

Satellite-Derived Bathymetry use case – New Zealand

HS51 Hydrographic Survey of Queen Charlotte Sounds/Tōtaranui and Tory Channel/Kura Te Au

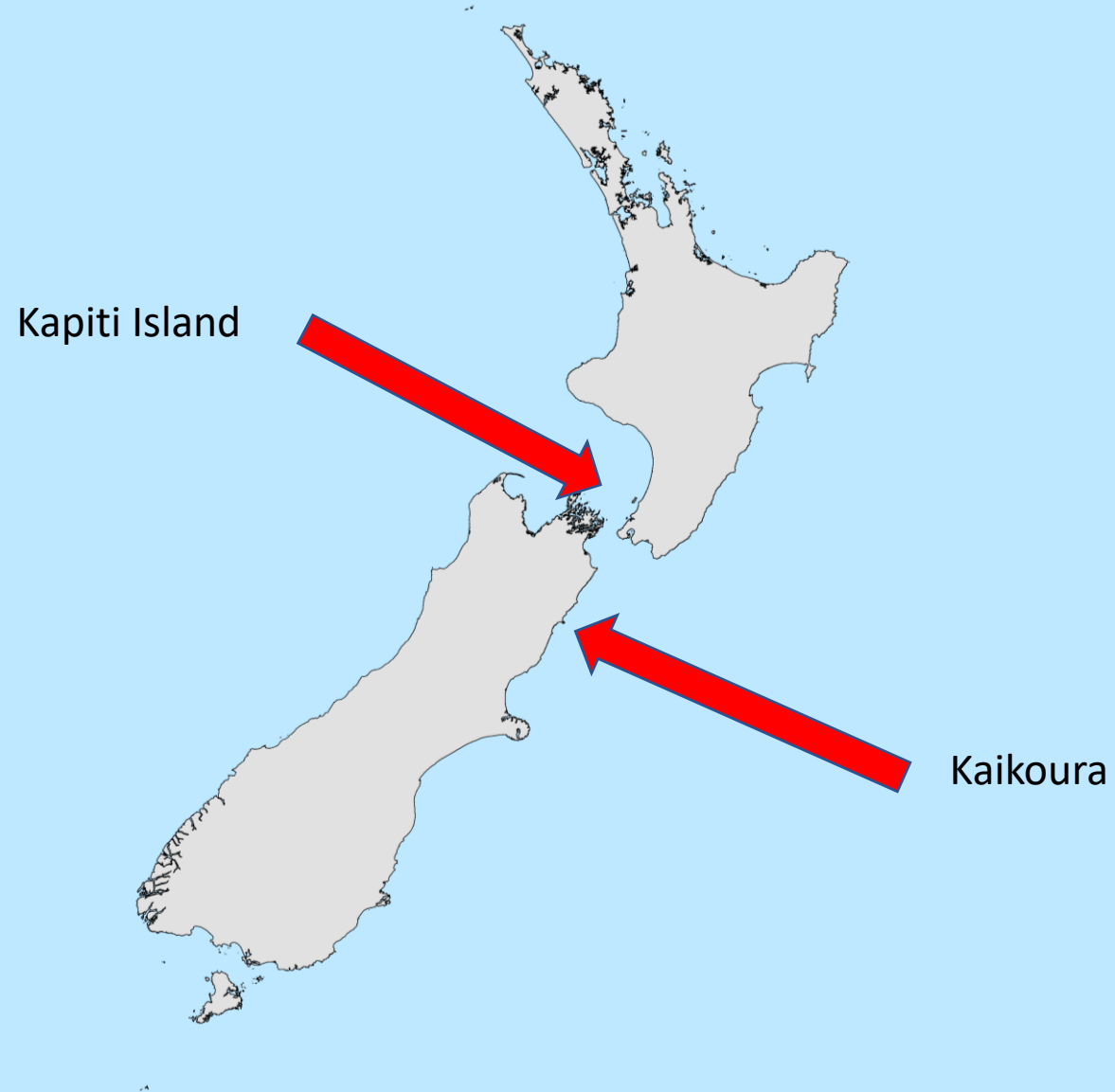


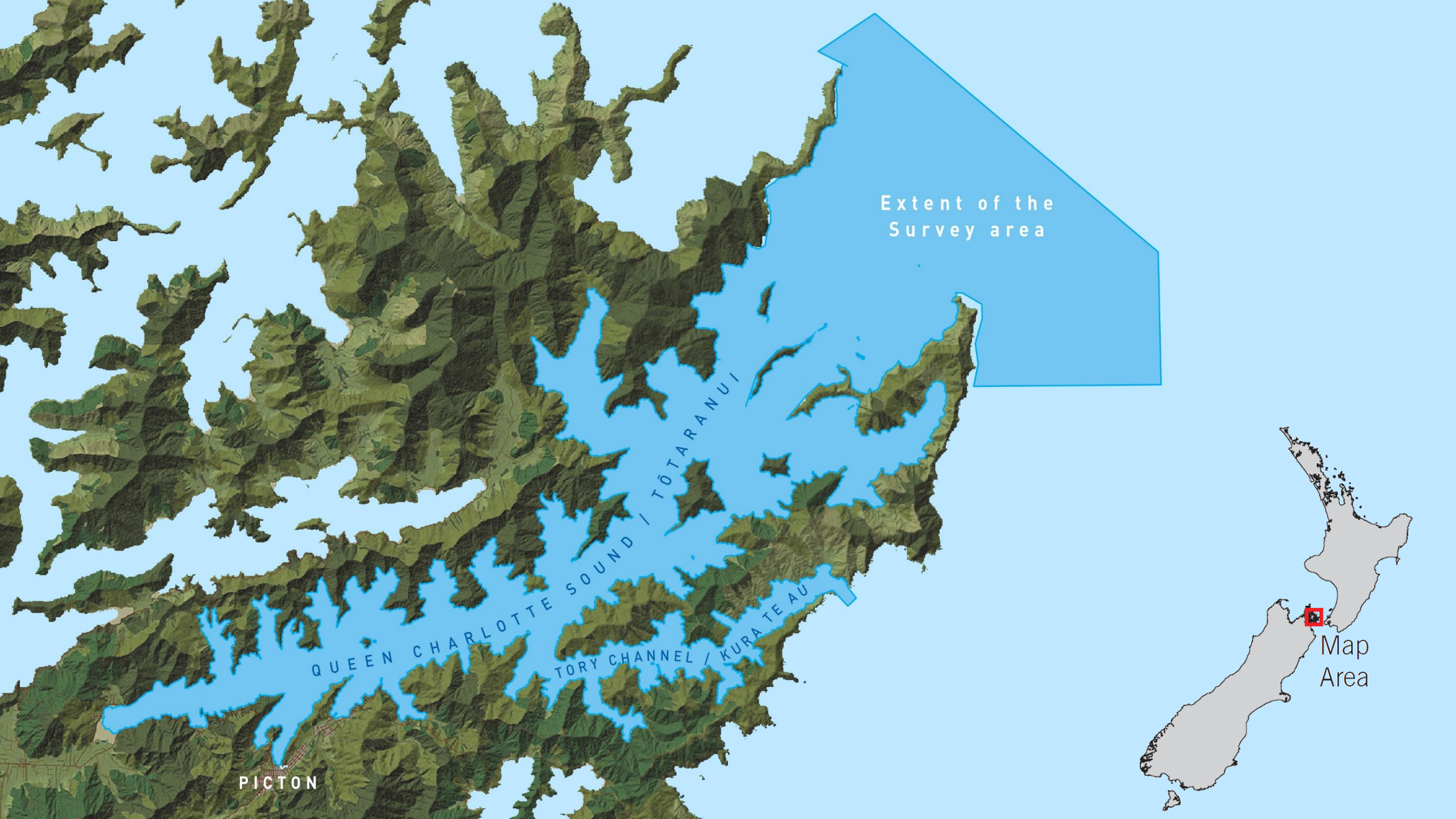
Marlborough District Council

In the beginning ...

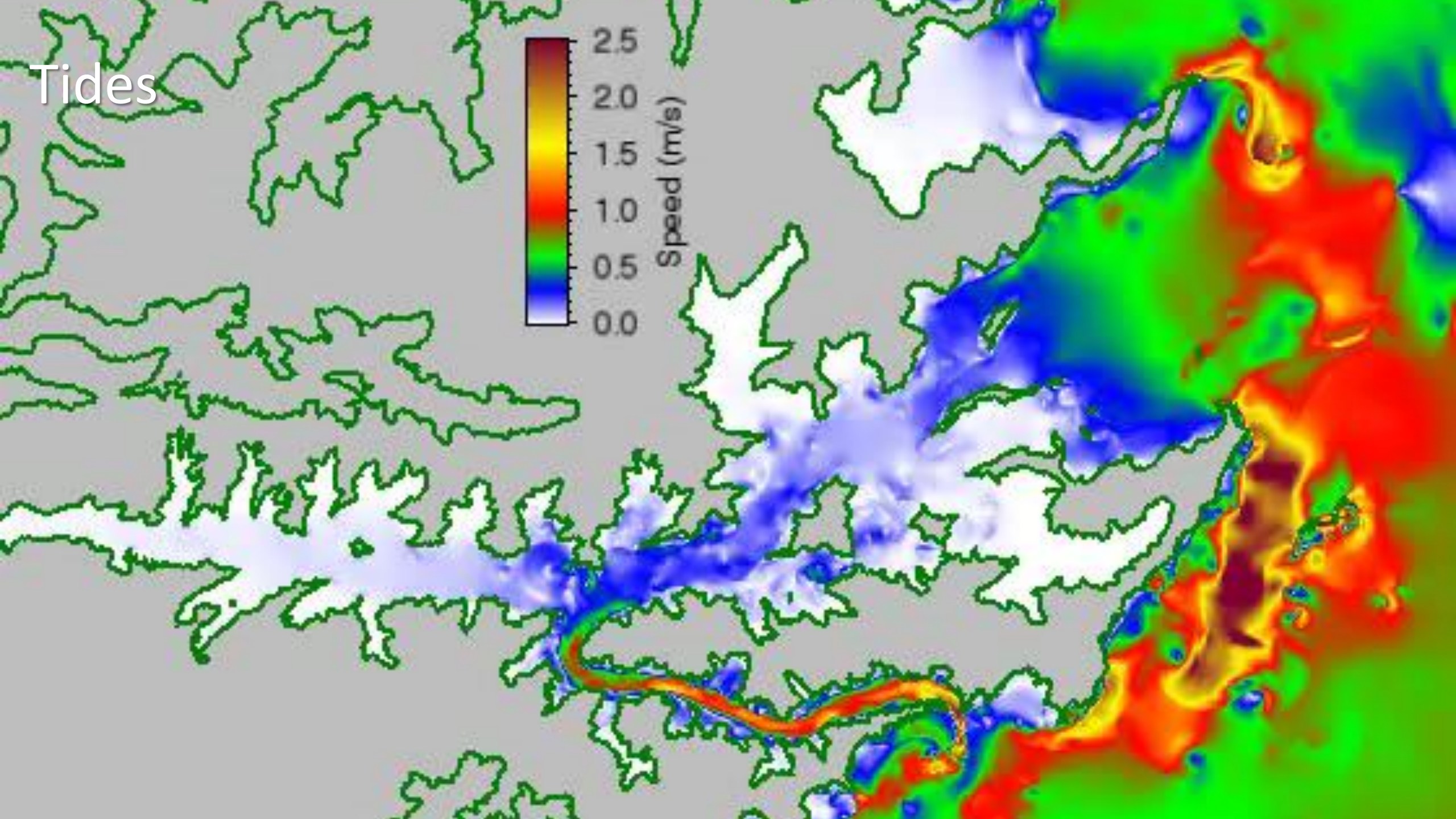


Previous use of SDB in New Zealand by NIWA





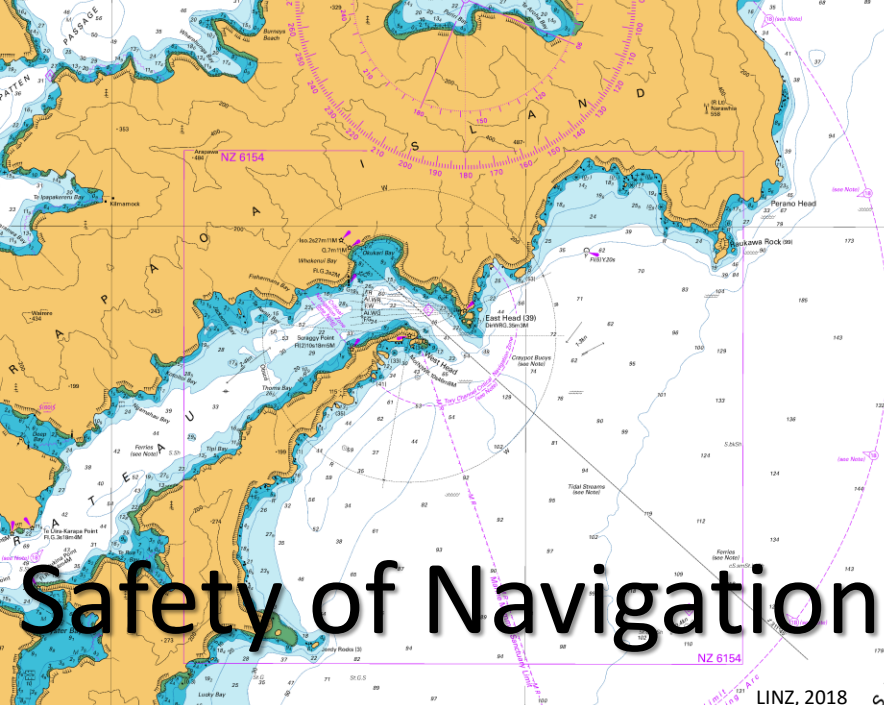
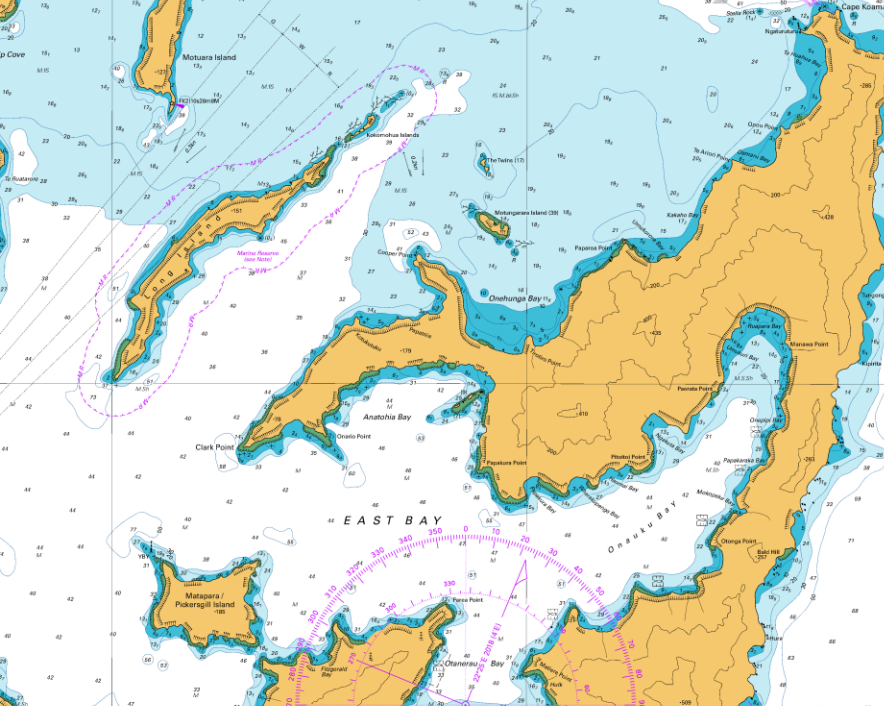
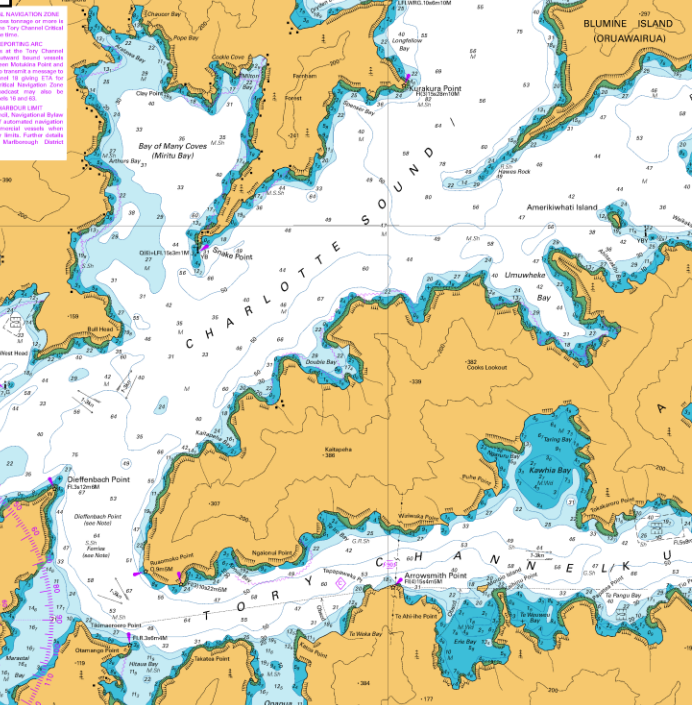
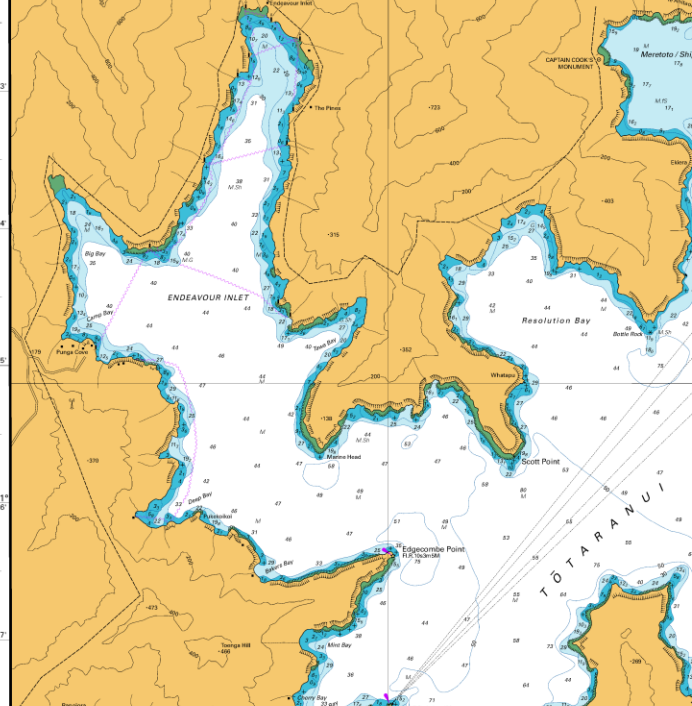
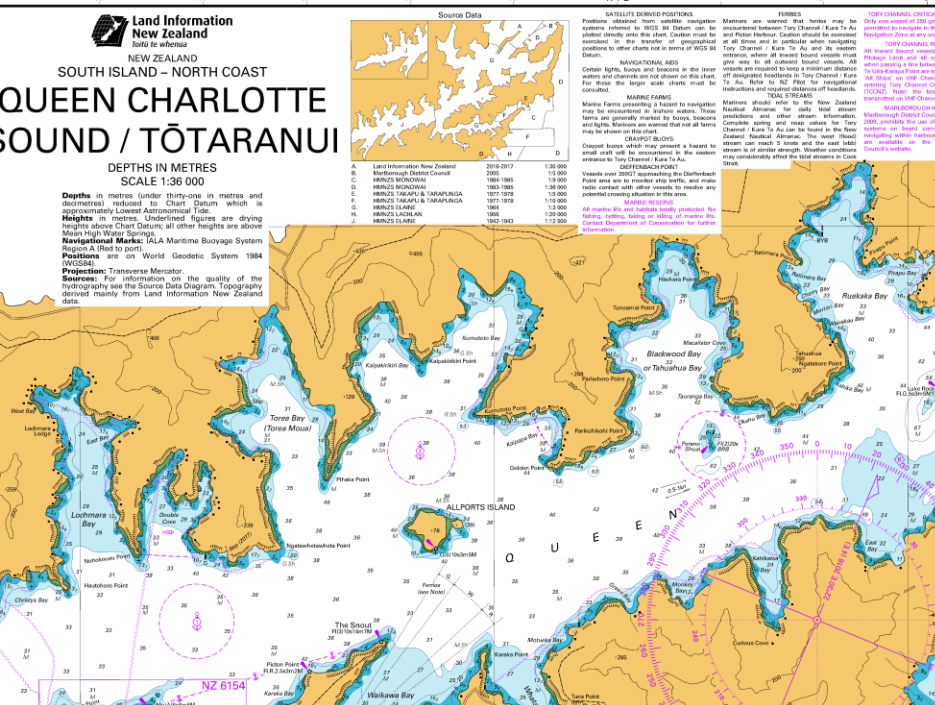
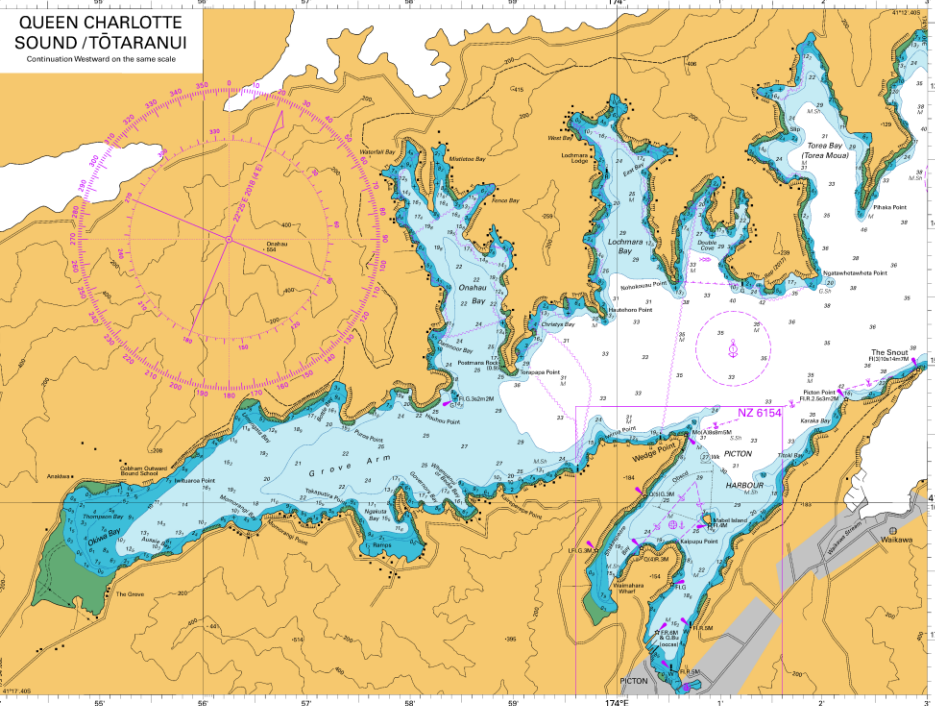
Tides





HS51 Hydrographic Survey of Queen Charlotte Sounds/Tōtaranui and Tory Channel/Kura Te Au

COOK STRAIT
(RAU KAWAKAWA)



Land Information New Zealand
SOUTH ISLAND - NORTH COAST
QUEEN CHARLOTTE SOUND / TŌTARANUI
DEPTHS IN METRES
SCALE 1:36 000

Depths in metres (under thirty-one in metres and decimetres) reduced to Chart Datum which is approximately Lowest Astronomical Tide.
Heights in metres. Underlined figures are drying heights above Chart Datum; all other heights are above Mean High Water Springs.
Navigation Marks ICA Marine Buoyage System. Region A (Red to port).
Position 91° on World Geodetic System 1984 (WGS84).
Projection Transverse Mercator.
Source: For information on the quality of the hydrography see the Source Data Diagram. Topography derived mainly from Land Information New Zealand data.

Source Data	2016-2017	2018-2019	2020-2021	2022-2023
A. Land Information New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
B. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
C. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
D. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
E. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
F. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
G. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
H. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
I. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000
J. Maritime New Zealand	1:36 000	1:36 000	1:36 000	1:36 000

NAVIGATIONAL AIDS
Cape Horn Light, buoy and beacon in the lower water and channel are not shown on this chart. For these the larger scale charts must be consulted.

CAUTION
Marine forces presenting a hazard to navigation have been encountered in recent years. These are generally marked by buoys, beacons and lights. Mariners are advised that not all of these may be shown on this chart.

CAUTION
The chart is a reprint of a chart of the same area, and it is possible that the chart may be out of date. Mariners are advised to consult the latest edition of the chart.

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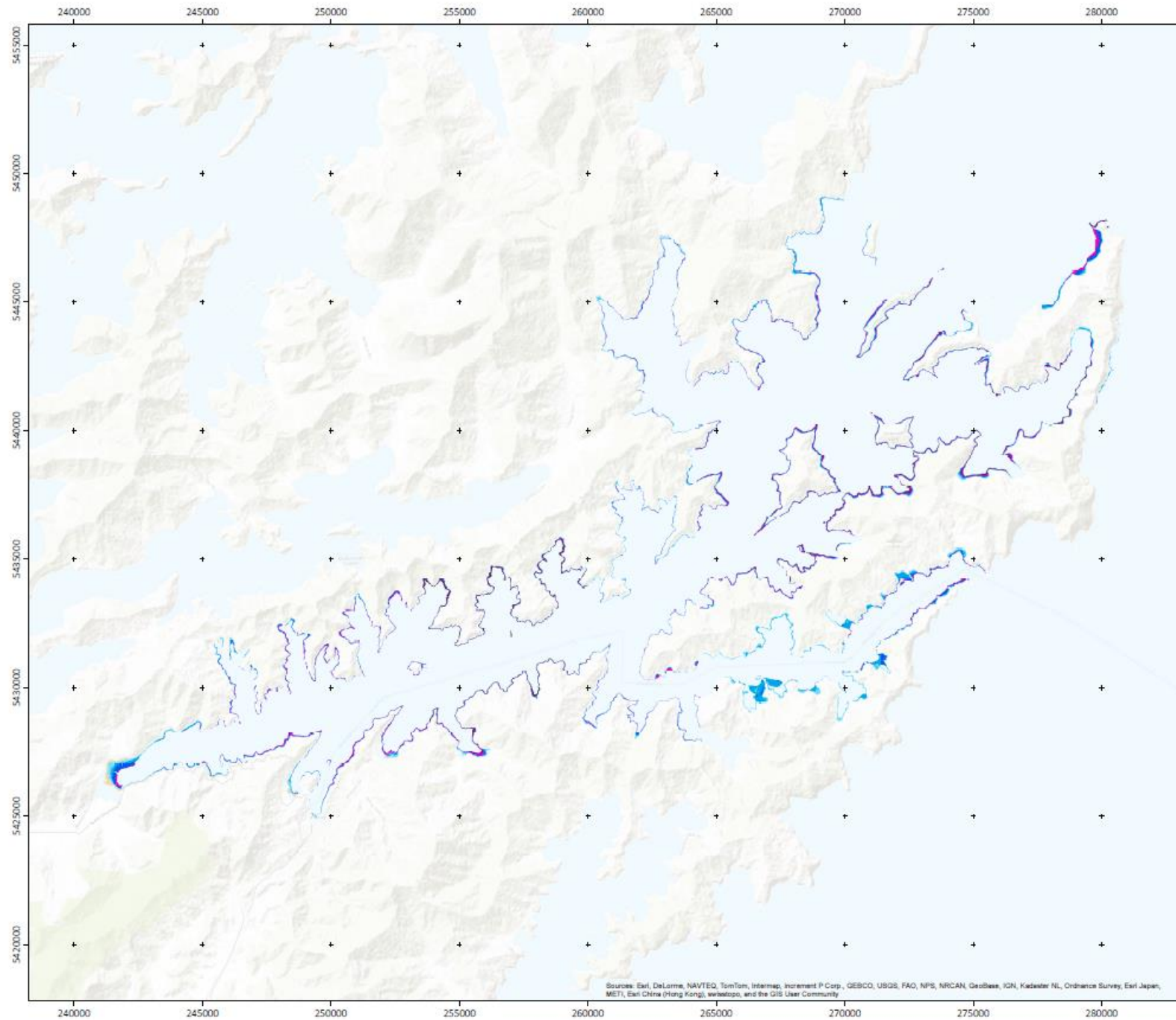
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Safety of Navigation





Marlborough Sound, NZ Satellite Derived Bathymetry

Data Source

Satellite sensor data: Very High Resolution multispectral
Spectral bands: 4-8
Spatial resolution: 2 to 2.4 m
Date of recording: 2007 to 2014

Legend

Bathymetry (Chart Datum)

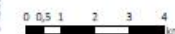


Overview



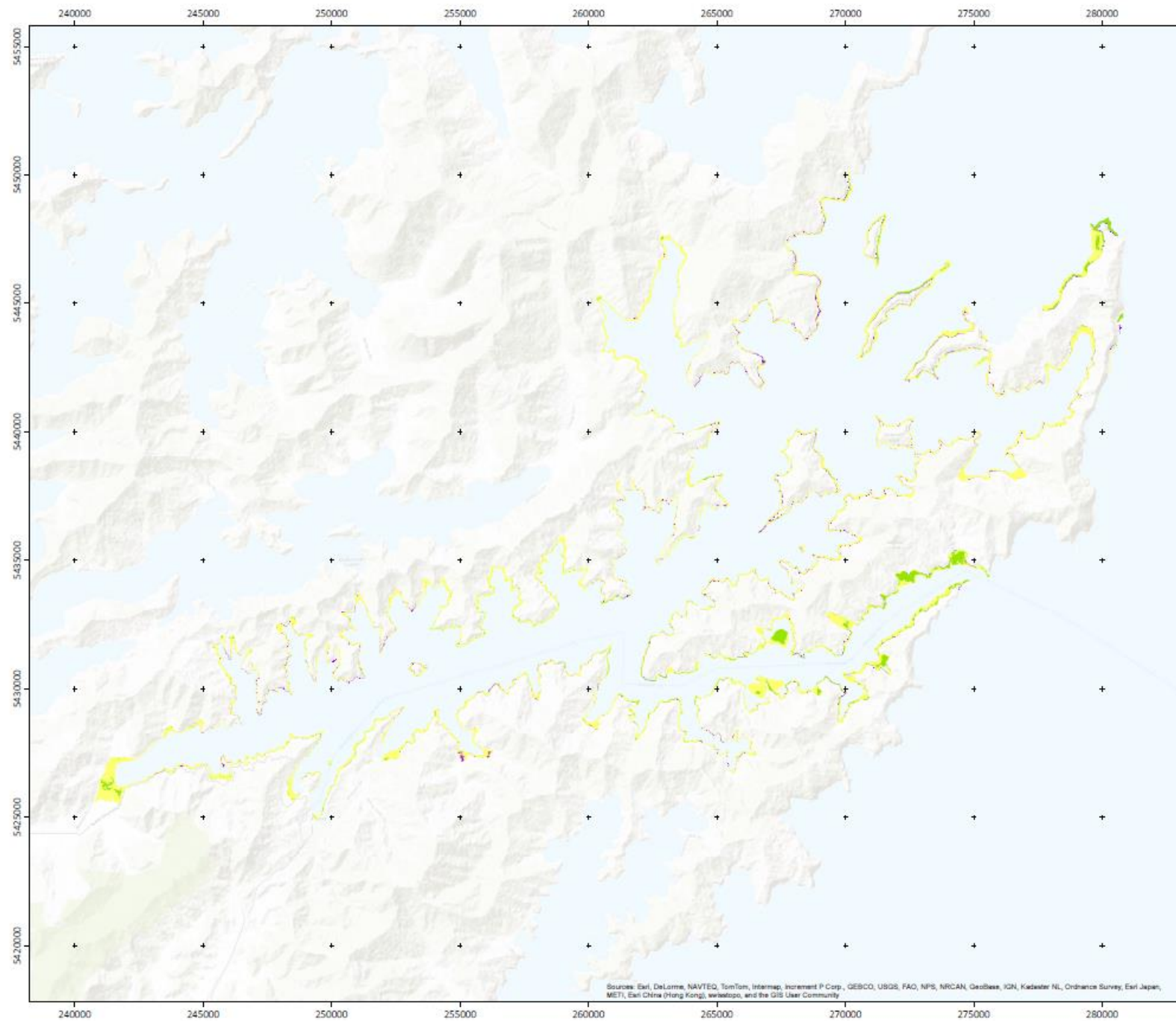
Spatial Reference

UTM Zone: UTM Zone 60
Datum: WGS 84
EPSG code: 32760



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Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, and the GIS User Community



Marlborough Sound, NZ Benthic map

Data Source

Satellite sensor data: Very High Resolution multispectral
Spectral bands: 4-8
Spatial resolution: 2 to 2.4 m
Date of recording: 2007 to 2014

Legend

Seafloor coverage

- Covered by vegetation
- Hardbottom
- Unconsolidated sediment

Overview



Spatial Reference

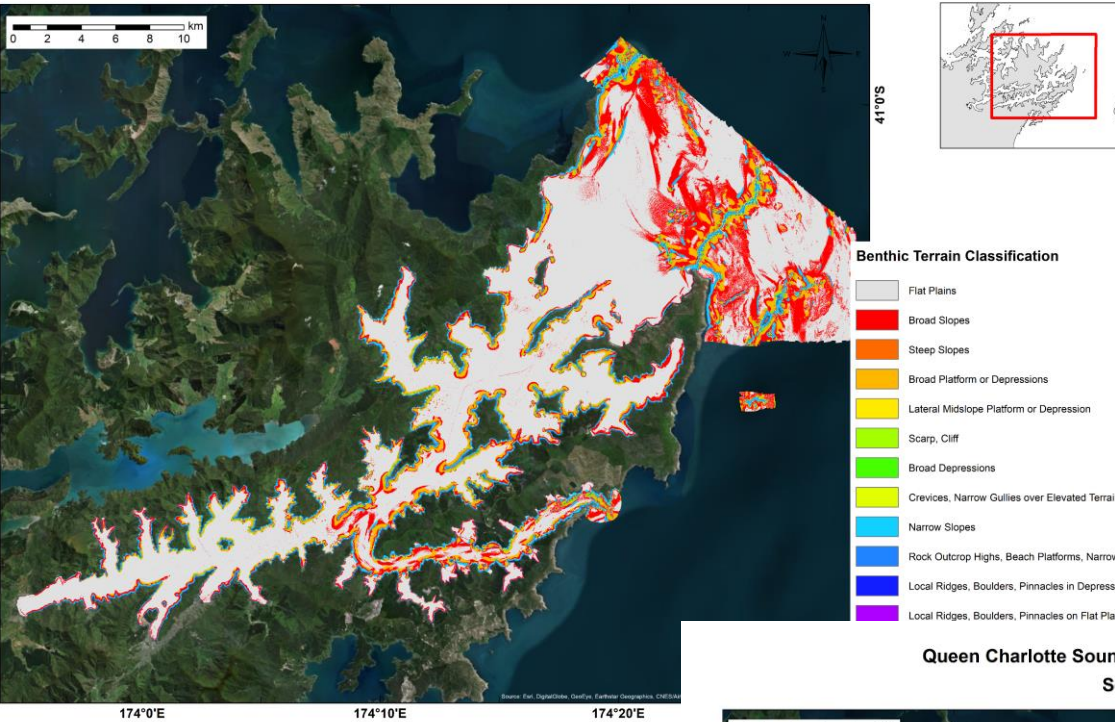
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EPSG code: 32760

0 0.5 1 2 3 4
km

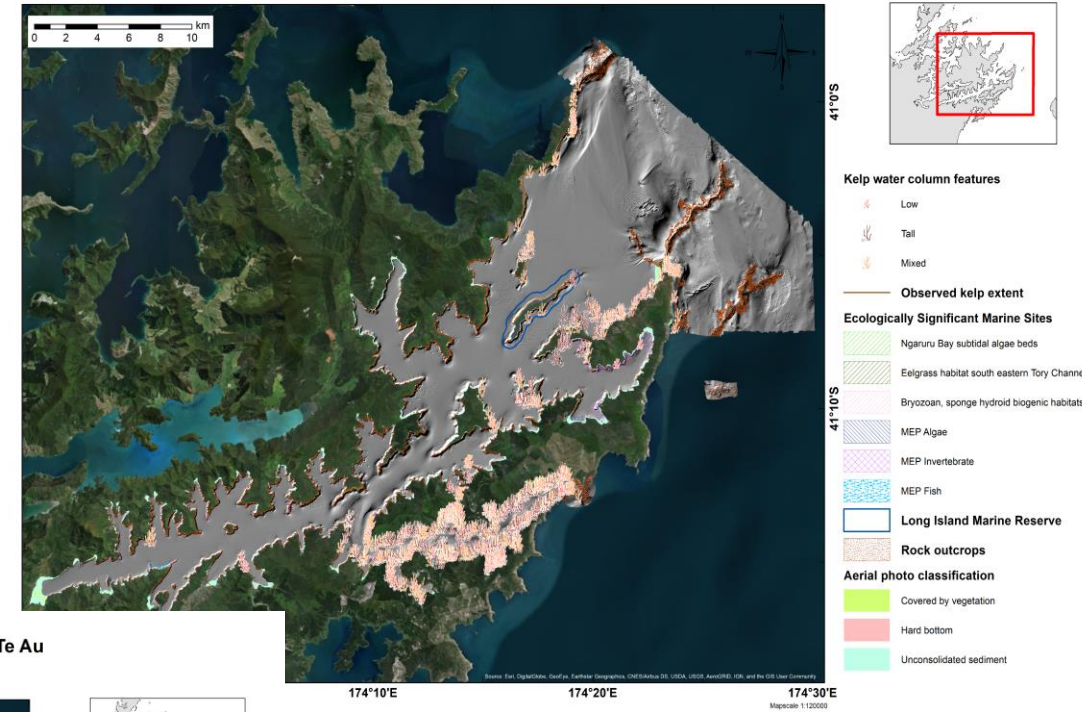


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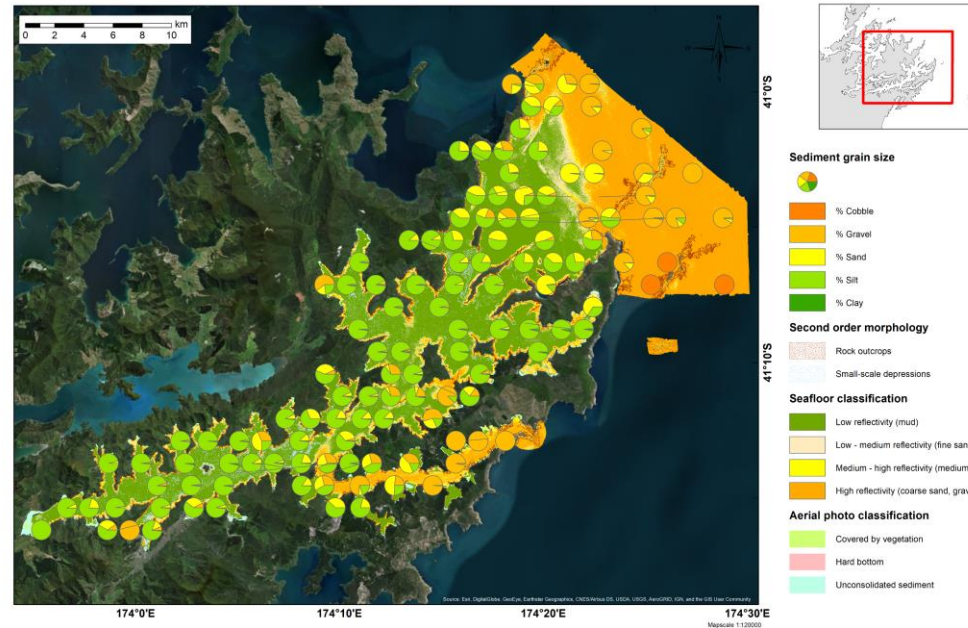
Queen Charlotte Sound/Tōtaranui and Tory Channel/Kura Te Au Benthic Terrain Classification



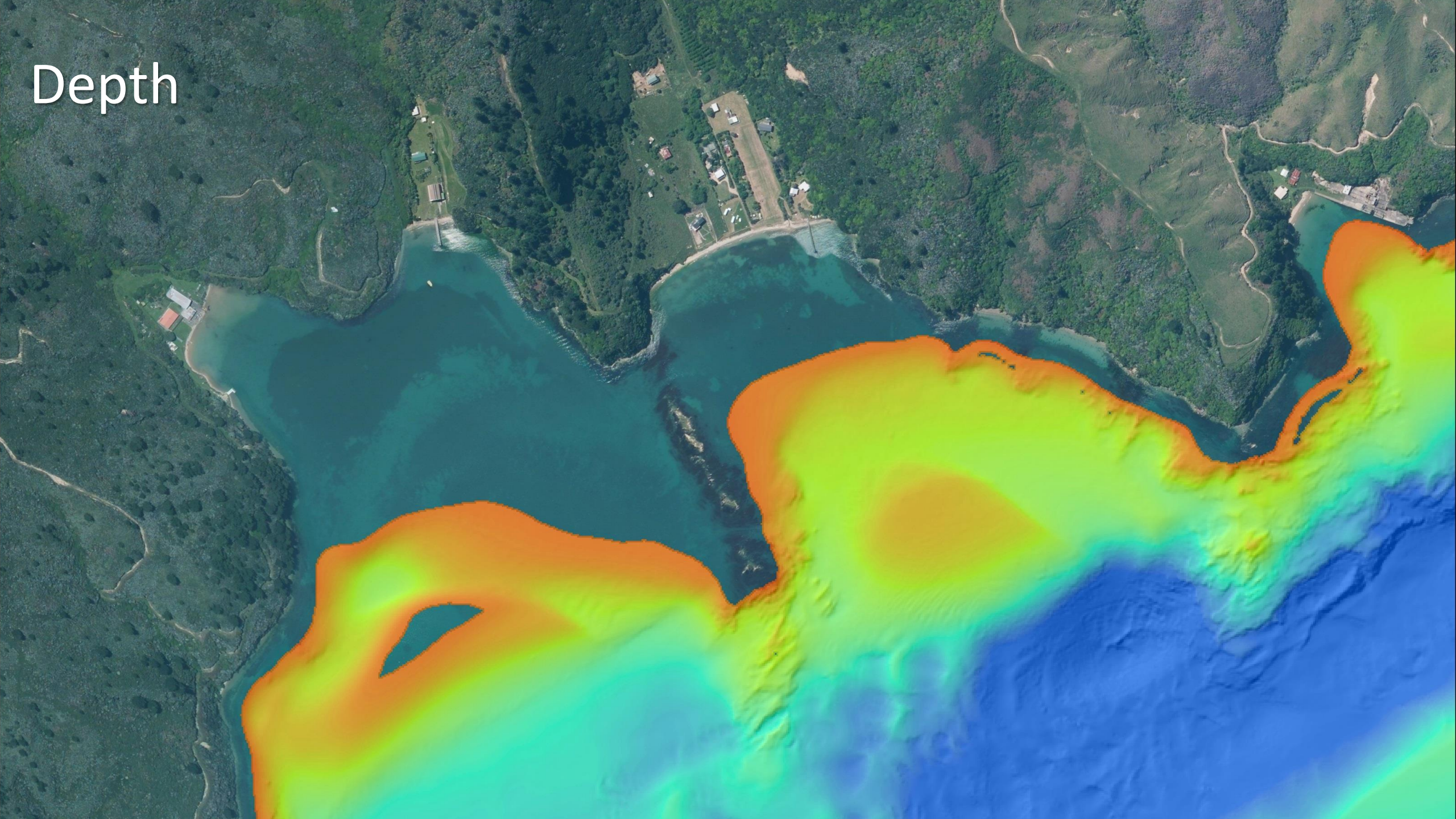
Queen Charlotte Sound/Tōtaranui and Tory Channel/Kura Te Au Ecology



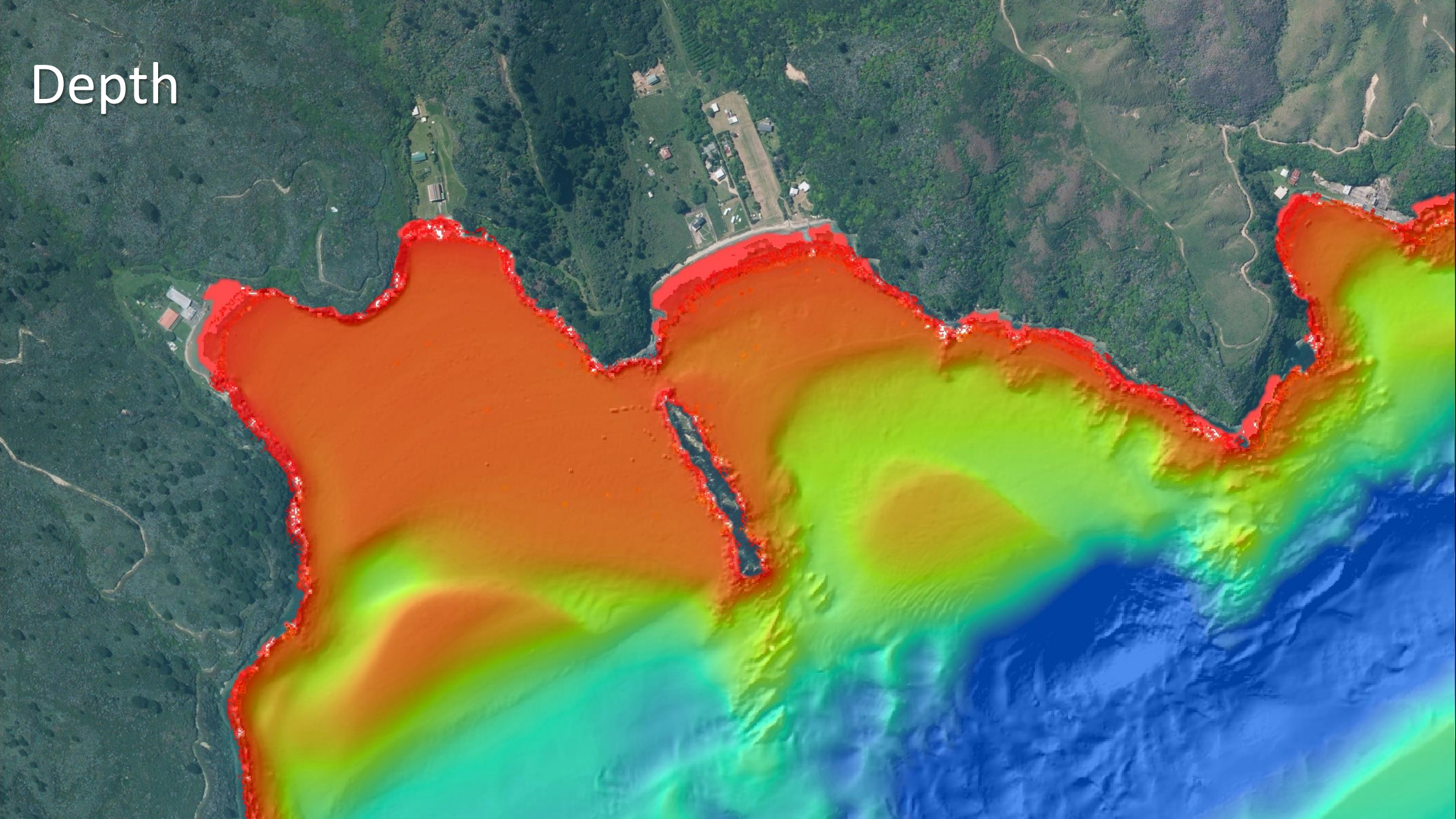
Queen Charlotte Sound/Tōtaranui and Tory Channel/Kura Te Au Seafloor Classification



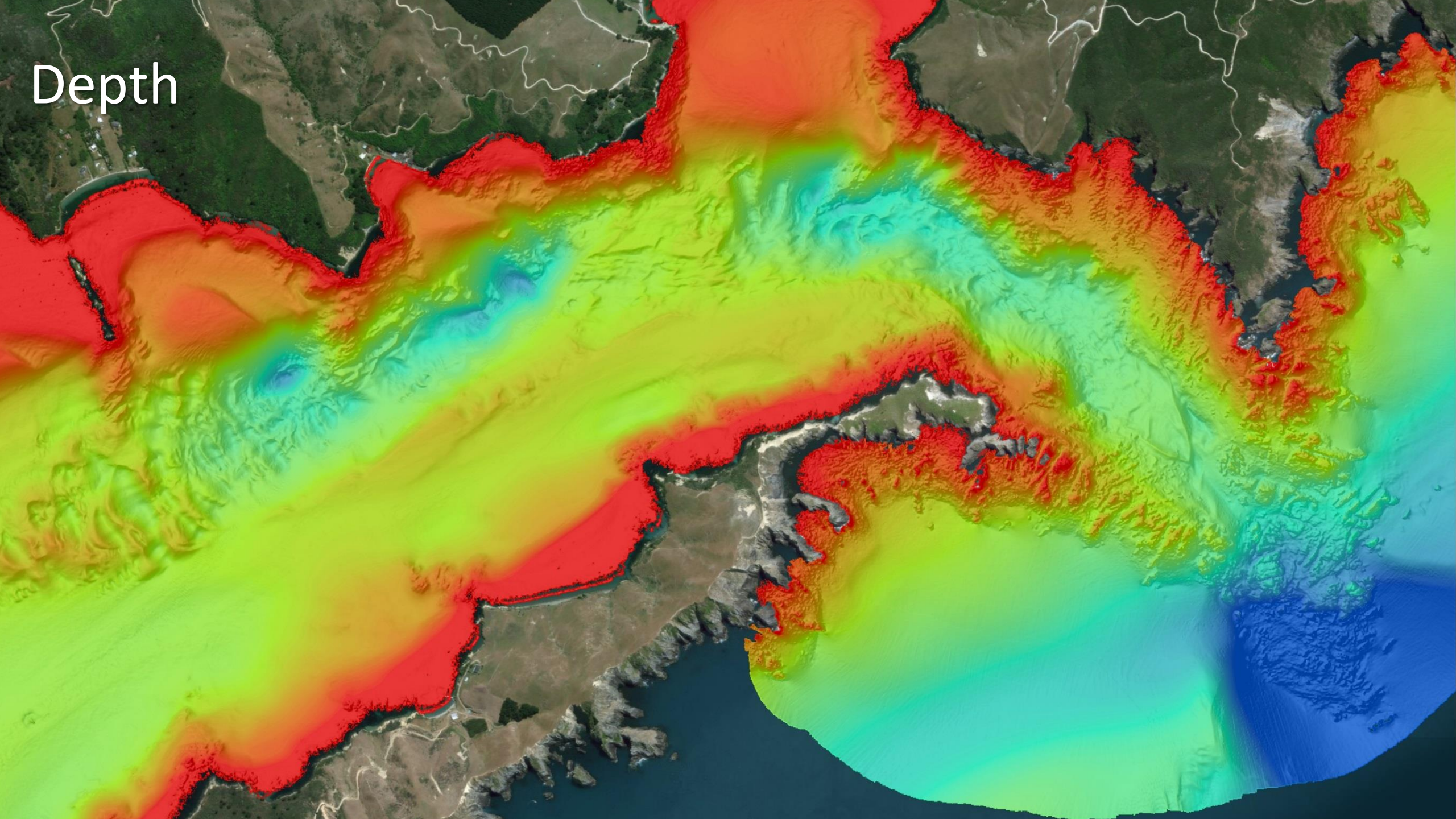
Depth



Depth

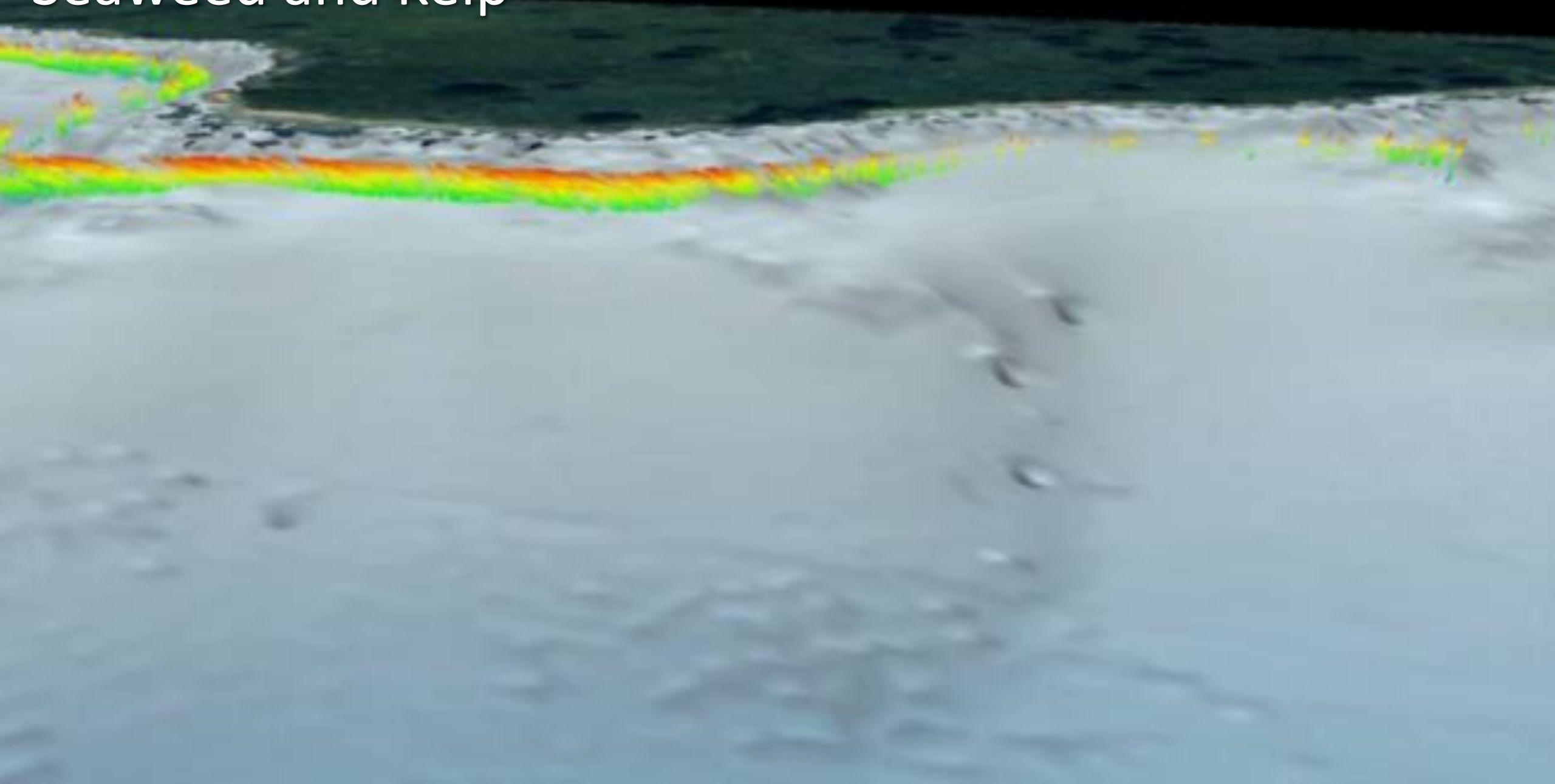


Depth

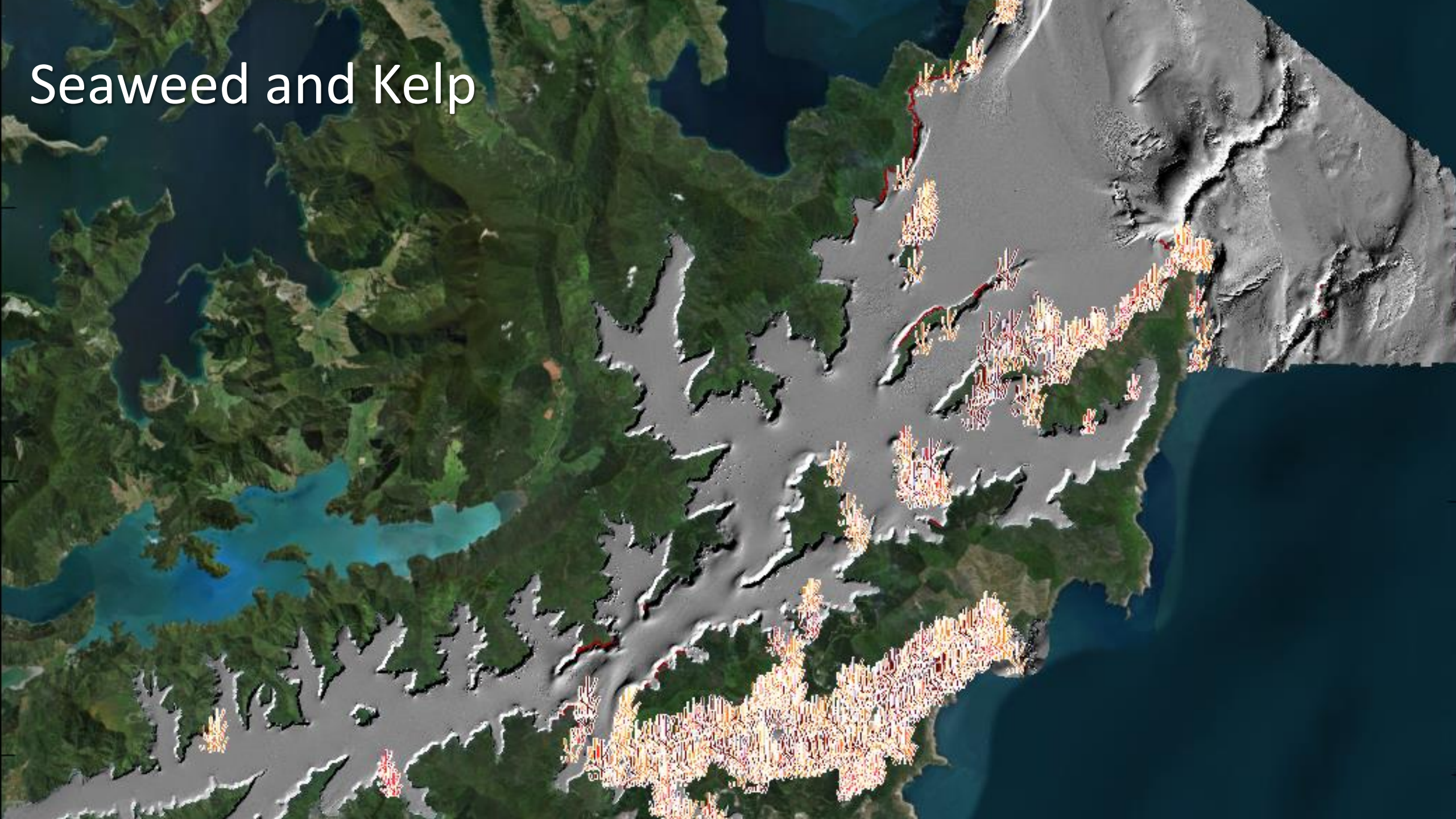




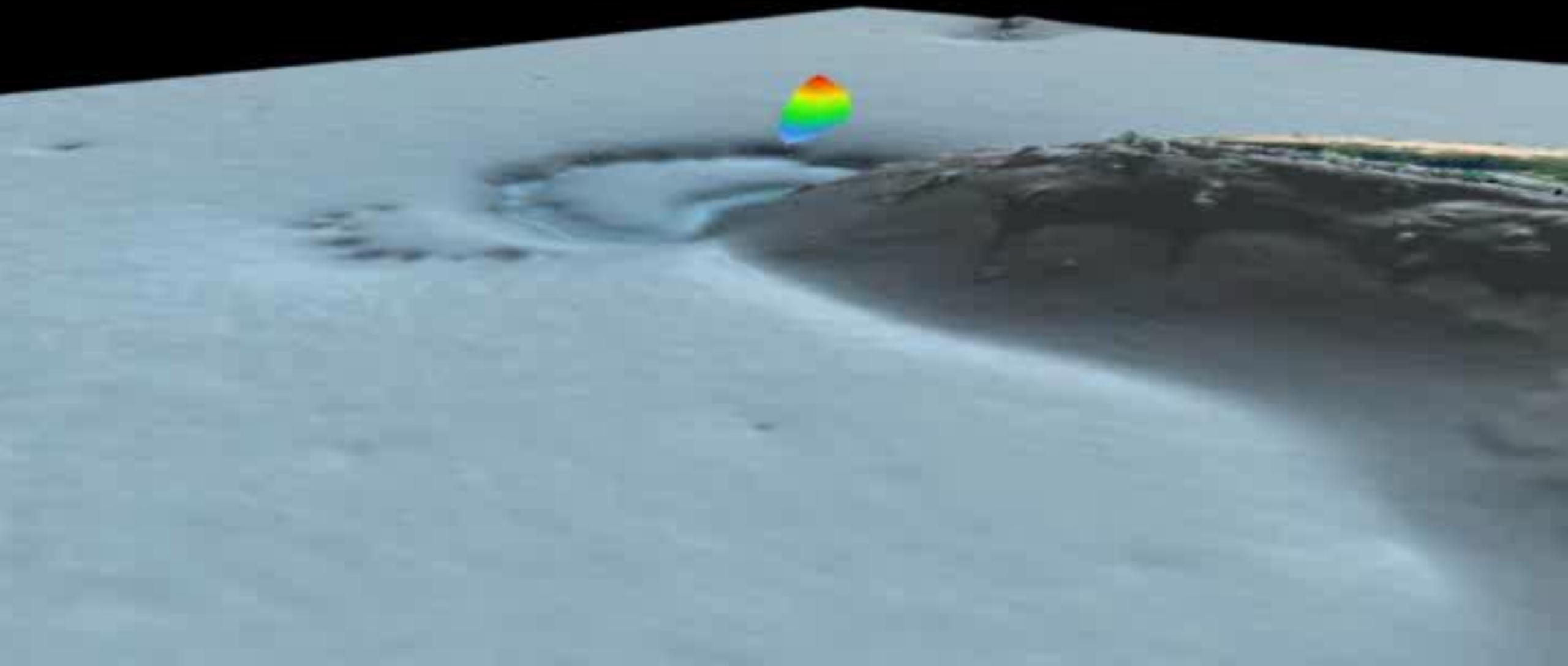
Seaweed and Kelp



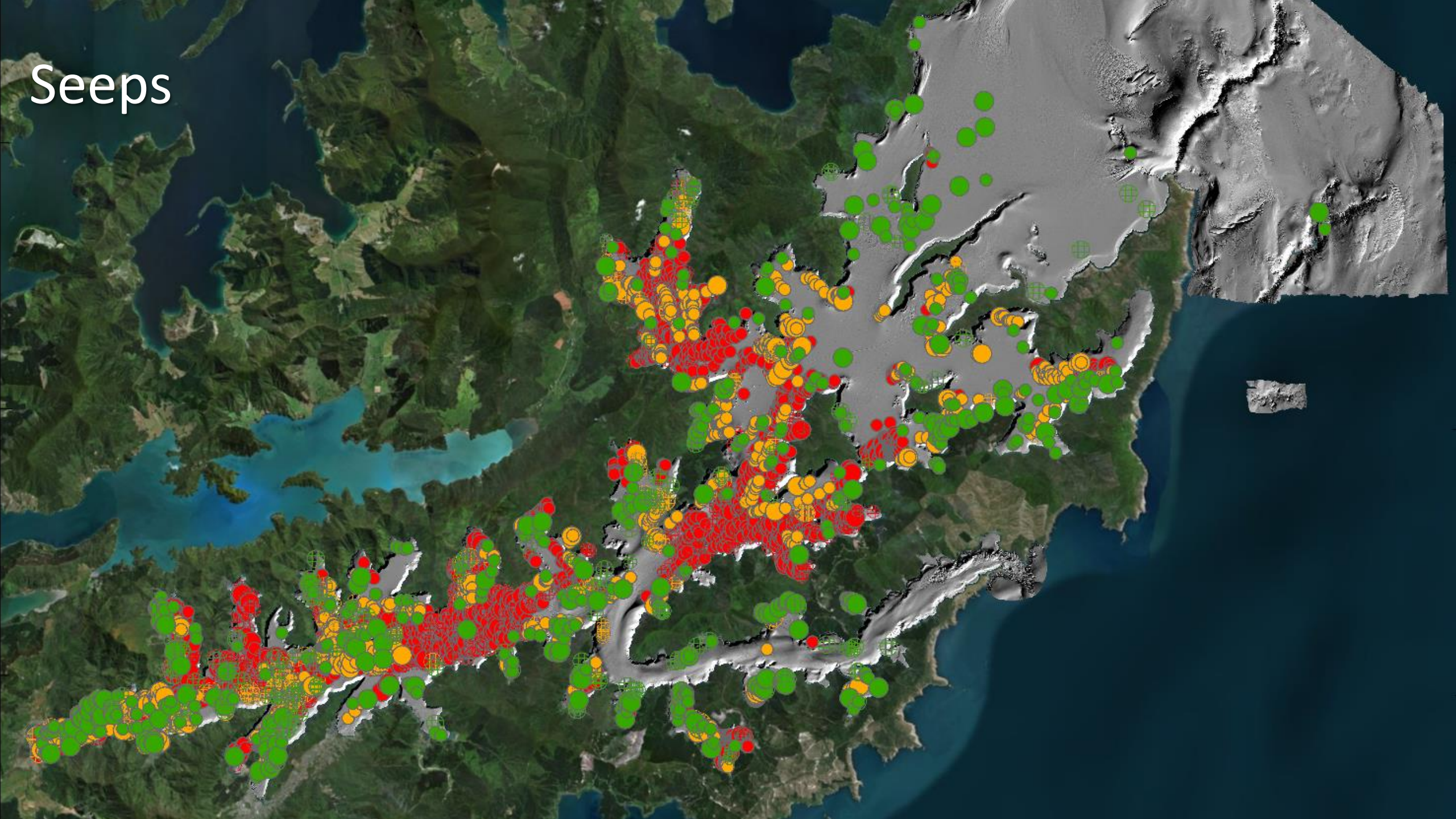
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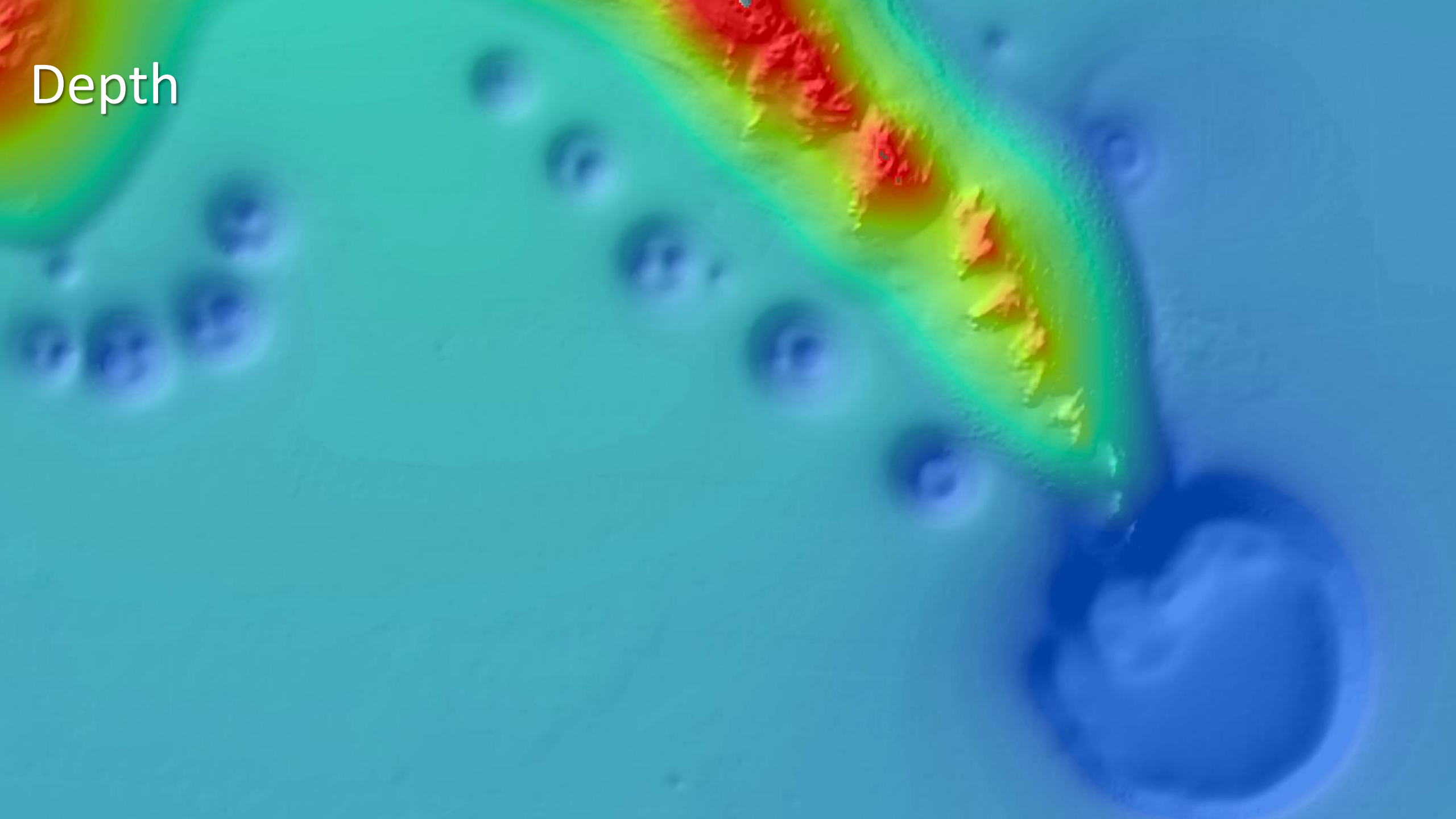
Seeps



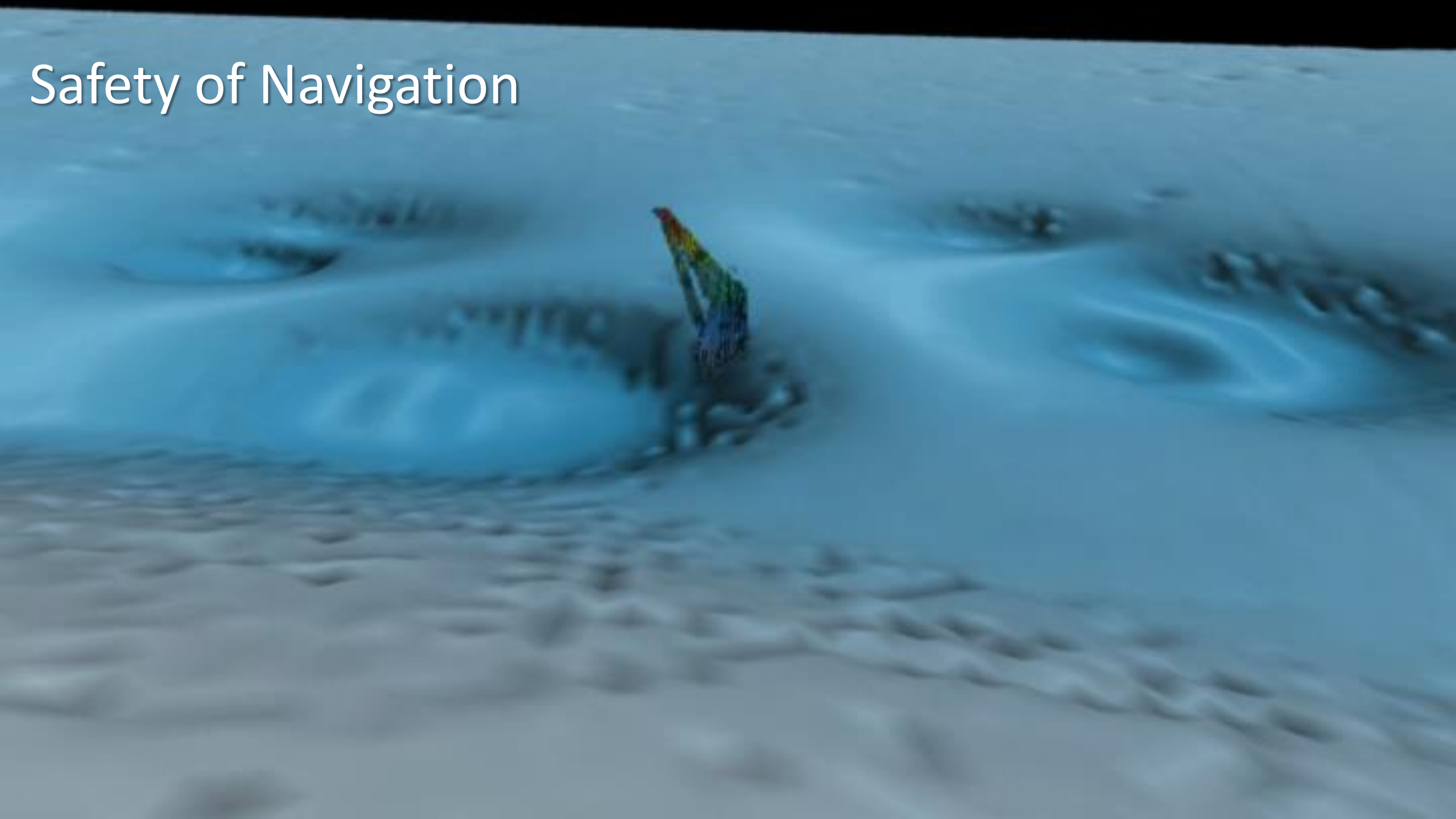
Seeps

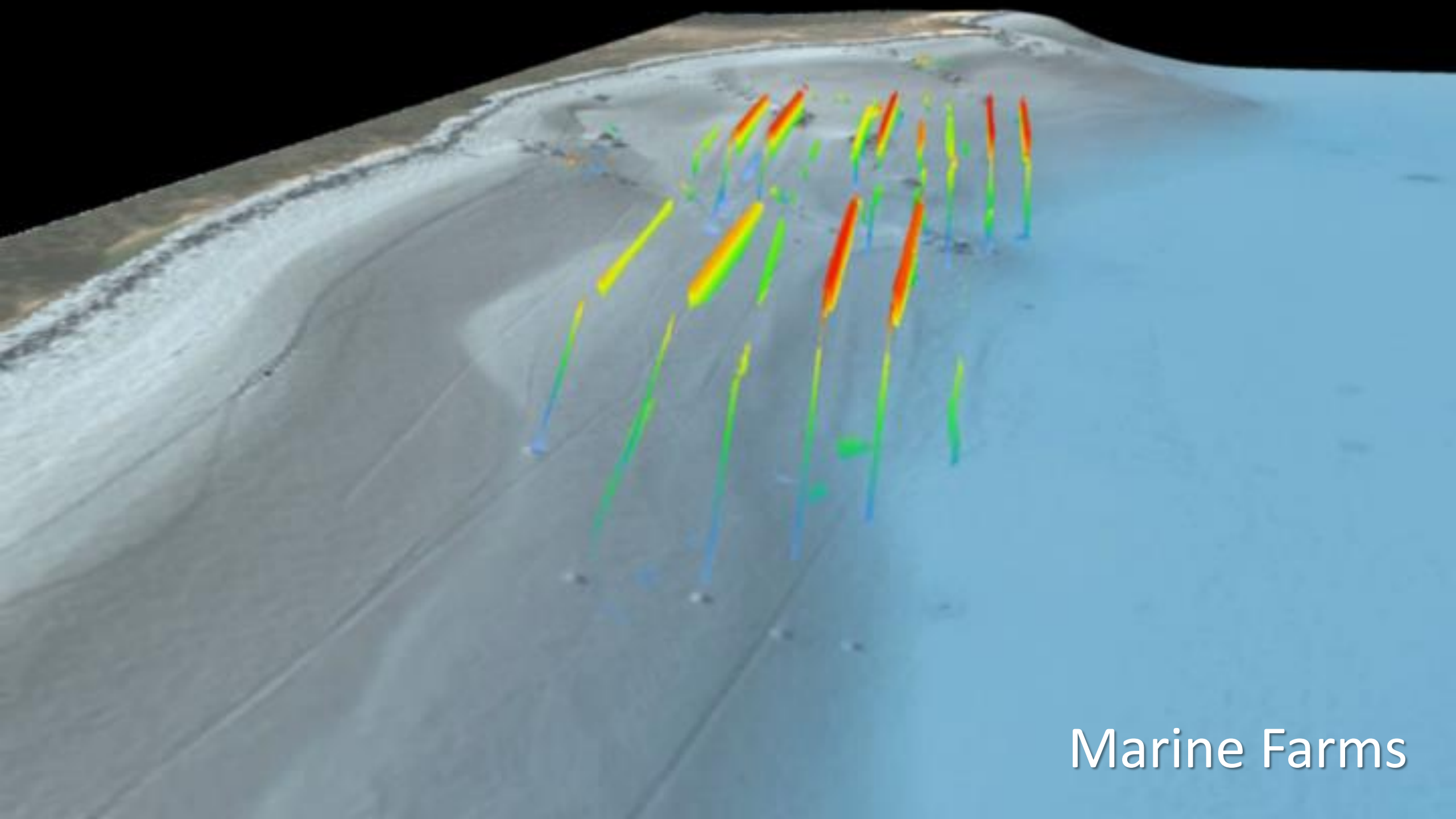


Depth



Safety of Navigation





Marine Farms





Acknowledgements

- NIWA core funding through the Coasts and Oceans Centre
- Land Information New Zealand
- Marlborough District Council
- Discovery Marine Limited
- EOMAP