

Imagery



Aerial and satellite imagery provides accurate photographic representation of the earth's surface and the features on it. The imagery can be used to visualise the landscape or understand how an area has evolved.

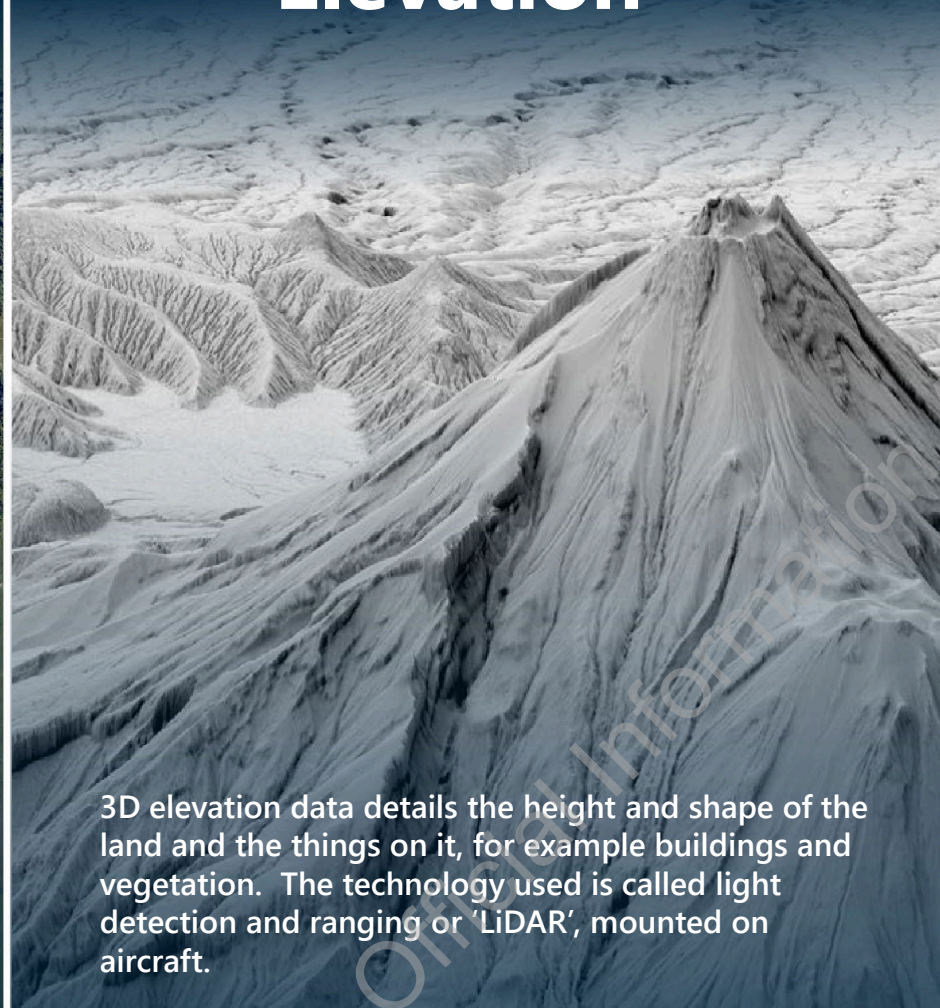
LINZ publishes aerial imagery covering 95% of the country which is freely available for others to use. It can be accessed through the LINZ Data Service, AWS open data registry, or the LINZ Basemaps service which lets users build their own maps on top of LINZ published imagery.

In response to the North Island weather events in early 2023, LINZ is working with local and central government agencies to procure and publish aerial imagery and LiDAR data to support recovery activities in affected regions.

We coordinate with councils, regional consortiums and response agencies to acquire and publish aerial imagery of New Zealand.

The capture from airborne sensors and cameras that give us an accurate photographic representation of the earth's surface and the features on it.

Elevation



3D elevation data details the height and shape of the land and the things on it, for example buildings and vegetation. The technology used is called light detection and ranging or 'LiDAR', mounted on aircraft.

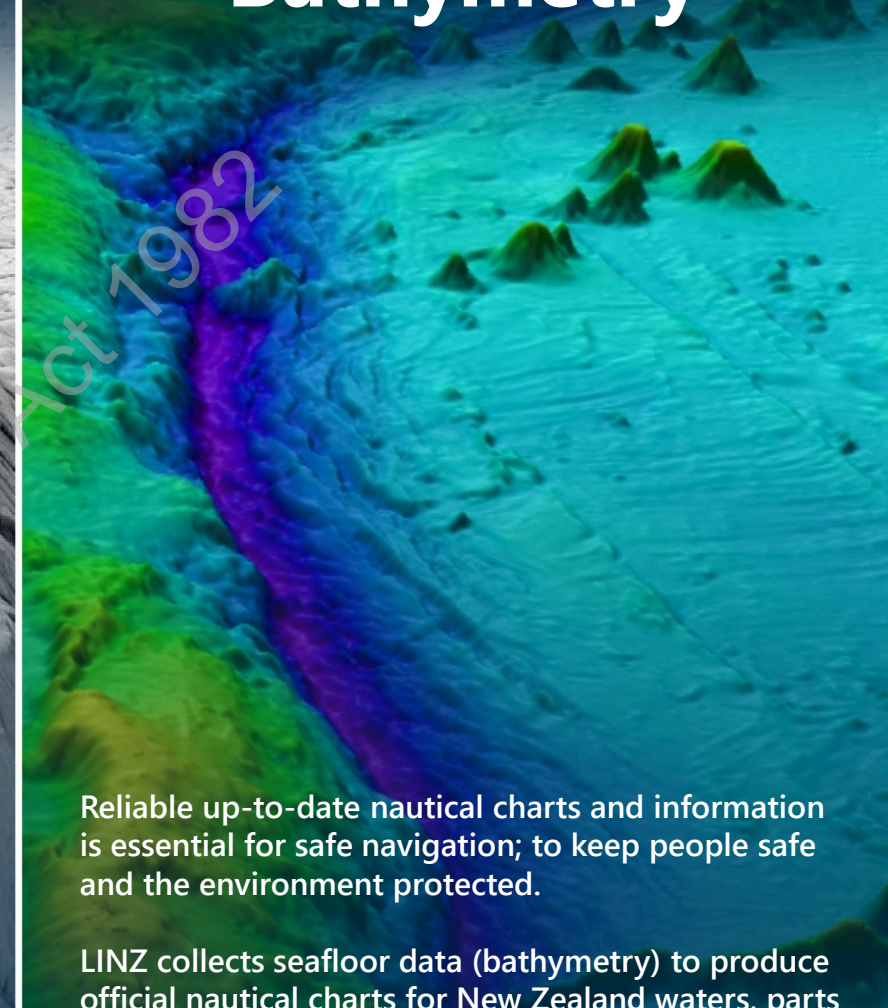
LINZ is on track to have LiDAR data available for 80% of the country by 2024. LiDAR data is valuable to both public and private sector organisations for:

- Improving environmental management including water resource planning, forestry management and habitat protection
- Providing farm-scale land information to benefit the agriculture and forestry sectors
- property and land development, engineering and communications infrastructure, archaeology, architecture, and design applications.

LiDAR elevation data capture project is providing co-funding to develop a consistent elevation dataset across a number of regions.

The standard open-data products are a 1m gridded bare earth digital elevation model, a 1m gridded digital surface model, and the source data point cloud.

Bathymetry



Reliable up-to-date nautical charts and information is essential for safe navigation; to keep people safe and the environment protected.

LINZ collects seafloor data (bathymetry) to produce official nautical charts for New Zealand waters, parts of Antarctica, and areas of the south-west Pacific. LINZ's nautical charts are used by commercial and recreational mariners.

Bathymetry has other applications such as scientific research and tide predictions.

In 2022/23 we were allocated \$39.2 million over four years to undertake 3D coastal mapping. This investment will support coastal communities, iwi, businesses and local and central government to prepare for the impacts of climate change and understand how the coastline is changing.

Due to the lead-in time needed for hydrographic surveys, we plan several years ahead.

The priority regions take into account ship traffic, hazards and the age of existing navigational information to determine the level and location of navigational related risk.

Property

It is critical that decisions about property and land are well informed because these decisions impact quality of life and the environment.

Property information is the essential information about land parcels and ownership that enables accurate land management, valuation, transacting, and decision-making.

LINZ creates important property information through its regulatory and responsibilities and operational processes; its datasets include property boundaries, ownership, and rating information.

Uses include:

- Waka Kotahi and councils deciding where to invest in roading infrastructure
- Property developers and local government deciding where to build housing developments

LINZ has a leadership role in connecting property data from central and local government. This includes creating a national dataset of district valuation roll (DVR) collated from individual councils, and making it available to local and central government

Address

Property addresses and suburb information are needed for mail, emergency services like fire, police, and ambulance, as well as utilities like power and water. Addresses are also the basis of New Zealand's voting system.

LINZ maintains the official national record of all road names and property numbers in New Zealand. LINZ assesses all numbering and naming proposals from councils against the national standards before adding them to the official record.

LINZ's address and suburb data is key information used for decision-making during emergency events. In the aftermath of Cyclone Gabrielle, emergency management groups used LINZ's address data with StatsNZ's population data to help ensure isolated communities were accounted for.

When new addresses are created by local councils, they provide those to LINZ. They are assessed against the national addressing standard and approved into the National Addressing Database.

Buildings

Building outlines is a key dataset to support both urban planning and community resilience. It also provides context when trying to understand land use, changes over time and places of interest.

This building outline dataset provides a foundation for various stakeholders to map risk modelling, environmental assessment, urban development, resilience planning in addition to the visualization and physical location of buildings.

LINZ contracts a New Zealand expert on machine learning to produce buildings data from the latest aerial imagery. After automated checks and manual quality assurance.