

Land - Sea Integration in the Pacific

"Lessons and good practices"

Forum on the Integration of Terrestrial, Maritime, and Cadastral Domains

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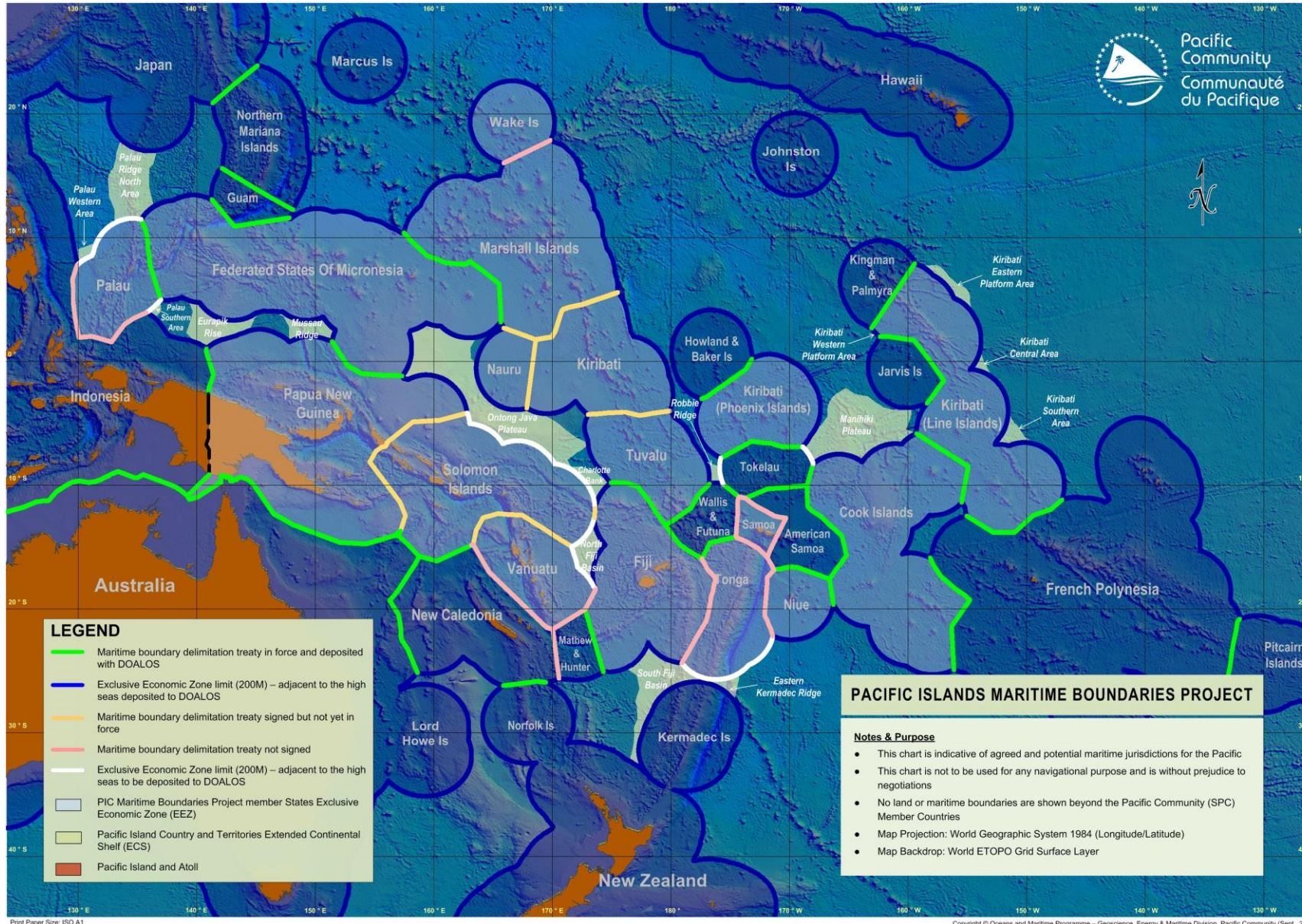
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Pacific Maritime Boundaries Limits

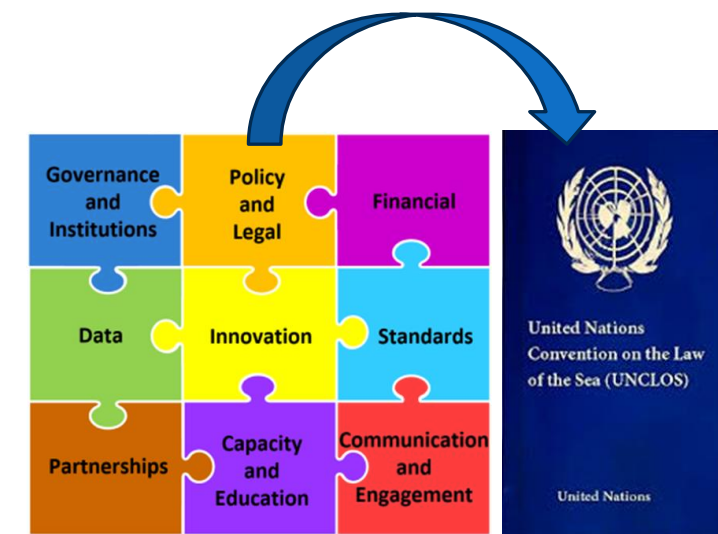


27 Pacific Island Countries and Territories

~ **52** million people

42 million square kilometres

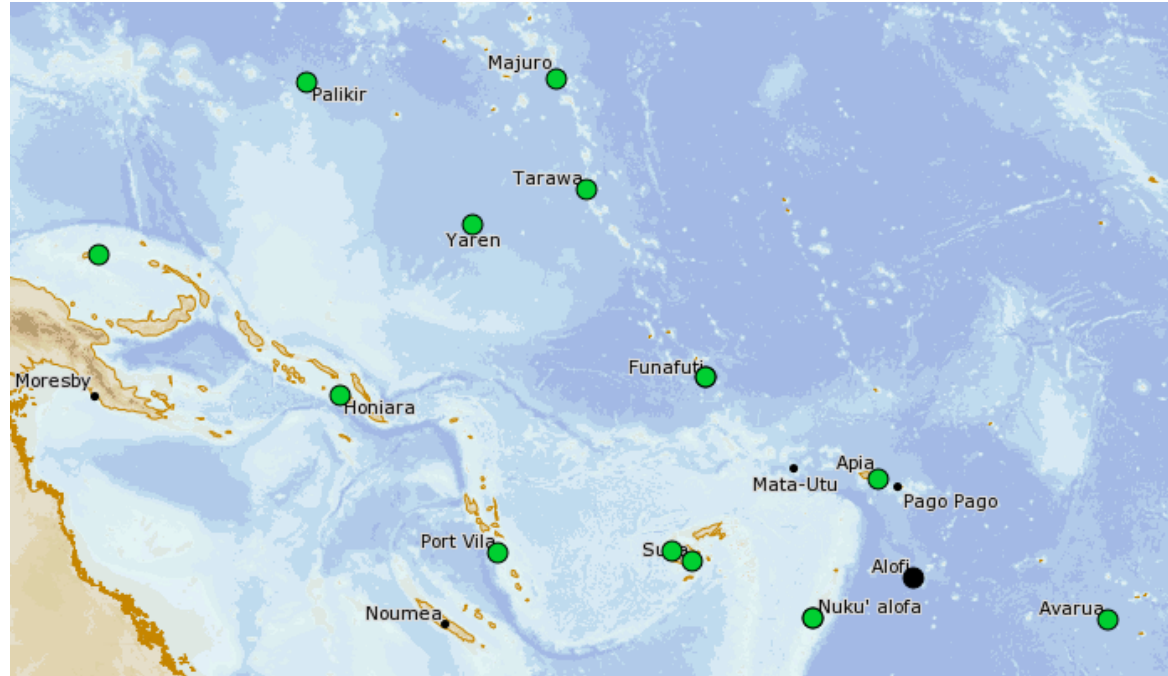
30% of the world's Exclusive Economic Zones



Geodetic Infrastructure



1. Cook Islands
2. Federated States of Micronesia
3. Fiji - Lautoka
4. Fiji - Suva
5. Kiribati
6. Marshall Islands
7. Niue
8. Nauru
9. Papua New Guinea
10. Samoa
11. Solomon Islands
12. Tonga
13. Tuvalu
14. Vanuatu



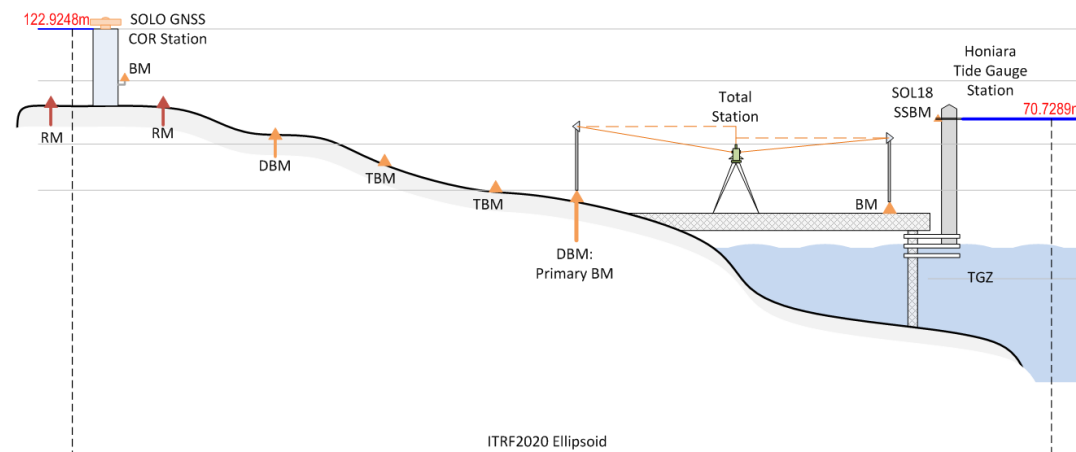
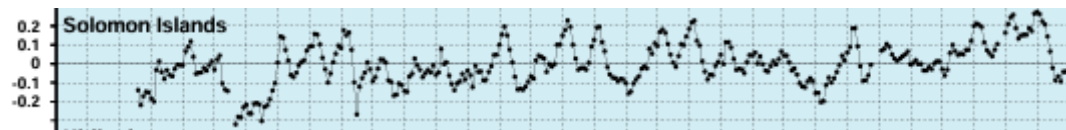
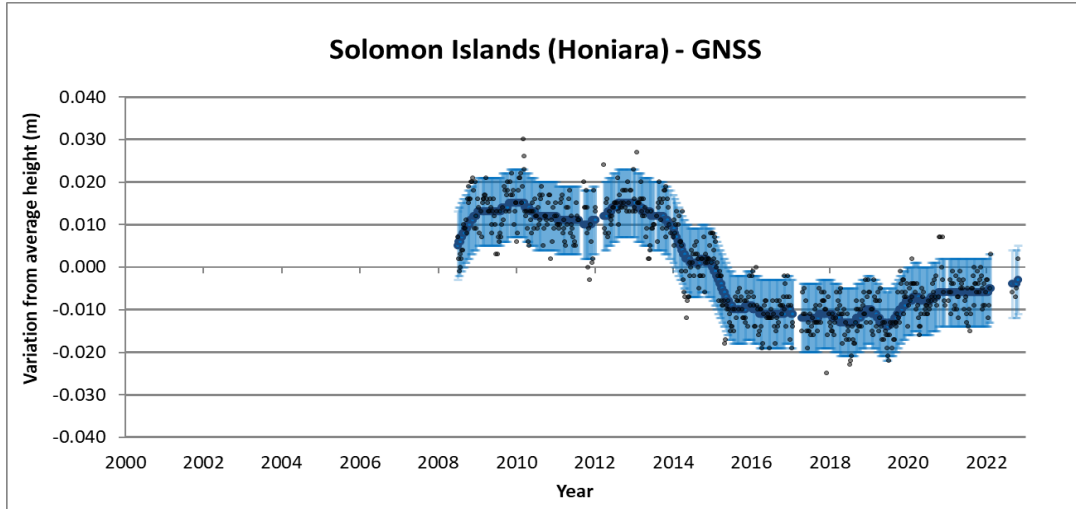
Began in 1991 as an Australian response to concerns raised by the member countries of the South Pacific Forum over the potential impacts of global warming on climate and sea levels in the Pacific.

Australia has been supporting 13 Pacific Island countries (PICs) to measure, record and analyse long-term sea level and land motion for over 25 years. This is known as the Pacific Sea Level and Geodetic Monitoring (PSLGM) project funded by Australian Aid under the Climate and Oceans Support Program in the Pacific (COSPPac).

The sea level data is collected continuously at one or two tide gauges and land motion data is collected continuously at one or two Global Navigation Satellite System (GNSS) stations in each of the 13 PICs.

Primary goal "to generate an accurate record of variance in long-term sea level for the Pacific and to establish methods to make [these] data readily available and usable by Pacific Island Countries

Data - Land Motions & Sea Level



<http://pid.geoscience.gov.au/dataset/ga/148937>

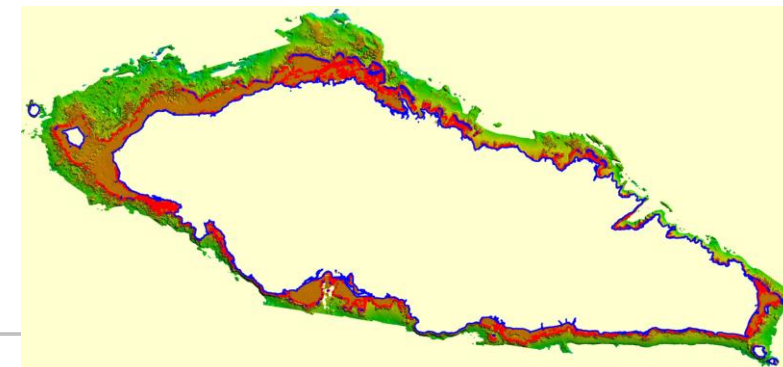
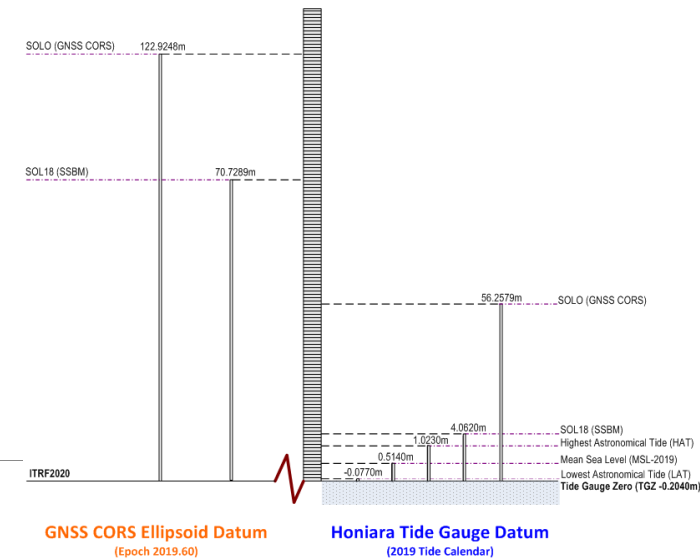
Vertical motion of Pacific Island tide gauges (2023)

Combined analysis from GNSS and levelling

GEOSCIENCE AUSTRALIA
RECORD 2024/09

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1. Geoscience Australia.
2. Pacific Community (SPC).



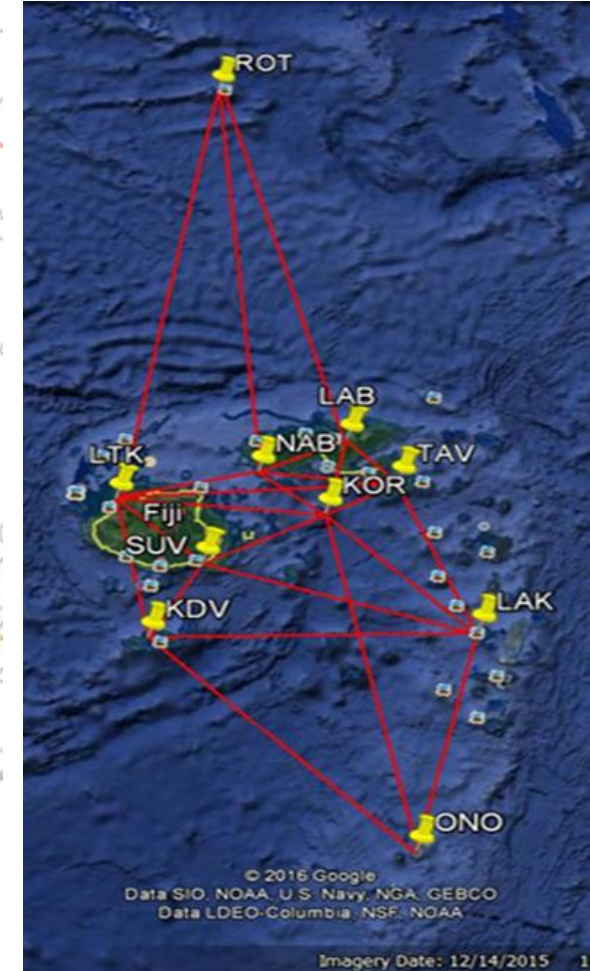
Land - Sea Integration in Fiji



Land Domain (WGS 72)



Marine Domain (WGS 84)



Geodetic Network

Land - Sea Integration in Tonga

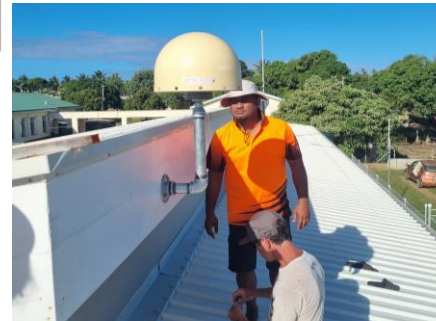
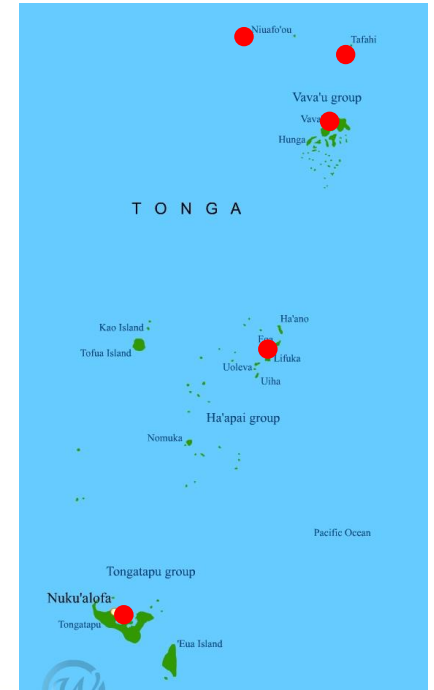
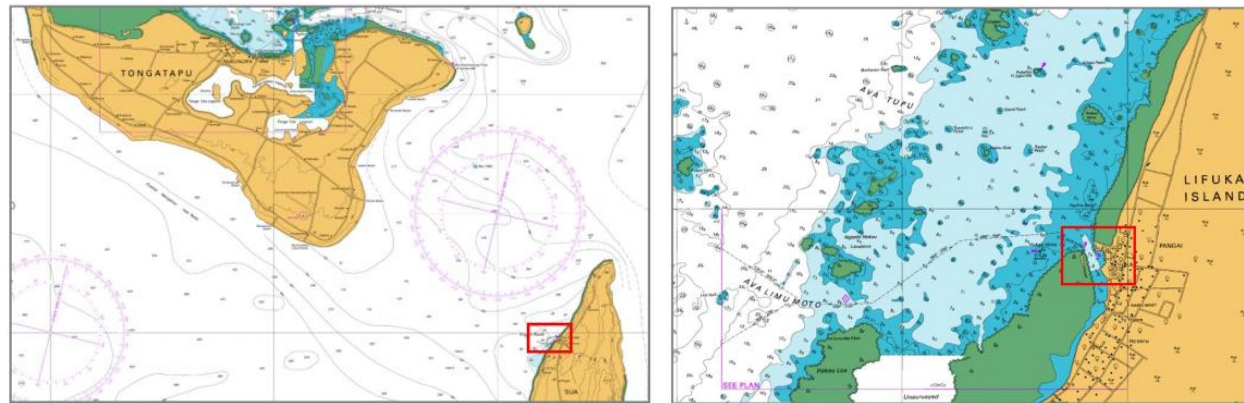


NEW NAUTICAL CHART

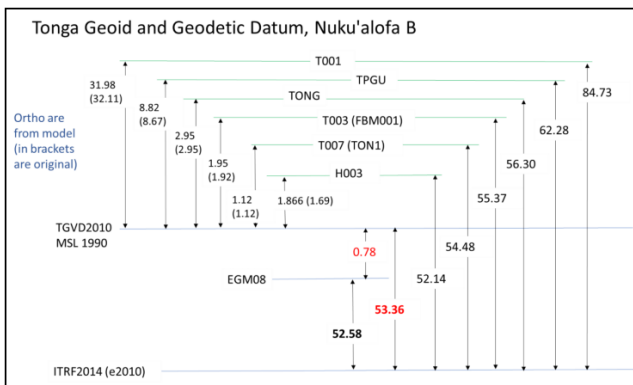
HYDROGRAPHIC AND LIDAR SURVEY

GNSS STATIONS

SEA LEVEL RISE, VERTICAL LAND MOTION & GTEWS

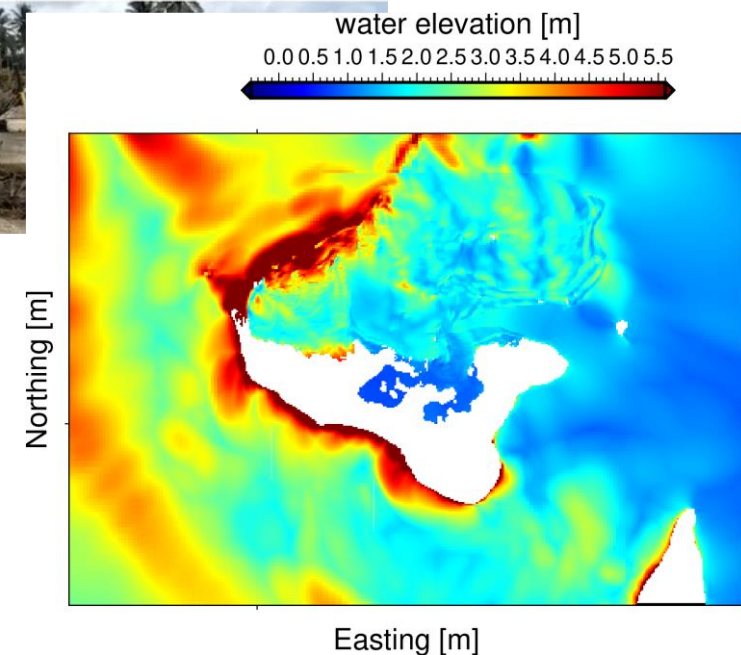
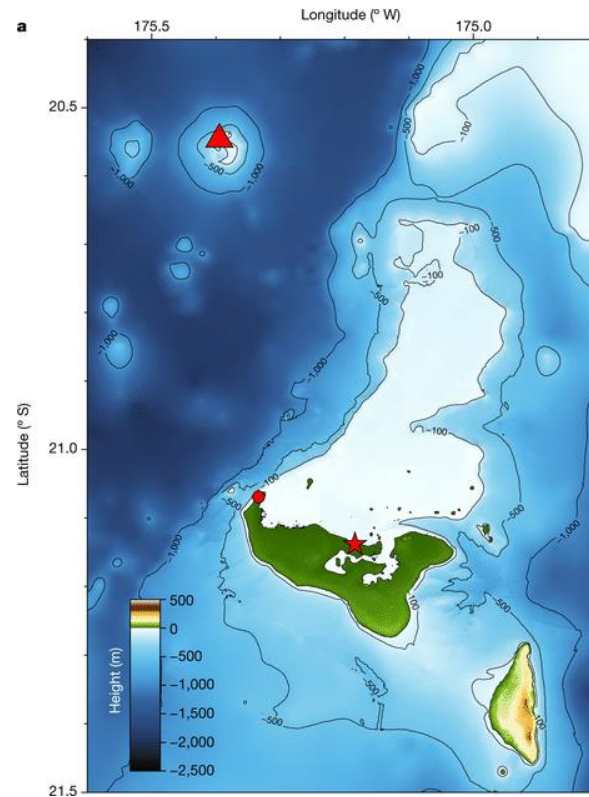
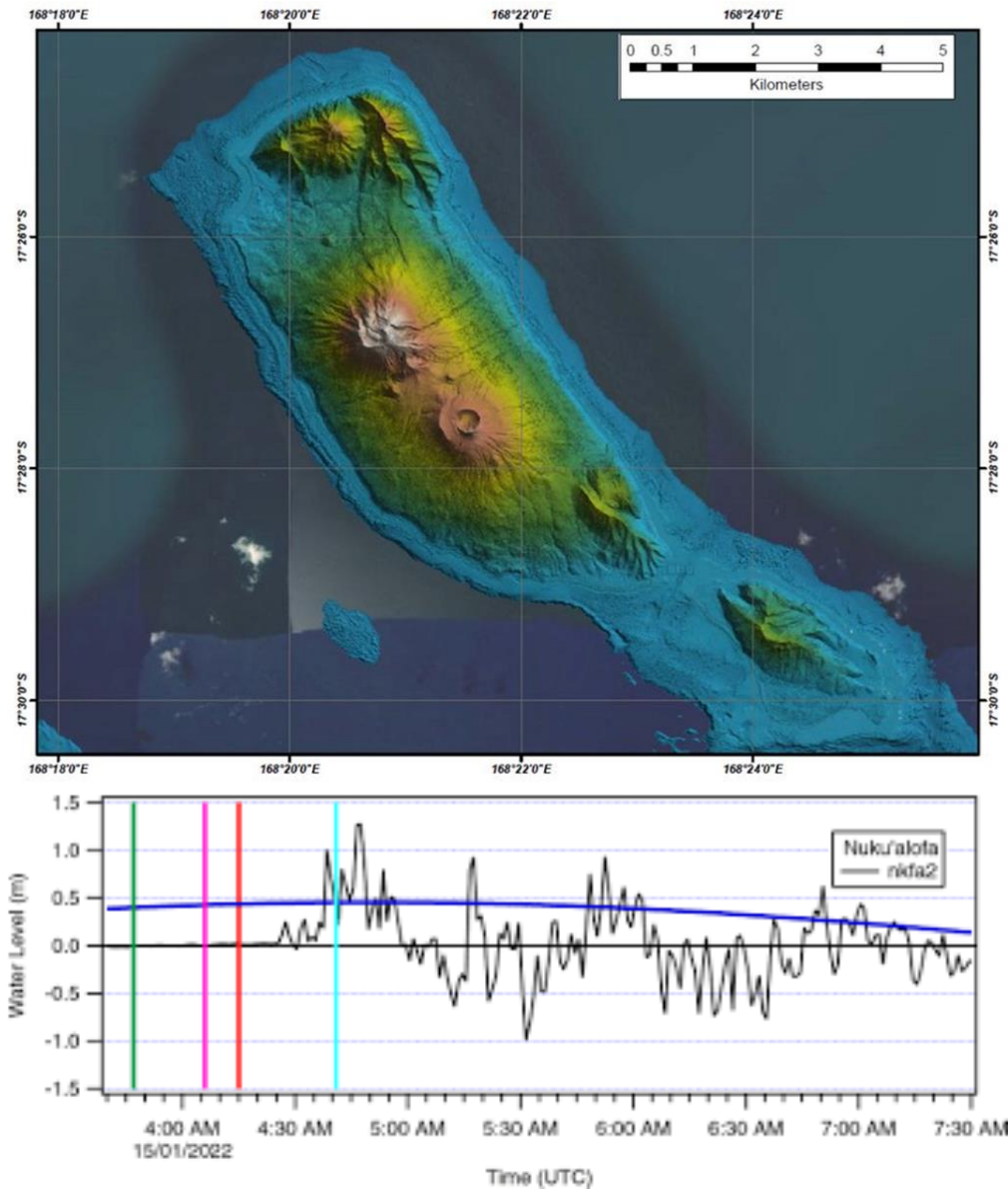
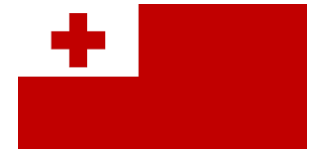


NEW GEOID MODEL AND VERTICAL DATUM



Various survey, datasets, infrastructures all support Land & Sea Integrations

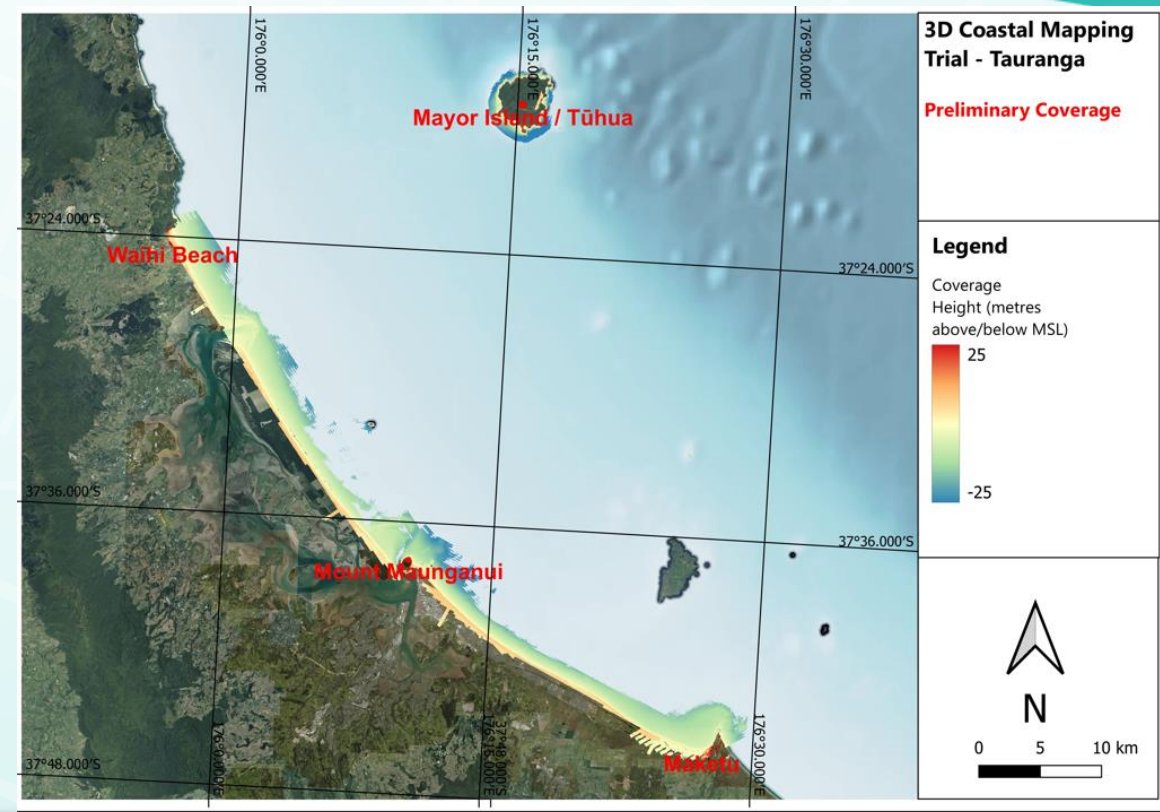
Land - Sea Integration in Tonga



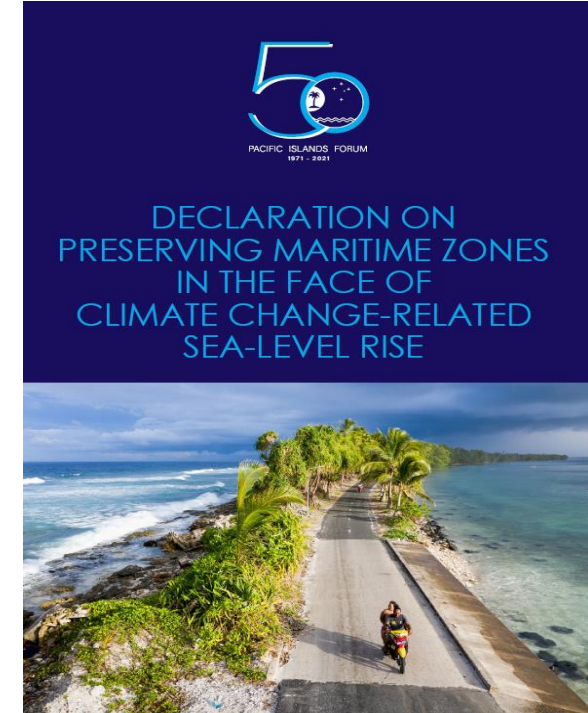
Land - Sea Integration in New Zealand

3D Coastal Mapping Programme

1. 3-year LiDAR programme to map of coastal New Zealand
2. Determining coastal vertical land movement (GNSS at tide gauges), to distinguish sea level change
3. Joining Land and Sea (JLAS) to transform between tidal surfaces and the geoid/ellipsoid



Pacific Island Leaders Declaration - 2021



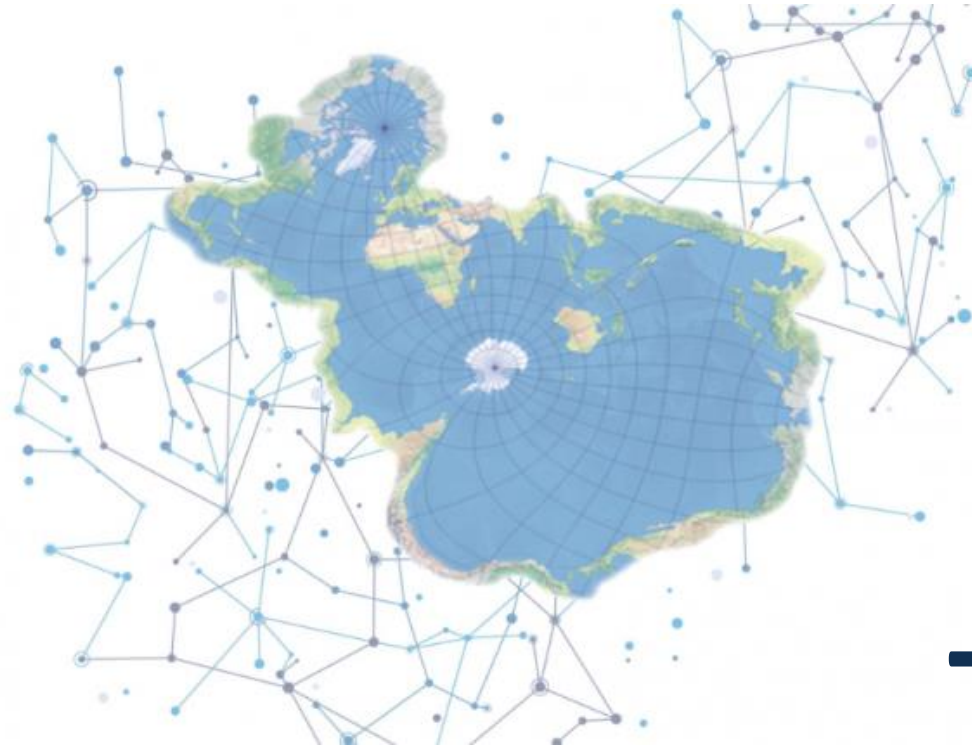
“We are committed to a **collective effort**, including to develop international law, with the aim to ensure that once a Forum Member’s maritime zones are delineated in accordance with the 1982 United Nations Convention on the Law of the Sea (UNCLOS), that the **Member’s maritime zones could not be challenged or reduced as a result of sea level rise and climate change.**”



UN GEOSPATIAL NETWORK
 UNITED NATIONS COMMITTEE OF EXPERTS ON
 GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



**Pacific
 Community**
 Communauté
 du Pacifique



Thank You

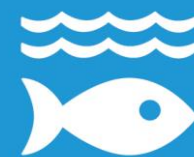


**2021
 2030** United Nations Decade
 of Ocean Science
 for Sustainable Development

**FRAMEWORK FOR
 A PACIFIC
 OCEANSCAPE**

Priority 1

14 LIFE
 BELOW WATER



TARGET 14.C
 Implement
 international law:
 UN Convention on the
 Law of the Sea