

Welcome to GEBCO Week!



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission

Thank you to our Hosts!



**University of
New Hampshire**



What is GEBCO?

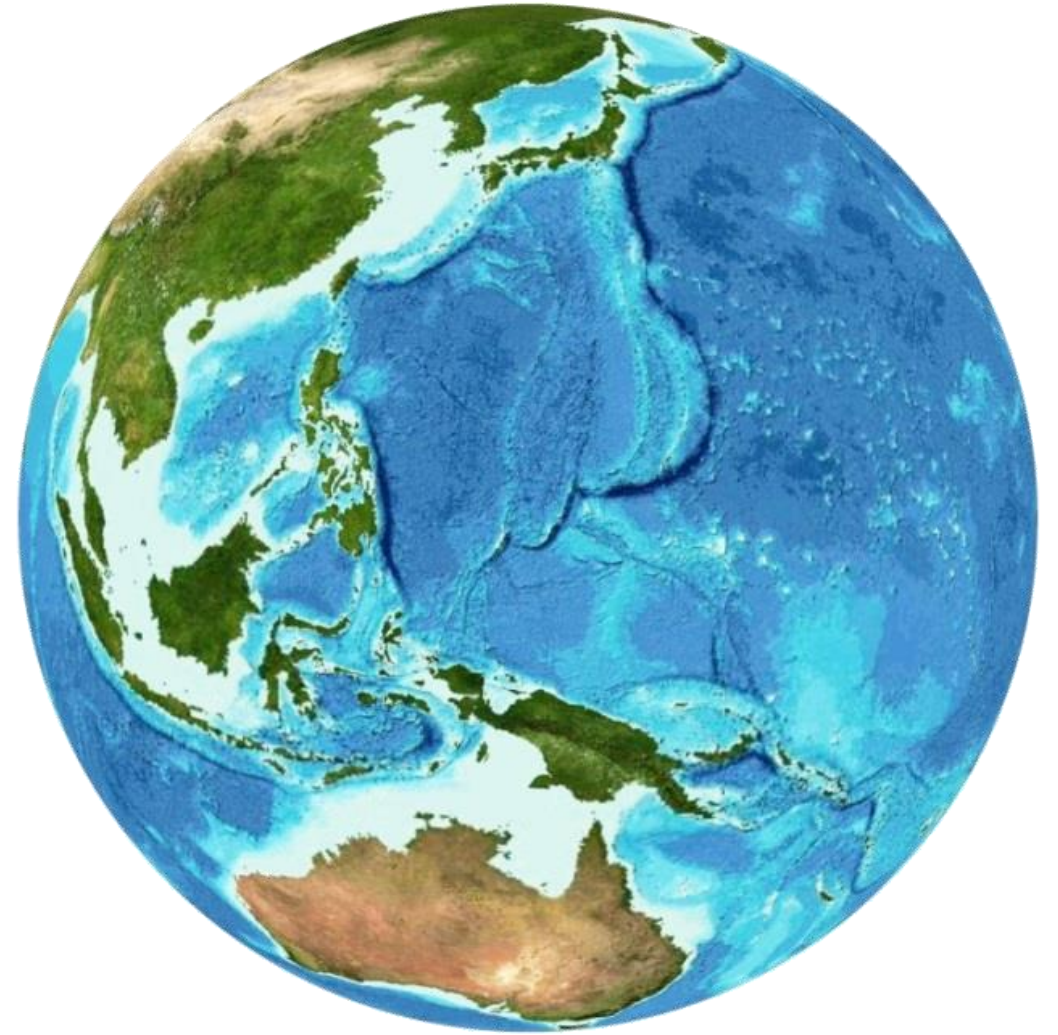
GEBCO aims to provide the most authoritative publicly-available bathymetry of the world's oceans.

It operates under the joint auspices of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO



GEBCO Products

- Global gridded bathymetric data
 - GEBCO 2014: 30 arc-second grid
 - GEBCO 2019 15 arc-second grid
- Gazetteer of Undersea Feature Names
- Digital Atlas
- Grid viewing software
- Printable maps
- Web Map Service (WMS)
- IHO-IOC GEBCO Cook Book



www.gebco.net/data_and_products/



GEBCO Structure

GEBCO's work is directed by a *Guiding Committee* and supported by *sub-committees* and *ad hoc working groups*:

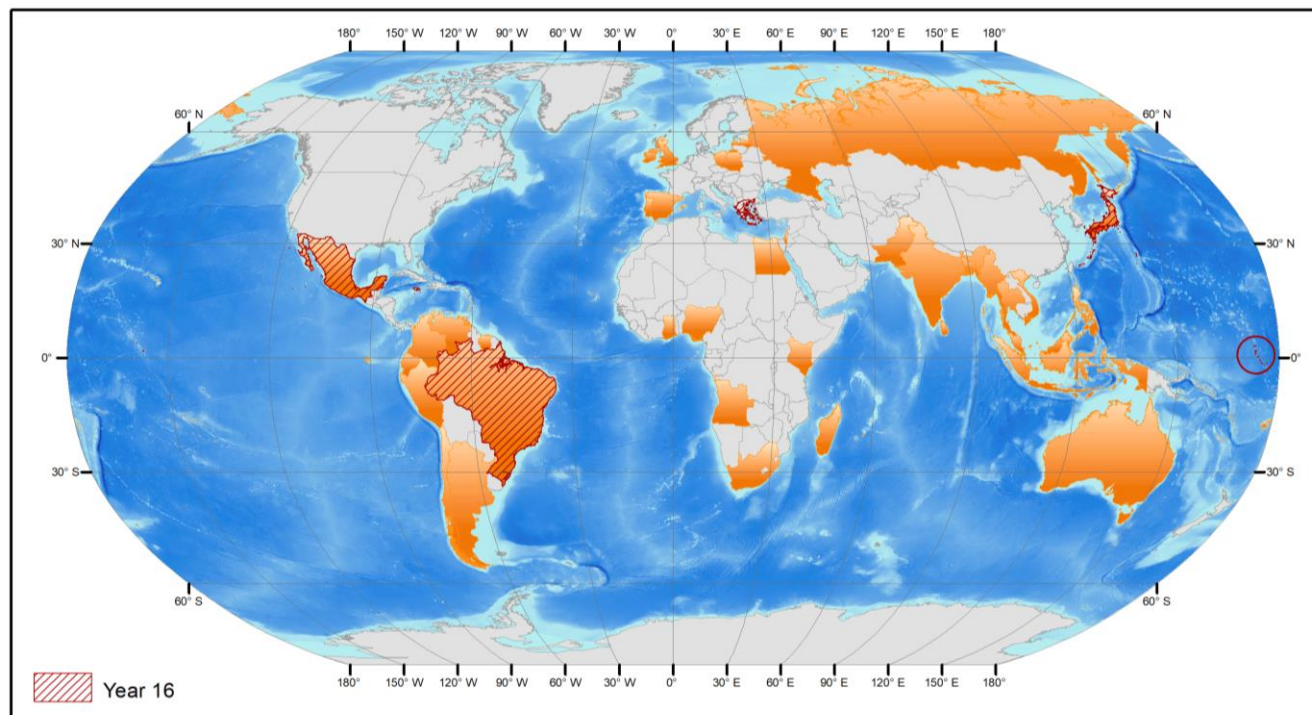
- Technical Sub-Committee for Ocean Mapping (TSCOM)
 - IHO-IOC GEBCO Cook Book Working Group
 - Metadata Working Group
- Sub-Committee for Regional Undersea Mapping (SCRUM)
- Sub-Committee for Outreach and Public Engagement (SCOPE)
- Sub-Committee for Undersea Feature Names (SCUFN)



GEBCO Community



Capacity-building Initiative: Nippon Foundation / GEBCO Alumni



96 students from 43 countries





The Nippon Foundation-GEBCO Seabed 2030 Project

Seabed 2030

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.



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Vision: 100% of the Ocean Floor Mapped by 2030



GEBCO Week Overview

- Sub-Committee Meetings (Monday/Tuesday)
 - SCRUM
 - TSCOM
 - SCOPE
- Map the Gaps Symposium (Wednesday)
- GEBCO Guiding Committee (Thursday/Friday)



Social Media

#iamGEBCO

#mapthegaps

#wherewillyoumap

#beapieceofthepuzzle

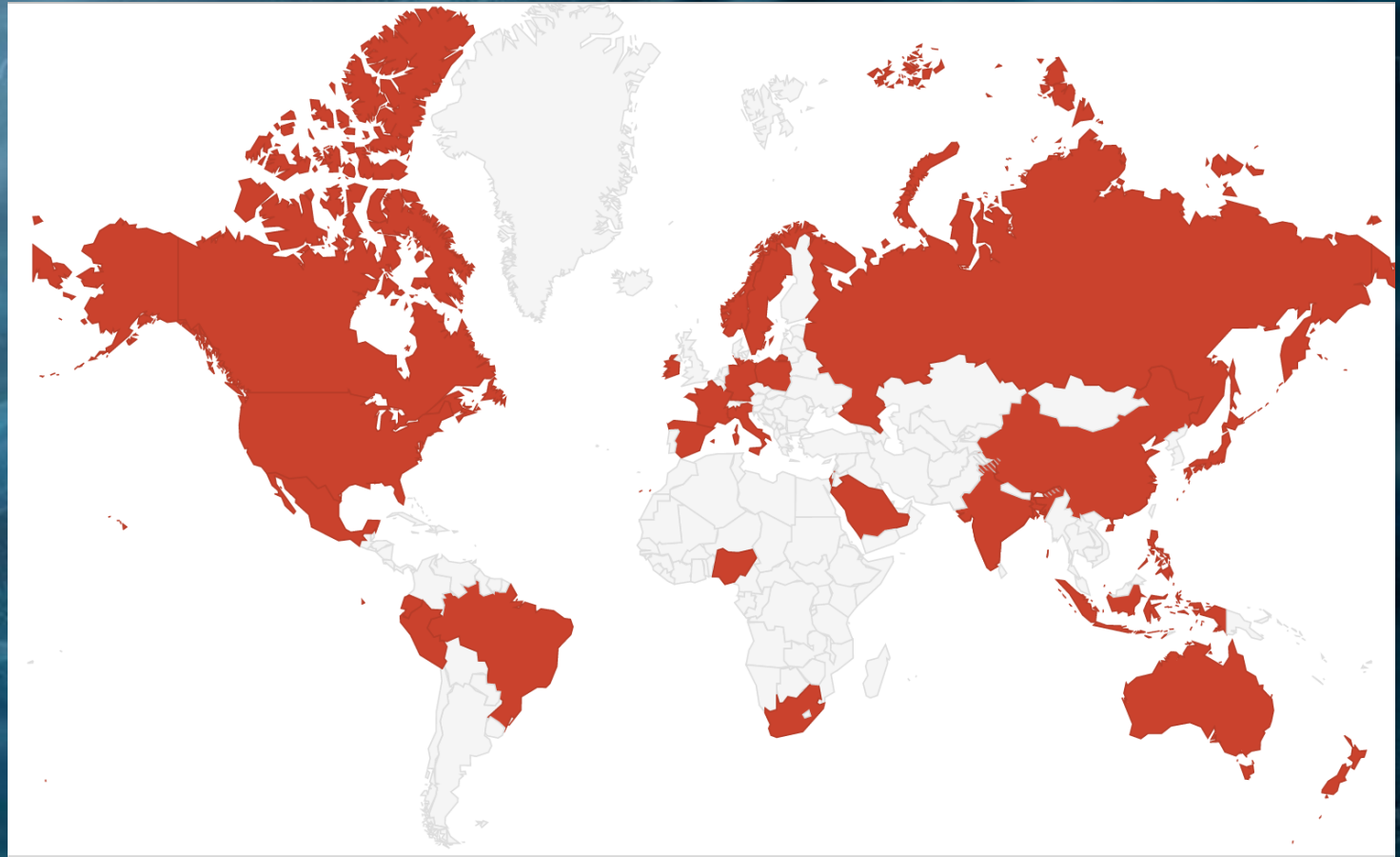
@gebcobathymetry

@mapthegaps

@seabed2030



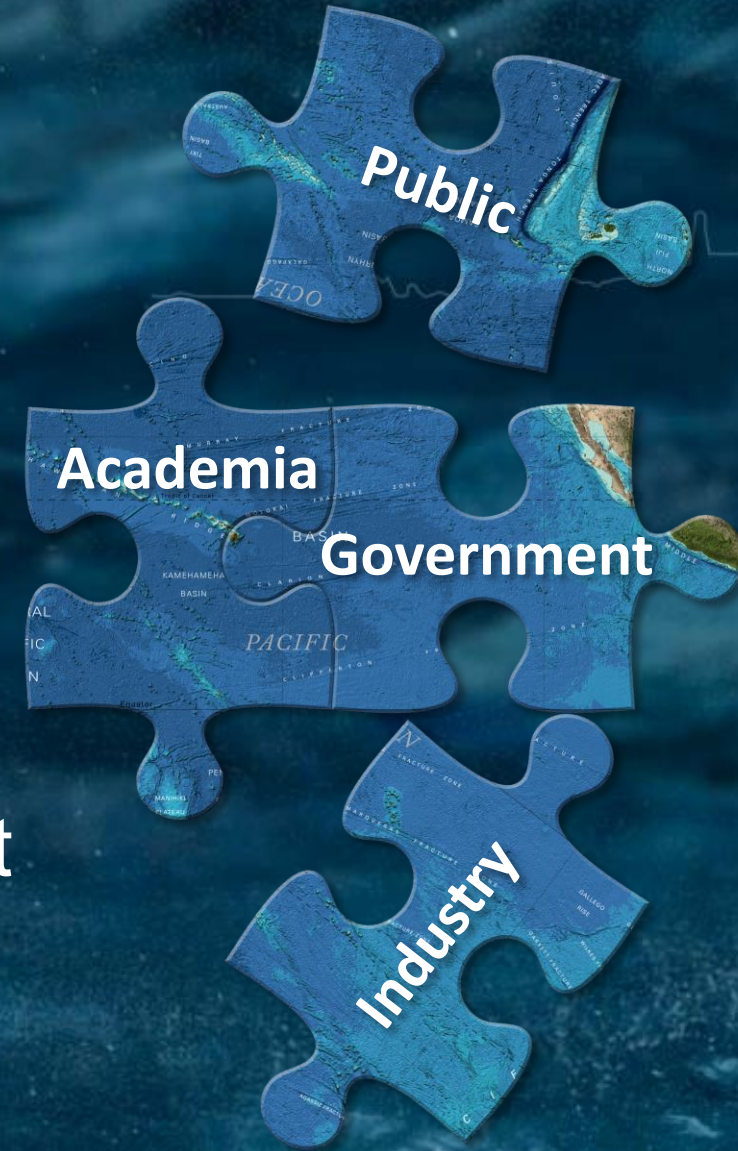
GEBCO Week 2019: Participating Nations



A new era in ocean mapping



- Stakeholder Engagement
- Capacity Building
- Technical Innovation



Terms of Reference

TSCOM/SCRUM/SCOPE



TSCOM

- Technical Matters
 - Cookbook
 - Metadata Working Group
 - Provide Advice
 - Assistance to DCDB

SCRUM

- Regional Mapping
 - RHC
 - RDACS
 - Data Flow Procedure

SCOPE

- Public Outreach and Awareness
 - Education
 - Communications



How this impacts the community

- Reviewing all membership across the committees
- Considering new membership
- Changing communication channels

IF YOU ARE INTERESTED IN AFFIRMING YOUR
MEMBERSHIP OR JOINING A COMMITTEE, PLEASE TALK TO
THE CHAIR FOR CONSIDERATION



Sub-Committee for Regional Undersea Mapping (SCRUM)

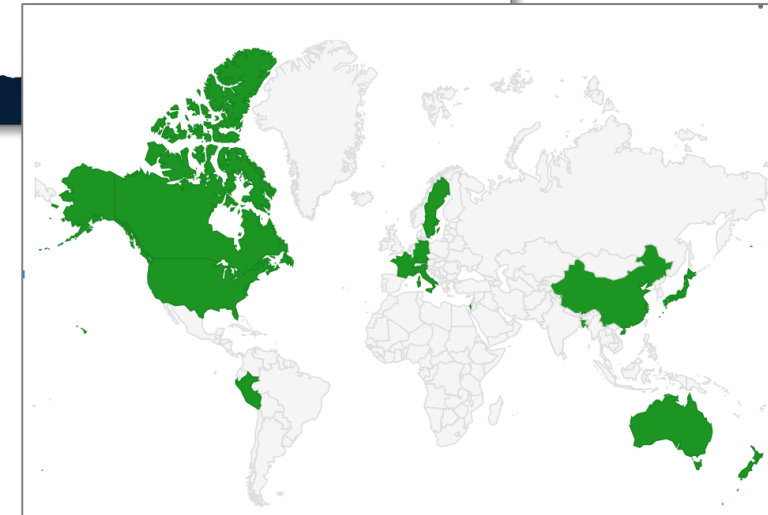


Dr. Vicki Ferrini (Chair)

Ms. Pauline Weatherall (Vice-Chair)

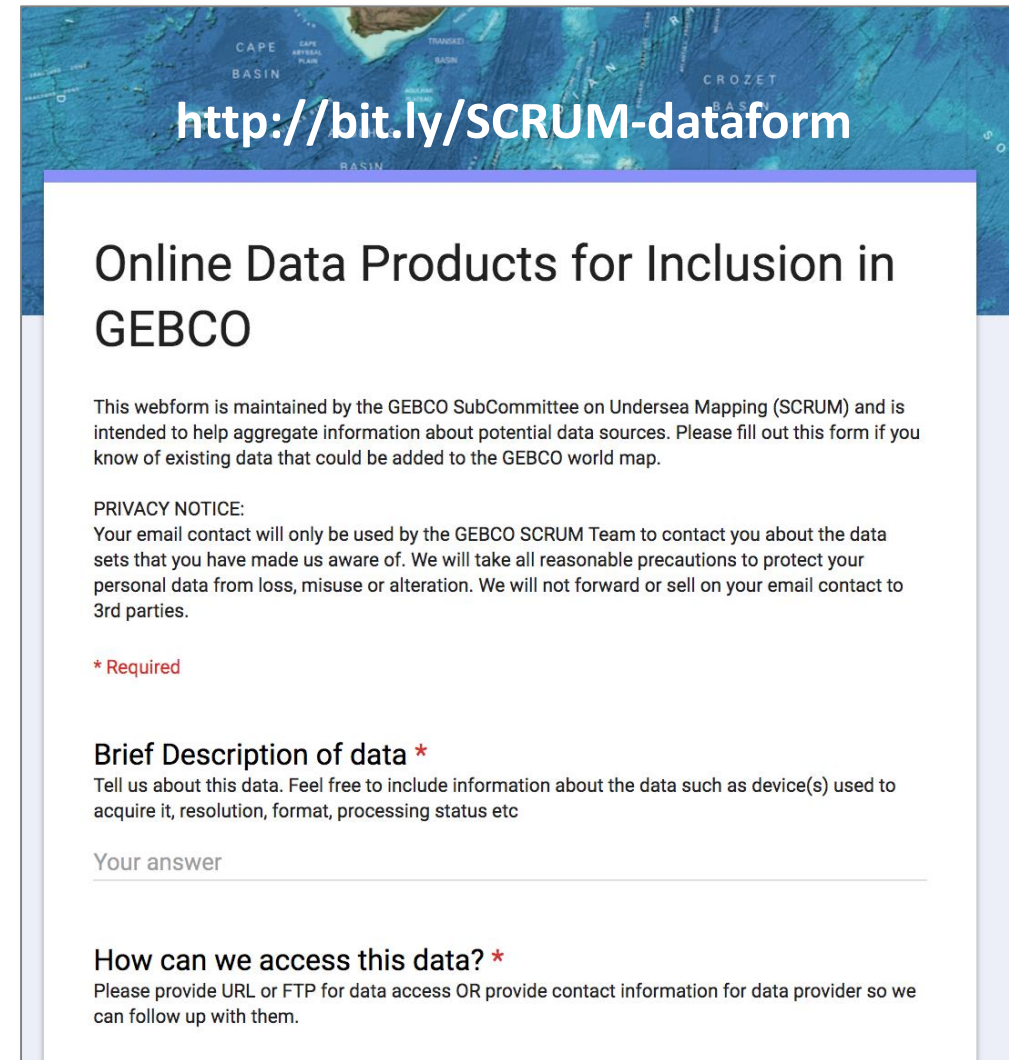
SCRUM 2018 - 2019

- Revised ToRs
- New SCRUM Members
 - Rob Beaman, Australia
 - Kim Picard, Australia
 - Geoffroy Lamarche, New Zealand
 - Miao Fan, China
 - Shereen Sharma, Australia
- All SCRUM members were invited to join Seabed 2030 RMCs



SCRUM 2018 - 2019

- 1 virtual meeting in conjunction with TSCOM
- Launched web form for information about available data
- Coordinated attendance at regional meetings (e.g. RHCs)
- Created GEBCO slide deck for use at regional meetings
- GEBCO 2019 Reviewing App



The screenshot shows a web browser displaying the SCRUM data form. The header features a blue ocean map background with the URL <http://bit.ly/SCRUM-dataform> in white text. Below the header, the title "Online Data Products for Inclusion in GEBCO" is displayed. A paragraph explains the form's purpose: "This webform is maintained by the GEBCO SubCommittee on Undersea Mapping (SCRUM) and is intended to help aggregate information about potential data sources. Please fill out this form if you know of existing data that could be added to the GEBCO world map." A "PRIVACY NOTICE" section follows, stating that email contact will only be used by the GEBCO SCRUM Team and that personal data will be protected. A red asterisk indicates a required field. The "Brief Description of data" section asks for details about the data, such as device(s) used, resolution, format, and processing status. A text input field labeled "Your answer" is provided. The "How can we access this data?" section asks for a URL or FTP for data access or contact information for the data provider, also marked as required.

<http://bit.ly/SCRUM-dataform>

Online Data Products for Inclusion in GEBCO

This webform is maintained by the GEBCO SubCommittee on Undersea Mapping (SCRUM) and is intended to help aggregate information about potential data sources. Please fill out this form if you know of existing data that could be added to the GEBCO world map.

PRIVACY NOTICE:
Your email contact will only be used by the GEBCO SCRUM Team to contact you about the data sets that you have made us aware of. 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**

Brief Description of data *
Tell us about this data. Feel free to include information about the data such as device(s) used to acquire it, resolution, format, processing status etc

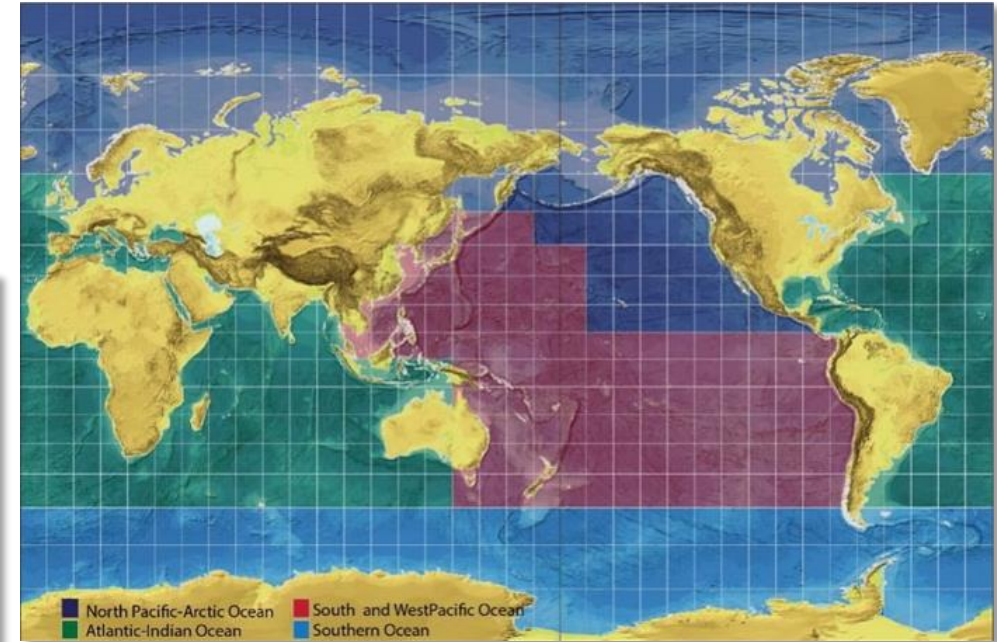
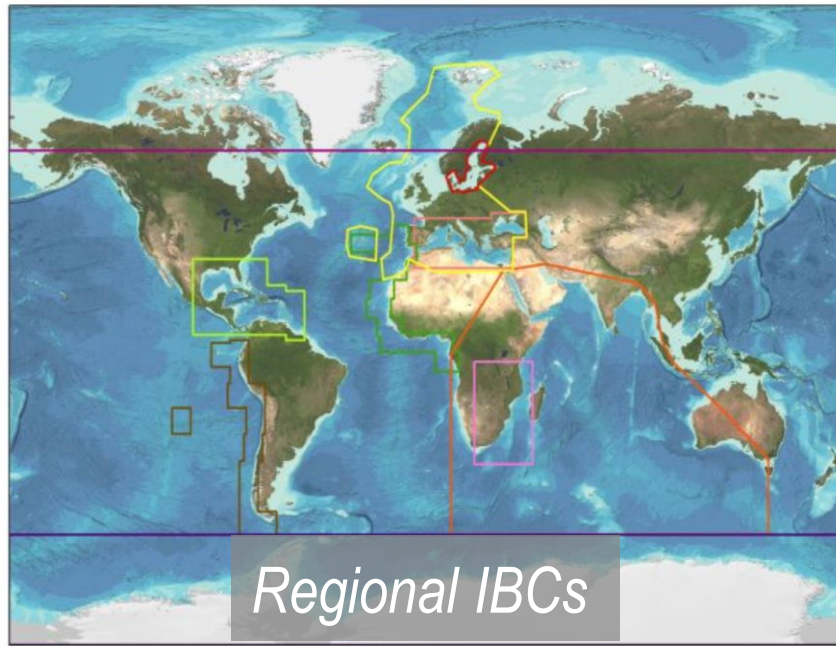
Your answer

How can we access this data? *
Please provide URL or FTP for data access OR provide contact information for data provider so we can follow up with them.



GEBCO – Regional Activities

- Participate in Regional Meetings to promote GEBCO and its work
- Facilitate/Review Regional Products



*Seabed 2030 Regional
Data Assembly & Coordination Centers*



Regional Hydrographic Commission Meetings 2019

RHC	Location	Date	Presentation	Attended
SWPHC	Alofi, Niue	Feb 2019	✓	✓
RSAHC	Manama, Bahrain	Feb 2019	✓	✓
EAHC	Bali	Feb 2019		?
USCHC	Biloxi, Mississippi	March 2019		?
NIOHC	Muscat, Oman	March 2019	✓	✓
SWAtHC	Buenos Aires, Argentina	April 2019	✓	✓
IRCC	Genoa, Italy	June 2019	✓	✓
HCA	Prague, Czechia	July 2019	✓	✓
SAIHC	Capetown	Sept 2019	✓	✓
MACHC	Dominican Republic	November 2018	(✓)	(✓)

Regional Hydrographic Commission Meetings

2020 – Volunteers Needed!

RHC	Location	Date	
SEPHC	Chile	TBD	
NIOHC	Colombo, Sri Lanka	TBD	
EAHC	Lisbon	9/28-10/2	
SAIHC	Mauritius		
IRCC	Poland	June	
USCHC	Quebec City	03/24	
NSHC	Reykjavik, Iceland	3/26-3/27	
SWPHC	Wollongong, Australia	2/12-2/14	
SWAtHC		TBD	

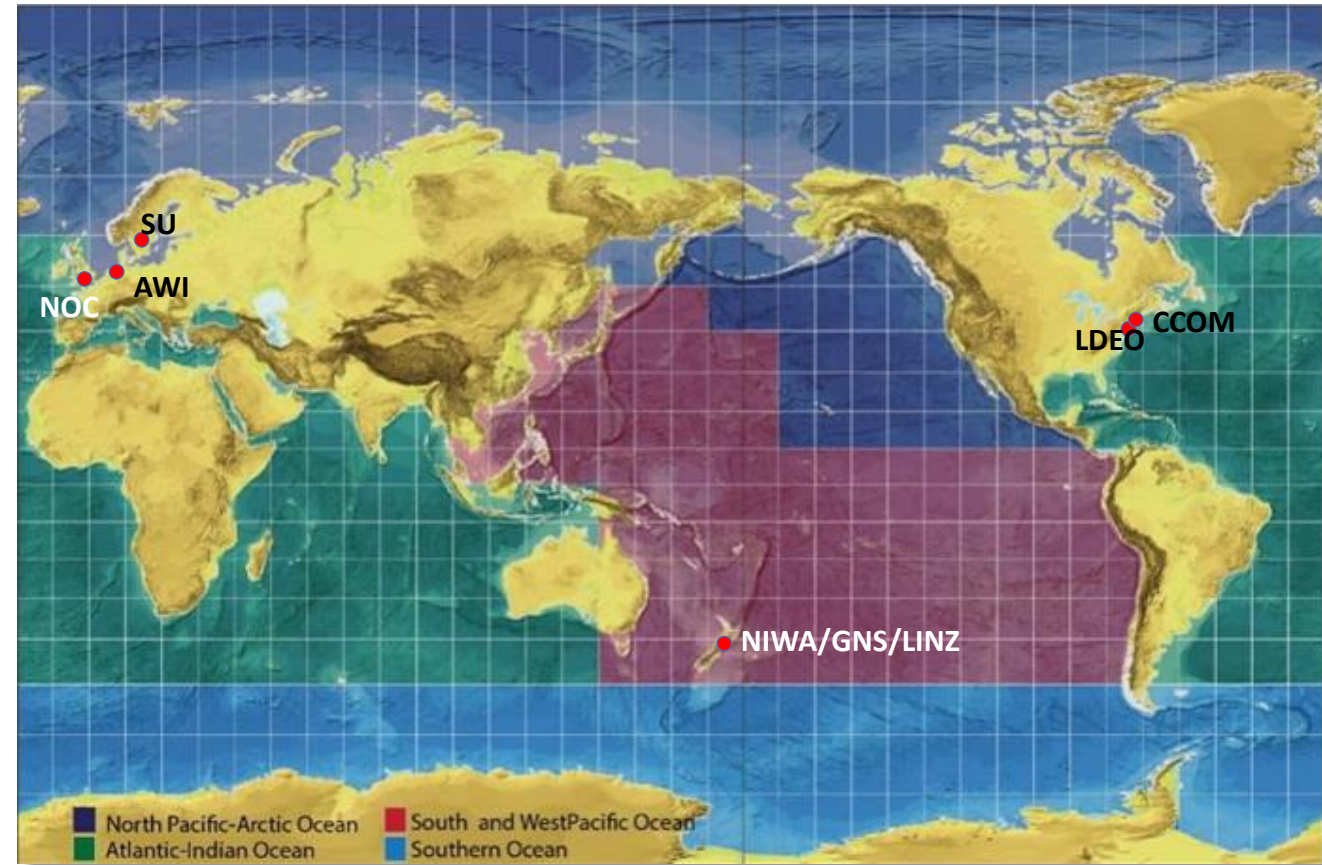
Acceleration Through Regional Coordination



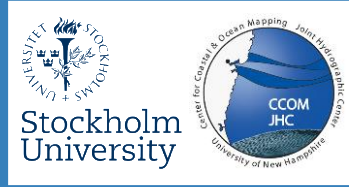
Seabed 2030

Data Assembly & Coordination Centers

- Regional Centers
 - Stakeholder engagement
 - Build upon ongoing efforts
 - Identify data gaps
 - Regional coordination
 - Regional data assembly
- Global Center
 - Generate global products
 - Disseminate global products



Arctic and Northern Pacific Oceans



Atlantic and Indian Oceans



Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE



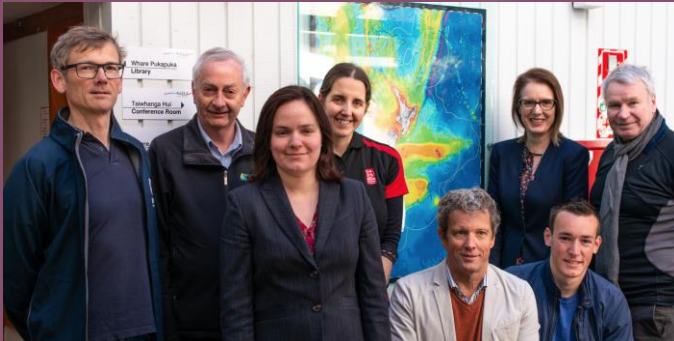
Global Center



Southern Ocean

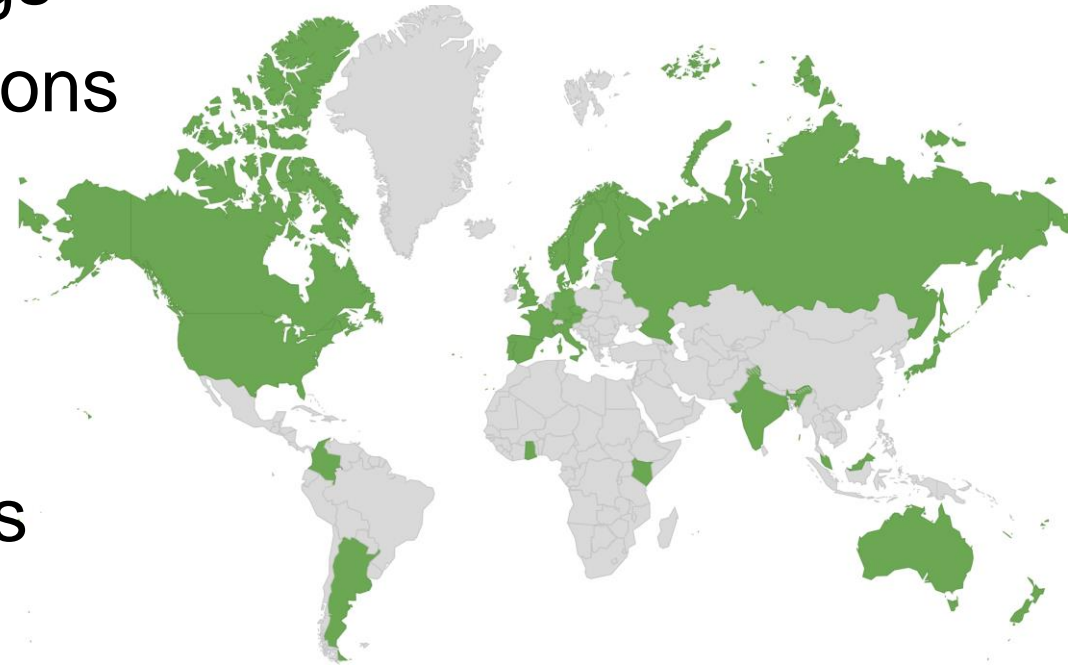


South and West Pacific Ocean



Meetings & Conferences

- National/International Science Meetings
- IHO Regional Hydrographic Commissions
- IOC meetings
- Workshops
- Industry Conferences & Meetings
- International Vessel Operator Meetings



Seabed 2030 Regional Mapping Committees



Stockholm, Sweden
October, 2018



Palisades, NY, USA
October, 2018



Wellington, New Zealand
March, 2019



Boulder, Colorado, USA
April, 2019



➤ Regional engagement activities in 2018-2019

- *Australasian Hydrographic Society seminar*, [Fiji](#)
- *South-West Pacific Hydrographic Commission (SWPHC) 16th meeting*, [Niue](#)
- *25th International Ocean Data Exchange (IOC) Committee of the UNESCO/IOC*, [Japan](#)
- *12th Intergovernmental Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-XII)*, [Philippines](#)
- *Hydrography Day seminar “Hydrographic information driving marine knowledge”*, [Fiji](#)
- *New Zealand Marine Sciences Society conference*, [New Zealand](#)
- *Pacific Community Workshop on UN Decade of Ocean Science for Sustainable Development*, [New Caledonia](#)
- *Australian Marine Sciences Association conference*, [Australia](#)
- *New Zealand ESRI User Conference*, [New Zealand](#)
- *International Research Vessels Operators meeting*, [Australia](#)

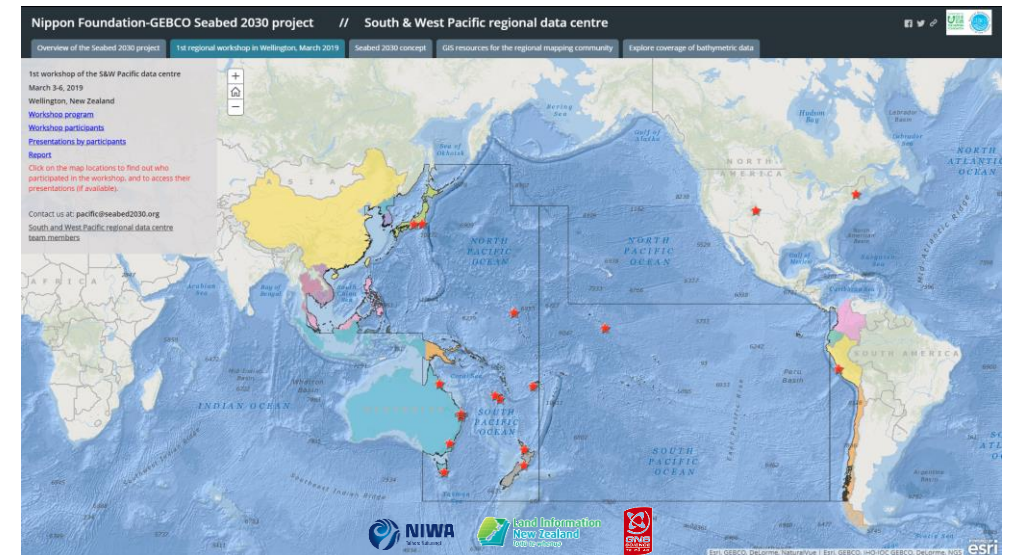
➤ Hosting interns in 2018-2019

- NF/GEBCO scholars, [University of New Hampshire](#)
- ENSTA Bretagne, [France](#)

➤ Continuous development of [online viewers](#)

Possible workshops in 2020

- South East Asia
- South America





➤ Regional engagement activities in 2018-2019

- AORA ASMIWG
- ASPIRE
- IBCCA Coordination Video Conference
- RHC Engagement
 - MACHC, SWAtIHC, SAIHC Presentations
 - MACHC Data Viewer
- National and Federal Engagement within US
- Ghana Fisheries Conference ***Alumni-led*
- Western Indian Ocean Marine Science Association (WIOMSA) Special Session ***Alumni-led*
- AORA Ocean Literacy Workshop (Nov 2019)
- MACHC 2019 (Dec 2019)

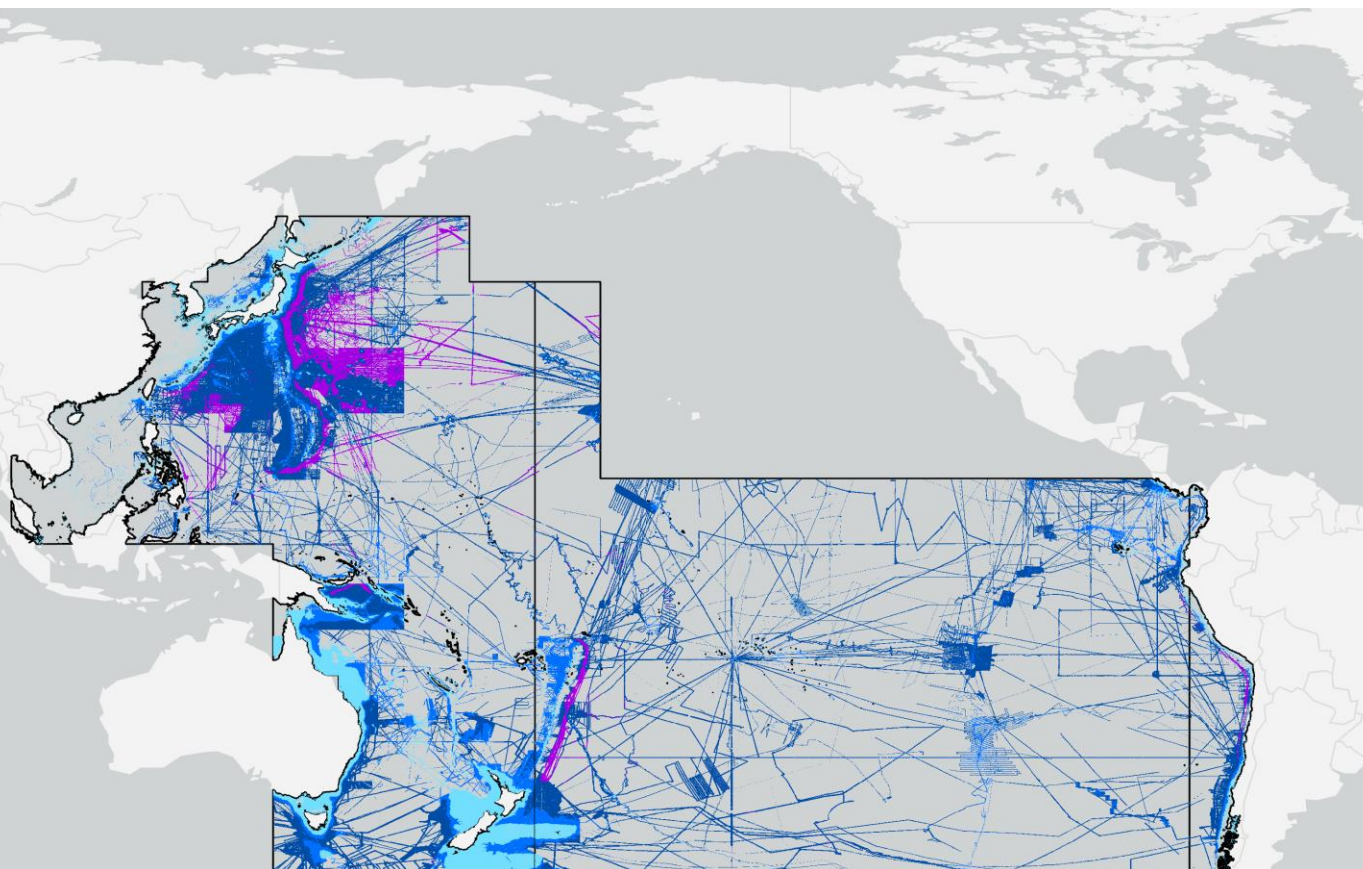
➤ Alumni Engagement

- Collaboration and support for regional meeting participation
- Alumni Visits
 - Mekayla Dale (Ireland)
 - Keshav Sauba (Mauritius)
 - Jaya Roperez (Philippines)
- AGU presentation (Dec 2019) ***Alumni-led*
- IIOE-2 presentation (March 2020) ***Alumni-led*





Year 2019 holdings



New major regional contributors in 2019

- JAMSTEC
- Geoscience Australia
- NOAA NCEI multibeam bathymetry database
- Olex
- SHOM

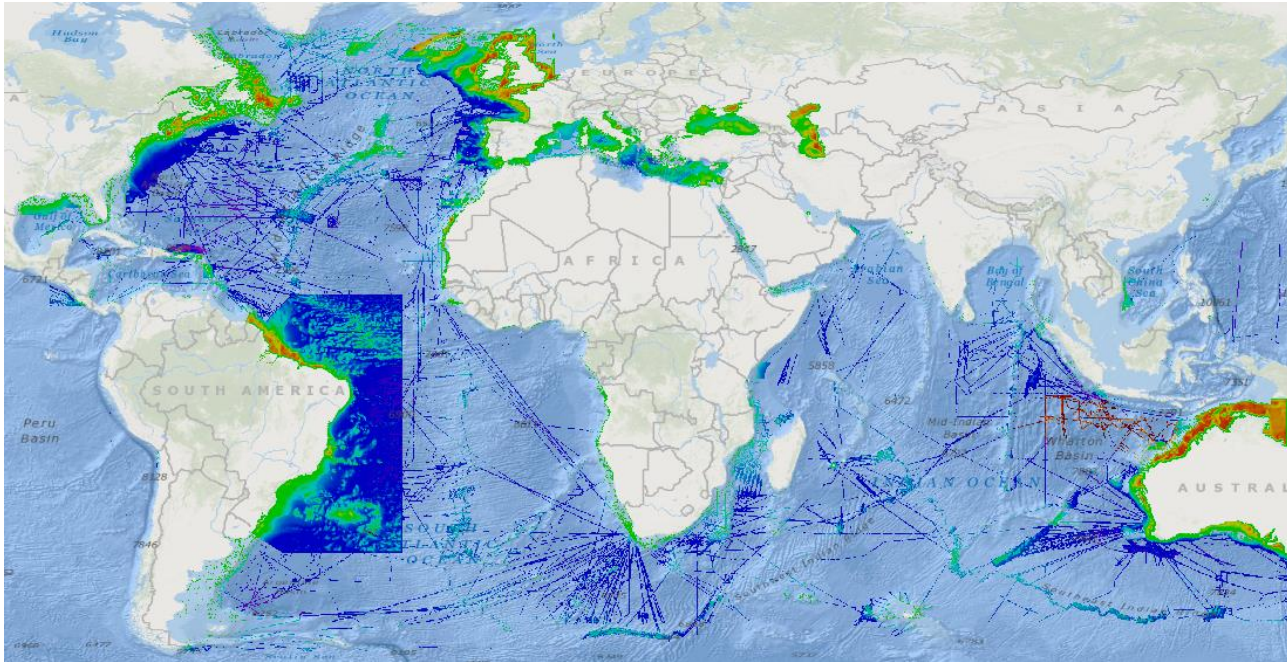
Awaiting submission in 2020

- IFREMER

Potential sources of CSB

- DeSET project (Japan) – 100 ships by end of 2019
- Sandford Fisheries (New Zealand), and others

Seabed 2030 Atlantic & Indian Regional Center



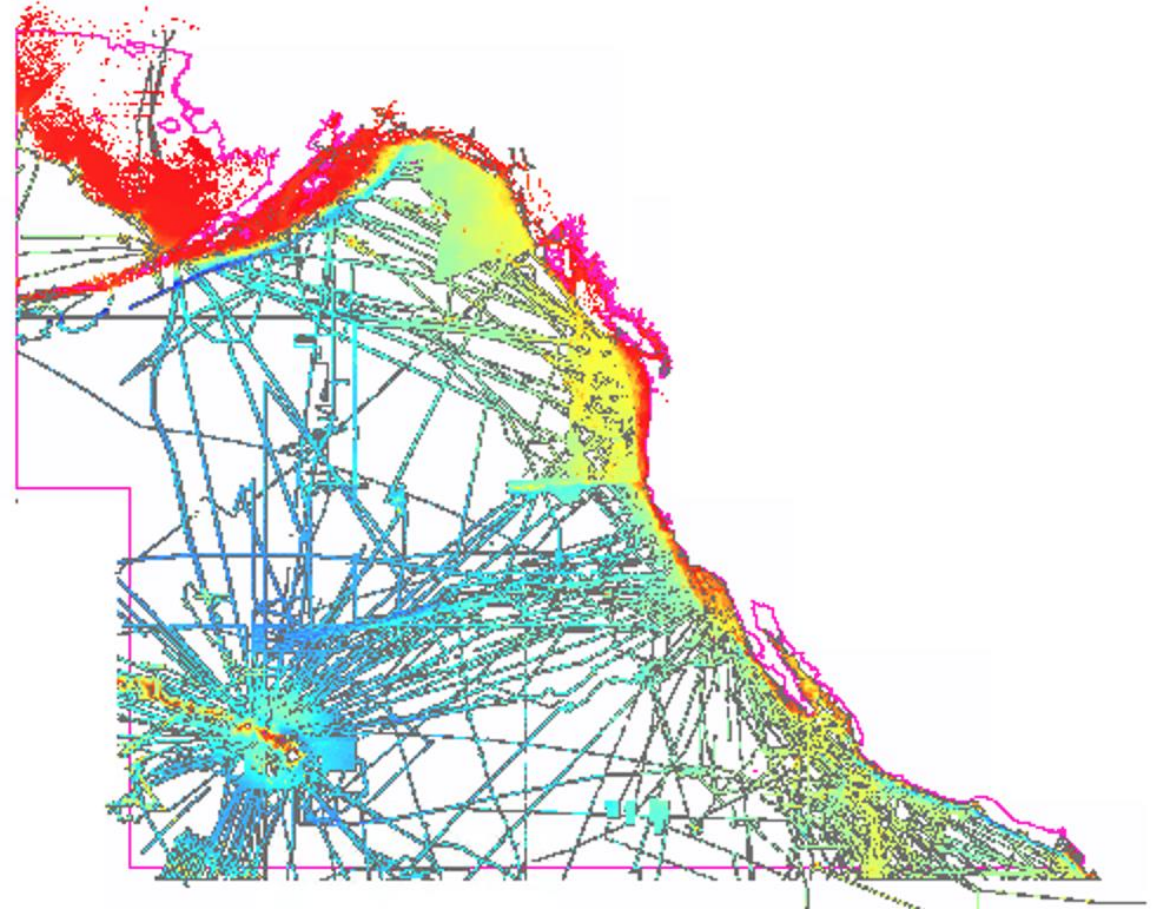
Recent Data Additions

- AORA
- AtlantOS
- AusSeabed
- Brazilian grids in support of SCUFN
- Brazilian Continental Margin DTM
- Canadian Hydrographic Service
- Fugro
- GMRT v3.6 (US Academic)
- Olex
- NOAA
- SHOM
- ...and more!

Seabed 2030 North Pacific Data Contributions



- Multibeam:
 - **NCEI/R2R:** *Atlantis, Falkor, Healy, Kilo Moana, Langseth, Melville, Revelle, Siquiliak, Thompson*
 - **OET:** *E/V Nautilus*
 - **NOAA-OER:** *E/V Okeanos Explorer*
 - **GSR**
 - **SHOM**
- Non-Multibeam / Grids:
 - **CHS**
 - **OLEX**
 - **NOAA Fisheries**
 - **SHOM**



RHC Coordination: MACHC & Seabed 2030



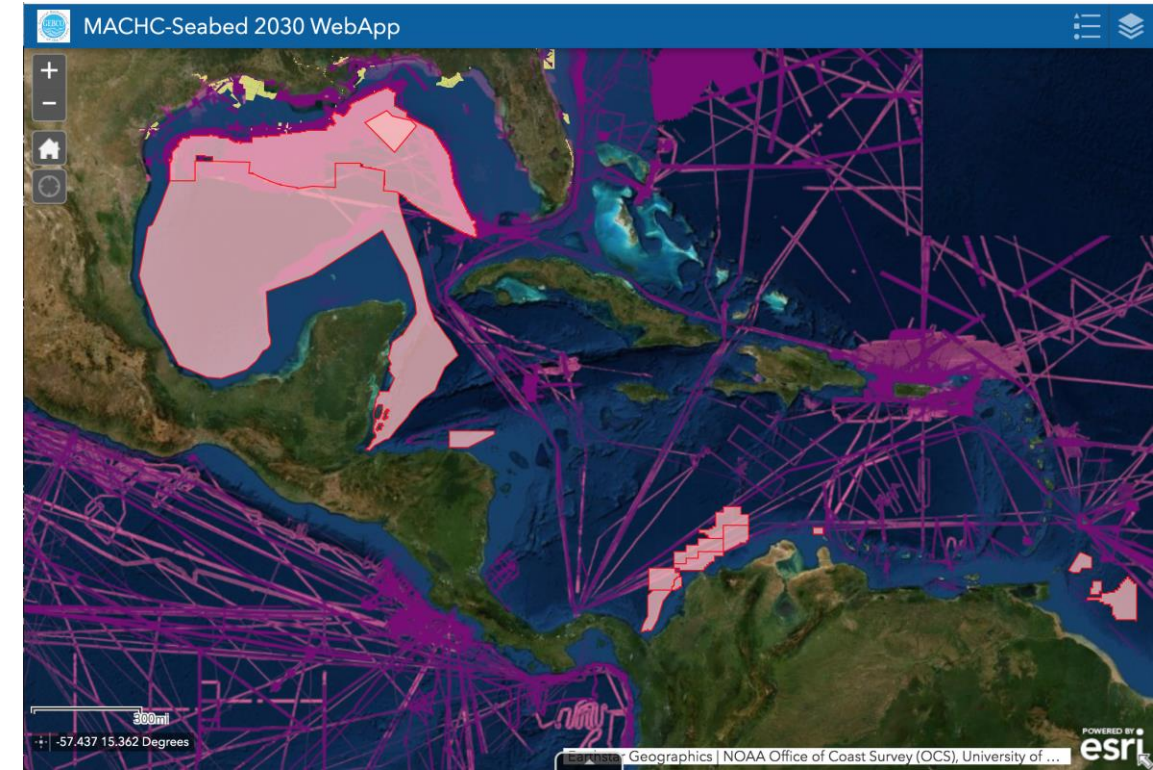
The screenshot shows the homepage of the MACHC website. At the top, there is a banner with the MACHC logo and the text "Initiatives of the Meso American-Caribbean Sea Hydrographic Commission". Below the banner, there is a navigation menu with links to Home, MICC, MMSDIWG, Capacity Building Committee, Maritime Safety Information, and Seabed 2030. On the left side, there is a sidebar with a language selector (Español), a Highlights section with links to MACHC MMSDIWG Inventory Survey, Regional MS! Status, 20th MACHC-Dominican Republic Dec 2-6, 2019, MACHC Seabed 2030 Contributions, MACHC MS Catalogs, and Products (MACHC ENOnline). The main content area features the title "Meso American-Caribbean Sea Hydrographic Commission (MACHC)" with the Chair (United States - Kathryn Ries) and Vice Chair (Brazil - Vice-Admiral Marcos Borges Sertã). Below this, there is a paragraph stating that MACHC supports the activities of the International Hydrographic Organization (IHO) on a regional basis. To the right of this text is a list of Members (Brazil, Colombia, Cuba, Dominican Republic, France, Guatemala, Guyana, Jamaica, Mexico, Netherlands, Suriname, Trinidad and Tobago, United Kingdom, United States, Venezuela) and Associate Members (Antigua and Barbuda, Barbados). At the bottom of the main content area, there is a map of the Meso American region with the caption "The greater Meso American region".

Members:

- [Brazil](#)
- [Colombia](#)
- [Cuba](#)
- [Dominican Republic](#)
- [France](#)
- [Guatemala](#)
- [Guyana](#)
- [Jamaica](#)
- [Mexico](#)
- [Netherlands](#)
- [Suriname](#)
- [Trinidad and Tobago](#)
- [United Kingdom](#)
- [United States](#)
- [Venezuela](#)

Associate Members:

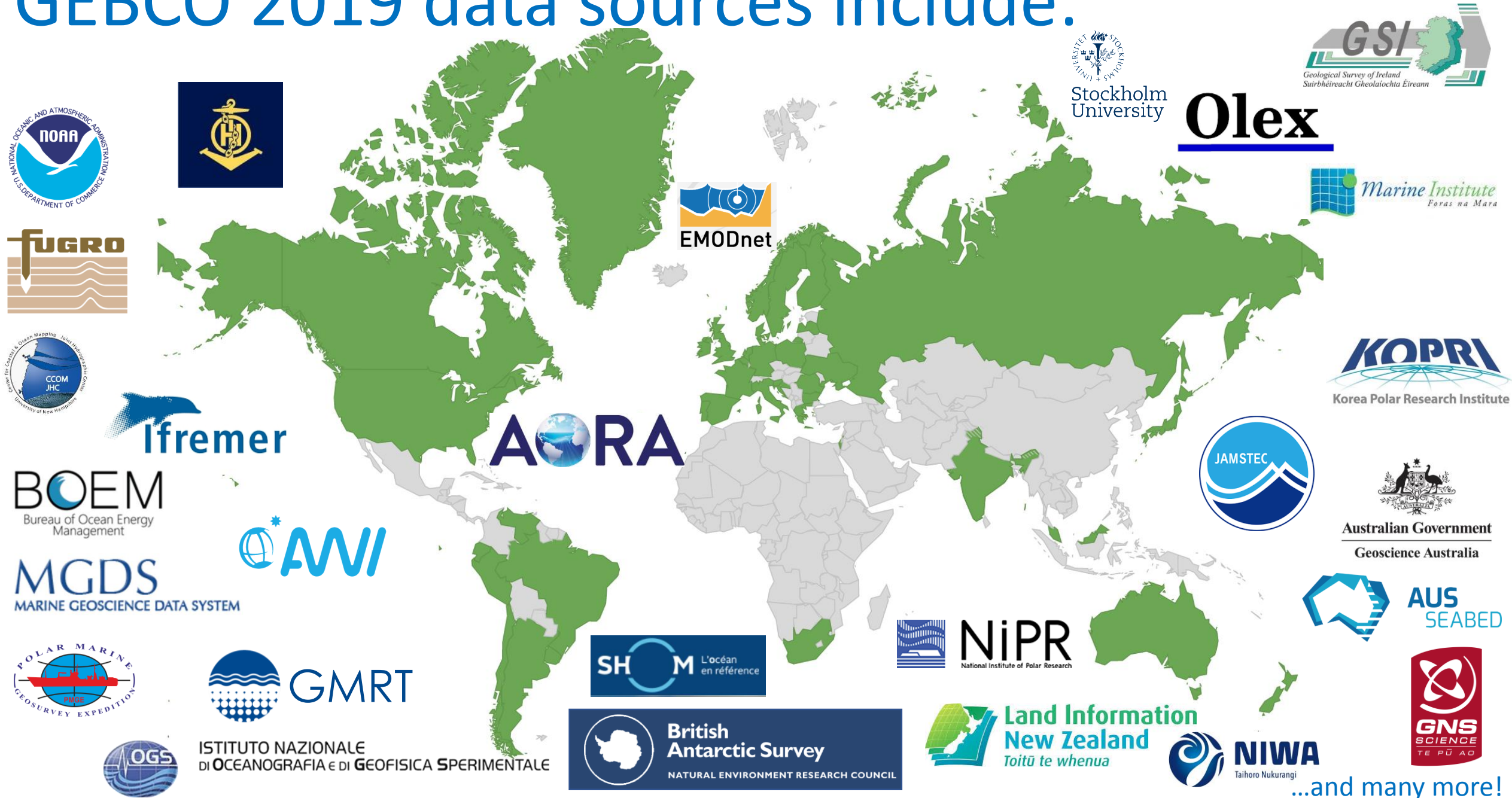
- Antigua and Barbuda
- Barbados



<http://bit.ly/2JHuZQN>



GEBCO 2019 data sources include:



SCRUM Discussion Topics

- How can we accelerate regional engagement and data contribution?
- What other regional meetings would be important to attend?
- What material/messaging is needed to broaden regional participation?
 - What are the stakeholder needs?
- Volunteers for upcoming Regional Meetings
- Other suggestions/ideas

