



# The Nippon Foundation-GEBCO Seabed 2030 Project

# NF-GEBCO Seabed 2030: From Vision to Action



Forum for  
Future Ocean  
Floor Mapping

June 2016



Mr Sasakawa, Chairman of the Nippon Foundation proposed ‘...to map 100% of the topography of the World Ocean by 2030’

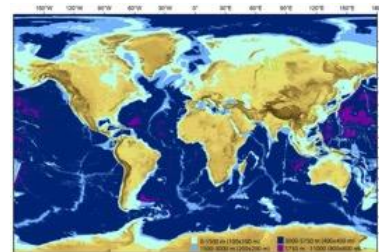


June 2017

**Nippon Foundation - GEBCO  
Seabed 2030 Project  
announced**



**Project Operational**



1<sup>st</sup> February 2018



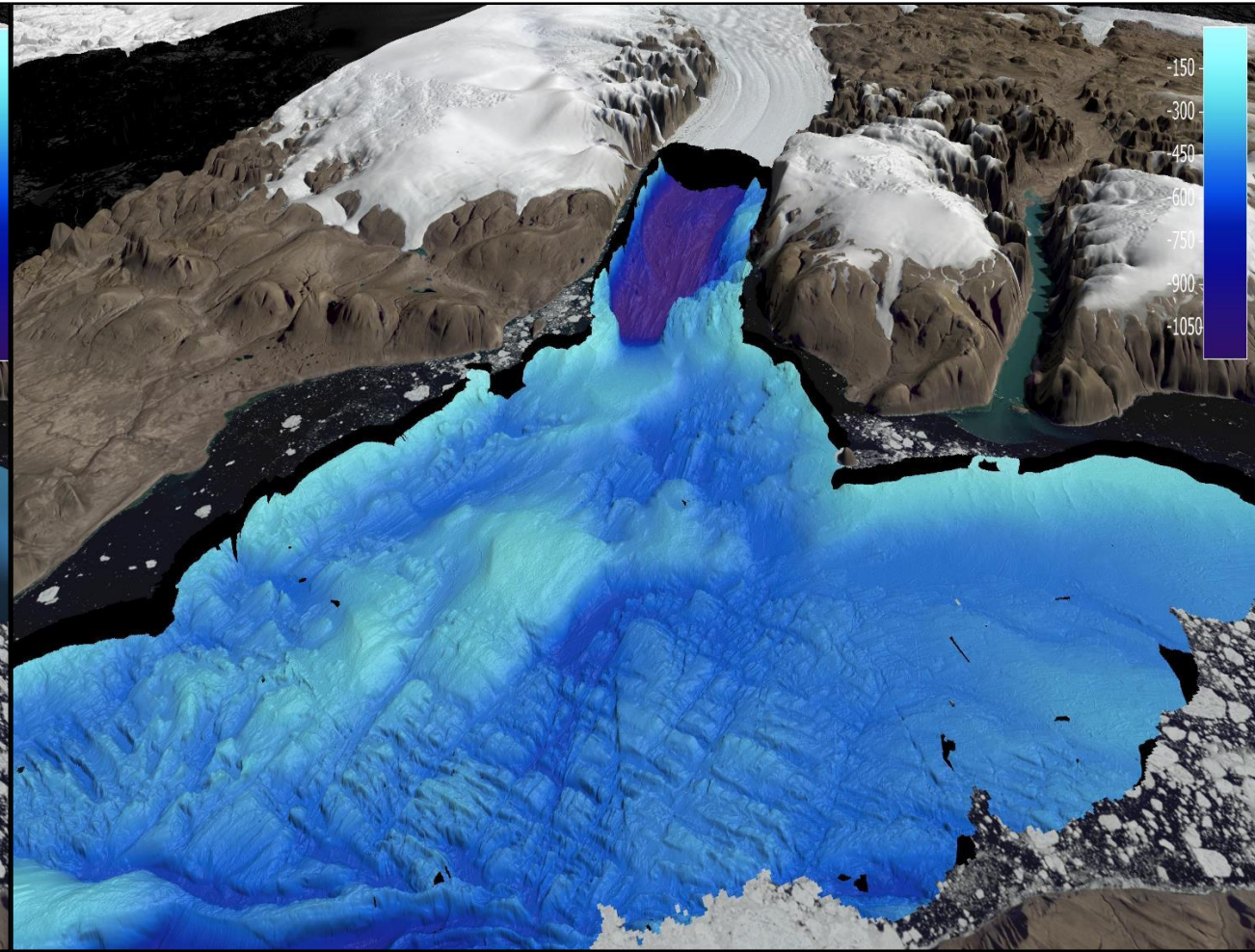
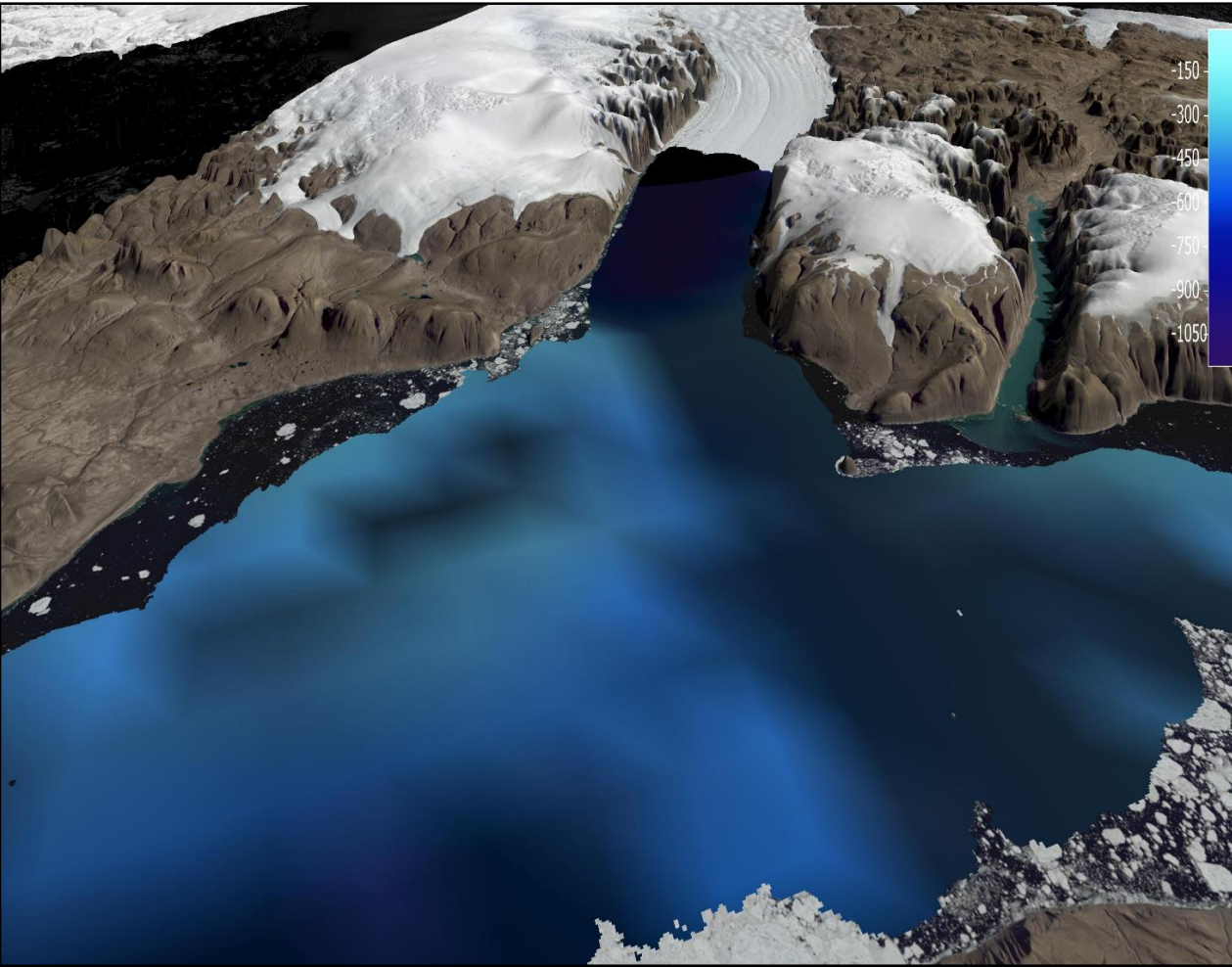
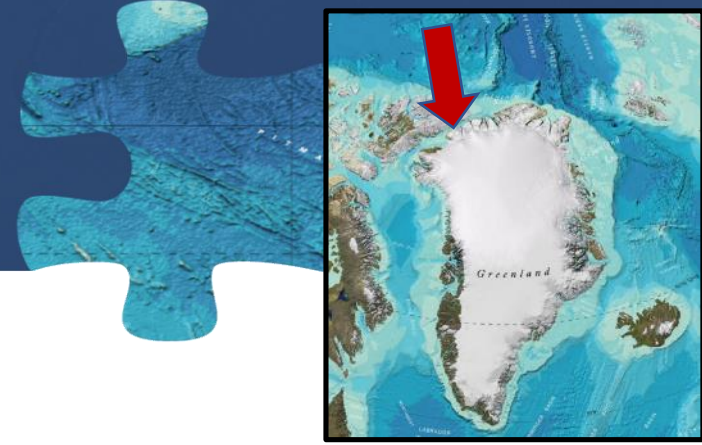
**2030**

**100% of ocean mapped**

# Vision

Seabed 2030 vision  
From.....

To.....



# The Seabed 2030 Project



1. How is Seabed 2030 organized?
2. How does Seabed 2030 relate to IBCAO/IBCSO?
3. What is the preferred data flow?
4. What is the mapping target resolution?
5. How much of the world is mapped at the Seabed 2030 target resolutions?

# 1. How is Seabed 2030 organized?



Roadmap <https://seabed2030.gebco.net/>

**The Nippon Foundation – GEBCO – Seabed 2030**  
Roadmap for Future Ocean Floor Mapping

## Business Plan

**GEBCO Nippon Foundation Seabed 2030 Project Business Plan**

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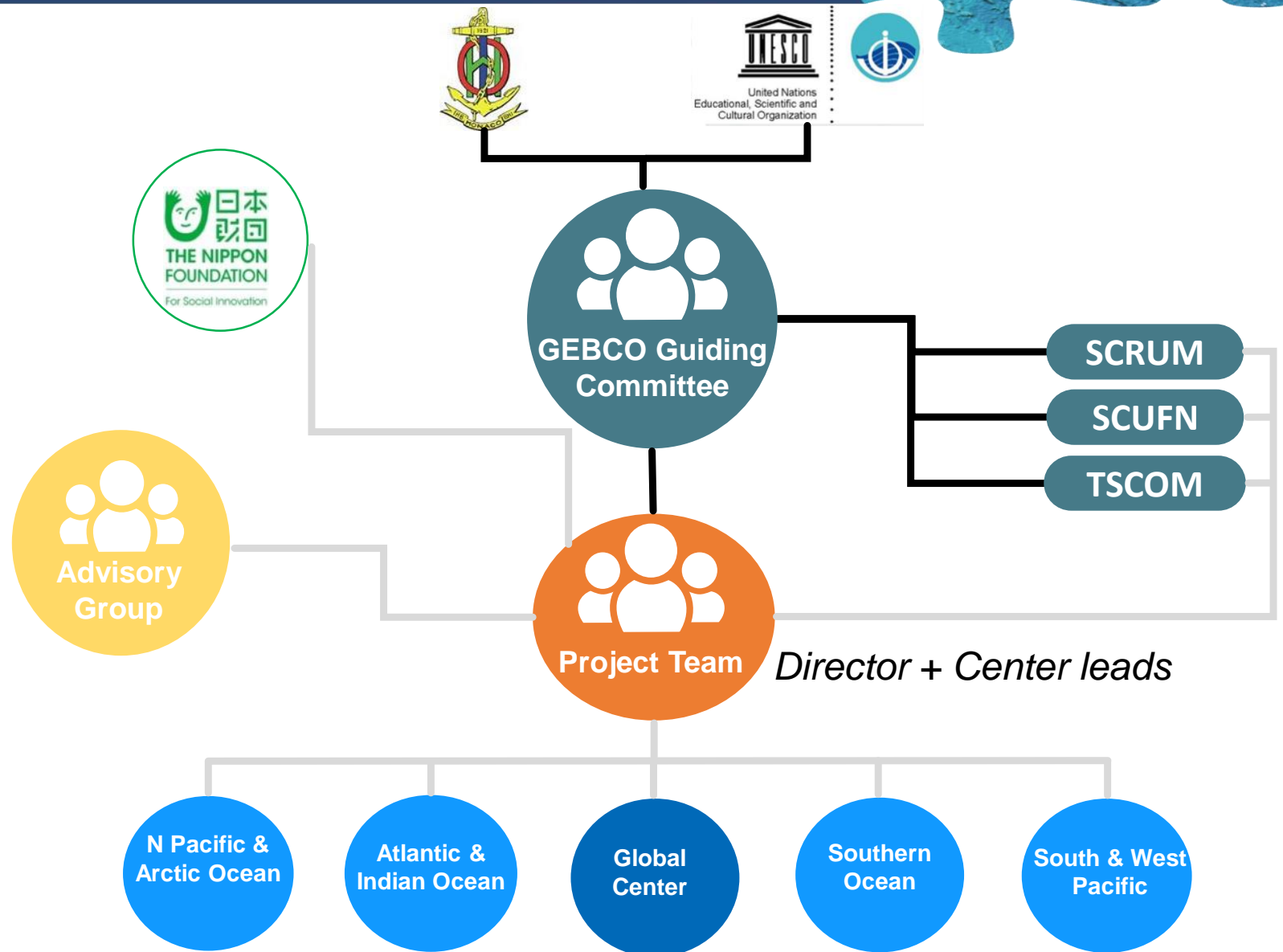
**geosciences** Volume 8 Issue 2 February 2018

**The Nippon Foundation—GEBCO Seabed 2030 Project: The Quest to See the World's Oceans Completely Mapped by 2030**

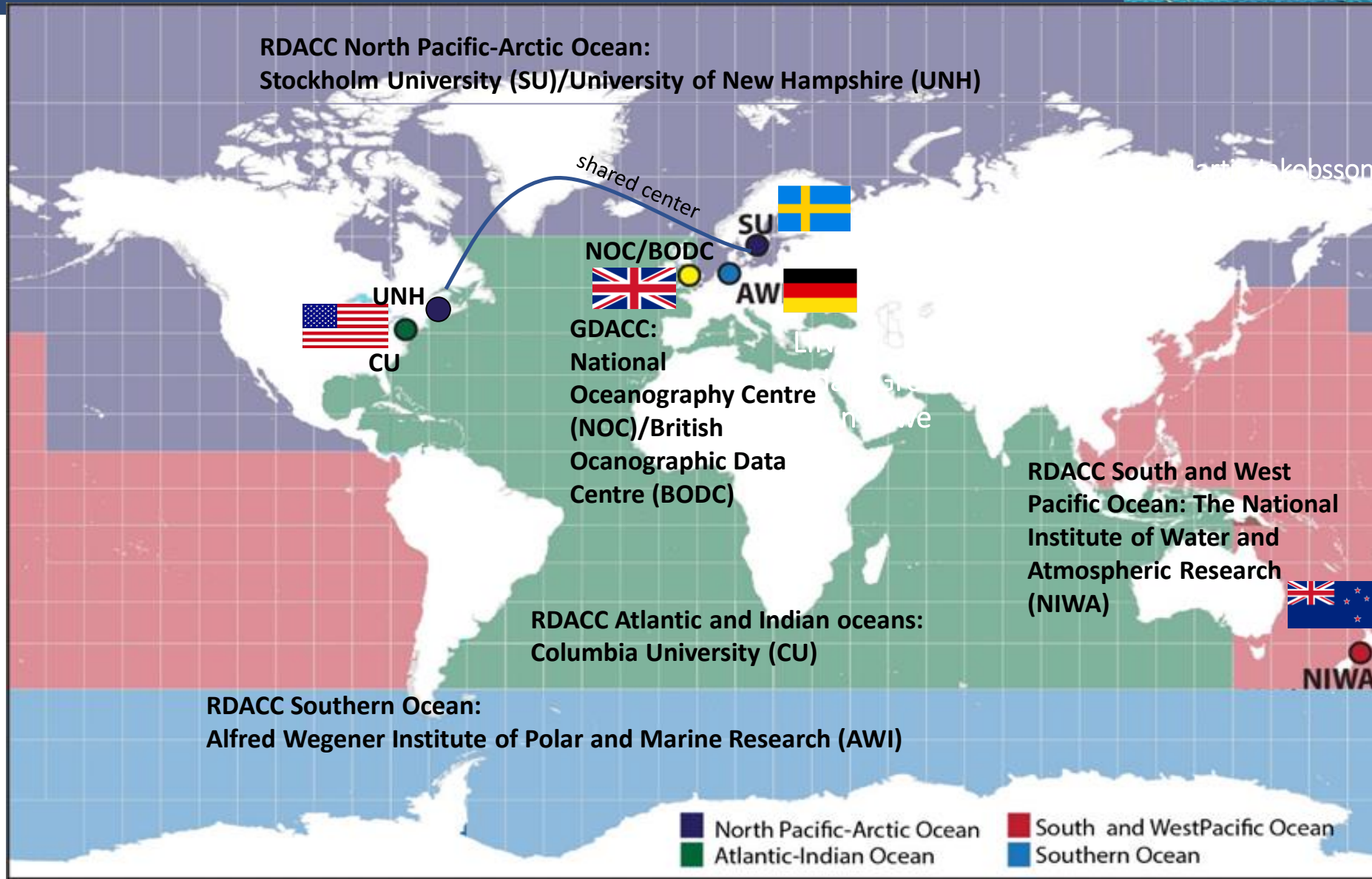
**MDPI** mdpi.com/journal/geosciences ISSN 2076-3263

# 1. How is Seabed 2030 organized?

- **4** Regional Data Assembly & Coordination Centres
- **1** Global Data Assembly and Coordination Centre
- **1** International data repository: IHO Data Centre for Digital Bathymetry (DCDB)



# 1. How is Seabed 2030 organized?



# Southern Ocean



Boris Dorschel



Jan Erik Arndt



Simon Dreutter

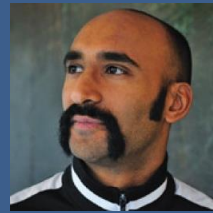


Laura Hehemann

# Arctic and Northern Pacific Oceans



Larry Mayer



Rezwann  
Mohammad



Caroline  
Bringsparr



Tomer Ketter



Björn Eriksson

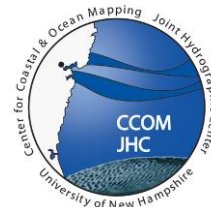


Carlos Castro



Paul Johnson

People at the  
Southern Ocean,  
Arctic and  
Northern Pacific  
Ocean

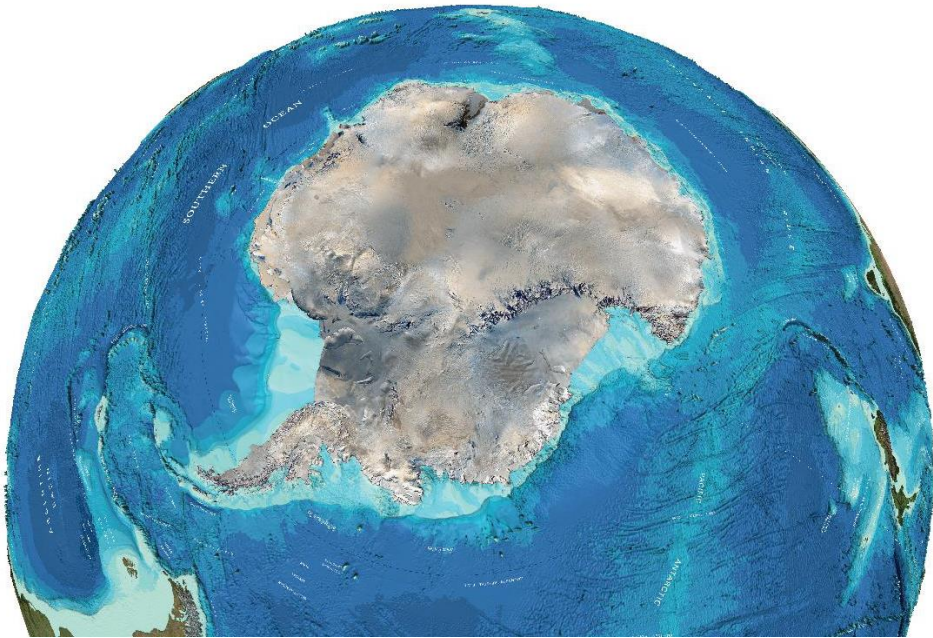




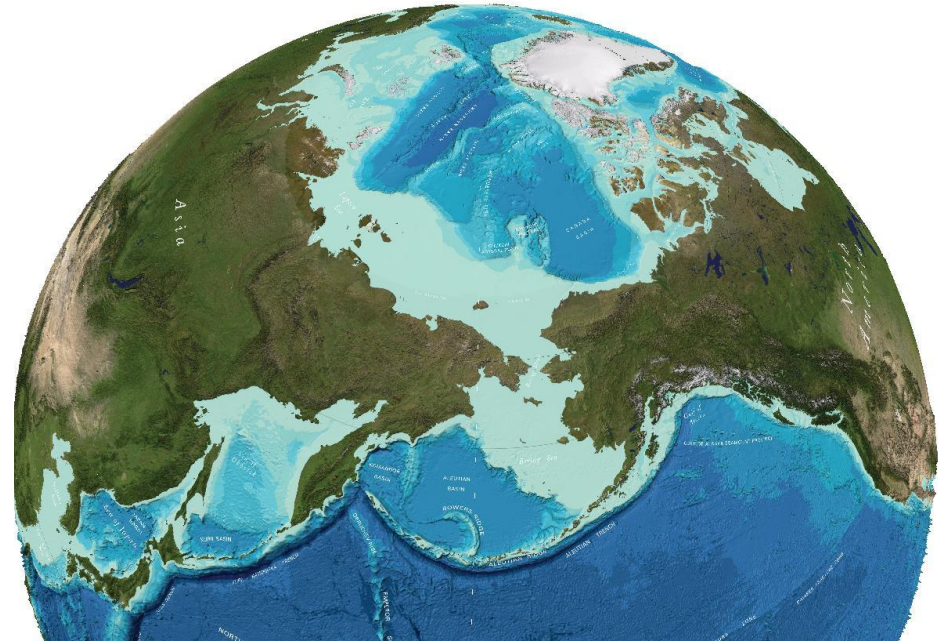
## 2. How does Seabed 2030 relate to IBCAO/IBCSO?

The Seabed 2030 project organization originates from the concept of a **“Regional Mapping Project”** and GEBCO’s structure within its parent organizations the International Hydrographic Organization (IHO) and Intergovernmental Oceanographic Commission of UNESCO (IOC)

International Bathymetric Chart of the Southern Ocean (IBCSO)



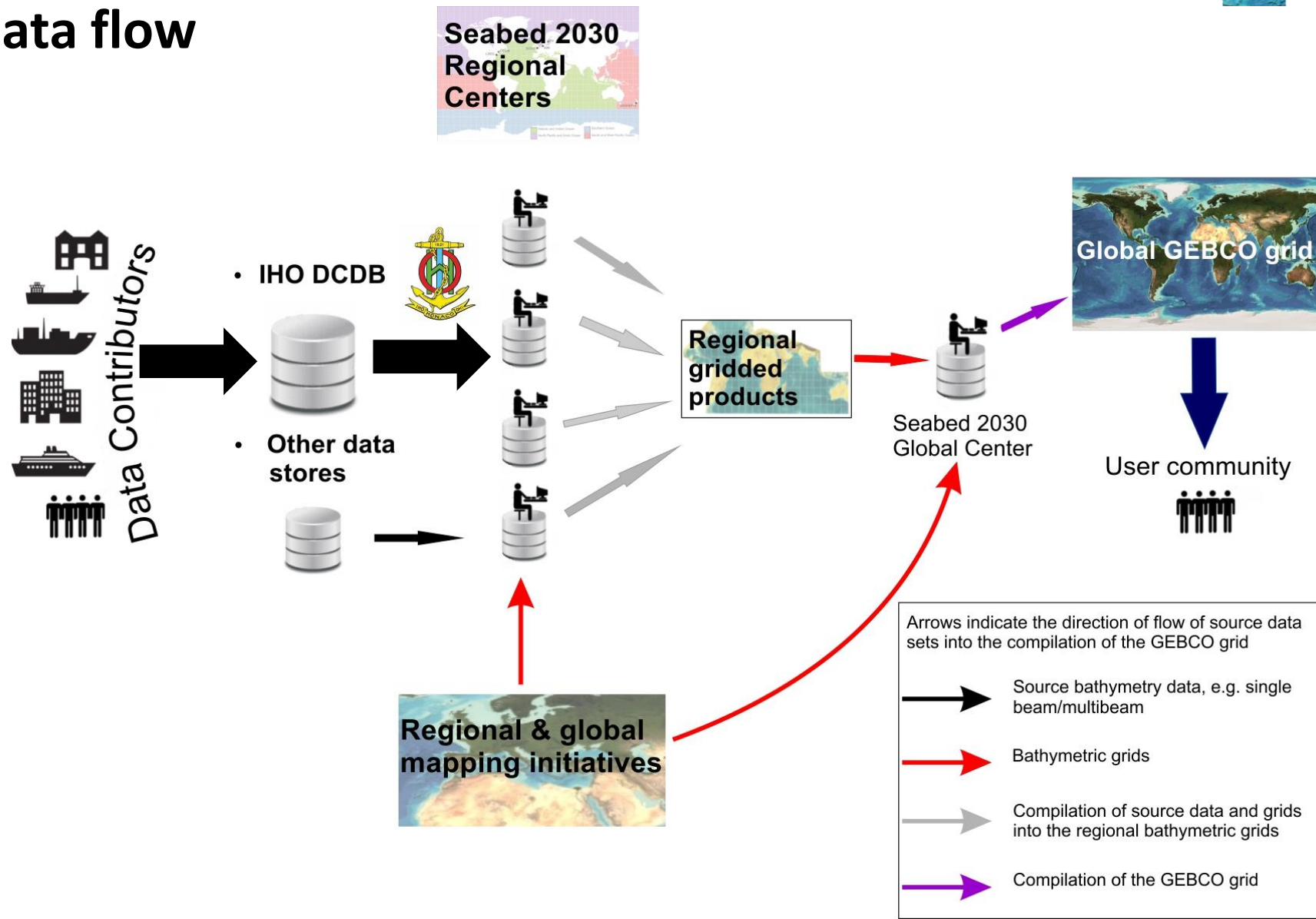
International Bathymetric Chart of the Arctic Ocean (IBCAO)



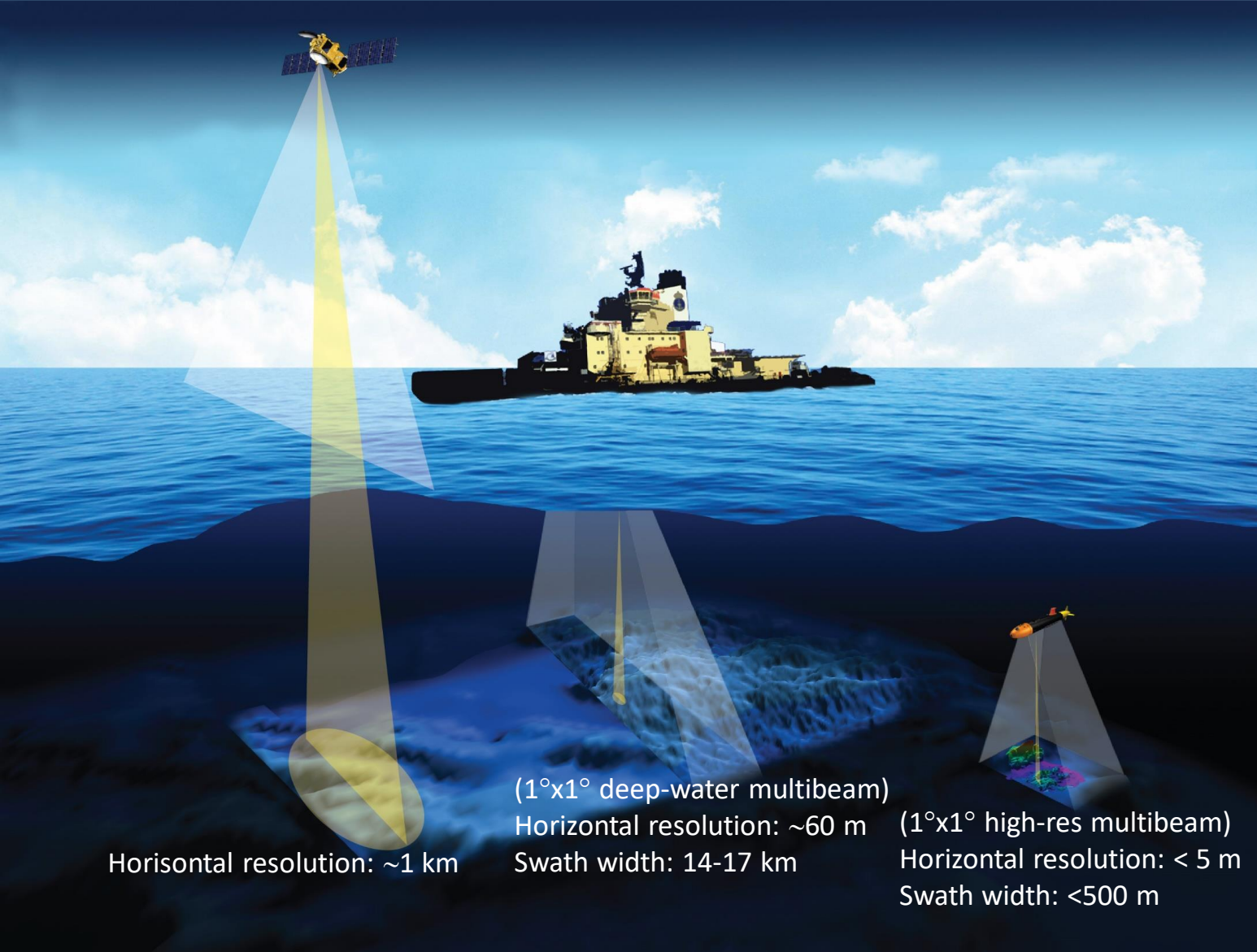
# 3. What is the preferred data flow?



## Preferred data flow



## 4. What is the mapping target resolution?



We set the target resolution based on what a modern multibeam system installed in a vessel can achieve

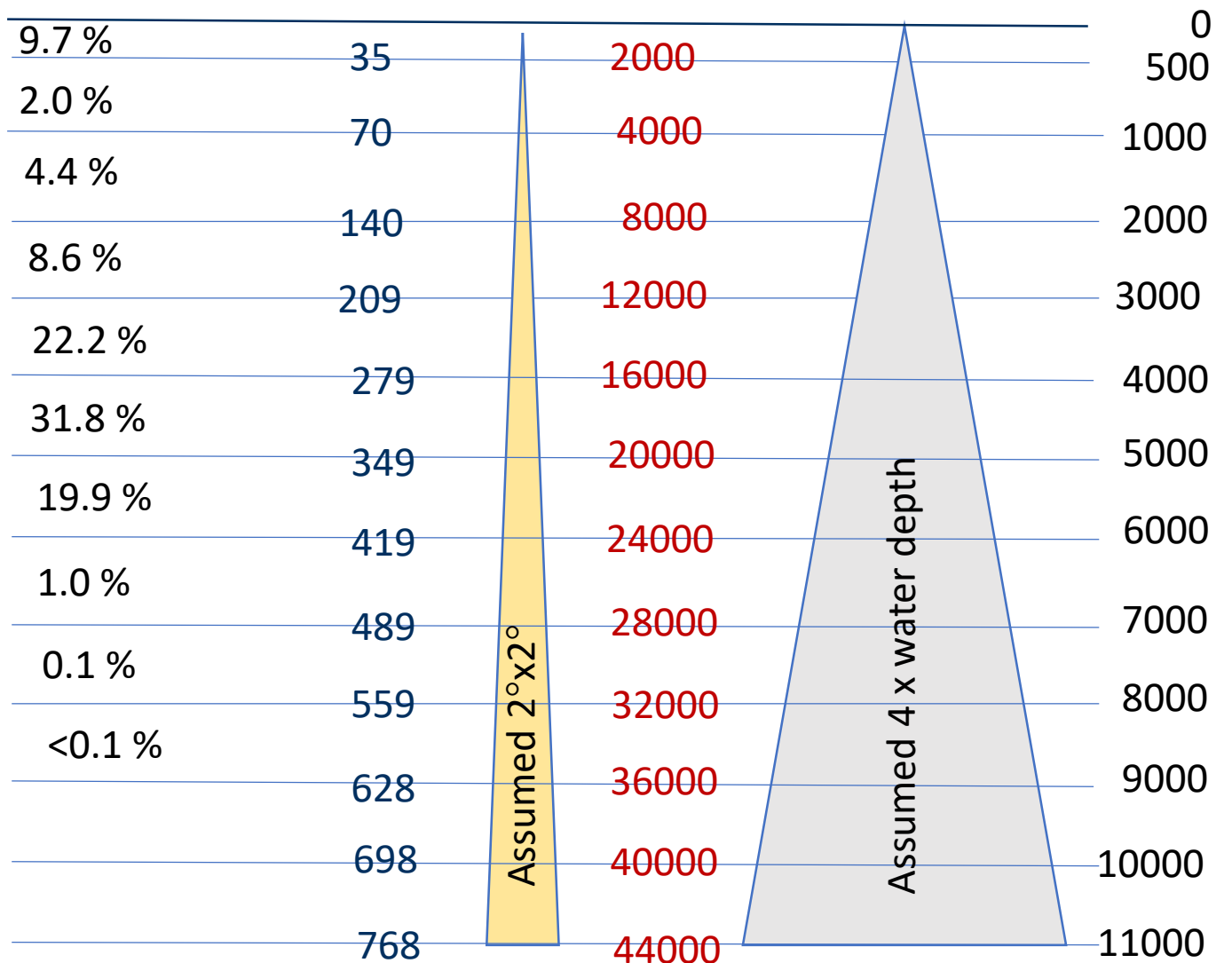


# 4. What is the mapping target resolution?

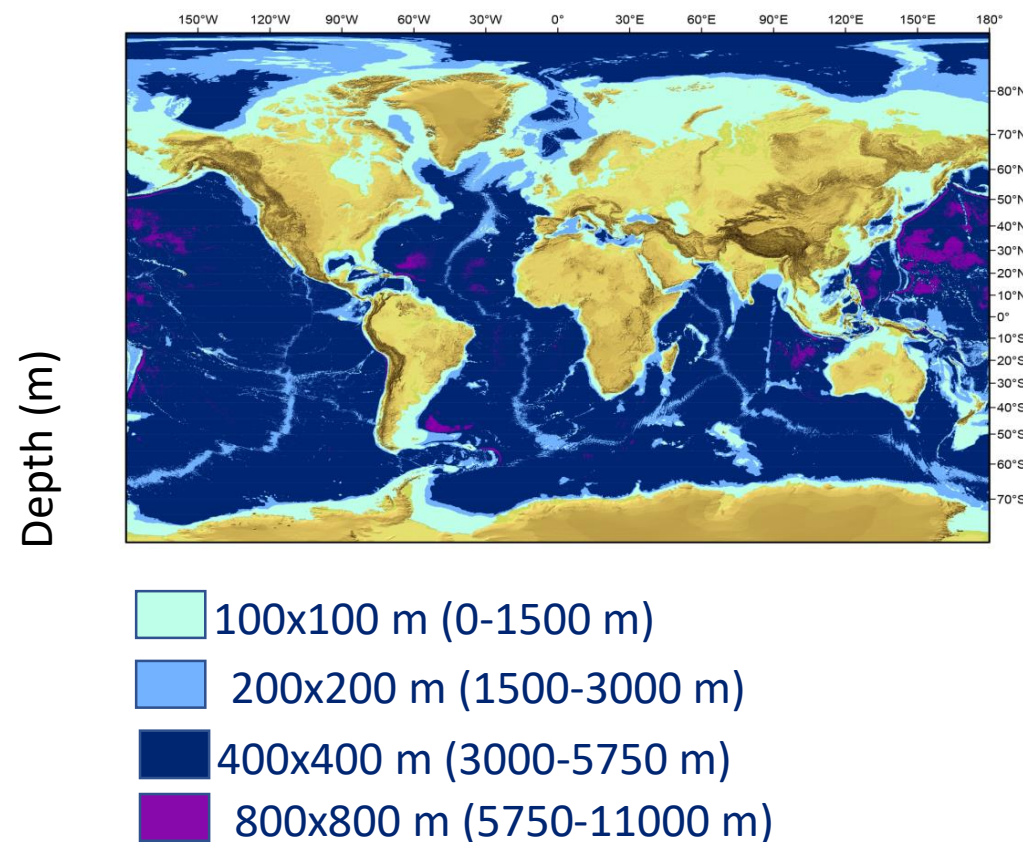
Mapping with surface vessel, deep water multibeam  
(12 kHz 2°x 2°, 60 ° from nadir)



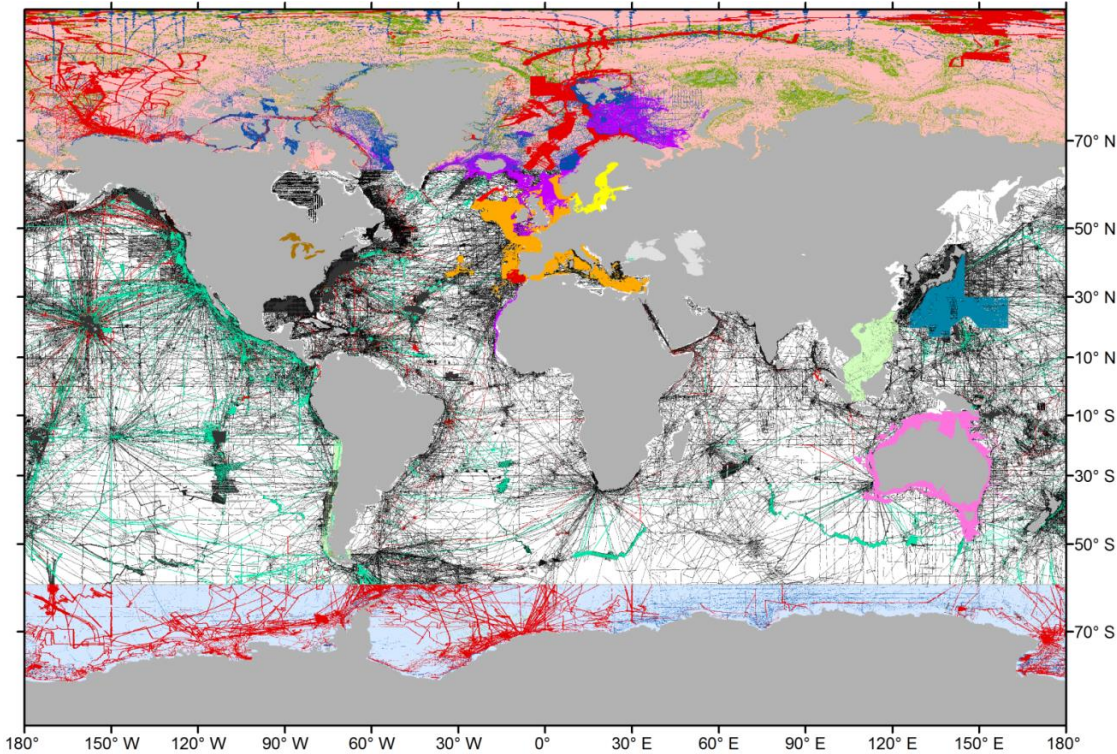
World Ocean area      “Resolution” (foot print)      “Coverage” (swath width)



## Target resolutions

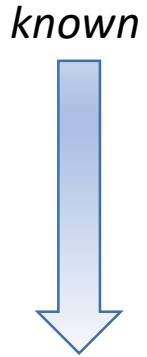


# 5. How much of the world is mapped at the Seabed 2030 target resolutions?



- |                                |  |  |
|--------------------------------|--|--|
| Region taken from IBCAO V3     | LDEO Global Multi-Resolution Topography                                    | Trackline control information from the SRTM30_plus (v5) base grid  |
| Region taken from IBCSO V1     | Multibeam bathymetry   | Region based on interpolation guided by satellite-derived gravity data within the SRTM30_plus (v5) base grid |
| EMODNet 2013                   | Single beam bathymetry   | Coastal area updated with shallow water soundings  |
| Baltic Sea Bathymetry Database | Bathymetric contours from charts   |  |
| Geoscience Australia Grid 2009 | North American Great Lakes bathymetry                                      |  |
| JHOD grid                      | Regions based on pre-prepared grids, (first included in the GEBCO_08 Grid) |  |
| Olex AS data                   |  |  |

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



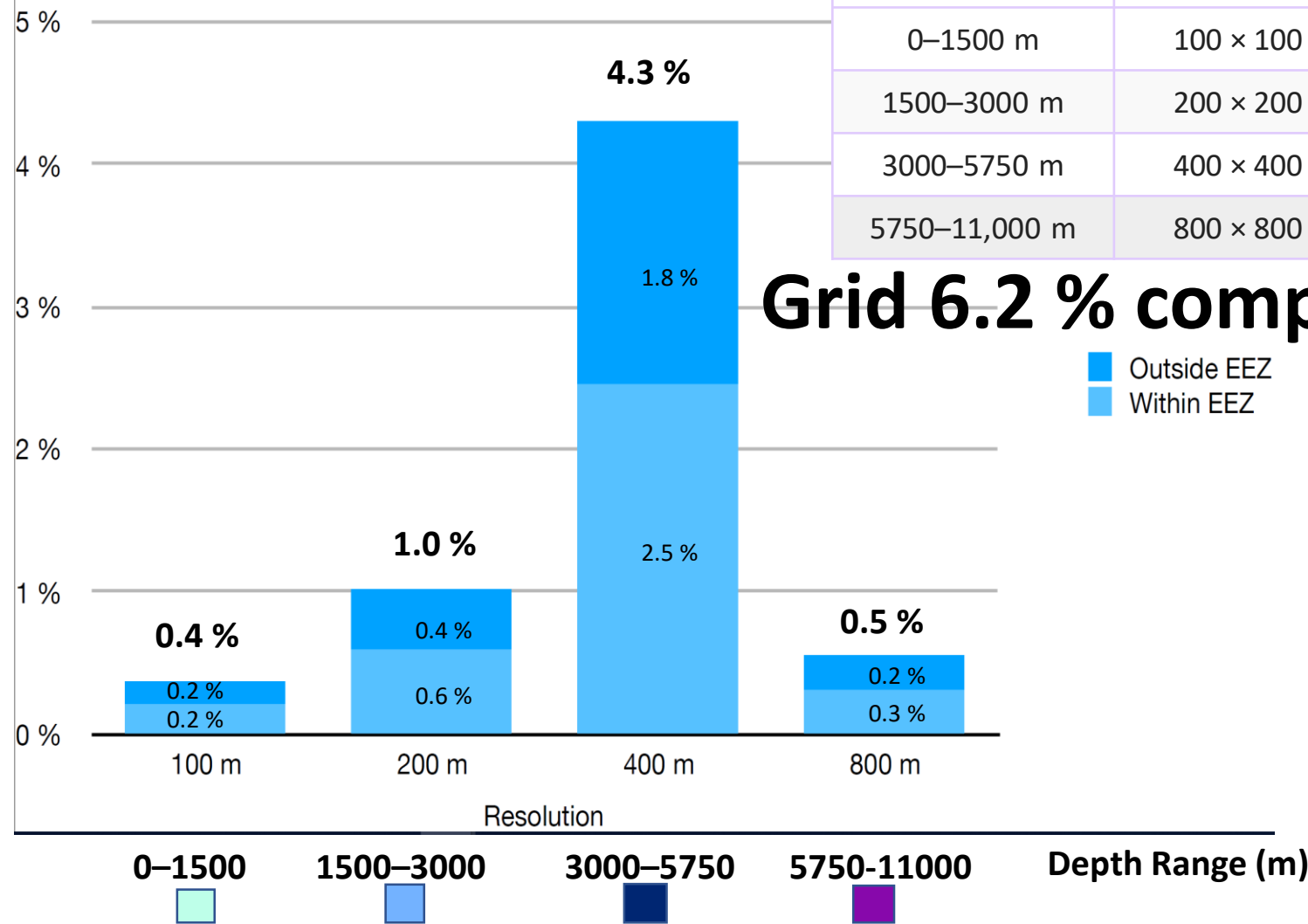
- X: Data in GEBCO/IBCAO/IBCSO products
- Y: Data that exists but are not yet integrated
  - Public
  - Embargoed
- Z: Data that must be acquired

# 5. How much of the world is mapped at the Seabed 2030 target resolutions?



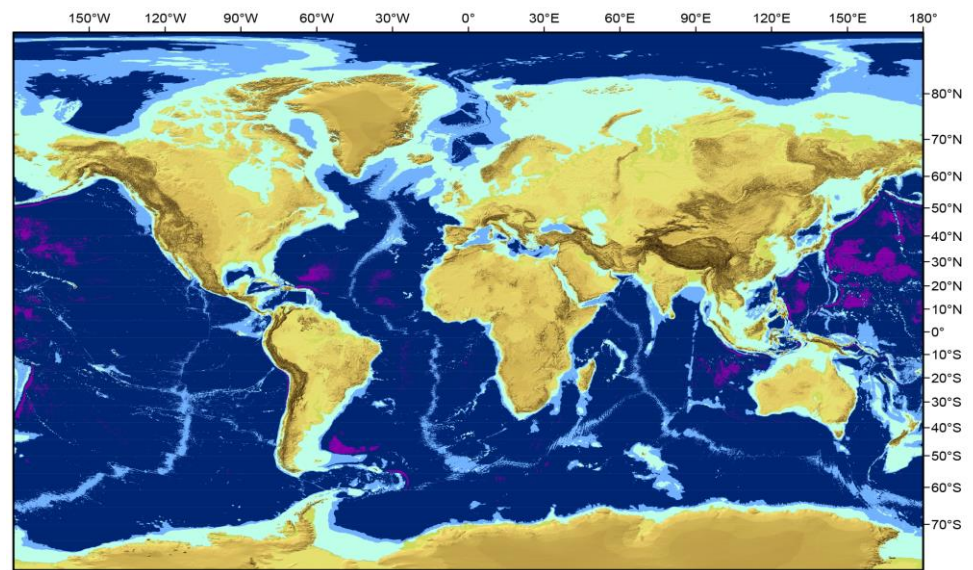
Mapped portion of entire World Ocean

Depth Range	Resolution	% of ocean
0–1500 m	100 × 100 m	13.7
1500–3000 m	200 × 200 m	11
3000–5750 m	400 × 400 m	72.6
5750–11,000 m	800 × 800 m	2.7



**Grid 6.2 % complete at the start of project**

■ Outside EEZ  
■ Within EEZ



New download tool at [www.gebco.net](http://www.gebco.net)

From 6.2 % to 15 % covered with the GEBCO 2019 grid

### GEBCO 2019 Gridded Bathymetry Data Download

[About GEBCO](#)

ENTER BOUNDARIES

[Clear](#)

SELECT FORMATS

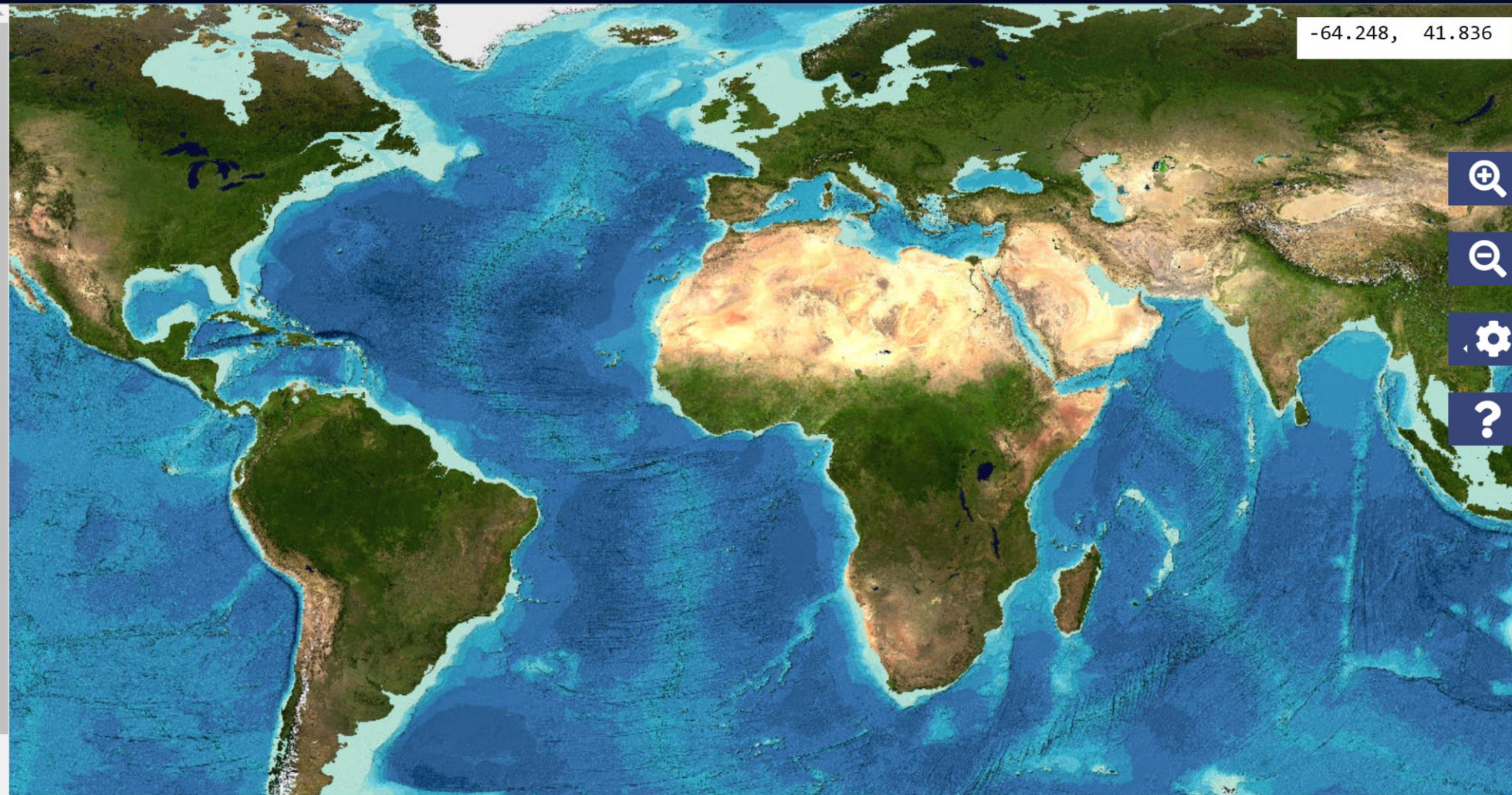
GEBCO 2019	Grid	SID Grid
2D netCDF	<input type="checkbox"/>	<input type="checkbox"/>
GeoTIFF	<input type="checkbox"/>	<input type="checkbox"/>
Esri ASCII	<input type="checkbox"/>	<input type="checkbox"/>

YOUR DATA SELECTION

**Bounds**  
N O W O S O E O

**Grid dimensions**  
W O H O

**File formats**  
Grid: none  
SID grid: none



Map navigation controls: zoom in (+), zoom out (-), settings (gear), and help (?).

**Use keyboard CTRL + mouse Left Click and Drag a box to select your region on the map.**  
**On a Mac, use the Command key instead of CTRL.**

# Nippon Foundation – GEBCO – Seabed 2030

First Arctic, Antarctic & North Pacific Mapping Meeting  
October 8–10 | Stockholm 2018

