



NIWA

Taihoru Nukurangi

Climate, Freshwater & Ocean Science

A Pacific Perspective

Kevin Mackay

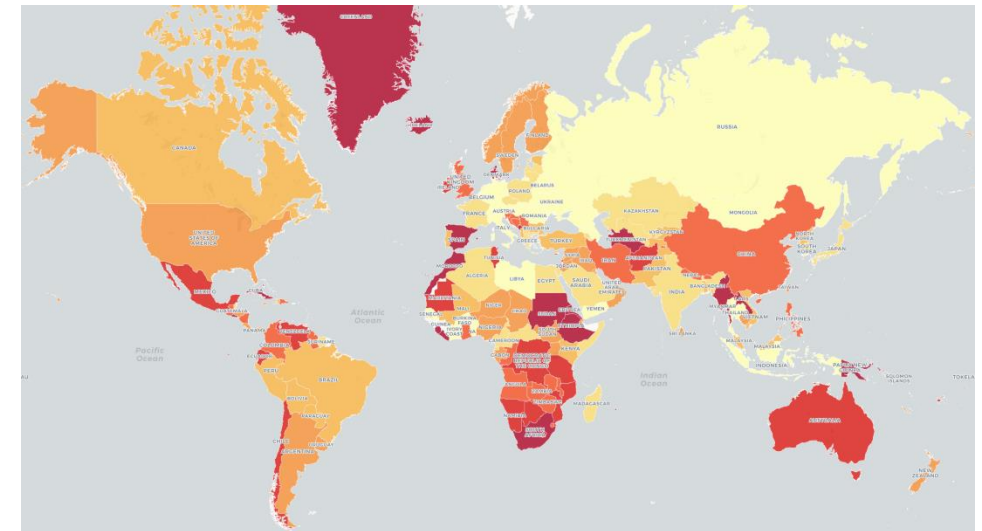
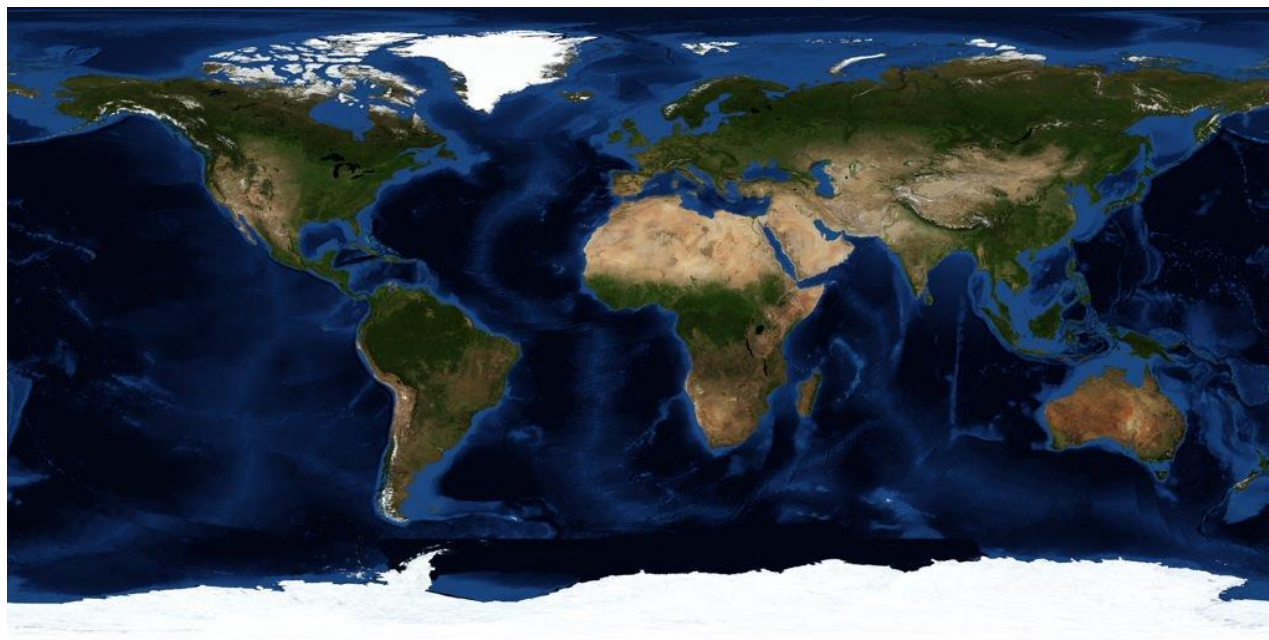
SDB Day 2022

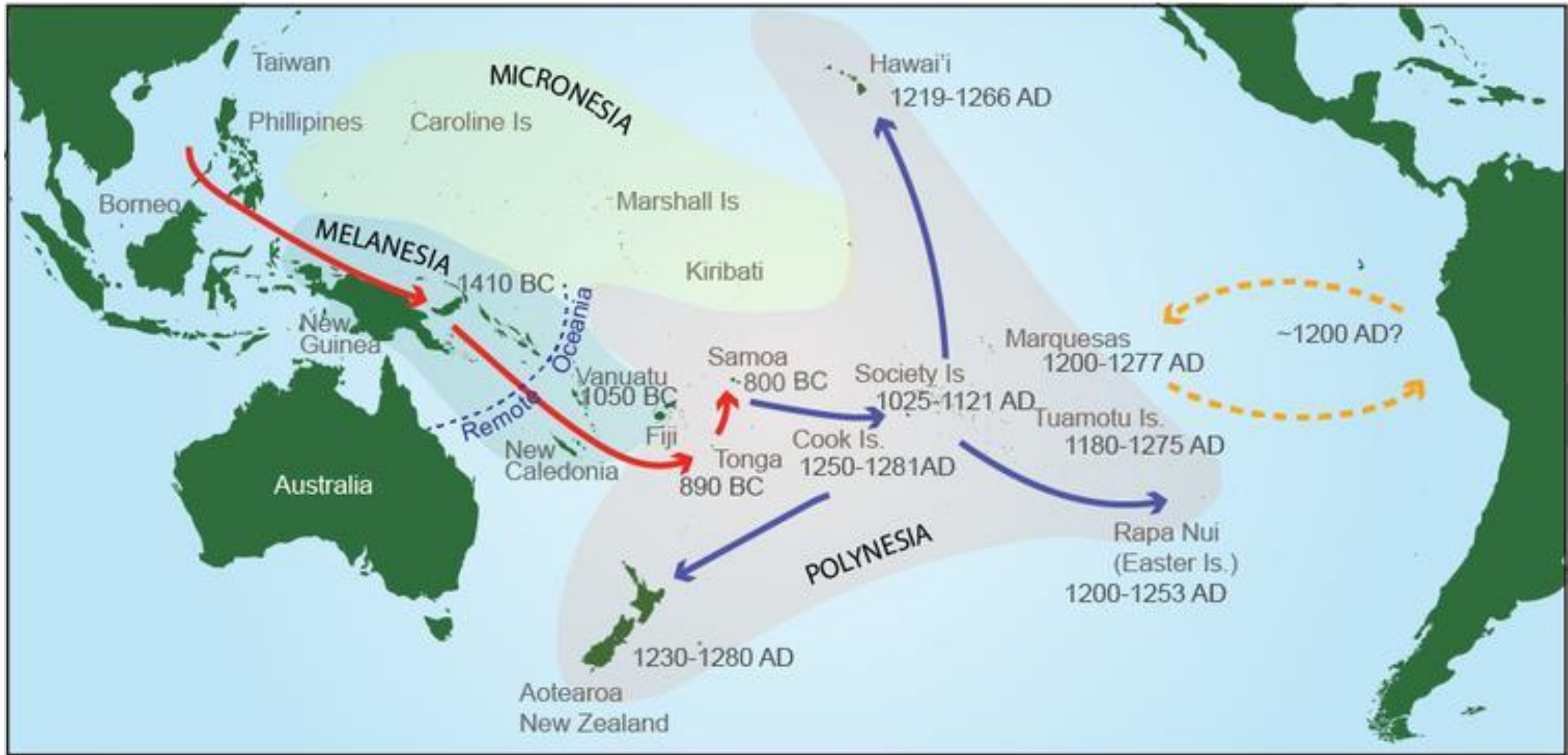
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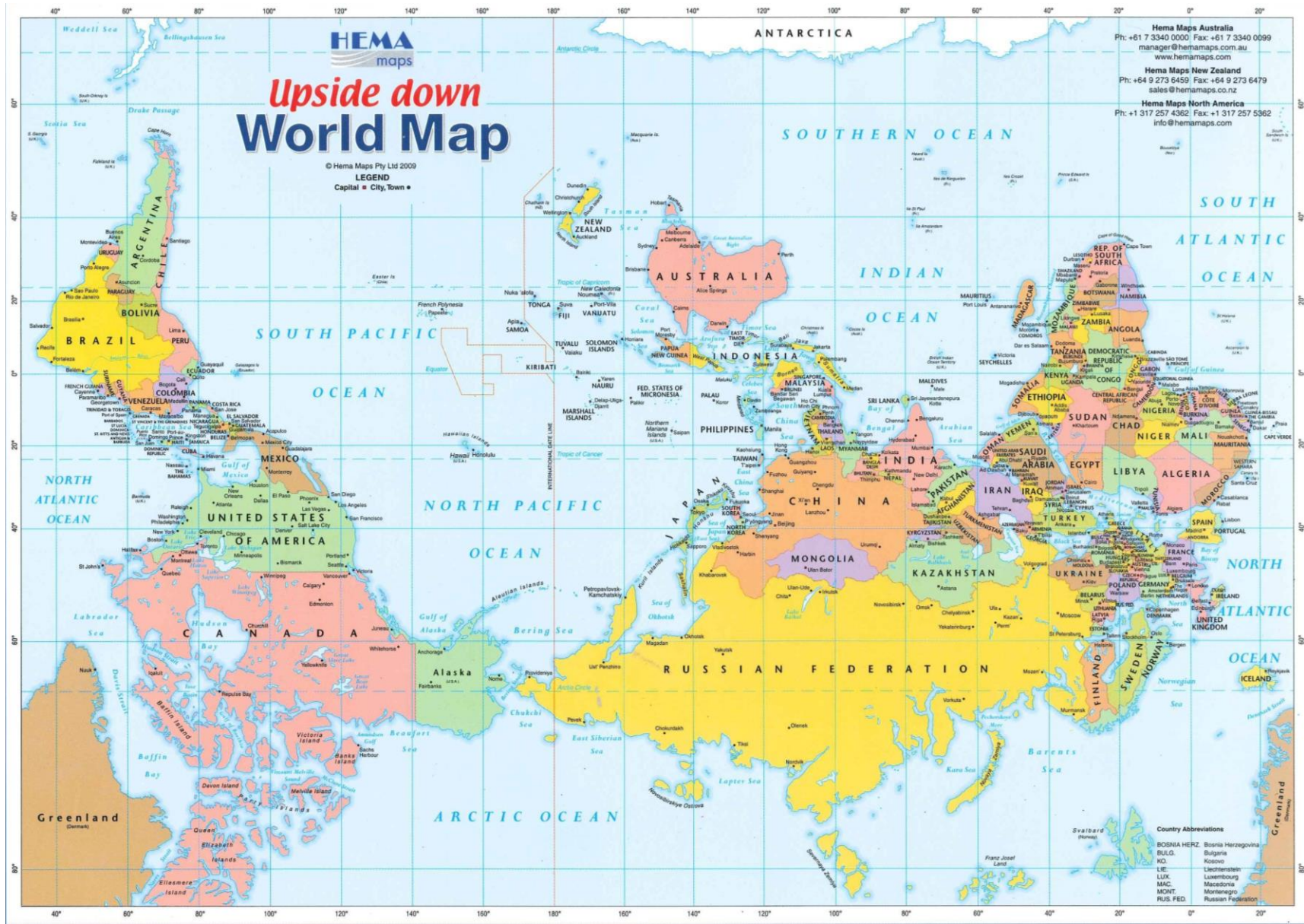






North is Up?

- Egyptian astronomer Ptolemy (90-168 AD)



Indigenous knowledge

- Concerns about indigenous voices not being listened to
- Ability of Pacific states to manage their data
- Issues around Data Sovereignty

“Data from us, and about us and our resources, are valuable assets. Once control of it is lost, it is difficult to regain; Data can be powerful mechanisms for informing and driving indigenous development at national and local levels but only if we are able to exercise authority over our data.”



DATA ABOUT OUR RESOURCES AND ENVIRONMENTS

Land, water, geology, titles, air, soil, sacred sites, territories, plants, animals, etc.

DATA ABOUT US AS INDIVIDUALS

Administrative, legal, health, social, commercial, corporate, services, etc.

DATA ABOUT US AS NATIONS

Traditional and cultural information, archives, oral histories, literature, ancestral and clan knowledge, stories, belongings, etc.

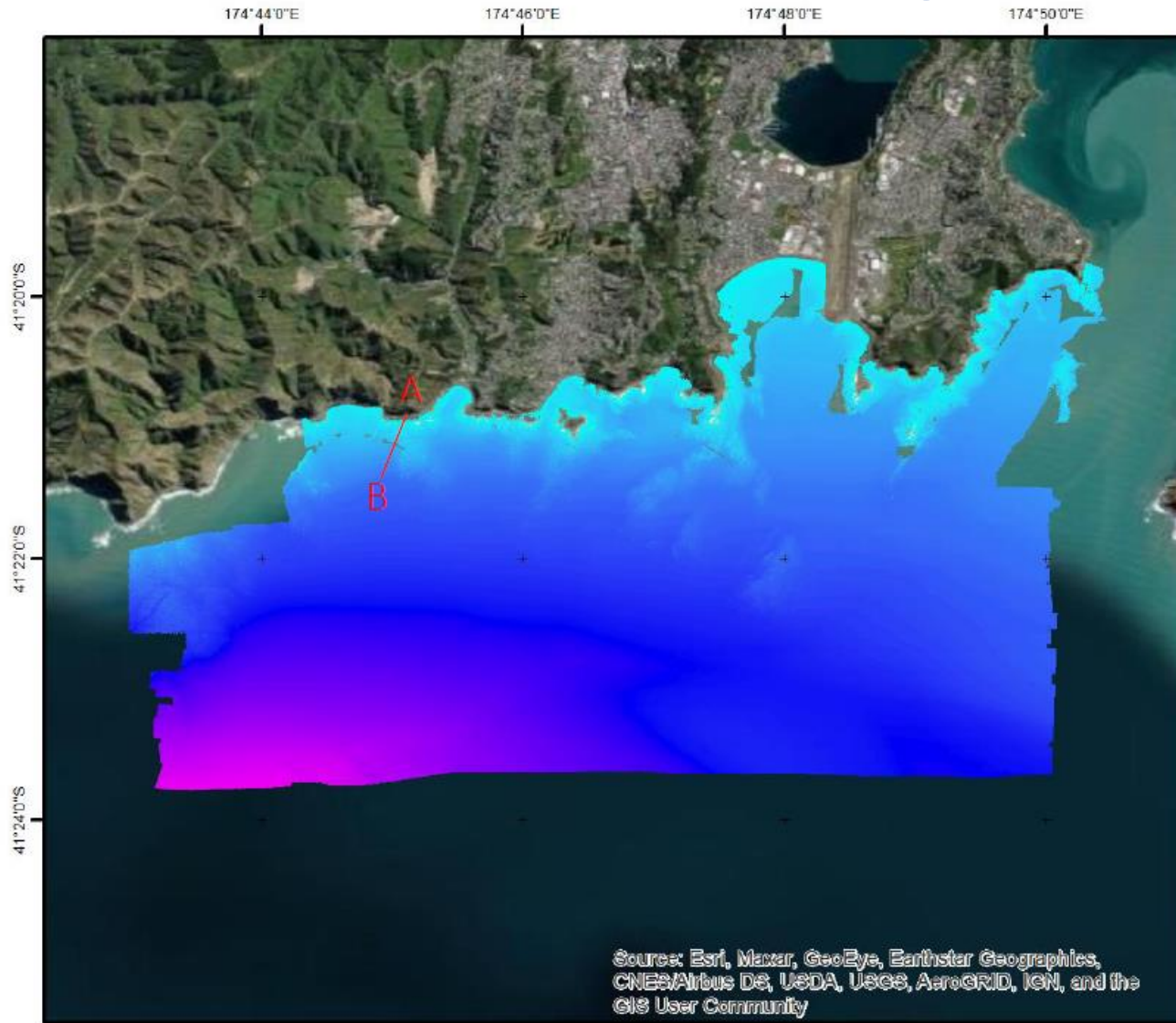
Overview of data sovereignty:

- Indigenous rights movement
 - Indigenous Data Sovereignty (IDS) perceives data as subject to the laws of the nation from which it is collected...
 - IDS aims to ensure Indigenous Communities are the primary beneficiaries of their data – lands, people, resources (International Indigenous Data Sovereignty Network)
 - Working Group within the UN
- Convention of Biological Diversity (1993)
- The Mataatua Declaration (1993)
- UN Declaration on the Rights of Indigenous Peoples (2010)
- Nagoya Protocol

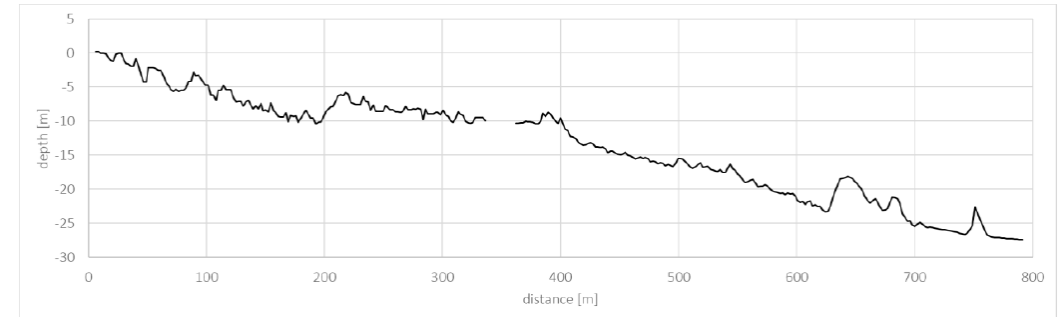
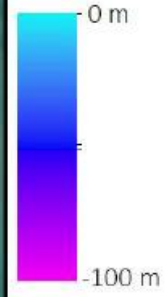
SDB Use Cases

- Wellington - Storm surge warning
- Auckland – fine-scale tidal modelling
- Tonga – volcanic eruption
- New Zealand's turbid waters

Wellington South Coast



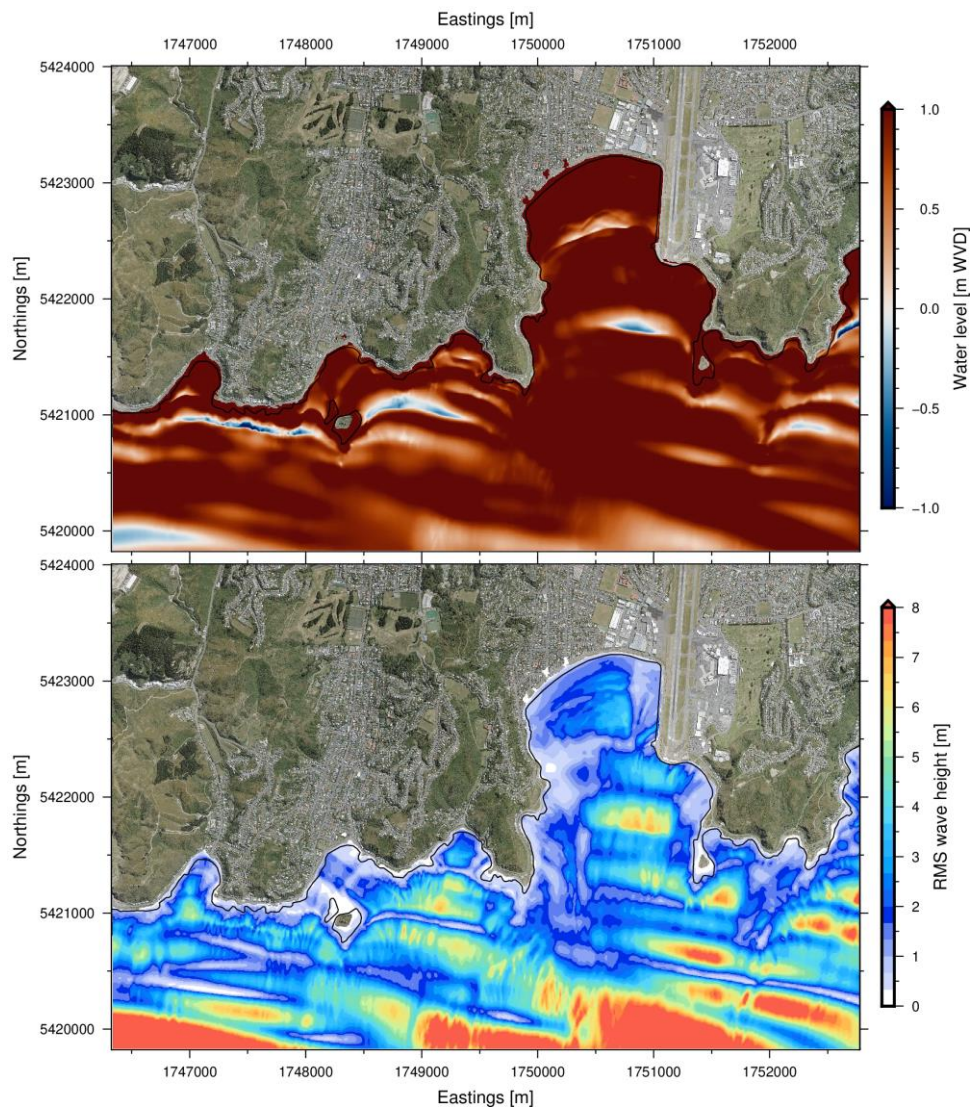
MSB in m below LAT



A

B





Wellington City Council @WgtnCC · Jun 29
LOCAL STATE OF EMERGENCY DECLARED FOR SOUTH COAST - PROPERTIES TO BE EVACUATED

Mayor Andy Foster has declared a local state of emergency from 3.30pm today (Tues 29 June).

The area of concern that are to be evacuated are:

🏠 Breaker Bay Rd between numbers 53 and 194.



9 107 118

Wellington City Council @WgtnCC · Jun 29
 The emergency declaration is to allow for the pre-emptive evacuation of these properties in Breaker Bay that are expected to take the brunt of the Southerly swell and storm expected at high tide tonight (around 9pm).

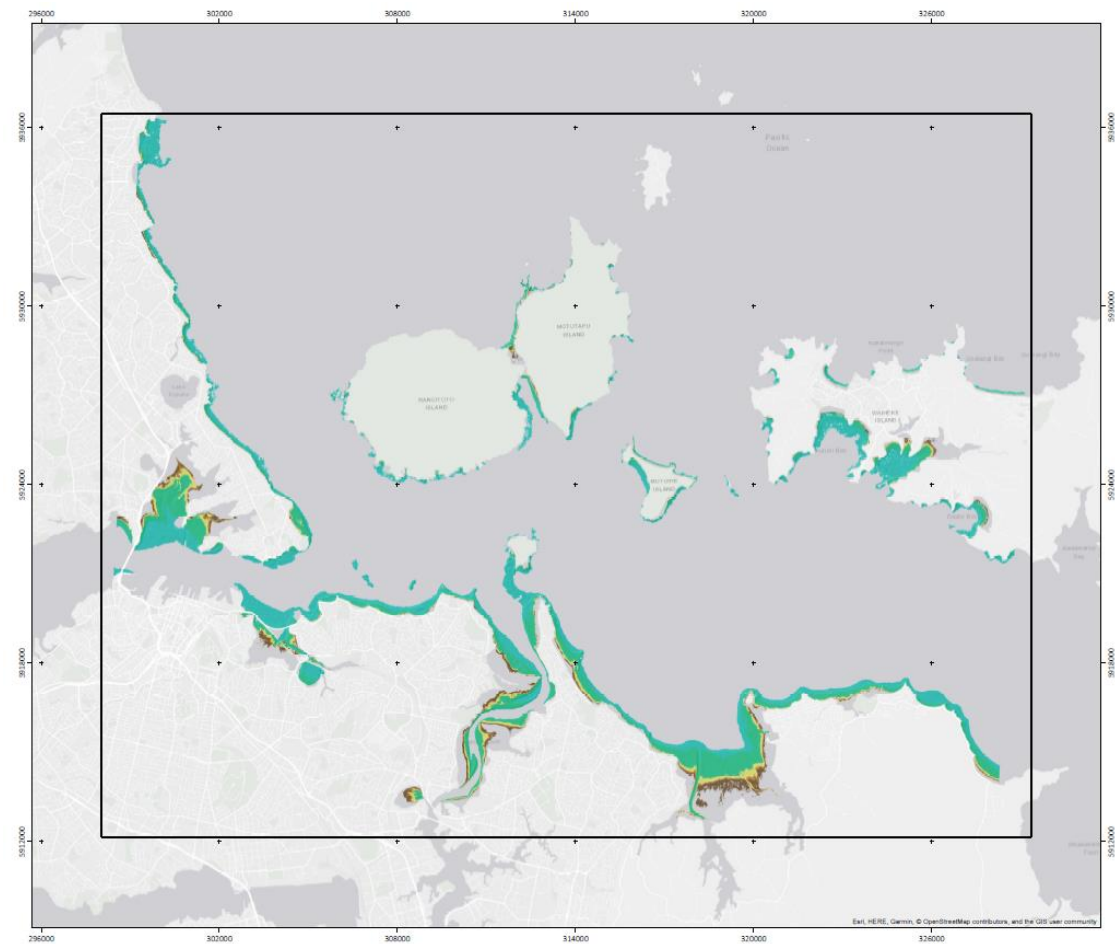
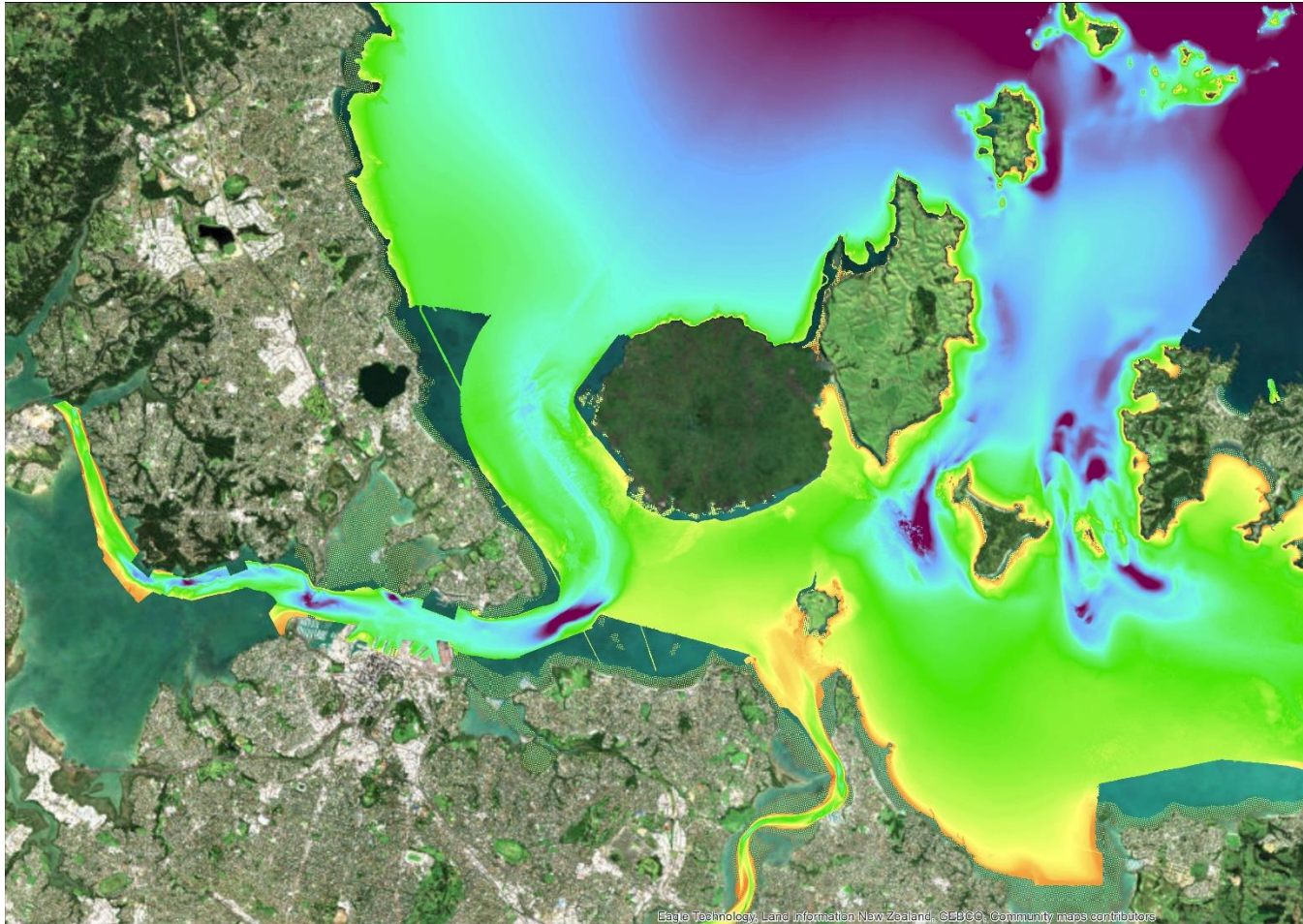
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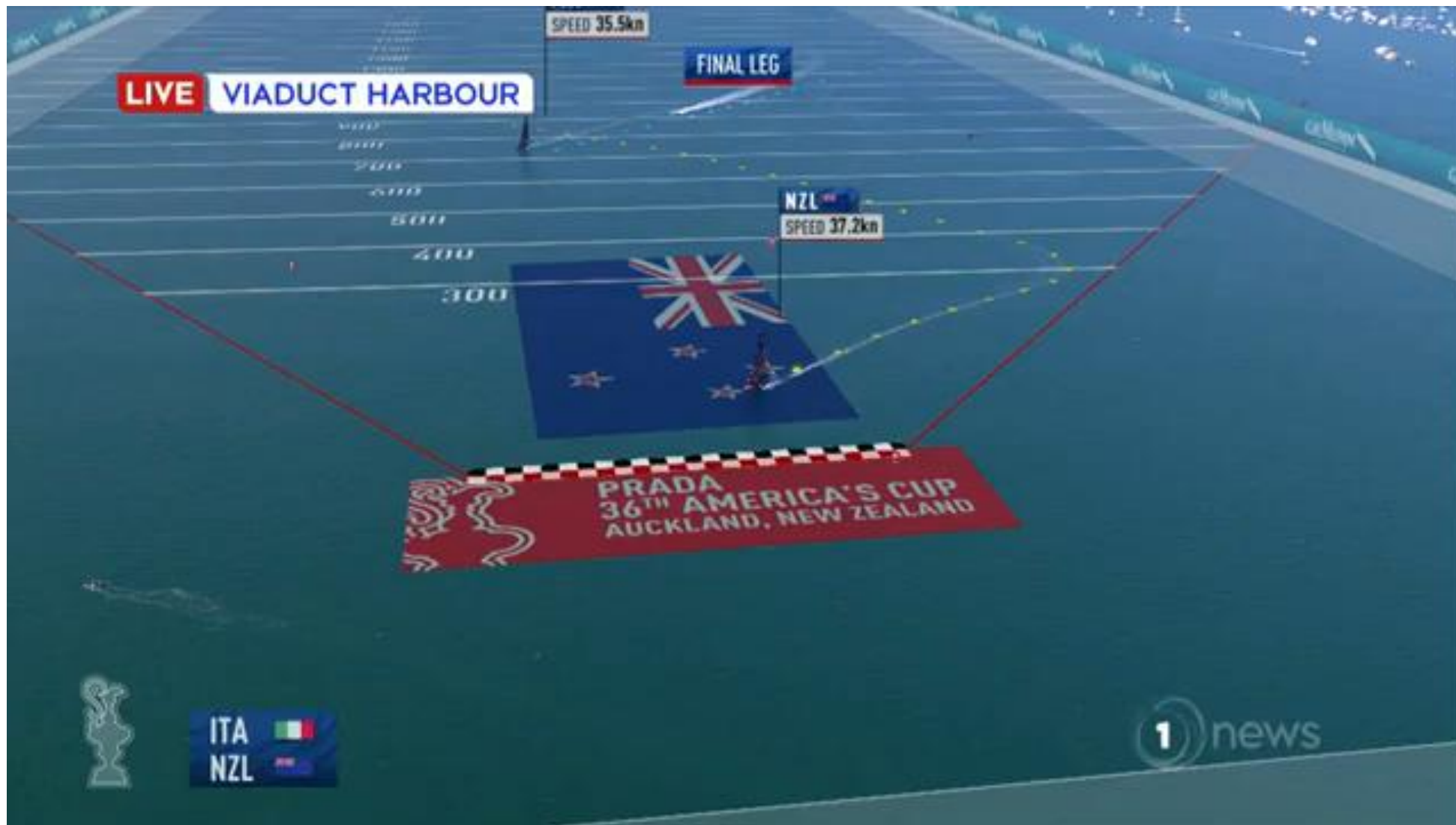
Wellington City Council @WgtnCC · Jun 29
 Mayor Foster says advice from the @MetService and @niwa_nz in the past few hours indicates that southerly swells of 6 metres or more could present a significant risk to life and property if they overtop areas alongside the South Coast – as they did in April 2020 and in 2013.

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Auckland – Waitemata Harbour







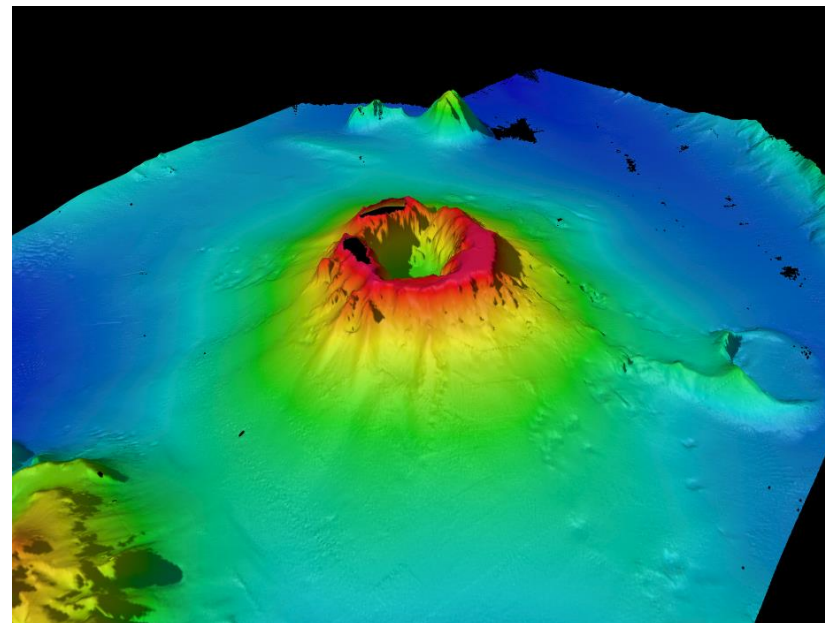
Tonga volcano eruption

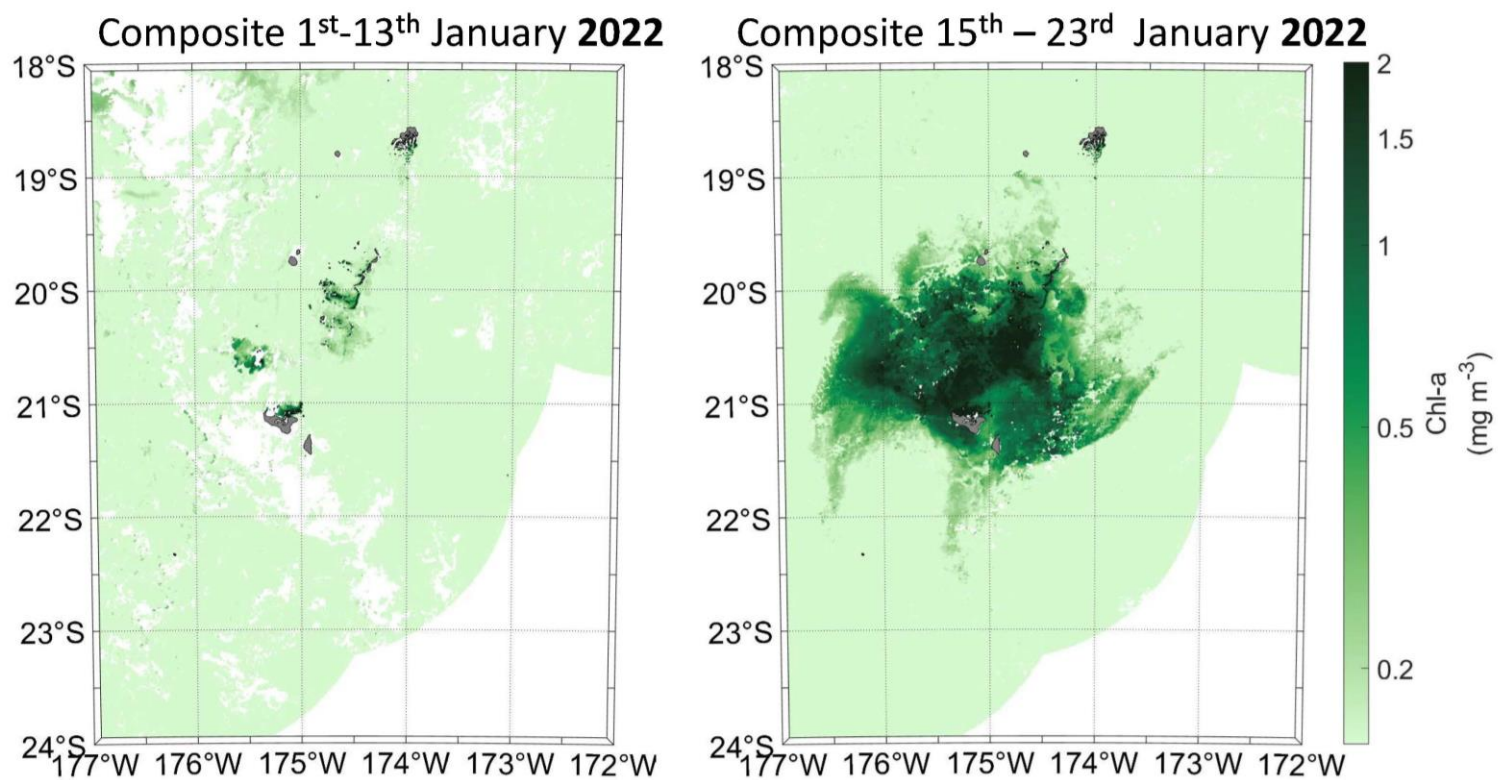


Kingdom of Tonga receives high-tech data from New Zealand

Published date
10 Oct 2019

The New Zealand High Commissioner in Tonga HE Ms Tiffany Babington has today delivered a massive thirty thousand gigabytes of data featuring never-before-seen images of the undersea world around Tonga to the Tongan Government.

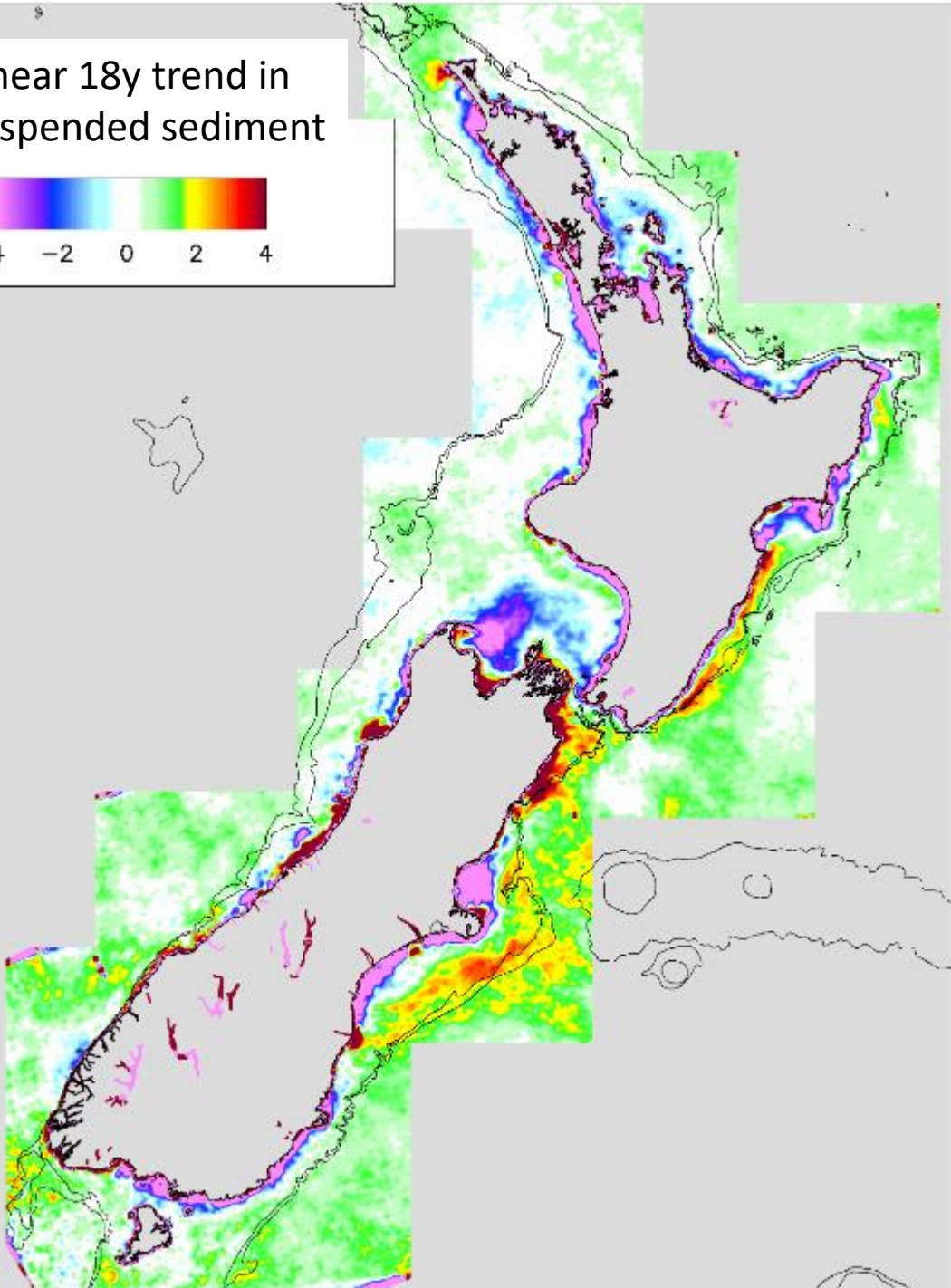
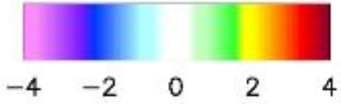




New Zealand's turbid waters



Linear 18y trend in
suspended sediment



Linear trends in suspended sediment concentration

- July 2002 – September 2020
- Monthly anomalies (de-seasonalized)
- Sen slope (linear trend magnitudes)
- Mann-Kendall trend significance (linear trend)
- Correction for autocorrelation
- McBride trend significance also calculated

Pinks/blue = decreasing trends
Red/yellow = increasing trends
Green/white = no trends

**Nau te rourou,
naku te rourou,
ka ora te iwi**

*With your basket,
and my basket,
the people will prosper.*

Thank You

Climate, Freshwater & Ocean Science

