Ministry for the Environment
Manatū Mō Te Taiao

10 April 2025

OIAD-1522

s 9(2)(a)

Tēnā koe s 9(2)(a)

Thank you for your email of 17 March 2025 requesting the following under the Official Information Act 1982 (the Act):

> *I am writing to request information under the Official Information Act 1982 as part of an academic research project for my MBA studies at University of Canterbury. The research focuses on geospatial data management and sharing practices in New Zealand government agencies. I am seeking the following information for the period from March 2020 to March 2025:*
> *1. A comprehensive list of geospatial surveys conducted by or on behalf of your agency.*
> *2. For each survey, please provide:*
> *a) The geographical area covered*
> *b) The survey methodology employed (e.g., LiDAR, photogrammetry, terrestrial laser scanning)*
> *c) The point density or resolution achieved*
> *d) The total cost incurred for the survey*
> *3. Any reports or summaries detailing the outcomes and applications of these surveys.*
> *4. Information on your agency's current data management practices, including:*
> *a) How survey data is stored and managed*
> *b) Protocols for data sharing within your agency and with external organizations*
> *c) Any challenges faced in data integration or interoperability*
> *If the requested information is not available for the full five-year period, please provide it for the most recent timeframe available. This research aims to contribute to the academic understanding of geospatial data management in the public sector and may inform future policy recommendations.*

On 20 March 2025, the Ministry for the Environment (the Ministry) wrote to you by email to clarify your request. Your request was clarified to exclude broad-scale (e.g. New Zealand-wide) thematic mapping from satellite imagery, and forest inventory (forest growth across a grid of plot locations over the country), as types of 'geospatial survey' within the scope of your request.

The Ministry has identified two geospatial surveys within the scope of your request, with information provided in response to points 1-3 of your request for each survey:

1. **Deforestation Monitoring 2019-2020**
    a. Total cost incurred $300,000
    b. Description: 0.3m BGR aerial photo capture of areas of forest loss around Mainland NZ and classification of those targets using machine learning
    c. Report: New Zealand deforestation mapping 2019 and 2020 - technical report (Document can be found at this link: https://environment.govt.nz/publications/new-zealand-deforestation-mapping-2019-and-2020-technical-report/)

2. **Deforestation Monitoring 2021-2022**
    a. Total cost incurred: $350,000
    b. Description: 0.5m BGR satellite imagery and classification of forest loss areas using machine learning
    c. Report: 2021-2022 deforestation mapping report Lynker Analytics – Final (Document released in full and attached)

Regarding point 4(a) and 4(b) of your request, for survey data storage and management and data sharing practices, the Ministry uses the following:

1. Temporary storage:
    - Esri file geodatabase
    - Esri shapefile
    - OGC (Open Geospatial Consortium) GeoPackage
    - XY tables
    - Kept on network or object storage or zipped in document management system(s).
2. Long-term storage:
    - Predominantly Esri Enterprise geodatabase (RDBMS - Relational Database Management System) with Esri metadata
    - File-based remote sensing data is stored in cloud object storage
    - Otherwise, formats listed under "Temporary" above with ISO (International Organization for Standardization) XML metadata or READMEs in network or object storage or zipped in document management system(s).
3. Data sharing protocols:
    - **Internal**: predominantly using ArcGIS Enterprise via private groups. Organisation-wide publications follow a formal style guide and peer review and approval process with metadata required.
    - **External**: Predominantly using https://data.mfe.govt.nz/ (MfE Data Service; Koordinates) and https://mfe.maps.arcgis.com/ (ArcGIS Online). Organisation-wide or public publications follow a formal peer review and approval process with metadata required. Most of these public datasets are set to be catalogued by data.govt.nz. Data too large to stream is zipped with metadata and shipped via S3 bucket pre-signed URLs, Secure File Transfer Protocol or similar site downloads. Ministry data publications are released with a Creative Commons By Attribution license where possible.

Regarding point 4(c) of your request, regarding any challenges faced in data integration or interoperability, the Ministry licenses Esri ArcGIS software due to complex technical requirements and heavy data loads. It is therefore straightforward to provide optimised streaming options in Esri format.

The Ministry is also committed to offering support for OGC formats achieved by uploading most of our open data to the MfE Data Service (Koordinates).

For performance reasons, Esri caps the number of records that can be streamed from an OGC service.

The option to create Esri REST (Representational State Transfer) services from the MfE Data Service is now becoming a technical possibility (by subscription). Some technical limitations exist. The Ministry is considering the merits and costs of enabling this service in future.

You have the right to seek an investigation and review by the Office of the Ombudsman of my decision, in accordance with section 28(3) of the Act. The relevant details can be found on their website at: www.ombudsman.parliament.nz.

Please note that due to the public interest in our work the Ministry for the Environment publishes responses to requests for official information on our OIA responses page shortly after the response has been sent. If you have any queries about this, please feel free to contact our Ministerial Services team: ministerials@mfe.govt.nz.

Nāku noa, nā

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