predicted the widespread mast events and subsequent predator plagues in 2014 and 2016. If the monitoring indicates “plagues” are not going to occur, the aerial 1080 operations will not go ahead.

All of this information is available on our website: www.doc.govt.nz/our-work/tiakina-nga-manu/measuring-a-mega-mast/.

It has been covered by RNZ, linked on our website: www.radionz.co.nz/national/programmes/ourchangingworld/audio/2018689188/science-of-a-mega-mast-and-planning-wide-scale-predator-control

It is also widely published in scientific journals, for example:

Elliott, G. and Kemp, J. (2016), Large-scale pest control in New Zealand beech forests. *Ecol Manag Restor*, 17: 200-209. doi:[10.1111/emr.12227](https://doi.org/10.1111/emr.12227)

Walker, S., Kemp, J.R., Elliott, G.P. et al. *Biol Invasions* (2019) 21: 1627. <https://doi.org/10.1007/s10530-019-01922-0>

My decisions on responses to your questions are listed below:

1. The definitions of "mast year" and "mega mast year" used by the Department are publicly available, as described above.
2. The indicators, criteria and monitoring program used by the Department to predict and confirm mast events, including maps of locations are described in Elliott & Kemp (2016), which is attached with this response. The monitoring locations for seed counts are also available in maps on the Department website: www.doc.govt.nz/our-work/tiakina-nga-manu/.
3. The Department does not hold a schedule of mast years therefore I am refusing your request under section 18 (g) of the OIA. However, you can access a schedule created by Landcare Research from NIWA data: www.landcareresearch.co.nz/publications/newsletters/kararehe-kino/kararehe-kino-issue-25/mega-masts.
4. Advice from the Department to the Minister of Conservation about responses to masts since 2008 is attached and listed in the table below. Resources requested by the Department are contained in some of these documents.

From 2018 the Government’s increased annual baseline funding for predator control has allowed resourcing for responses to masts to be included in regular control operations. Please note budgets are available in annual reports on the Department website: www.doc.govt.nz/about-us/our-role/corporate-publications/annual-reports-archive/

5. The Department does not undertake monitoring to assess if predicted mast years meet the criteria for mast years. We do, however, undertake monitoring to assess whether the seed abundance, and then rodent abundance, exceeds the threshold to trigger a predator control operation to protect the native species at a particular site.

This monitoring process is described in Elliott & Kemp (2016) (the article is supplied with this answer). Our monitoring generates a great deal of data from numerous sources. For example, our seedfall data is collected from 78 sites around New Zealand. Our rodent tracking data set from late 1999 to late 2016 included 264,457 records collected approximately quarterly from at a total of 23,709 tracking tunnel stations. Analysis of these data are publicly available in the journal article, Walker et al. (2019), referenced above.

Current data are still under analysis and cannot be made available in a form suitable for public reference without substantial collation or research (section 18(f) of the OIA refers).

However, information is posted on the Tiakina Ngā Manu pages of our website when it becomes available: www.doc.govt.nz/our-work/tiakina-nga-manu/.

6. Maps comparing the seeding of beech, rimu and tussock 2019 are available on our website: www.doc.govt.nz/our-work/tiakina-nga-manu/measuring-a-mega-mast/.

7. Maps showing different beech species do not exist, therefore this request is refused under section 18 (g) of the OIA. However, monitoring indicates that red, hard, silver and mountain beech have all produced large crops of seed this season.

8. Information about the operations planned for 2019 is publicly available on our website: www.doc.govt.nz/our-work/tiakina-nga-manu/predator-control-programme/.

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

Item	Date	Document description	Decision
1	13 December 2013	Briefing: Landscape scale pest control and response to beech mast DOC 1332115	<i>Released in part under section 9(2)(a)</i>
2	10 February 2014	Cabinet paper Beech mast funding 2014-2015 DOC-1351843	<i>Released in part under section 9(2)(a)</i>
3	26 August 2015	Briefing: Battle for our Birds Review DOC-2584319/15-B-0734	<i>Released in part under section 9(2)(a)</i>
4	17 November 2016	Aide -Memoire: Information on the successes of BfoB DOC-2912719	<i>Released in part under section 9(2)(a)</i>
5	27 September 2016	Elliott, G. and Kemp, J. (2016), Large-scale pest control in New Zealand beech forests. Ecol Manag Restor, 17: 200-209. doi:10.1111/emr.12227	<i>Supplied in full</i>

I have decided to release the relevant parts of the documents listed above, subject to information being withheld under one or more of the following sections of the Official Information Act, as applicable:

- personal contact details of officials, under section 9(2)(a) – to protect the privacy of natural persons, including deceased people,

In making my decision, I have considered the public interest considerations in section 9(1) of the Official Information Act.

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) and enclosed documents will be published on the Department's website.

Yours sincerely



Amber Bill
Director Threats, Biodiversity
for Director-General