

New Zealand – National Report

Glen Rowe, Technical Leader Sea Level Data



Organisation Structure

- Land Information New Zealand (LINZ)

A New Zealand government department responsible for land titles, geodetic and cadastral survey systems, topographic information, hydrographic information, managing Crown property and a variety of other functions.

- New Zealand Hydrographic Authority

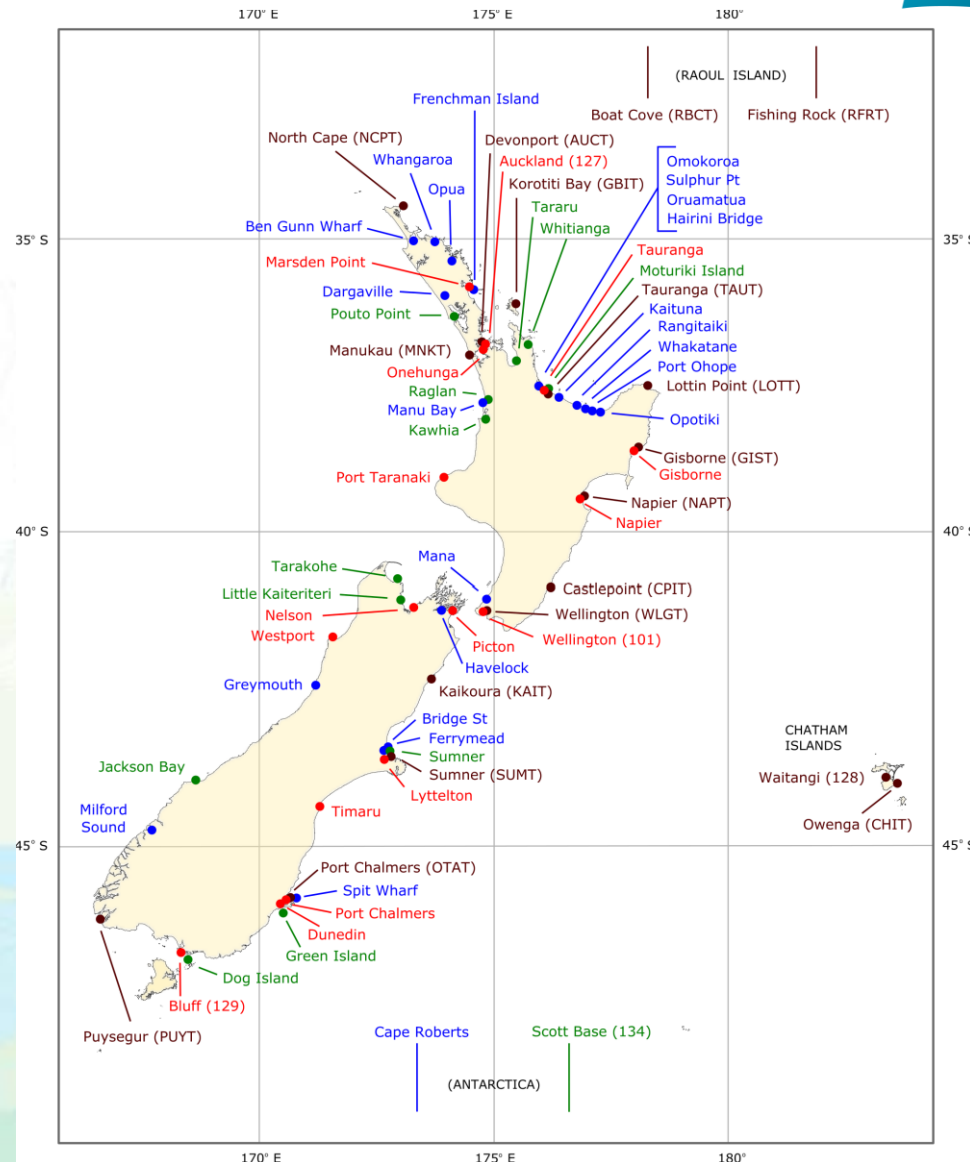
LINZ assumed hydrographic responsibilities from Royal NZ Navy in 1996.

Initially work contracted back to RNZN, now all in-house except for hydrographic surveys.

Permanent Tide Gauges



Land Information
New Zealand
Toitū te whenua



Sea Level Data

- Recorded at 1, 5 or 10 minute intervals
- Received daily, monthly, quarterly
- Multiple formats
- E-mail, ftp, internet
- Archived by LINZ
- Data owned by supplier

Analysis and Prediction

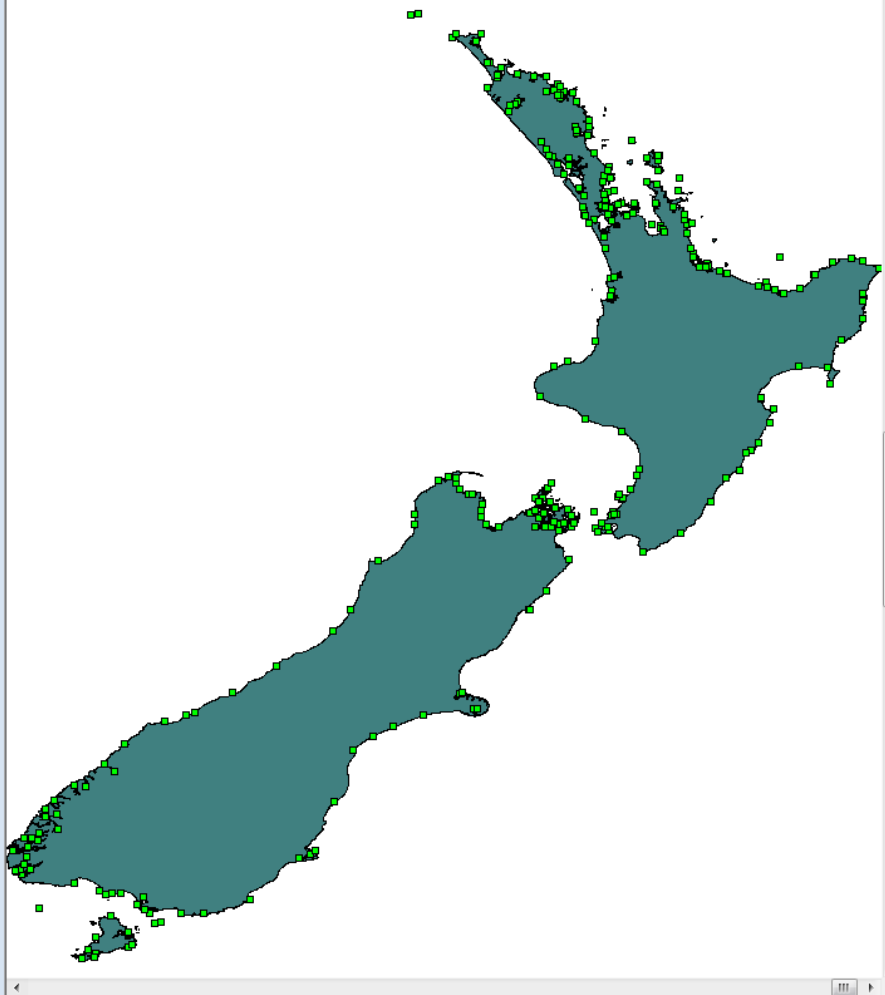
- Use Mike Foreman's software
- Sea Level Information Management System (SLIMS)
- Annual analyses of permanent sites
- Publish daily high/low predictions for 16 standard ports in NZ Nautical Almanac
- Publish daily high/low predictions for a further 50 location on the LINZ website
- Publish offset corrections for 220 secondary ports

- Time-series data system
- Data validation, analysis, predictions, tide levels etc
- Editing functions
- Graphical views of data
- Data, constituent sets, tidal levels etc stored in SQL Server database

Sea Level Information Management System - [Main Window]

File Edit View Map Data Graph Window Help

Map navigation icons: [Zoom In] [Zoom Out] [Hand] [Home] [Layers] [Print] [Full Screen] [Previous View] [Next View] [Help]



Ready

47° 20'S 174° 40'E

Identification

Station ID

Name

Lat/Long

Benchmarks

	Name	Code	CD Description
Primary	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sec 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Sec 2	<input type="text"/>	<input type="text"/>	<input type="text"/>

Master Mean Tidal Levels

	Admiralty	Means	Manual
MHWS	<input type="text"/>	<input type="text" value="3.387"/>	<input type="text"/>
MHWN	<input type="text"/>	<input type="text" value="2.867"/>	<input type="text"/>
MLWN	<input type="text"/>	<input type="text" value="0.926"/>	<input type="text"/>
MLWS	<input type="text"/>	<input type="text" value="0.397"/>	<input type="text"/>

	Derived	Manual
MSL	<input type="text"/>	<input type="text"/>
HAT	<input type="text"/>	<input type="text"/>
LAT	<input type="text"/>	<input type="text"/>

Constituents

Master Date

Data from to

Number of Constituents

Theoretical RMS

Matrix Condition

Residual Std Deviation

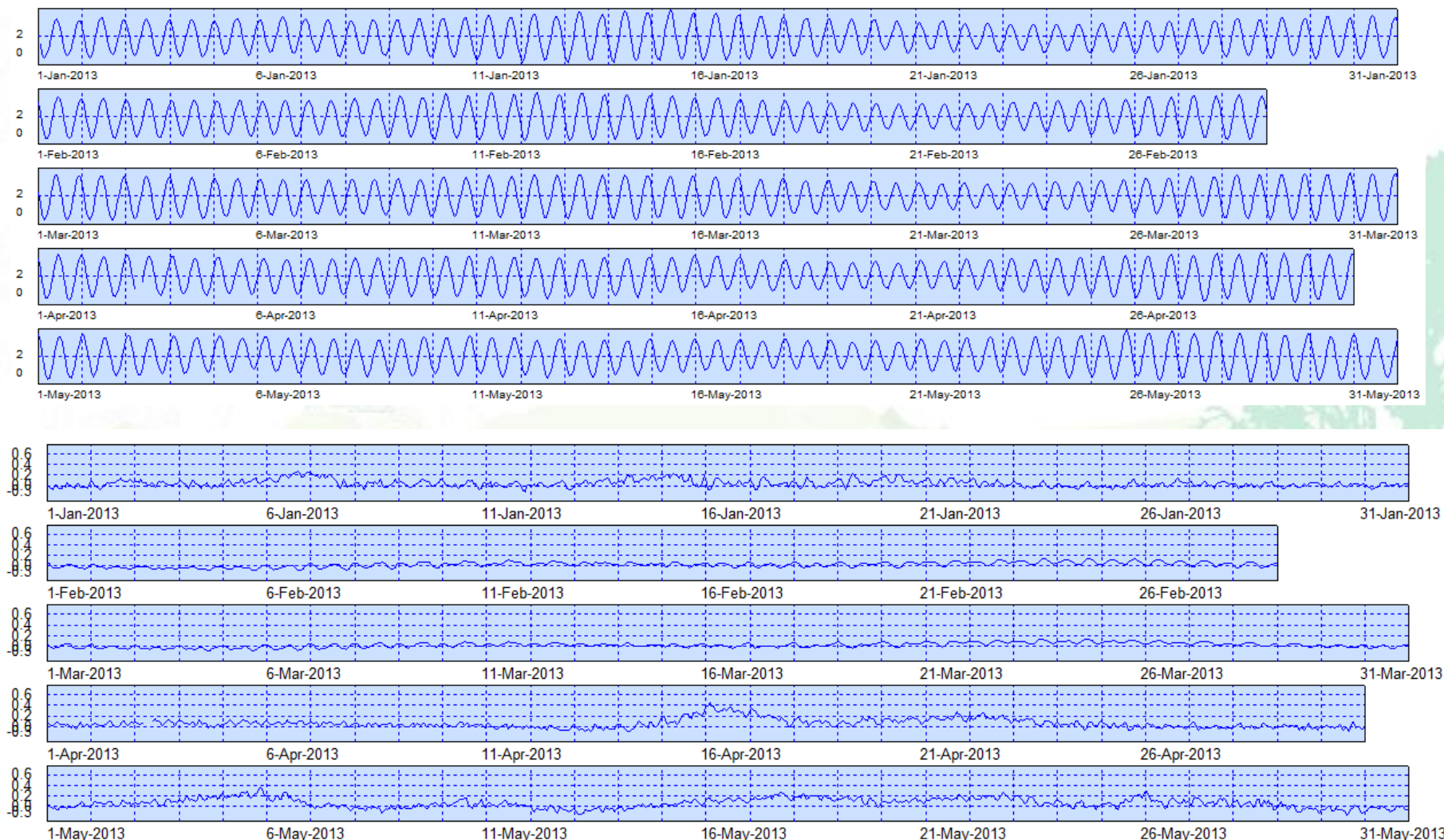
Comment

Secondary Port

Std Port

	Computed	Manual
Time Differences	<input type="text"/>	<input type="text"/>
Mean High Water	<input type="text"/>	<input type="text"/>
Mean Low Water	<input type="text"/>	<input type="text"/>

newzealand.govt.nz



Publishing Tide Information

- New Zealand Nautical Almanac
- LINZ web-site
- MarineMate
- NZ MetService
- OceanFun
- Other 3rd parties on request
- All free of charge



The screenshot shows a mobile app interface for "Akaroa Tides". At the top, the status bar shows "Voda NZ", signal strength, Wi-Fi, and the time "3:09 PM". Below the status bar is a dark header with the title "Tide Details". The main content area is titled "Akaroa Tides" in green. It features a table with tide data for the next nine days. The table has columns for the day, high tide time, low tide time, and high tide time. The data is as follows:

	High	Low	High	Low	High
1 Mar Friday	-	4:25 0.46 m	10:49 3.30 m	16:51 0.48 m	23:18 3.23 m
2 Mar Saturday	-	5:10 0.48 m	11:35 3.28 m	17:37 0.47 m	-
3 Mar Sunday	12:05 3.22 m	5:58 0.55 m	12:23 3.24 m	18:25 0.50 m	-
4 Mar Monday	12:54 3.19 m	6:52 0.63 m	13:13 3.18 m	19:17 0.55 m	-
5 Mar Tuesday	1:46 3.13 m	7:51 0.70 m	14:07 3.10 m	20:15 0.61 m	-
6 Mar Wed	2:44 3.08 m	8:53 0.74 m	15:06 3.04 m	21:16 0.65 m	-
7 Mar Thursday	3:49 3.06 m	9:56 0.75 m	16:10 3.01 m	22:21 0.66 m	-
8 Mar Friday	4:57 3.10 m	11:00 0.71 m	17:17 3.03 m	23:26 0.63 m	-
9 Mar	6:00	12:00	18:21	-	-

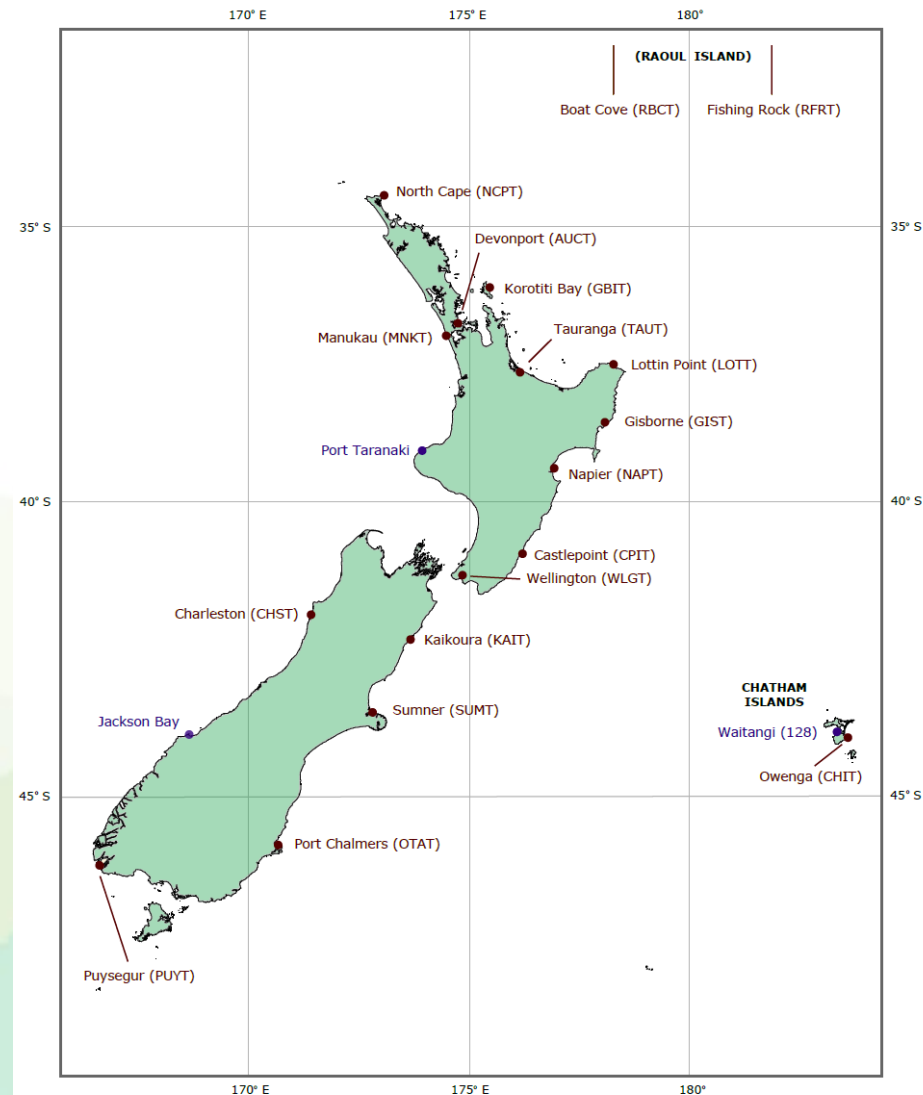
At the bottom of the screen is a navigation bar with four icons: a hamburger menu, a location pin, a magnifying glass, and an information icon. Below these icons are the labels "Main Menu", "Location", "Search", and "Area Notices".

Tidal Streams / Currents

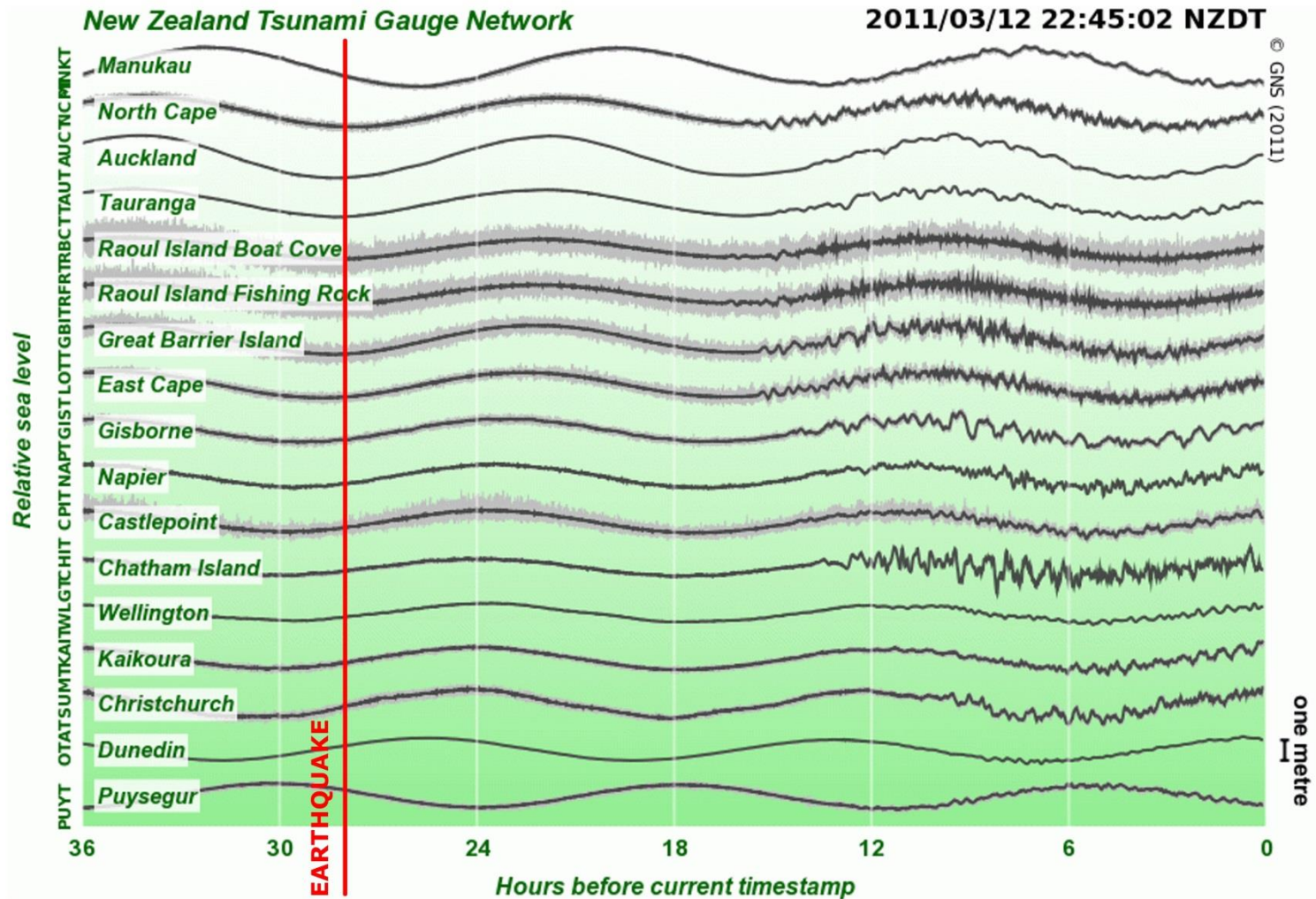
- Publish daily tidal stream predictions for 2 locations
 - Formula applied to tide predictions at nearby ports
- Survey contracts likely to include current measurements
- At present no in-house capability to process, validate current measurements
- Would welcome advice, recommendations about developing this capability

Tsunami Monitoring Network

- 18 sites
- Fully operational 2010
- Druck pressure sensors
- 30 sec comms
- Partnership with GNS Science



Tōhoku, Japan - 11 March 2011



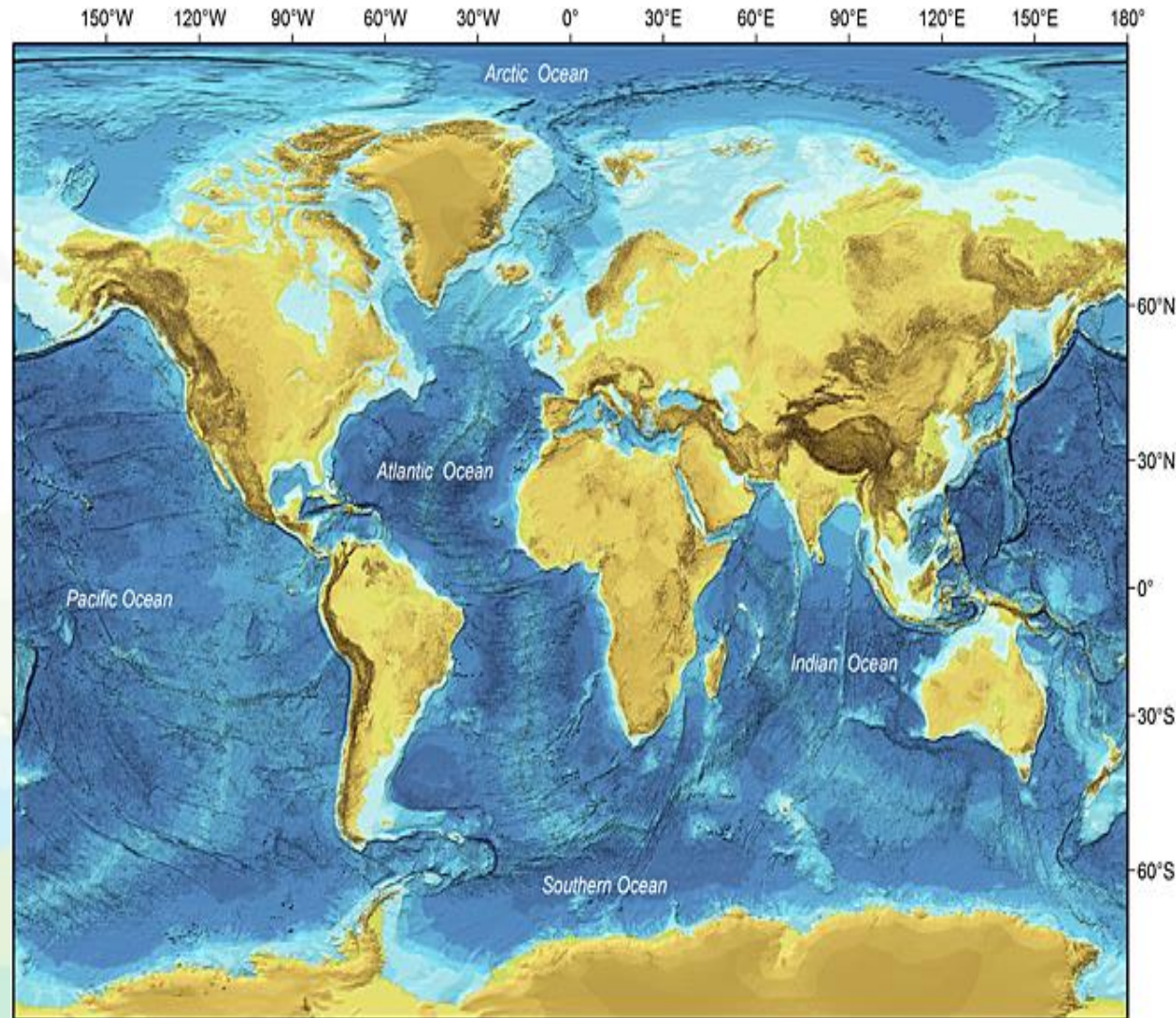
Seabed 2030

Vision

100% of the world ocean floor mapped by 2030

Mission

Produce the definitive map of the world ocean floor by 2030 to:
empower the world to make policy decisions,
use the ocean sustainability and undertake scientific research based on detailed bathymetric information of the Earth's seabed



Seabed 2030

<15% of the ocean floor have been mapped at an acceptable resolution

Seabed 2030 will be organised in 4 Regional Data Assembly and Coordination centres and 1 Global centre

Grid-cell size will vary 100x100m; 200x200m; 400x400m

Regional Data Centres will:

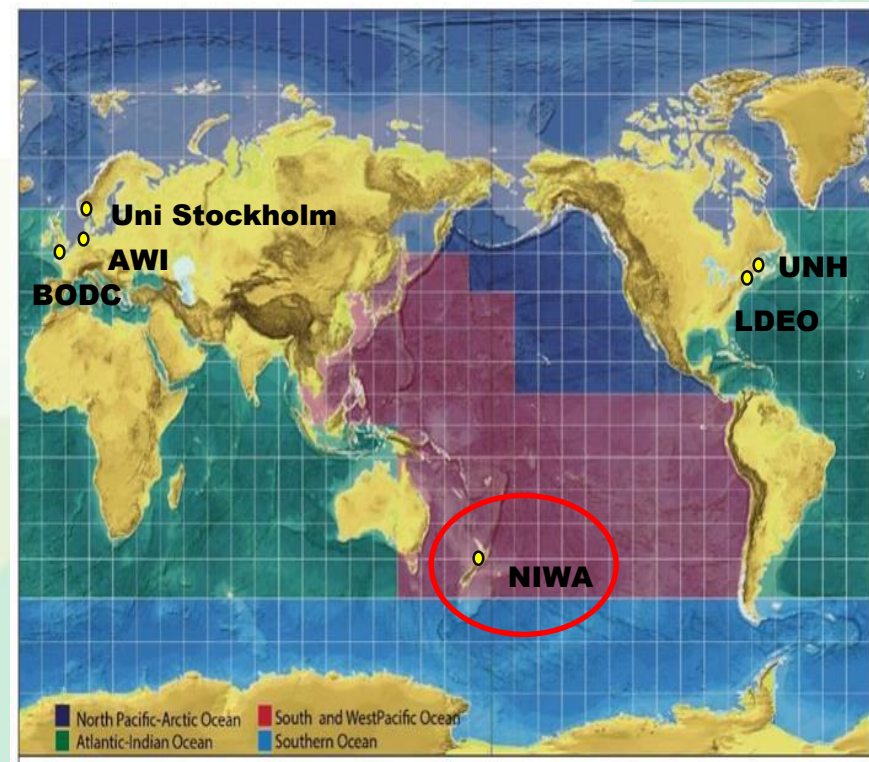
Organise/facilitate surveys

Work with countries/industry/public so they provide data

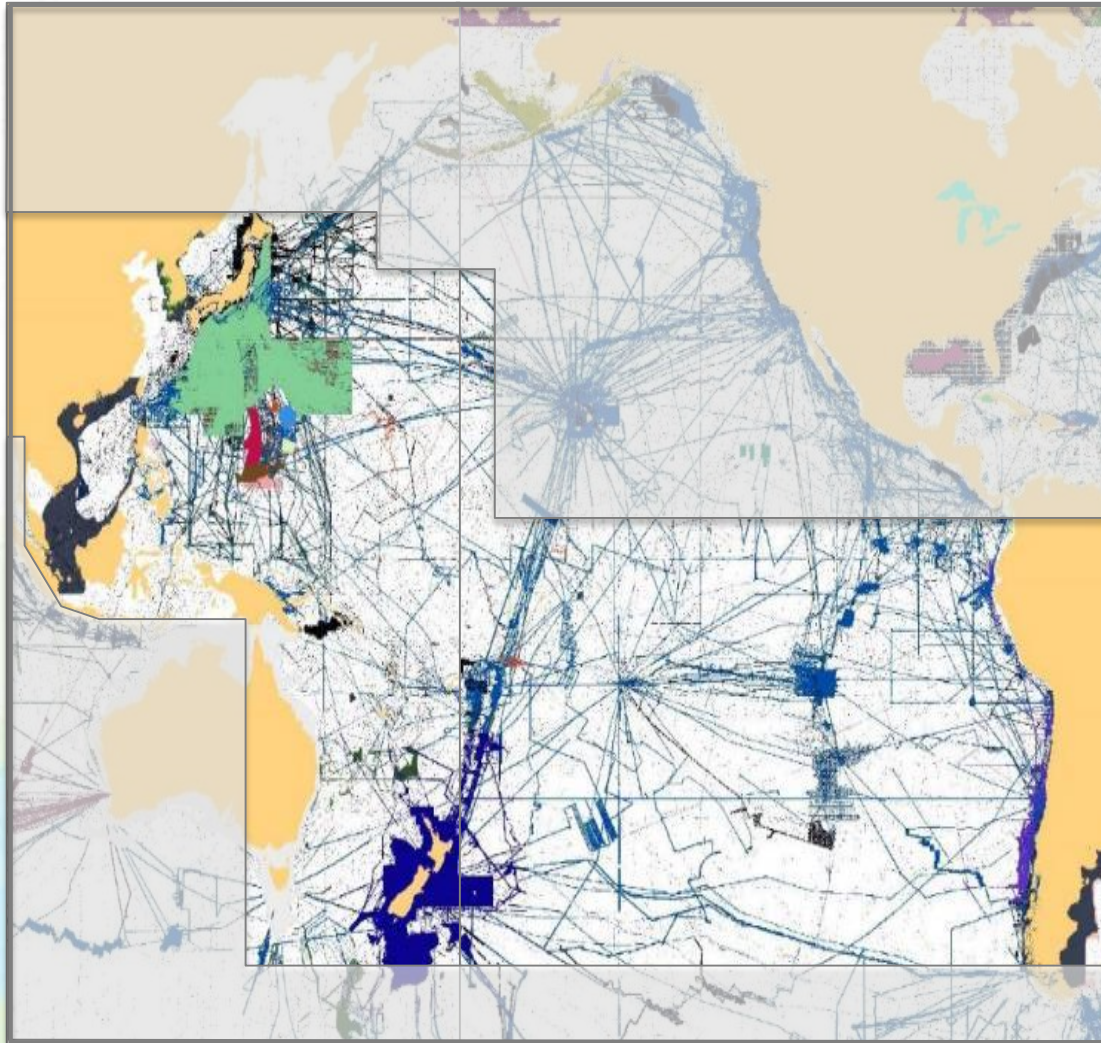
Identify and prioritise critical data gaps

Encourage development of new mapping technologies

Develop tools to continuously update data coverage



The Seabed 2030 South and West Pacific Centre



39 countries

~150,000,000 km²

Need point of contact in each country

Help bring together bathymetric data to produce the best map possible



Thank You