

THE NIPPON FOUNDATION-GEBCO

SEABED 2030

SWPHC18 17-19 February 2021

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Seabed 2030 South and West Pacific
Centre

pacific@seabed2030.org



International
Hydrographic
Organization



Intergovernmental
Oceanographic
Commission

A Network of Centers



North Pacific –Arctic Ocean

Stockholm University & University of New Hampshire
(SU & UNH)

Southern Ocean

Alfred-Wegener-Institut (AWI)

Atlantic-Indian Ocean

Lamont-Doherty Earth Observatory,
Columbia University (CU)

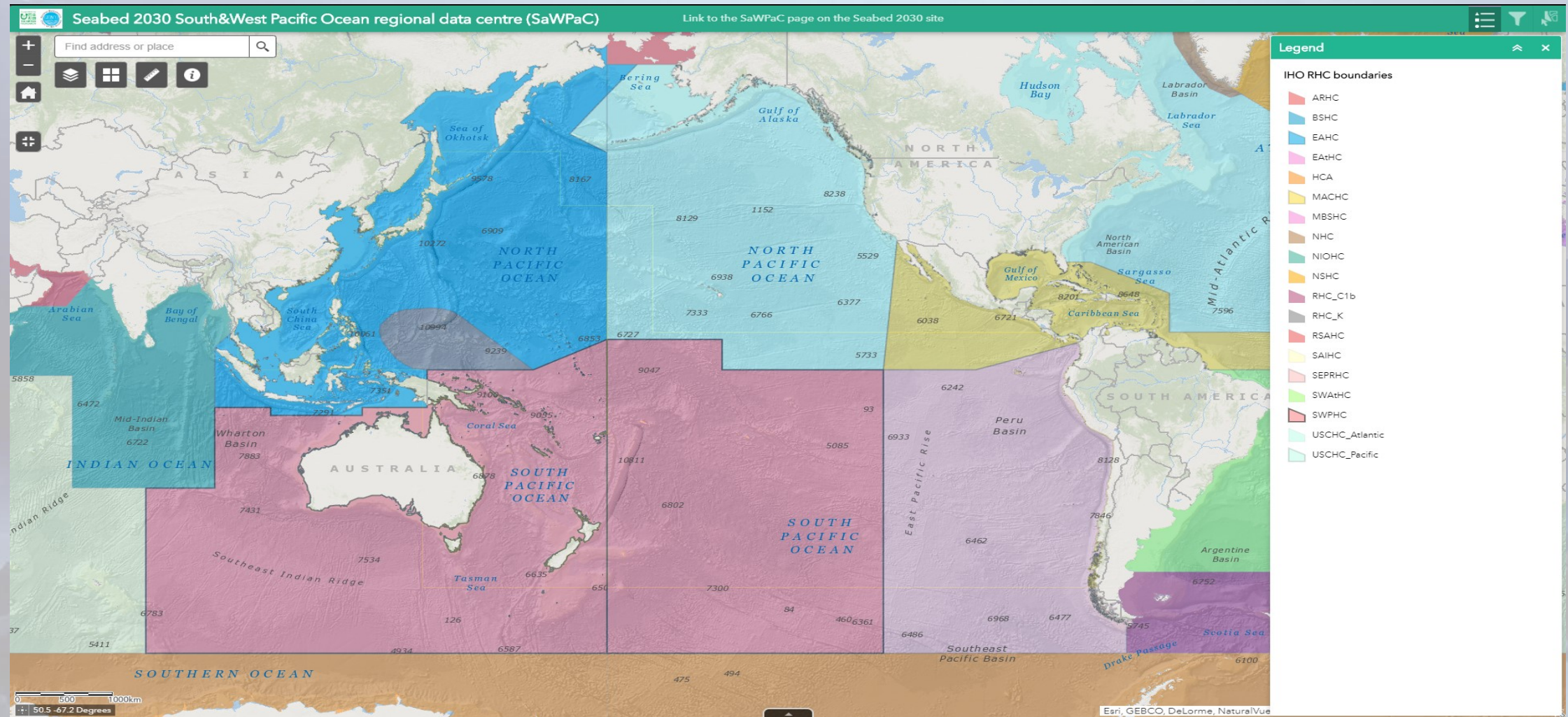
South-West Pacific Ocean

National Institute of Water & Atmospheric Research (NIWA)
Land Information New Zealand (LINZ)
GNS Science (GNS)

Global Center

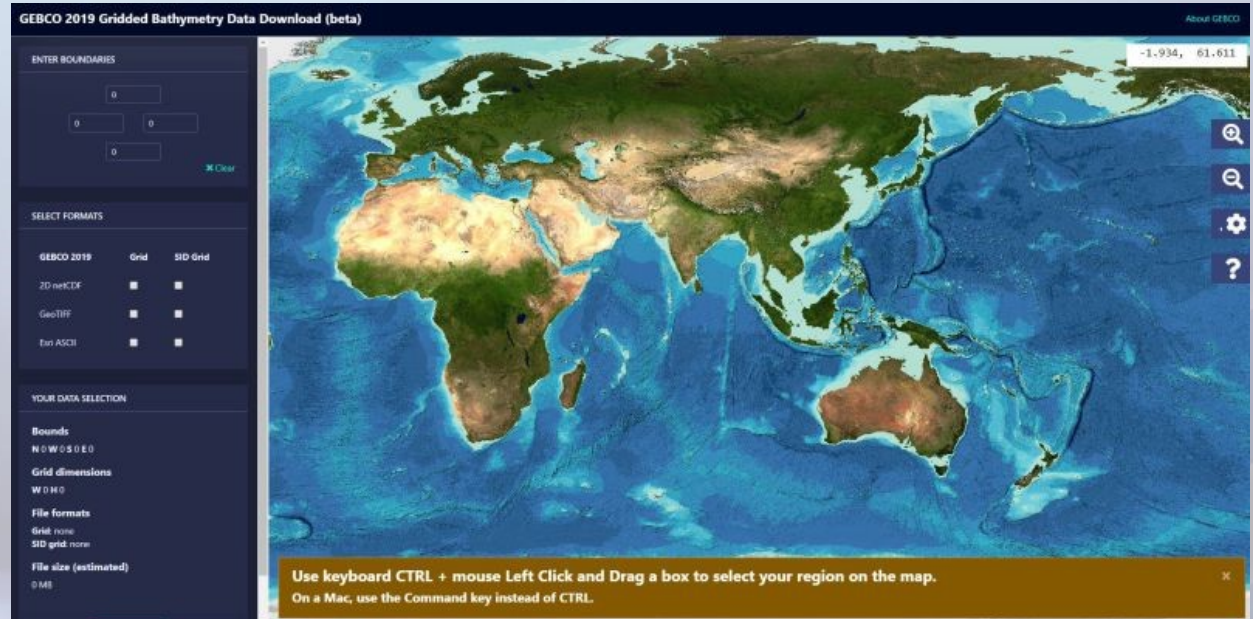
British Oceanographic Data Centre,
National Oceanography Centre (NOC/BODC)

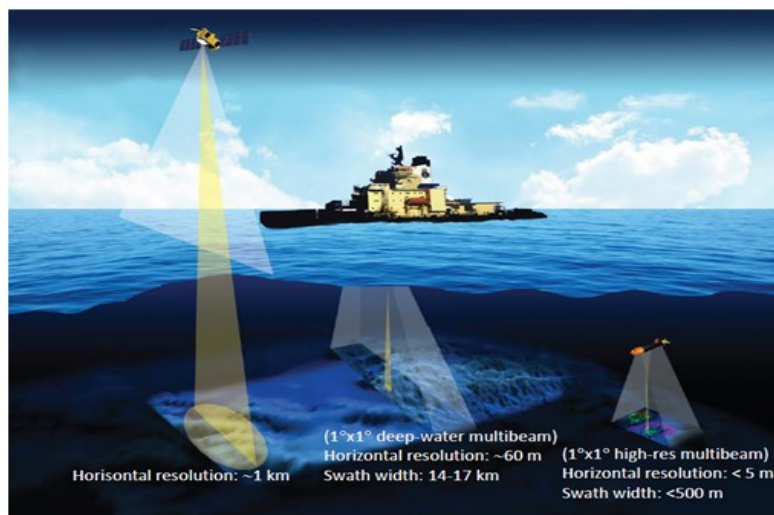
IHO Regional Hydrographic Commissions boundaries



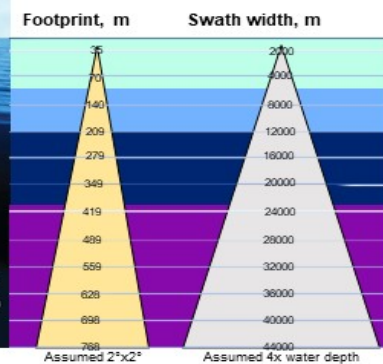
GEBCO Gridded Bathymetry Data

- The GEBCO_2020 grid, is a global terrain model for ocean and land at 15 arc-second (~480 m) intervals.
- It is accompanied by a Type Identifier (TID) Grid that gives information on the types of source data that the GEBCO_2020 Grid is based
- It is NOT a portal to the underlying data
- Ultimately to move to a variable resolution grid by 2030.

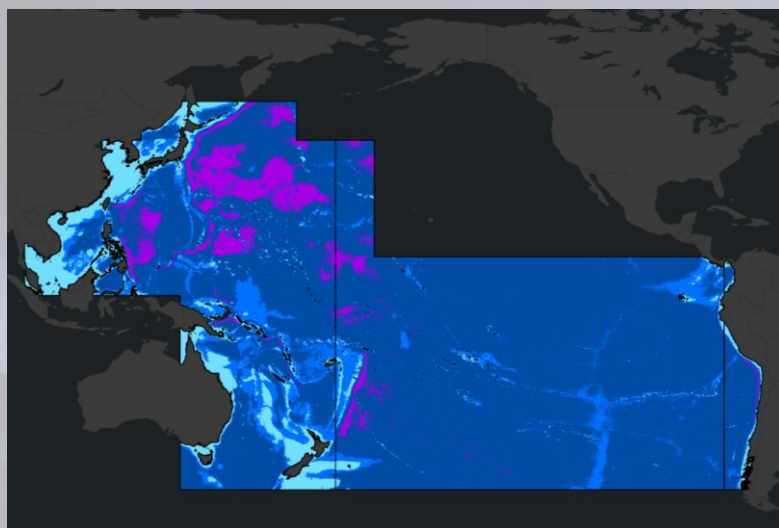




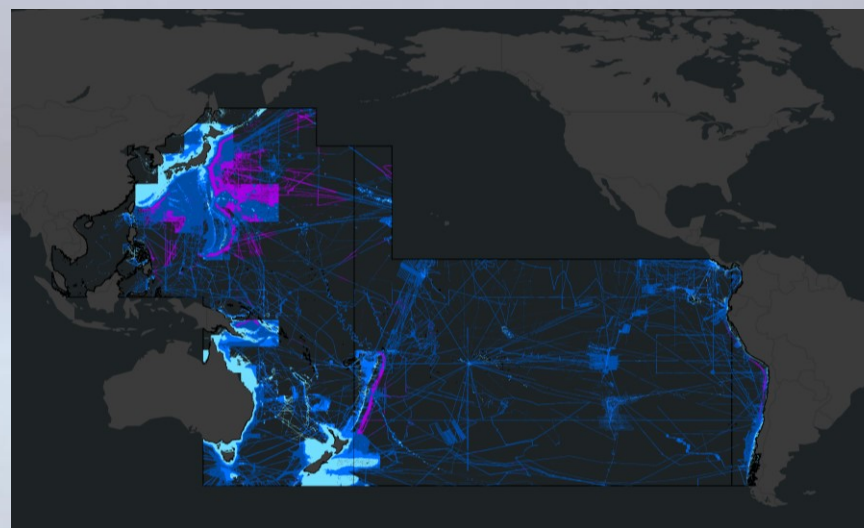
Seabed 2030 target grid resolution is based on the average beam footprint for a specified depth range of a modern multibeam system installed on a surface vessel.



Depth Range	Target grid resolution
0 – 1500 m	100 × 100 m
1500 – 3000 m	200 × 200 m
3000 – 5750 m	400 × 400 m
5750 – 11000 m	800 × 800 m



GEBCO 2030 target coverage

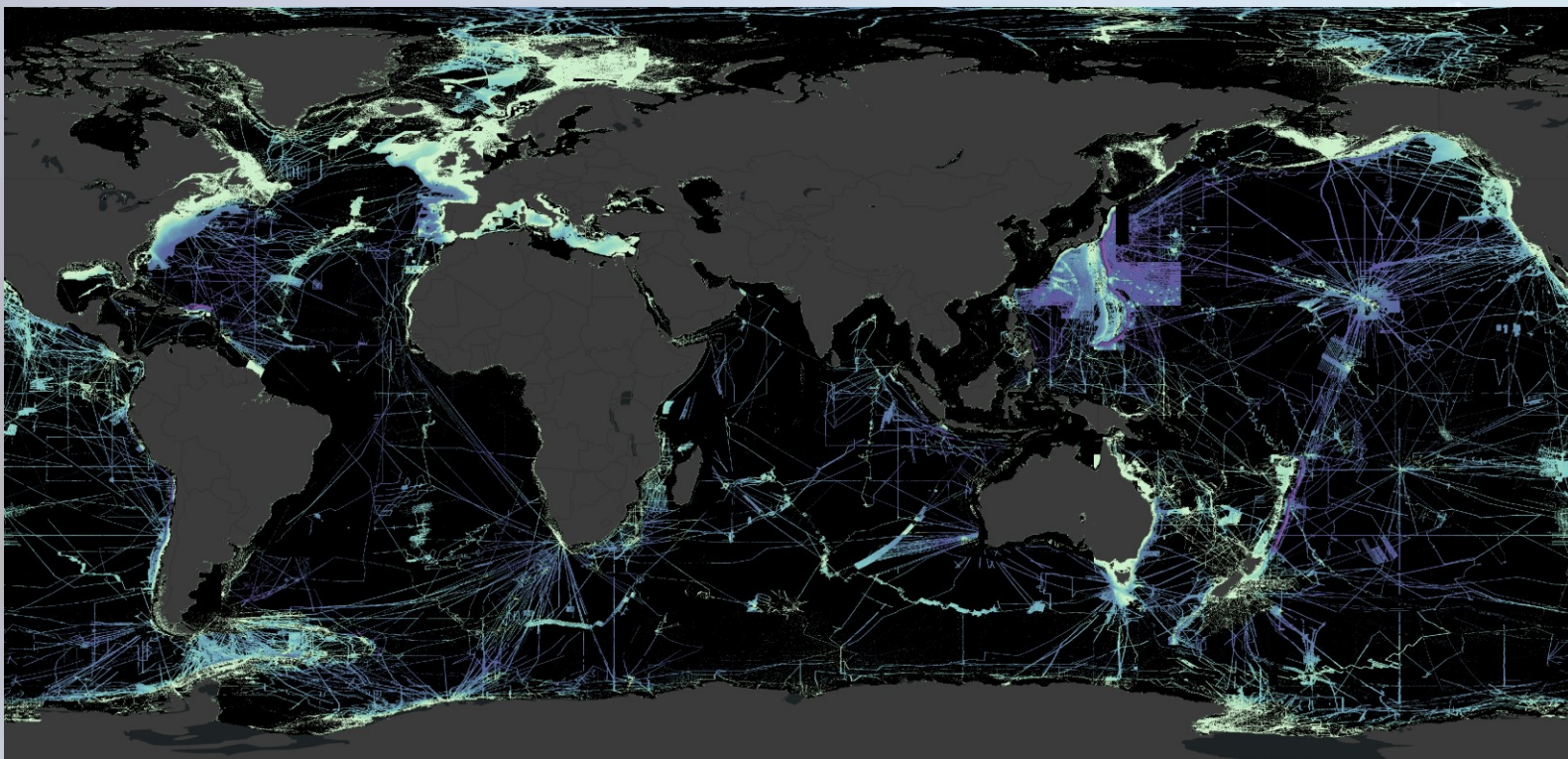


GEBCO_2021 (draft) coverage

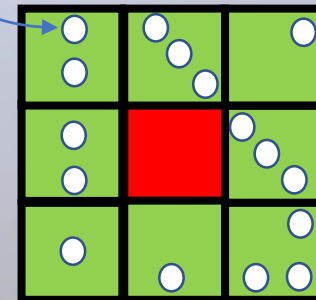
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GEBCO Gridded Bathymetry Data – how much is mapped?

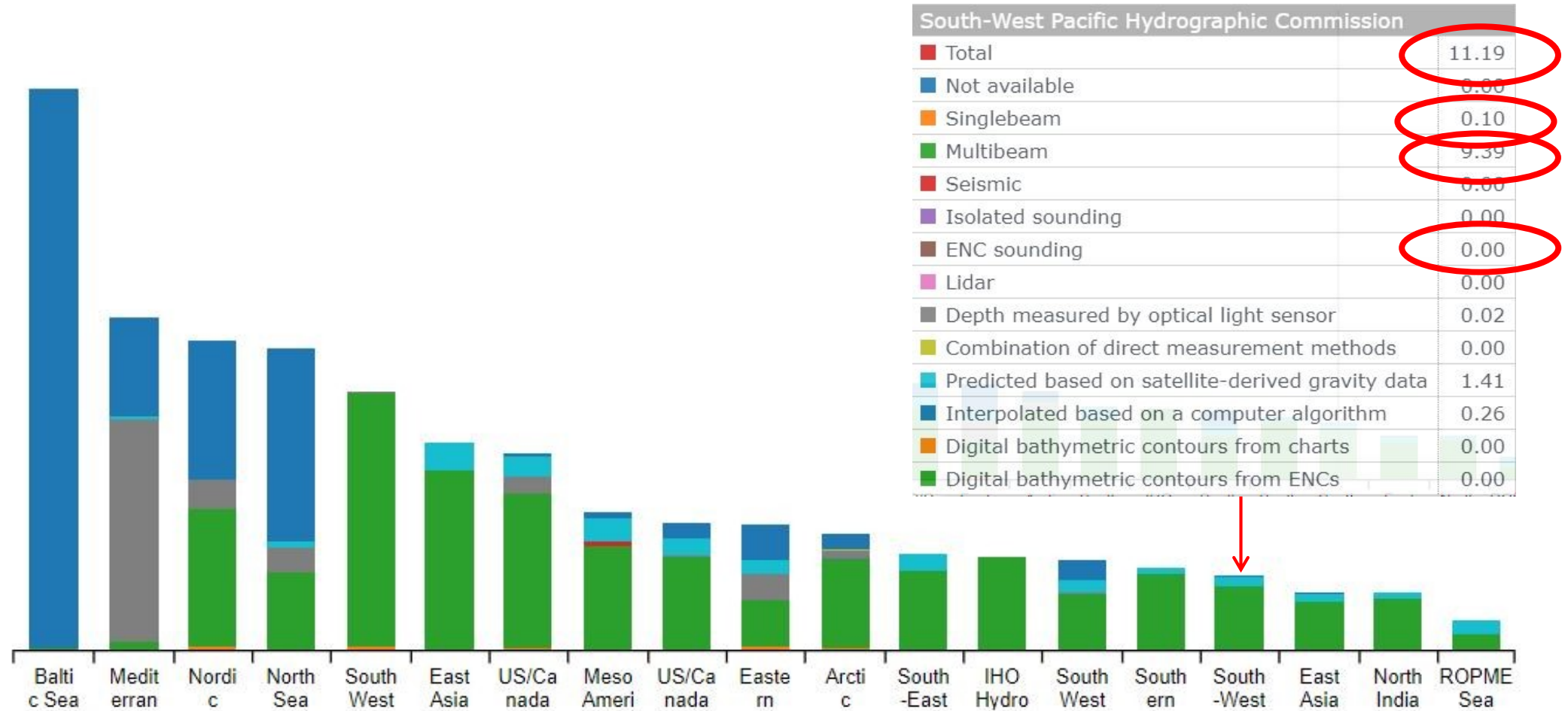


Data point

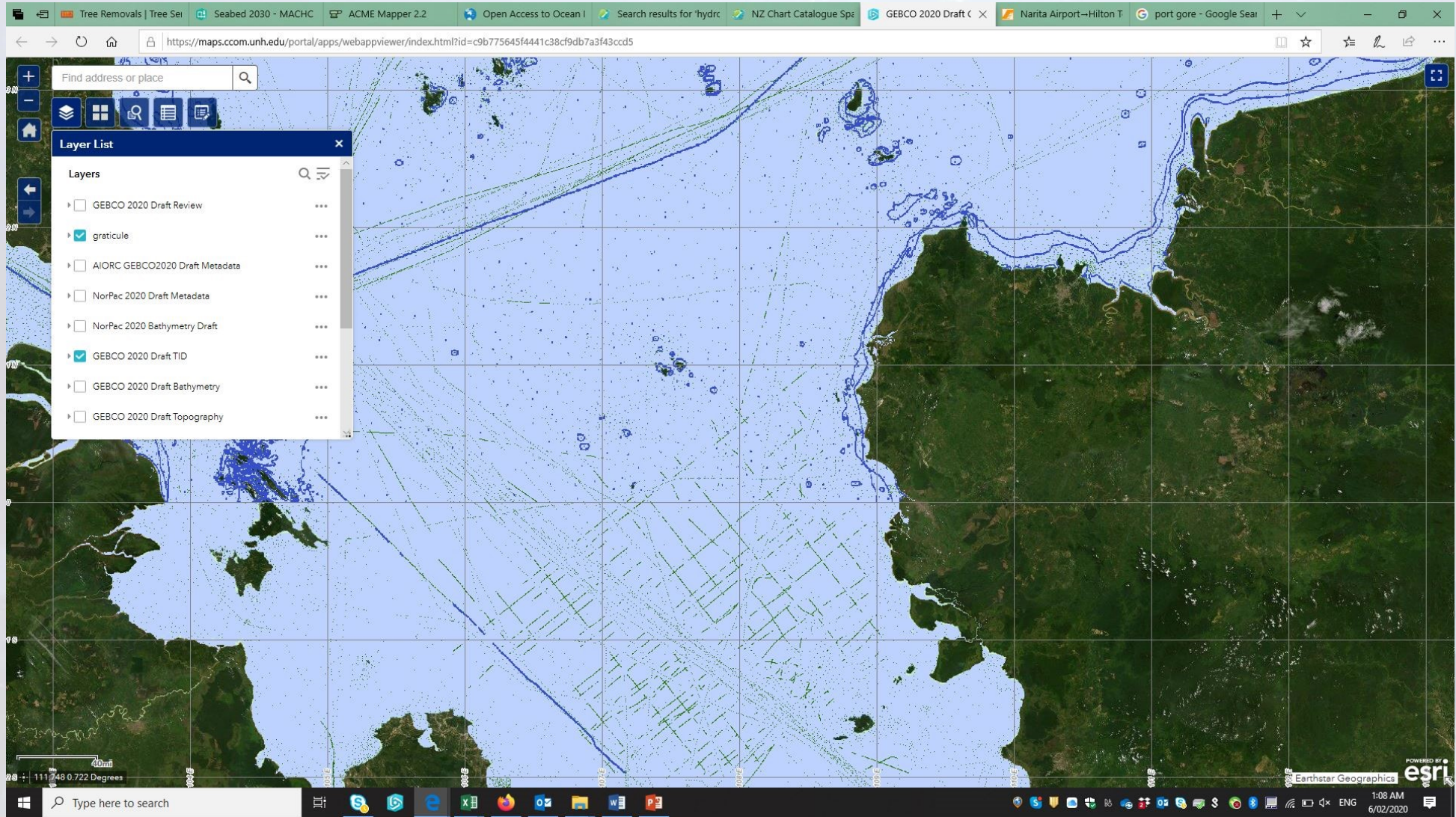


19% of GEBCO 2020 cells have data
81% interpolated data

Regional hydrographic commissions



ENC data

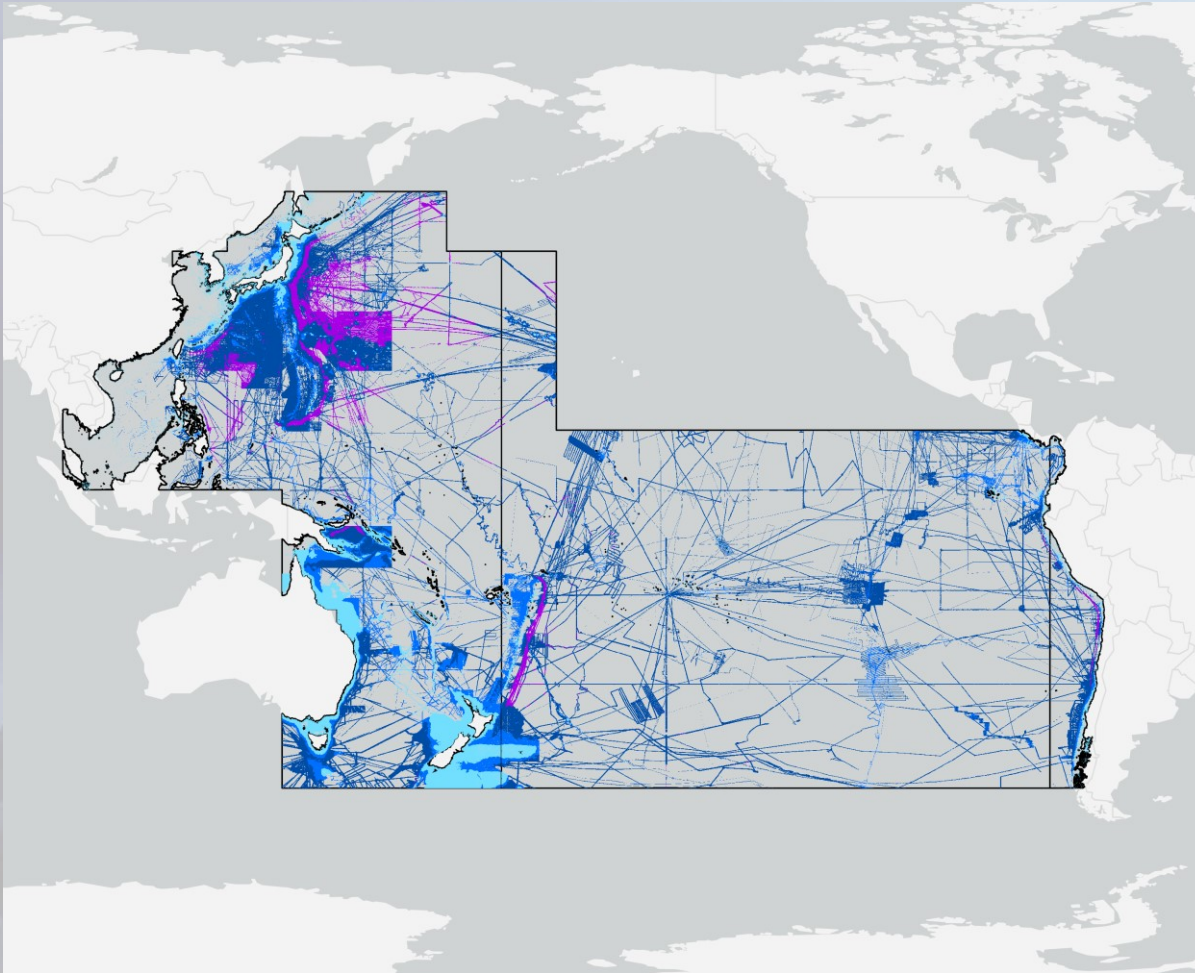


Data contributions from HOs in the Pacific region

Source	Description and Reference
Korea Hydrographic and Oceanographic Administration (KHOA), Republic of Korea	ENC soundings and contours, Korean Peninsula
East Asia Hydrographic Commission (EAHC)	ENC soundings and contours, South China and Eastern Archipelagic Seas
Chilean Navy Hydrographic and Oceanographic Service (SHOA), Chile	Multibeam data, ENC soundings, Pacific off Chile
Directorate of Hydrography and Navigation (DHN), Peru	ENC soundings and contours, Pacific off Peru
Instituto Oceanografico de la Armada (INOCAR), Ecuador	ENC soundings and contours, Pacific off Ecuador
Royal Thai Navy	ENC soundings and contours
Land Information New Zealand (LINZ), New Zealand	Multibeam data, single beam data, sounding sheets, ENC soundings and contours
Australian Hydrographic Service (AHS), Australia	ENC soundings and contours

Seabed 2030 South and West Pacific Centre

Year 2021 (in prep.) holdings



Major regional contributors in 2020

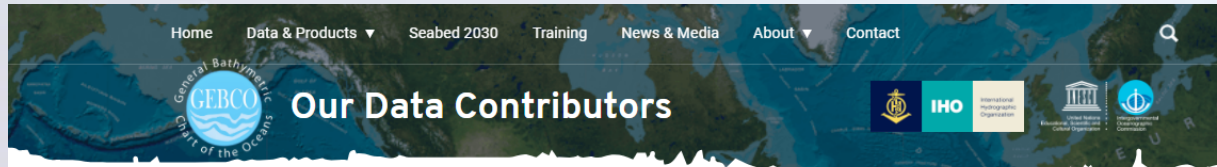
- Land Information New Zealand
- JAMSTEC
- Geoscience Australia
- NGA
- GMRT
- SHOA
- Royal Thai Navy
- China (via SCUFN)

Potential sources of crowd-sourced bathymetry

- DeSET project (Japan)



GEBCO bathymetric grid: [Data contributors](#)



[Home](#) » [About](#) » [Acknowledgements](#) » [Our data contributors](#)

Data contributors

We are continually working to update and improve our global bathymetric grid. This is only possible through access to data sets and regional bathymetric compilations made available by the international community. We thank all data contributors.

Even to this day large areas of the global ocean floor have not been mapped using modern echo-sounding techniques. Help us to map the gaps, find out how to [contribute your data](#) and get involved in GEBCO.

The [GEBCO grid](#) has been built from data from a number of sources, including regional and global grids and hundreds of individual surveys made available through international and national databases such as the IHO Data Center for Digital Bathymetry ([IHO-DCDB](#)) and from partners in industry.

The table below lists the data contributions included in the current GEBCO grid, GEBCO_2020.

Compilations and gridded contributions

Contributing Project/Organization	Regional Data Set (including reference/link where available)
Alaska Fisheries Science Center of the US National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Alaskan Fisheries)	<p>Bathymetry data from the Alaska bathymetry compilations for the Aleutian Islands, central Gulf of Alaska and Norton Sound. https://www.afsc.noaa.gov/RACE/groundfish/Bathymetry/default.htm</p> <p>Digitized chart soundings, Alaska: Proofed digitized historical chart soundings from "smooth sheets" covering Alaskan waters Proofed digitized historical chart soundings from "smooth sheets" covering Alaskan waters.</p> <p>Zimmermann, M., Prescott, M. M. & Haeussler, P. J. Bathymetry and Geomorphology of Shelikof Strait and the Western Gulf of Alaska. Geosciences 9, 409, doi:10.3390/geosciences9100409 (2019). Prescott, M. M. & Zimmermann, M. Smooth sheet bathymetry of Norton Sound. Report No. Memo. NMFS-AFSC-298, 23 (U.S. Department of Commerce, 2015). Zimmermann, M. & Prescott, M. M. Smooth sheet bathymetry of Cook Inlet, Alaska. Report No. Memo. NMFS-AFSC-275, 32 (U.S. Department of Commerce, 2014). Zimmermann, M., Prescott, M. M. & Rooper, C. N. Smooth sheet bathymetry of the Aleutian Islands. Report No. Memo. NMFS-AFSC-250, 43 (U.S. Department of Commerce, 2013).</p>

Jump to

- > [Compilations and gridded contributions](#)
- > [Multibeam and single beam survey data](#)
- > [Other contributions](#)

Other contributions

Source	Description and Reference (where available)
Member States of the International Hydrographic Organization (IHO)	Bathymetric soundings extracted from Electronic Navigation Charts (ENCs) provided by IHO Member States. Access further details about ENC contributions made to GEBCO. www.gebco.net/data_and_products/gridded_bathymetry_data/shallow_water_bathymetry List of countries/organisations that have contributed ENC data directly to GEBCO: Australian Hydrographic Service (RAN); Australia Bundesamt für Seeschifffahrt und Hydrographie, Germany; Directorate of Hydrography and Navigation, Peru; East Asia Hydrographic Commission; Finnish Hydrographic Office, Finland; Flemish Hydrography, Belgium; Hellenic Navy Hydrographic Service, Greece; Hydrographic service office of the Kingdom of Bahrain; Hydrographic Service, Maritime Administration of Latvia; Hydrographic Office of the Polish Navy, Poland; Hydrographic Office, South Africa; State Hydrographic Service of Ukraine; Royal Malaysian Navy Servicio de Hidrografia, Oceanografia; Meteorología y Cartografiado Náutico, Venezuela; Instituto Oceanográfico de la Armada, Ecuador; Instituto Idrografico Della Marina, Italy; Instituto Hidrografico, Portugal; Korea Hydrographic and Oceanographic Administration, Korea (Republic of); National Hydrographic Office, India; National Ocean Service, USA; Netherlands Hydrographic Office, The Netherlands; Norwegian Mapping Authority, Norway; Servicio Hidrográfico y Oceanográfico de la Armada, Chile; Swedish Maritime Administration, Sweden; Centro De Hidrografia Da Marinha, Brazil; Uruguayan Navy Oceanography, Hydrography and Meteorology Service; Argentina
Davey, F.J., 2004	Ross Sea Bathymetry (1:200,000) Bathymetric map, Version 1.0, Institute of Geological and Nuclear Sciences, geophysical Map 16, GNS Ltd, Lower Hutt, New Zealand
Stagpoole, V.M. et al, 2004	Bathymetry of the Ross Dependency and adjacent Southern ocean 1:5,000,000, Version 1.0. Institute of Geological and Nuclear Sciences, Lower Hutt, New Zealand, geophysical map 17. GNS Ltd, Lower Hutt, New Zealand

Community survey

<https://seabed2030.org/survey>

Preliminary results (June 2020)

➤ The most common area for good bathymetry for the South Pacific is INSHORE

➤ The most desired 'need':

• Environmental	35%
• Science / research	20%
• Economy	17%
• Safety	15%
• Other	13%



THE NIPPON FOUNDATION-GEBCO
SEABED 2030

Seabed 2030 Survey

If you would like to know more about the context for this survey, please read the explanatory article ['Marine Geospatial Data: The Cornerstone Of The Blue Economy'](#).

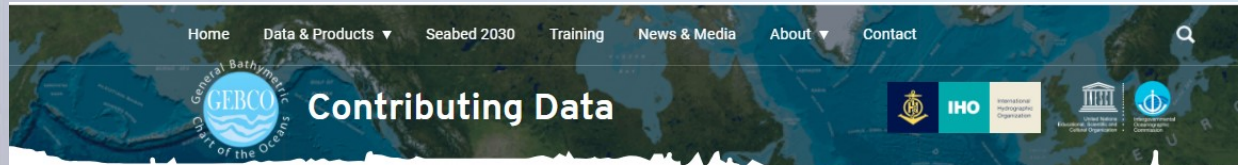
Section A: About you

1. Your name

2. Your organisation

0 of 24 answered

GEBCO bathymetric grid: [Data contribution form](#)



Home » About » Contributing data

How to contribute data

Please use the form below to make contributions of multibeam and/ or single-beam survey data, individual soundings or existing grids to help update our gridded data sets and products. If you have any problems in completing the form, then please email this information to the Global Center (gdacc@seabed2030.org).

Jump to

[> Our data contributors](#)

[> Join the Crowdsourced Bathymetry initiative](#)

Share this

GEBCO Data Contribution Form

GEBCO's aim is to provide the most authoritative, publicly-available bathymetry of the world's oceans. It operates under the joint auspices of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) (of UNESCO). GEBCO is continually working to improve its data products and gratefully acknowledges all data contributions to help map the gaps.

Seabed 2030 is a collaborative project between The Nippon Foundation and GEBCO to inspire the complete mapping of the world's ocean by 2030 and to compile all bathymetric data into the freely-available GEBCO Ocean Map.

PRIVACY NOTICE:

Your email contact will only be used by the GEBCO and the Seabed 2030 Team to contact you about the data sets of which you have made us aware. We will take all reasonable precautions to protect your personal data from loss, misuse, or alteration. We will not forward or sell on your email contact to 3rd parties.

* Required

Email address *

Your email

Your Name *

Country or Organization who holds these data *

Your answer

Data Sharing status *

- ☐ Open Access - freely available
- ☐ Restricted Access (e.g. can be included in GEBCO products, but not disseminated as provided)
- ☐ Embargoed
- ☐ Other: _____

Region of the World Ocean *

Check all that apply

- ☐ Arctic Ocean
- ☐ Atlantic Ocean
- ☐ Indian Ocean
- ☐ North Pacific Ocean
- ☐ South and West Pacific Ocean
- ☐ Southern Ocean

Would you like to archive these data with the IHO Data Center for Digital Bathymetry (IHO DCDB)?

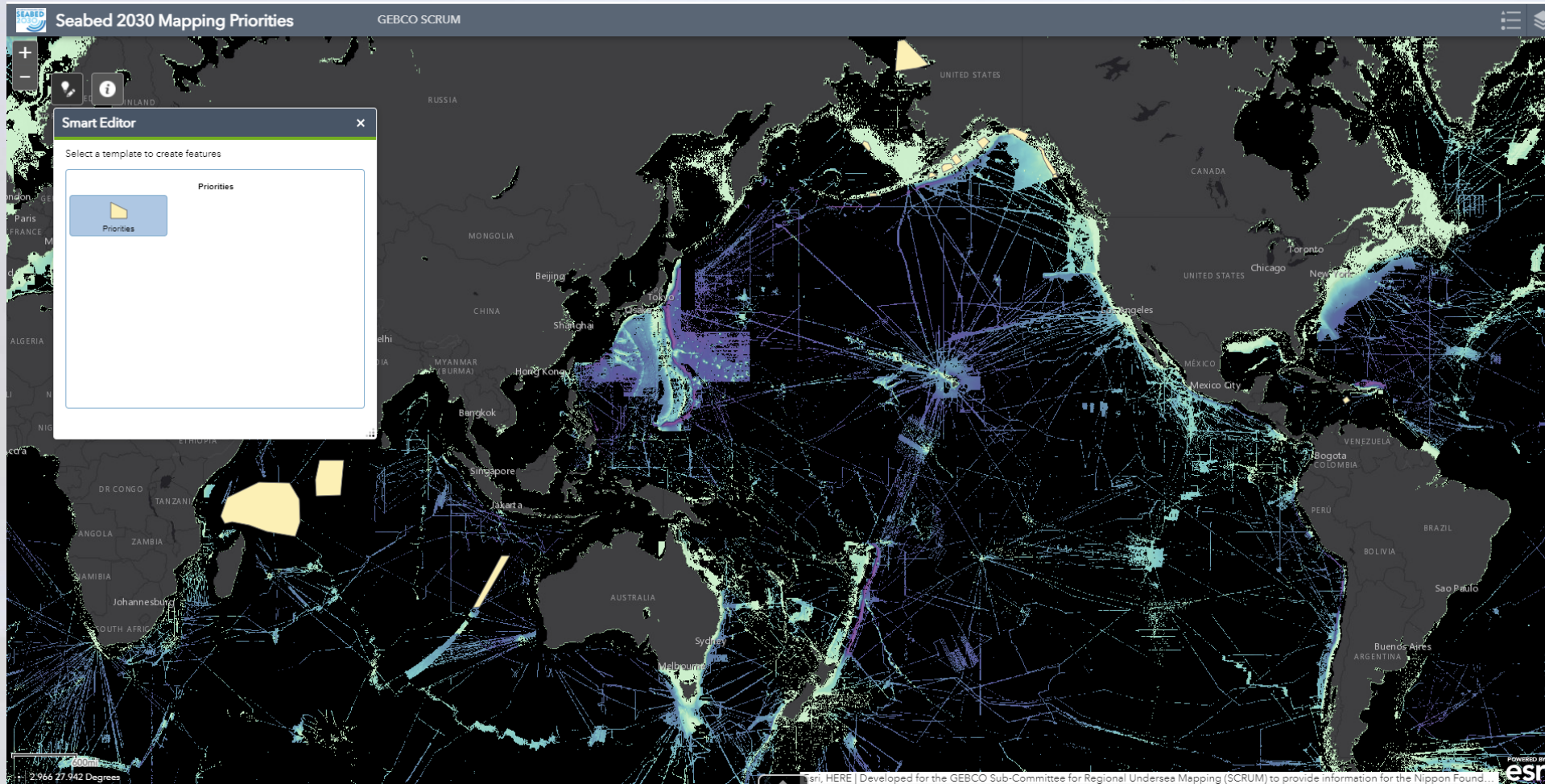
The IHO DCDB was established in 1990 to steward the worldwide collection of bathymetric data. The Center archives and shares, freely and without restrictions, depth data contributed by mariners. (More information at: <https://www.ngdc.noaa.gov/iho/>).

- ☐ Yes
- ☐ No
- ☐ Other: _____

How can these data be accessed? *



Seabed 2030 Mapping Priorities [web app](#)




Seabed 2030 S&W Pacific data centre: [Regional page](https://seabed2030.org/centers/south-and-west-pacific-ocean-regional-center) at https://seabed2030.org

← → ↻ https://seabed2030.org/centers/south-and-west-pacific-ocean-regional-center

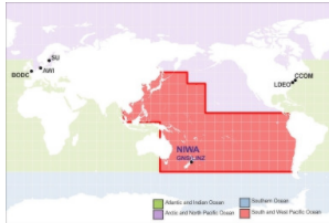
Home About Us ▾ Centers ▾ Get Involved ▾ FAQs Resources for Journalists Search

South and West Pacific Ocean Regional Center

Center Head



Kevin Mackay



Contact:
pacific@seabed2030.org

→ [Regional Data Portal](#)

Center Teams

National Institute of Water and Atmospheric Research (NIWA)

- Dr Evgenia Bazhenova, Center Manager
- Ms Jaya Roperez, Data Manager
- Dr Helen Neil, Marine geologist; National Projects Manager
- Mr Arne Pallentin, Principal Technician - GIS & Bathymetry
- Dr Tilmann Steinmetz, GIS Data Analyst & Administrator

Institute of Geological and Nuclear Sciences (GNS Science)

- Dr Vaughan Stagpoole, Head of Department - Marine Geoscience
- Dr Jenny Black, Data Technician - Geospatial Data and Analysis Team; IBCSO editorial member

Land Information New Zealand (LINZ)

- Mr Adam Greenland, NZ National Hydrographer, member of the IHO SWPHC
- Mr Glen Rowe, Senior Tide Analyst - Hydrographic Authority

Seabed 2030 S&W Pacific data centre: [Regional data portal](#)



NIWA
Taihoro Nukurangi

Geospatial Data





Legend:

- North Pacific-Arctic Ocean
- Atlantic-Indian Ocean
- South and West Pacific Ocean
- Southern Ocean

Nippon Foundation-GEBCO Seabed 2030 project: South and West Pacific Ocean regional data centre

Seabed 2030 has four Regional Centers who compile bathymetry data for their areas, and a Global Center (based at the British Oceanographic Data Centre) that produces the global **GEBCO** grid.

South and West Pacific Ocean regional data centre (SaWPac) held its inaugural workshop on March 3-6, 2019, in Wellington.

[SaWPac story map](#)

Online resources for the mapping community

This public platform is being developed for discovering bathymetric data coverage in the Pacific region.

[Seabed 2030 Open Data Layers and Applications](#)

Explore bathymetric data coverage

[Web viewer](#) [How-to guide](#)

Contact Us

Email: pacific@seabed2030.org

[Seabed 2030 on the NIWA web page](#)

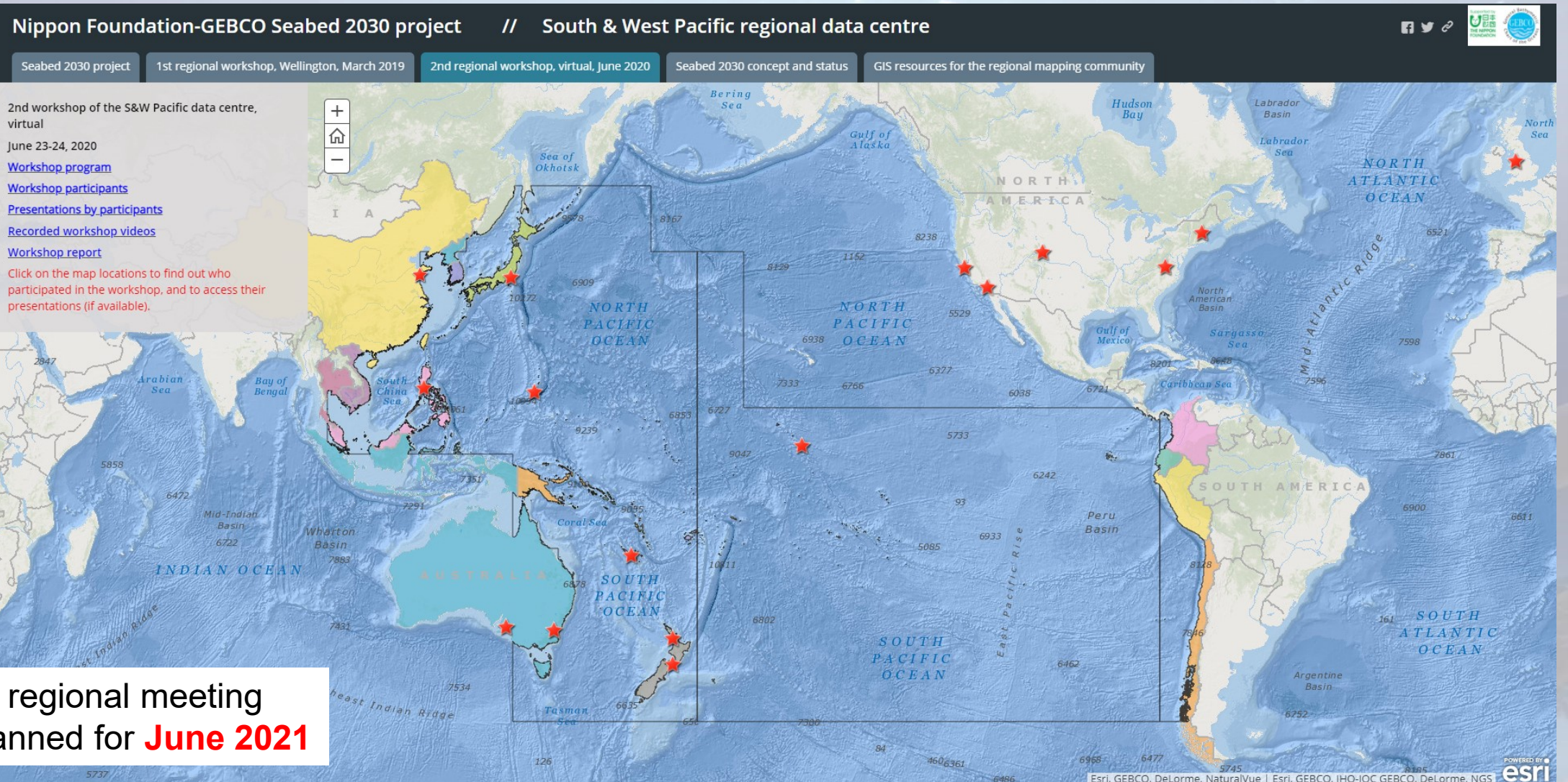


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Taihoro Nukurangi

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Seabed 2030 S&W Pacific data centre: [Regional story map](#)



Parting Words

Seabed 2030 provides Member States with a mechanism to respond to

UN General Assembly Resolution A/RES/72/73

'285. Encourages Member States to consider contributing to mechanisms that encourage the

widest possible availability of all bathymetric data, so as to support the sustainable development, management and governance of the marine environment;'



Parting Words

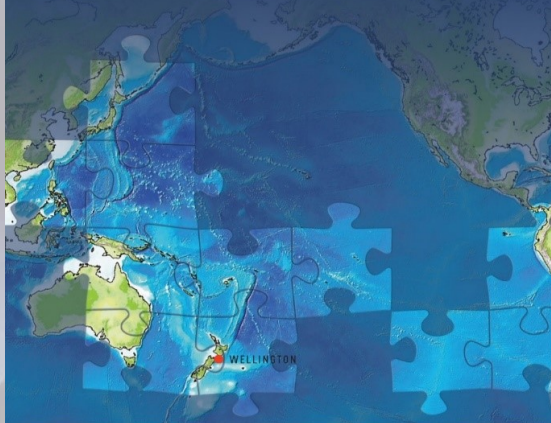
Seabed 2030 allows Member States to make a cost-effective contribution to:

- ✓ UN Decade activities
- ✓ completing the GEBCO Ocean Map,
- ✓ producing the ‘comprehensive digital atlas of the ocean’ (R&D Priority 1)



Seabed2030 South and West Pacific Centre

100% of the World's ocean
floor mapped by 2030



Thank you and any questions

<https://seabed2030.gebco.net>

E-mail: pacific@seabed2030.org

@seabed2030 

[SaWPaC Open Geospatial Data](#)

[SaWPaC story map](#)