

**THE NIPPON FOUNDATION-GEBCO**

# SEABED 2030

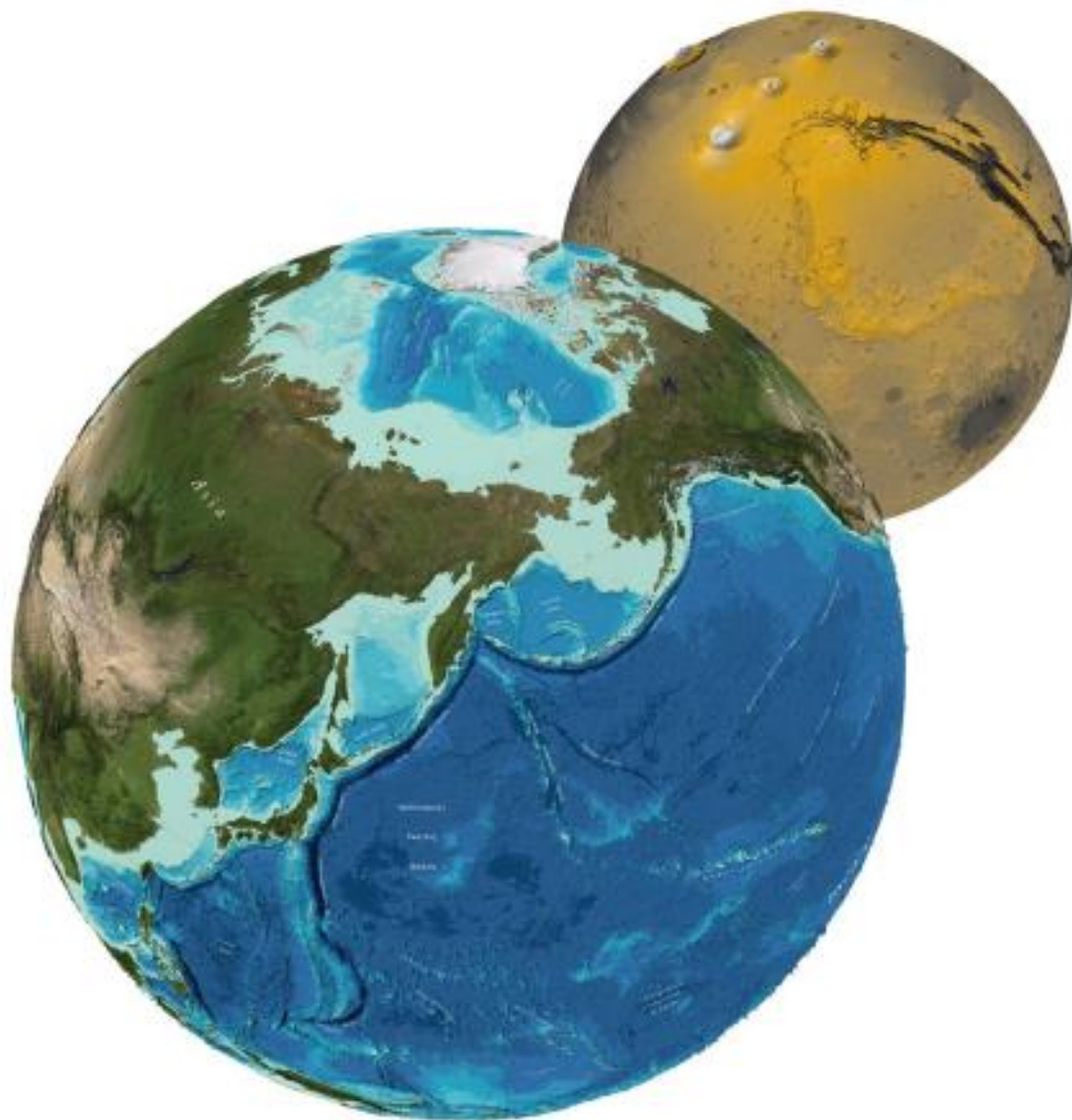
Presentation to  
IRCC 12  
6-7 October 2020

**Jamie McMichael-Phillips**  
Project Director



International  
Hydrographic  
Organization







# GEBCO



GEBCO Guiding Committee

' The **G**eneral **B**athymetric **C**hart of the **O**cean'

'... a joint project of **IHO** & **IOC**, managed by the GEBCO Guiding Committee (GGC)'

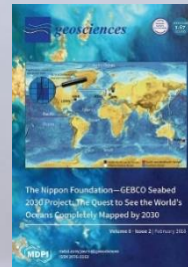
'...aiming to provide the most authoritative, publicly-available bathymetry data sets of the world's oceans.'

'... largely a **voluntary** community of international **scientists** and **hydrographers** collaborating with the support of their parent organizations.'



# 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**.



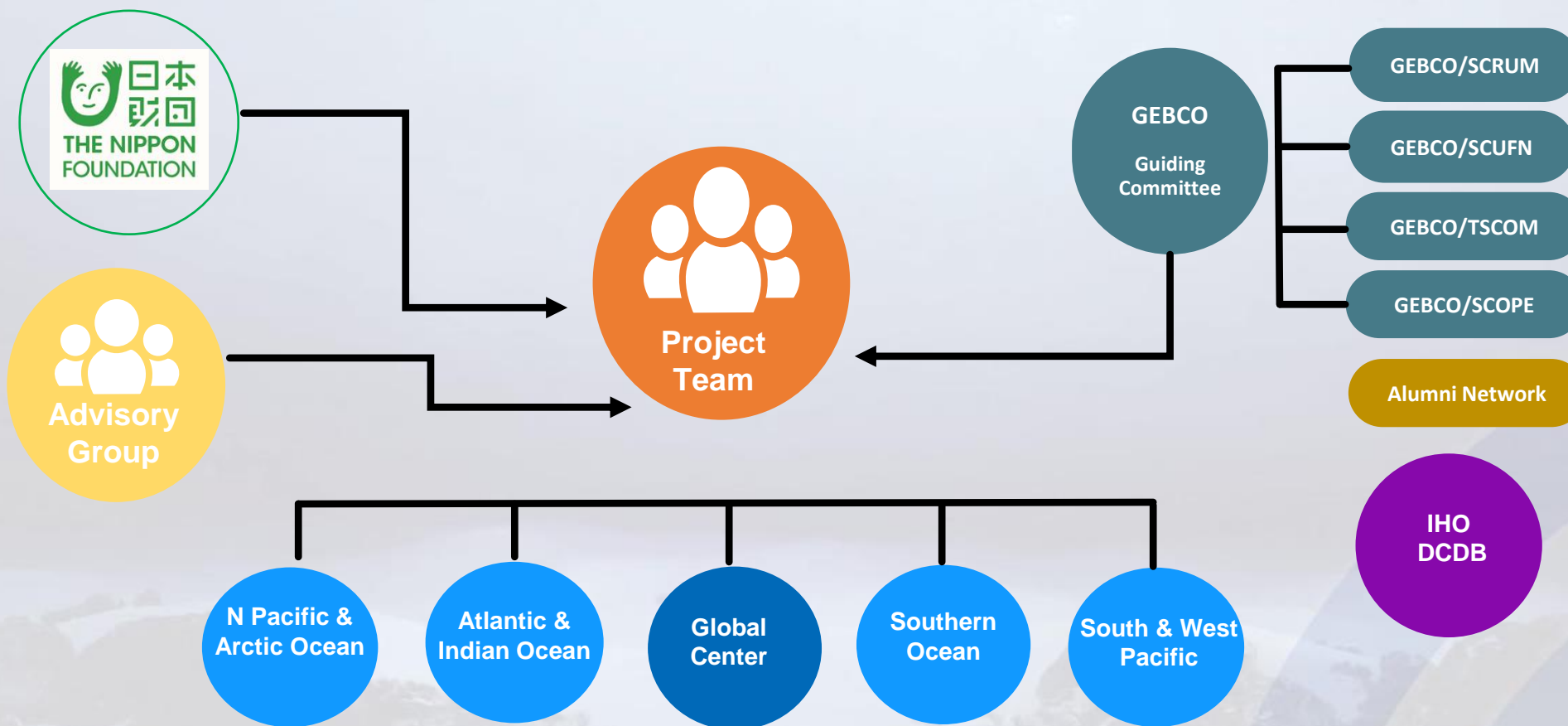
June 2016



June 2017



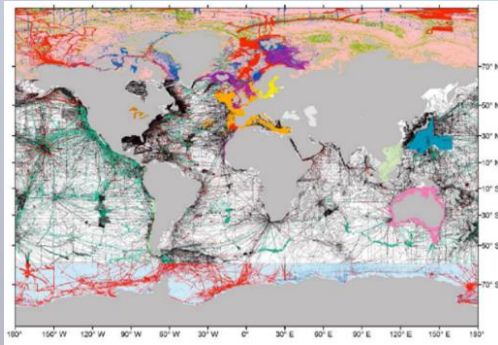
# Seabed 2030 Network



4 Regional Centers + 1 Global Center



# Seabed 2030 Phase 1: Existing Data



- Ingest all available existing data (Y)
- Catalogue embargoed existing data (Y)
- Develop new high-res GEBCO product
- Develop user tools for GEBCO products

GEBCO 2014  
30-arc second Grid

$$X + Y + Z = 100\%$$

Data IN  
GEBCO

Data NOT in  
GEBCO

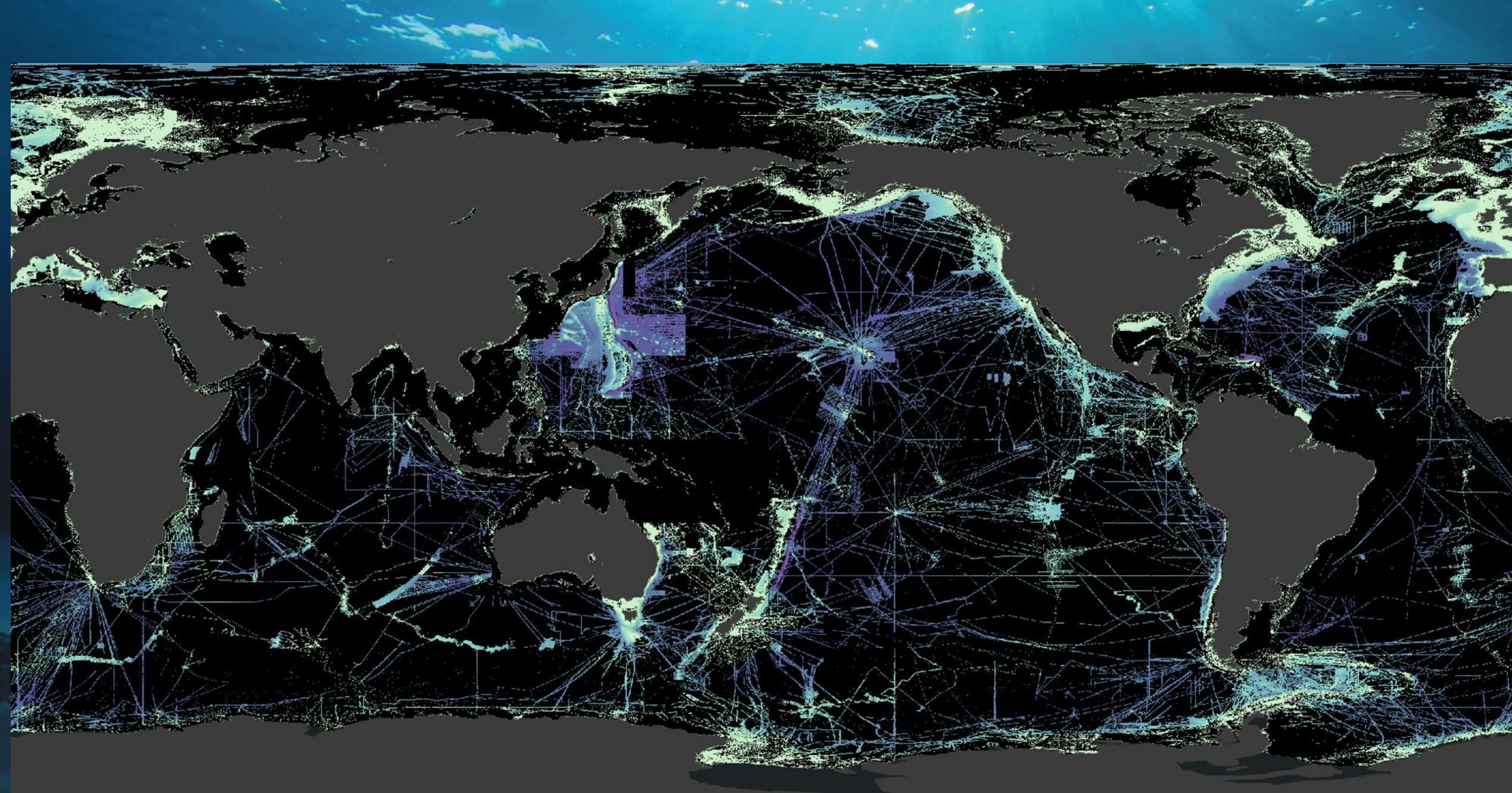
'Map the Gaps' = ocean  
NOT mapped

## The GEBCO 2020 Grid

- Ocean mapping coverage now stands at **19%**
- 14.5million km<sup>2</sup> of new data in last year
  - ~54 x size of New Zealand's landmass
- At 6% when Seabed 2030 Project began - so steady progress
- ***What does this all look like .....***







*Courtesy of Vicki Ferrini, Columbia University*



## Looking ahead

- We have still 81% of the World Ocean left to map
  - About 293million km<sup>2</sup>
- An area 2 x size of Mars but ..... on our own Planet

# Seabed 2030 Phase 2: Mapping the Gaps

$$X + Y + Z = 100\%$$

## ➤ Ocean Frontier Mapping

- Use GEBCO Grid to inform location of future mapping
- Advocate for greater mapping activity
- Identify funding for mapping expeditions



## ➤ Crowd Sourced Bathymetry

- Promoting CSB around the world
- Gaining support of, and data from, contributors at all levels

## ➤ Technology Innovation

- What can Seabed 2030 do to accelerate uptake of technology to accelerate rate of bathymetric mapping?





# Ocean Frontier Mapping

- Mapping Committee established
  - Director & Center Heads
  - 2 x External Advisers
- Informed choices for prioritization/selection/funding of eligible missions that deliver mapping days in areas of gaps
  - Incremental mapping days
  - Sonar Operators
- Funding allocated to plan by The Nippon Foundation

# Two Oceans Two Technologies Transits

## *Ocean Frontier Mapping 2020 Quick Win*

- ***Demonstration of autonomy .....***
- **Atlantic Transit (completed Aug 20)**
  - ***USV Maxlimer*** (SEA-KIT)
  - Uncrewed Trans Atlantic Survey (UTAS) mission already scheduled
  - Full over the horizon remote operation
  - Alumni Team based in 8 counties remotely operated MBES to gather & process data
- **Pacific Transit (scheduled Oct 20)**
  - ***Saildrone***
  - Data collection and processing remotely





# CSB Field Trials

- Palau
- South Africa
- Greenland
- Darwin 200
- We need more ..... where?

# Alumni Engagement

- Nippon Foundation-GEBCO Ocean Mapping Training Program
  - 95 alumni from 42 countries
  - <http://ccom.unh.edu/education/gebco/courses>
- Seabed 2030 Alumni Coordinator
  - Recruitment underway
  - Member of Seabed 2030 core team
  - Remit: deliver Alumni Engagement & Development Plan
    - ***Utilizing skills & experience of the Alumni to support wide range of Seabed 2030 activities; also providing individual/collective development opportunities across broad spectrum of ocean mapping & tech innovation.***





# What we ask of you.....

- ***Noting that***

- Some 70% of the Earth covered by the ocean, yet today we have mapped only 19% of the ocean floor
- Seabed shape is fundamental not only to safety of navigation but also to many ocean processes that:
  - Drive ocean current circulation, affecting climate & sea level rise predictions.
  - Allow forecasting of tsunami wave propagation & other dynamic phenomena (inc sediment transportation; wave action; & underwater hazards).
  - Allow better understanding of marine habitats, eco-systems and much more
  - Offer opportunities for new discoveries .....

- ***Please .....***



# What we ask of you.....

- ***Please join us in supporting Seabed 2030 by:***
  - ***Promoting*** the vital need to map the entire seabed
  - ***Encouraging*** your own organisations and networks to make existing seabed mapping data available for use by Seabed 2030 in the GEBCO Grid
    - *Non commercially sensitive/sanitised data if possible*
    - *Transit data between projects*
    - **seabed2030.org/contributions**
  - ***Helping*** us gather Crowd Sourced Bathymetry (CSB) for use by Seabed 2030 in the GEBCO Grid
  - ***Supporting*** future seabed mapping projects where data can be used by Seabed 2030 in the GEBCO Grid
  - ***Innovating*** technology that will accelerate seabed mapping





# Thank you

## Sponsors



## Regional and Global Center Hosts



Connect with Seabed 2030:

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