

Smart Solutions to Seafloor Mapping in New Zealand

J. Black¹, K. Mackay², A. Greenland³, E. Griffin³

¹GNS Science, Lower Hutt, New Zealand, j.black@gns.cri.nz

²NIWA, Greta Point, Wellington, New Zealand

³LINZ, New Zealand National Hydrographic Agency, Wellington, New Zealand



Challenges

Small country, small population
Large, isolated ocean

- One of the world's largest EEZs
- 1.3 km² of seafloor person, 2.2 km² including Ross Dependency = the whole of Monaco per person!
- NZ offshore waters more than 20 times the land area



Data collection

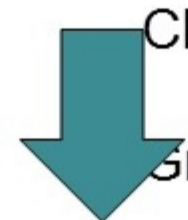
International collaborations

Data storage

Use of transit and legacy data
Management

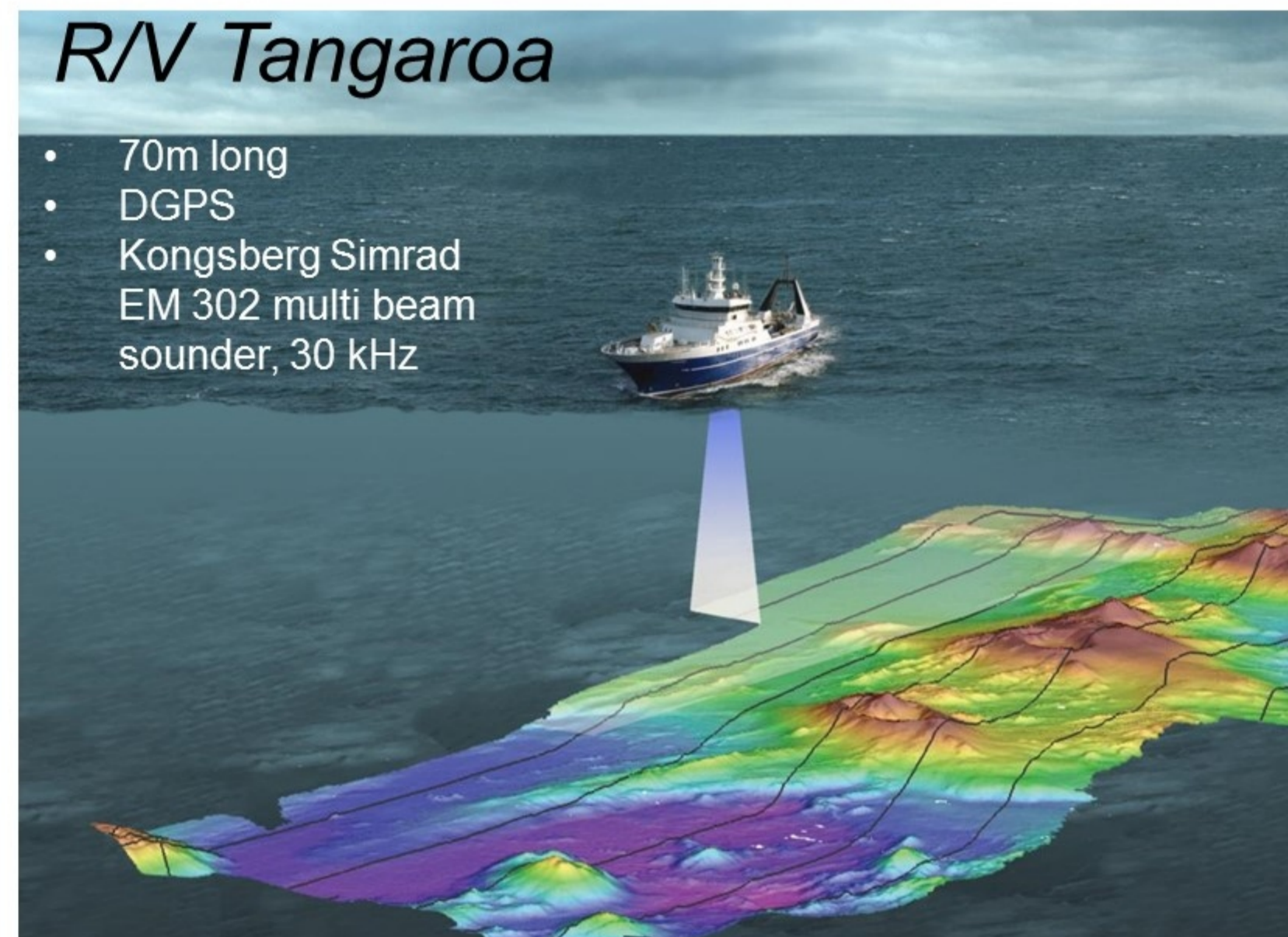
Data processing

Discovery and distribution
Clever gridding
Gravity inversion



Capability

Many coastal vessels for shallow hydrographical surveys
One deepwater multi beam research vessel

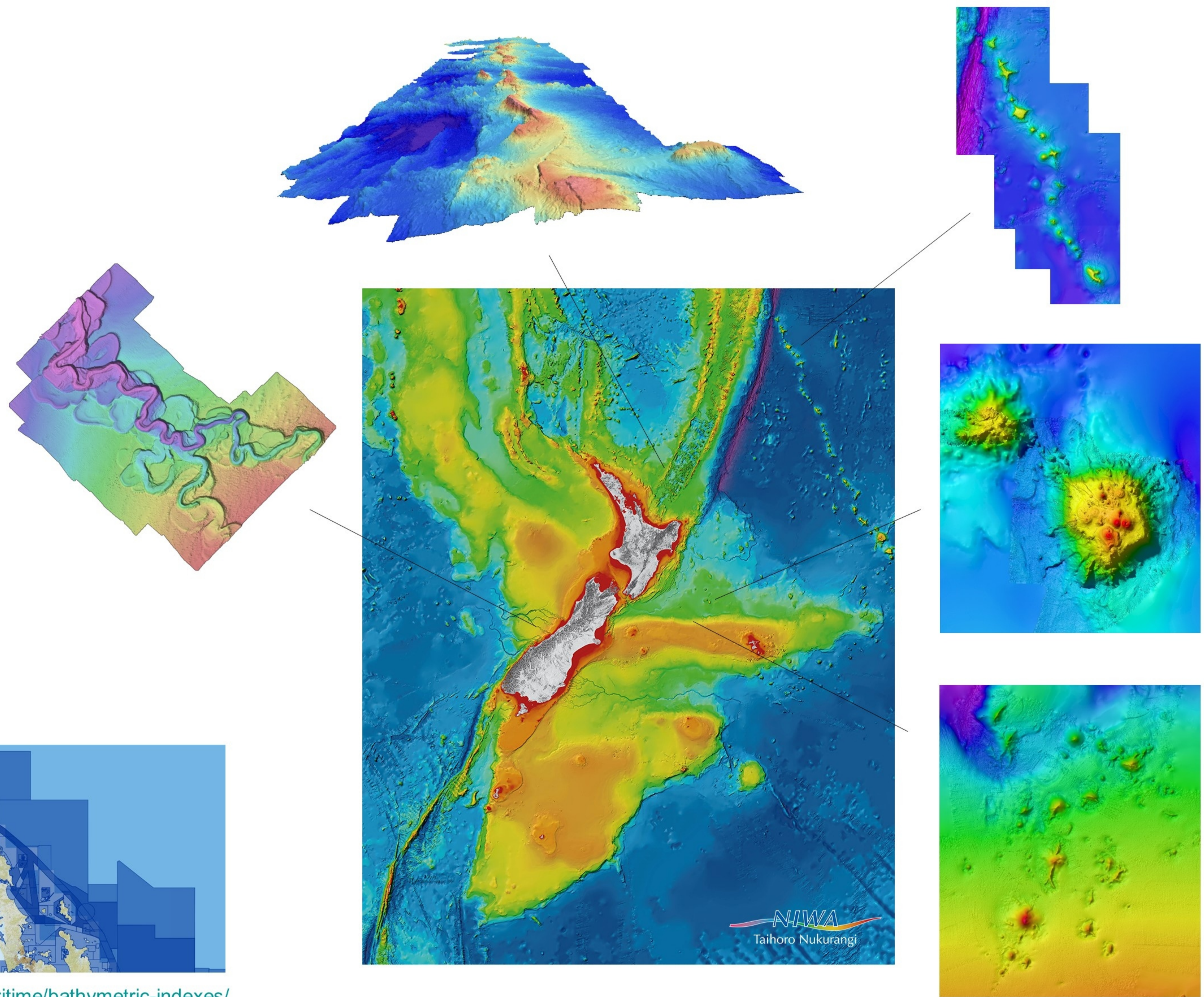
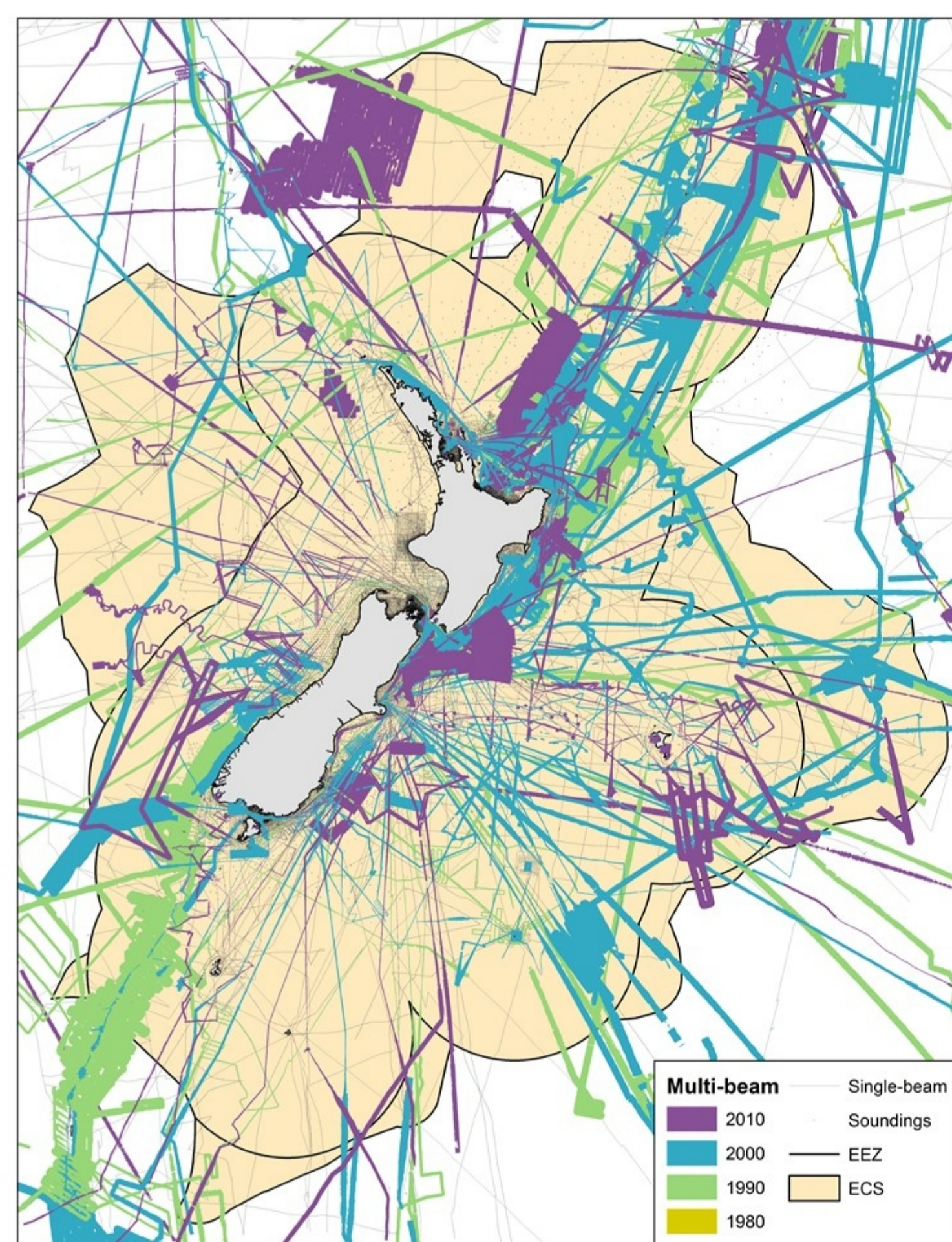


Recent International Vessels



Smart solutions for high quality bathymetry

Data



Discoverability

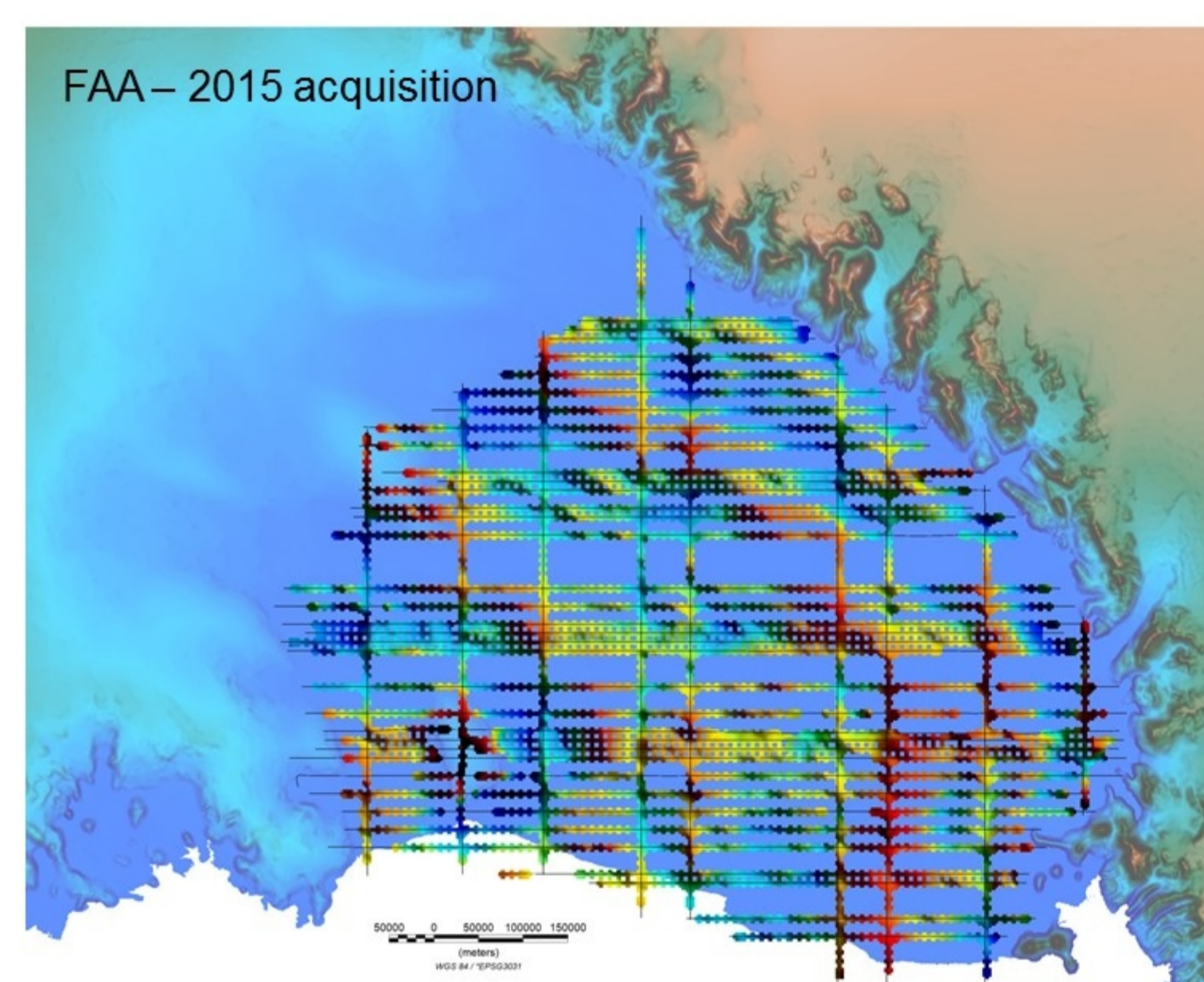
LINZ is making available a collection of indexes to enable customers to discover what bathymetric data LINZ holds, assess the suitability of that data for their needs and submit a request to obtain the data of interest.



The indexes can be found at:

<https://data.linz.govt.nz/data/category/hydrographic-maritime/bathymetric-indexes/>

Gravity Inversion



Satellite gravity, global datasets

Bathymetry of the Ross Dependency and the adjacent Southern ocean
2004, 2016

Airborne gravity, new dataset

ROSETTA, in partnership with LDEO
2015 data acquisition
LC-130 flown at 4000 ft and 170 knots
Further lines (infilling) planned for 2016
Will invert for bathymetry under ice shelf 2017

