

IHO Hydrographic Commission on Antarctica (HCA)

GEBCO

*General Bathymetric Chart of the Ocean*

Nippon Foundation – GEBCO Seabed 2030

IBCSO

*International Bathymetric Chart of the Southern Ocean*

***Boris Dorschel***

*Alfred Wegener Institute*

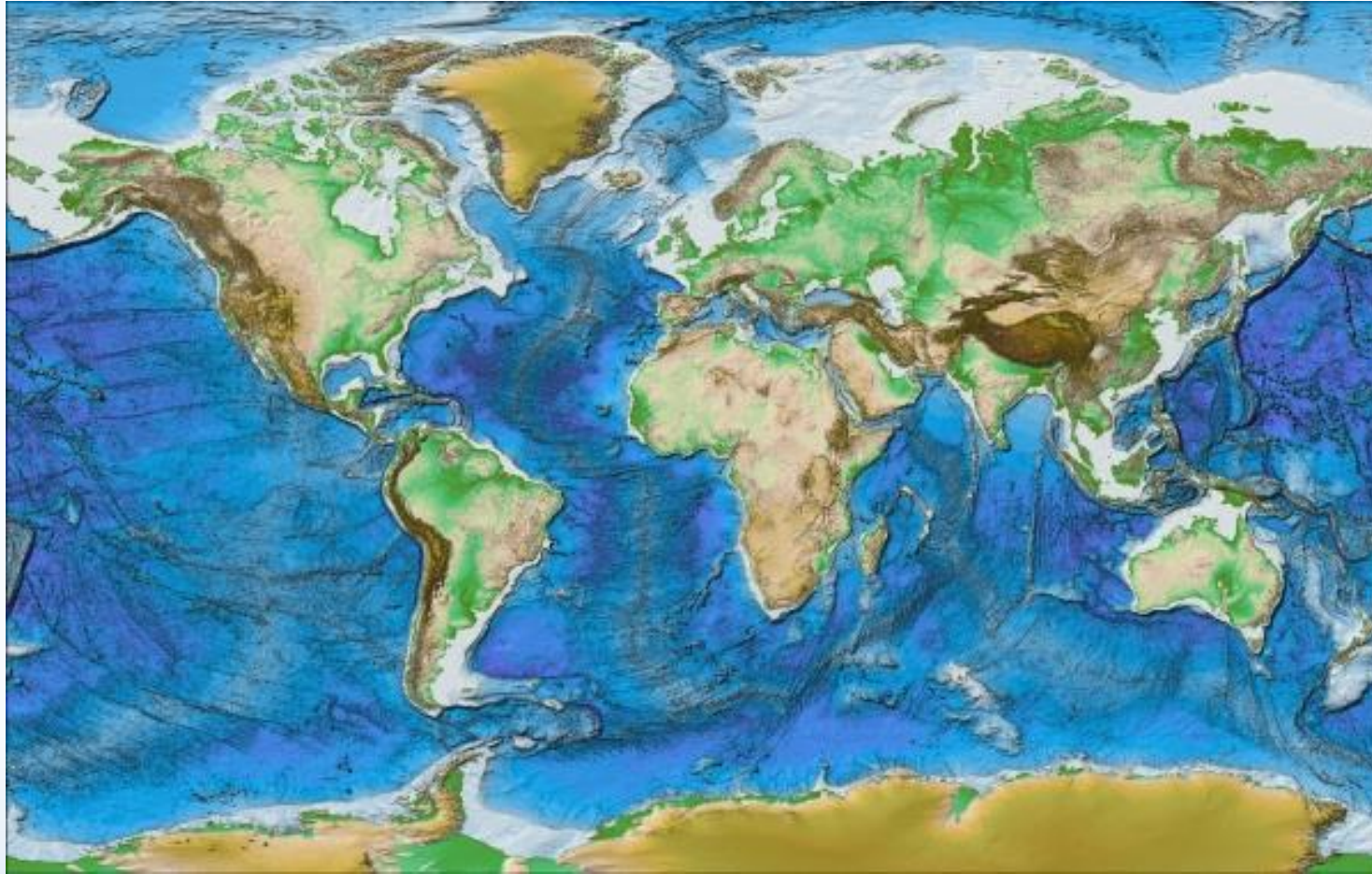
*Helmholtz Centre for Polar and Marine Research*



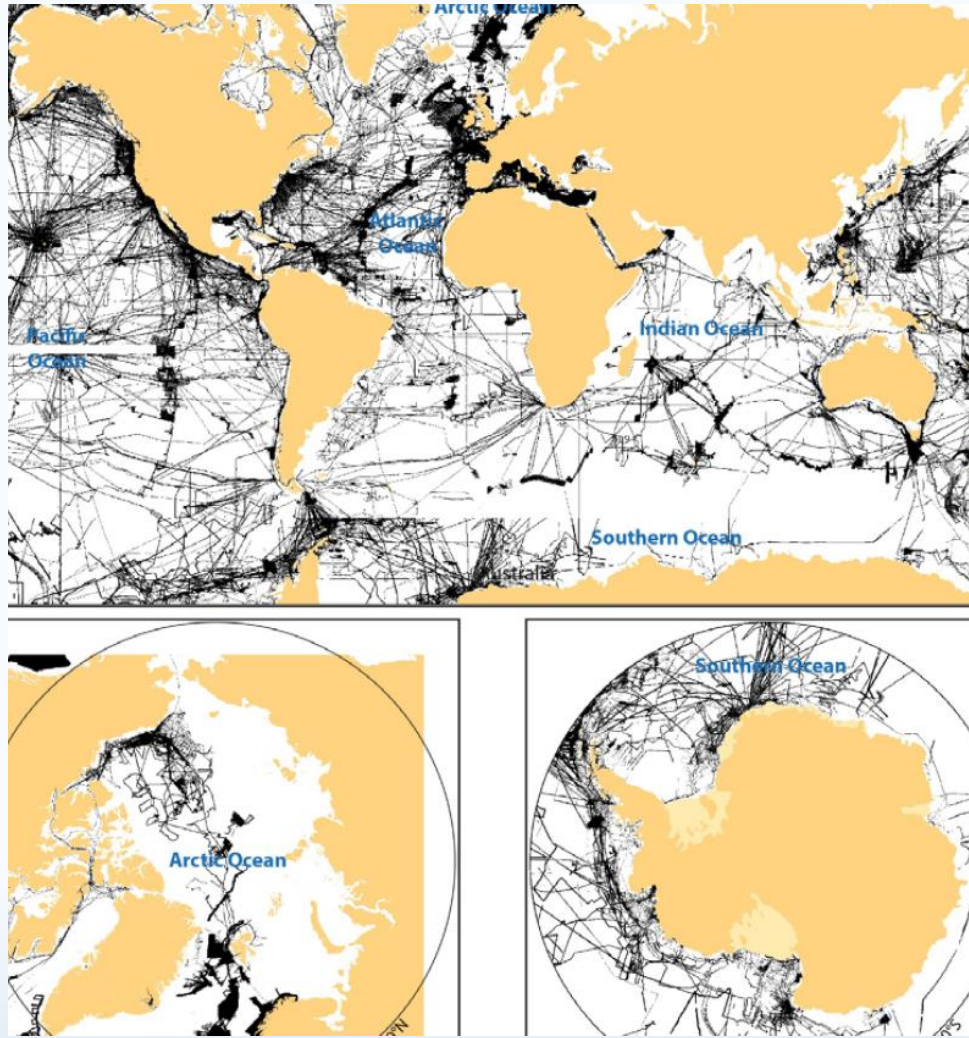
# GEBCO

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## General Bathymetric Chart of the Ocean



# GEBCO



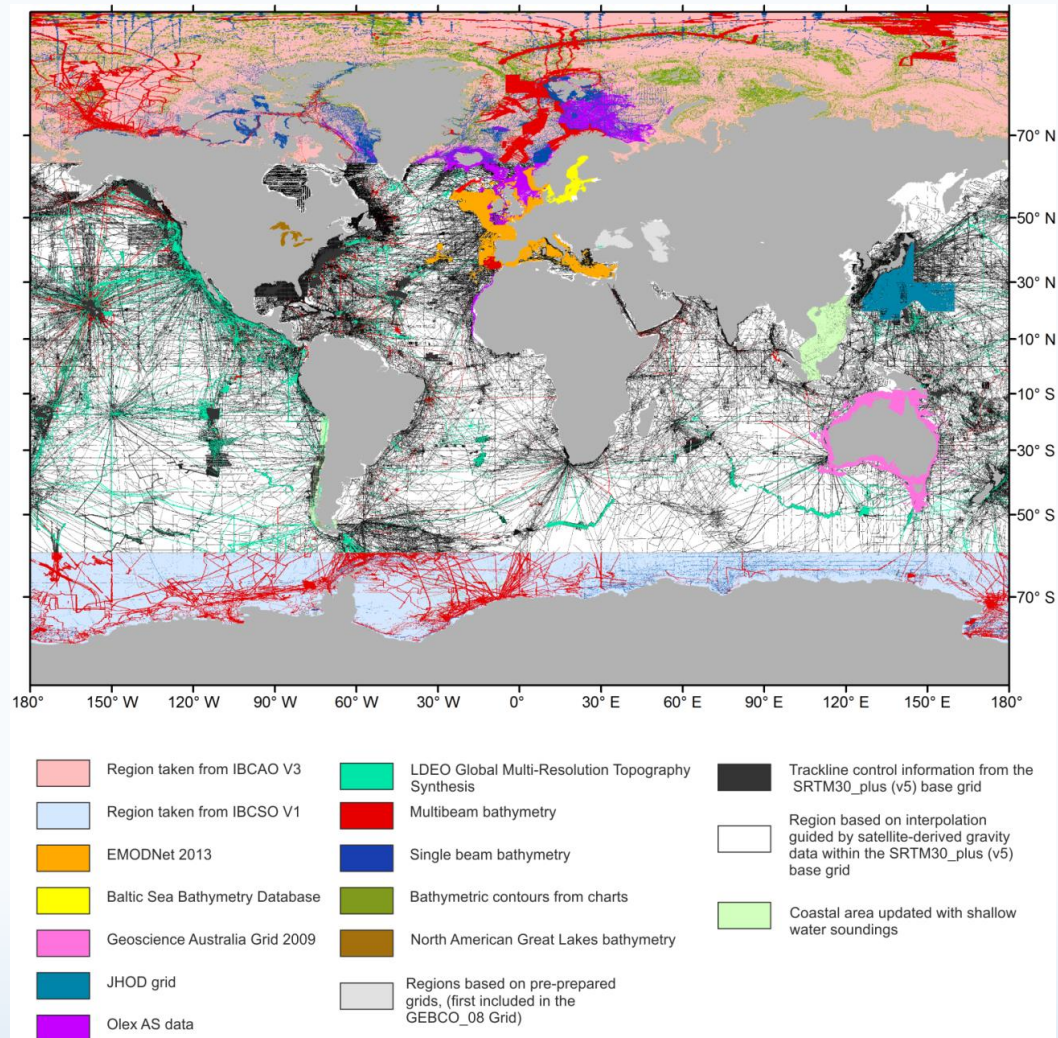
## GEBCO-2014

- Track lines of multibeam bathymetry

Mayer L.A., M. Jakobsson, G.L. Allen, B. Dorschel, R. Falconer, V. Ferrini, G. Lamarche, H. Snaith, P. Weatherall, 2018. The Nippon Foundation—GEBCO Seabed 2030 Project: The Quest to See the World’s Oceans Completely Mapped by 2030. *Geosciences* 8, 63. <https://doi.org/10.3390/geosciences8020063>



# GEBCO



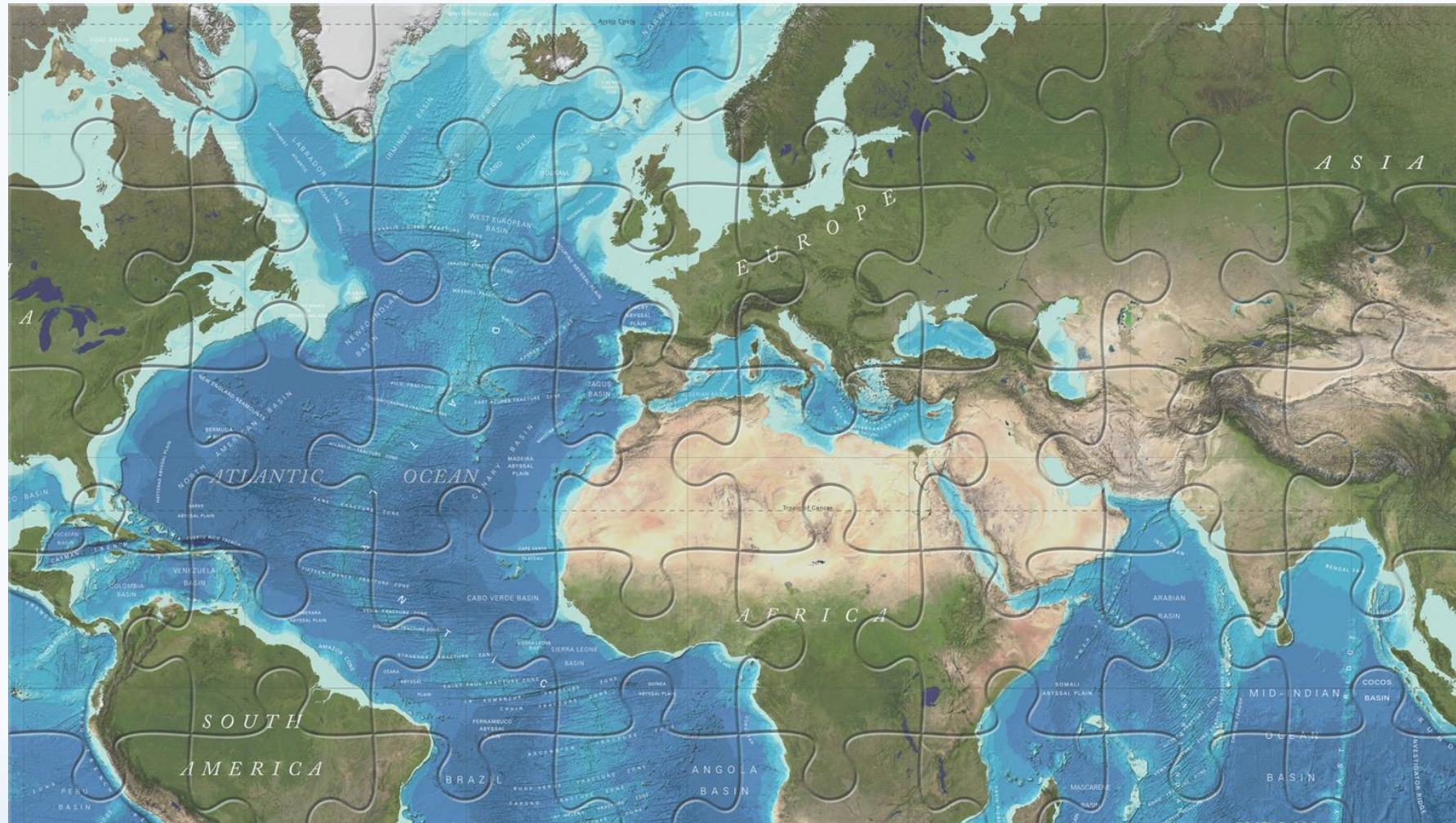
## GEBCO 2019 Released April 2019

- 15 arc second grid
- Coverage more than doubled
  - GEBCO 2014: 6% of goal
  - GEBCO 2019: 15% of goal
- Data from all sectors
  - Government
  - Academia
  - Industry
  - Private

Mayer L.A., M. Jakobsson, G.L. Allen, B. Dorschel, R. Falconer, V. Ferrini, G. Lamarche, H. Snaith, P. Weatherall, 2018. The Nippon Foundation—GEBCO Seabed 2030 Project: The Quest to See the World's Oceans Completely Mapped by 2030. *Geosciences* 8, 63. <https://doi.org/10.3390/geosciences8020063>



# Nippon Foundation – GEBCO Seabed 2030



# 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.



- The **Nippon Foundation** is a private Japanese-based, non-profit grant-making organization with a mission based around philanthropic activities to pursue global maritime development and assistance for humanitarian work
- The **General Bathymetric Chart of the Oceans (GEBCO)** organization operates under the joint auspices of the International Hydrographic Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO

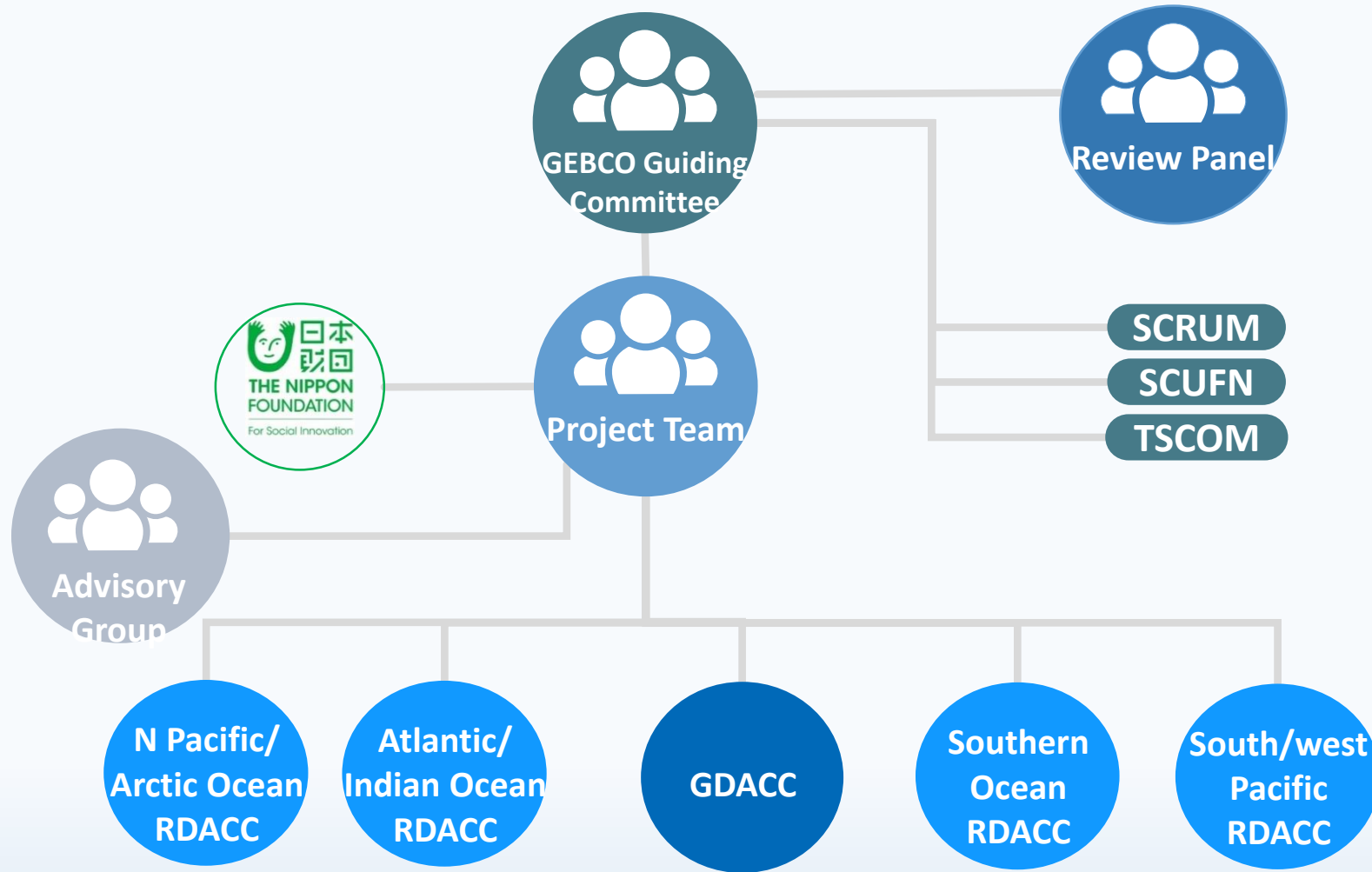


# Seabed 2030

## Seabed 2030 Project Structure

RDACC:  
Regional Data Assembly &  
Coordination Center  
(Regional Center)

GDACC:  
Global Data Assembly &  
Coordination Center  
(Global Center)



# Seabed 2030



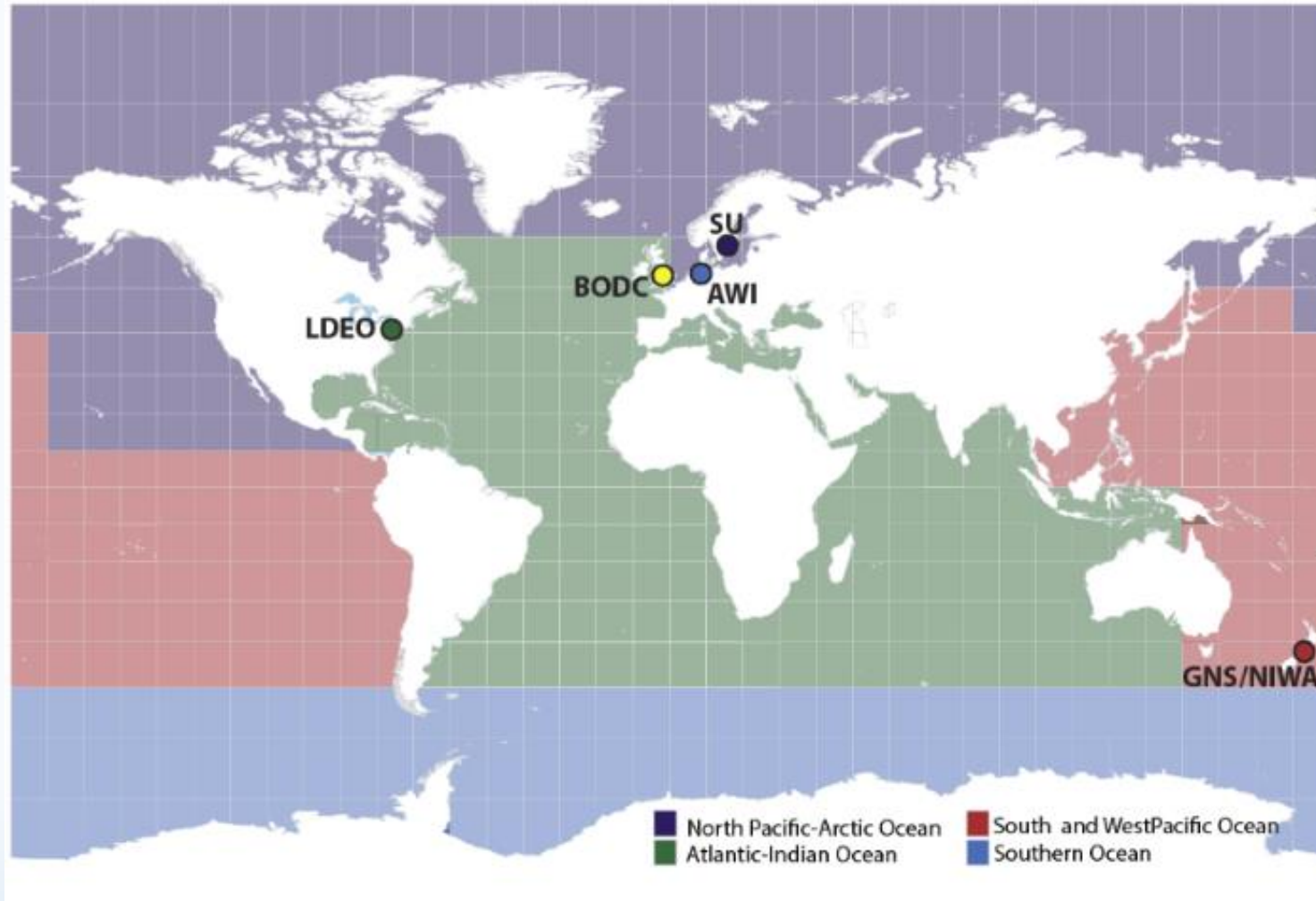
## Data Sources

- Government
  - Survey Vessels
- Academic
  - Research Vessels
- Industry
  - Survey Vessels
  - Cruise Ships
  - Fishing Boats
- Public
  - Private Boats and Yachts
  - Recreational Mariners





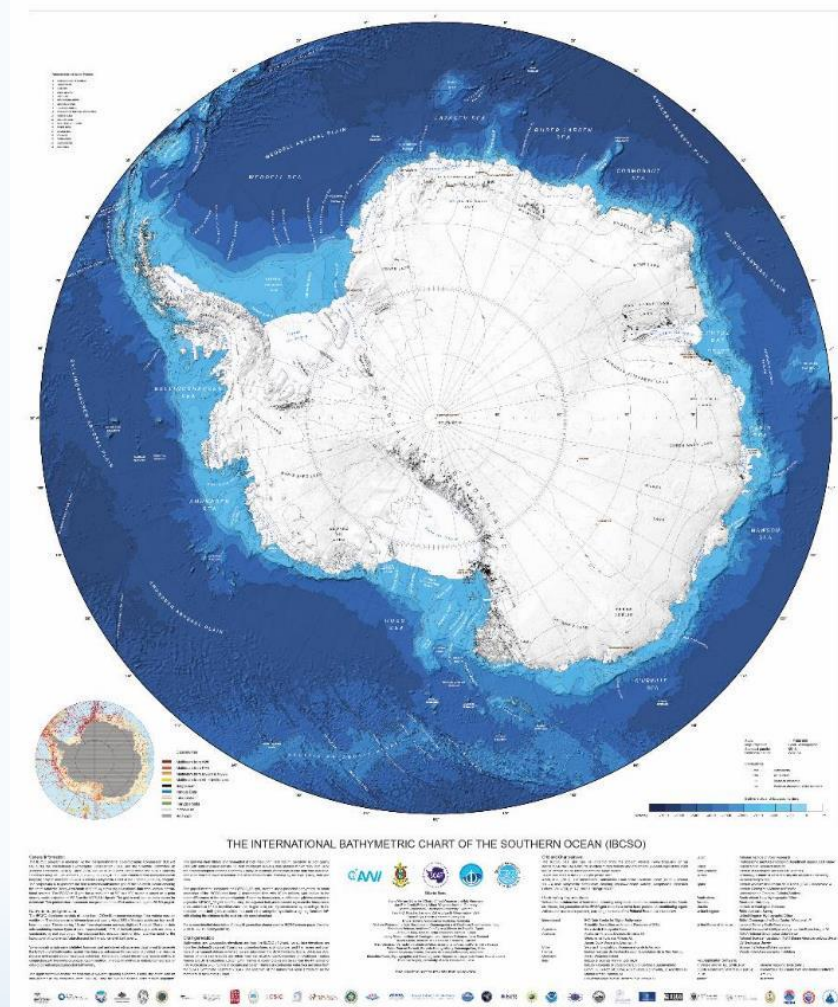
# Seabed 2030



## Data Center

- AWI  
Southern Ocean
- LDEO  
Atlantic + Indian Oceans
- NIWA  
South Pacific Ocean
- SU and UNH  
Arctic + North Pacific  
Oceans
- BODC  
Global Data Center



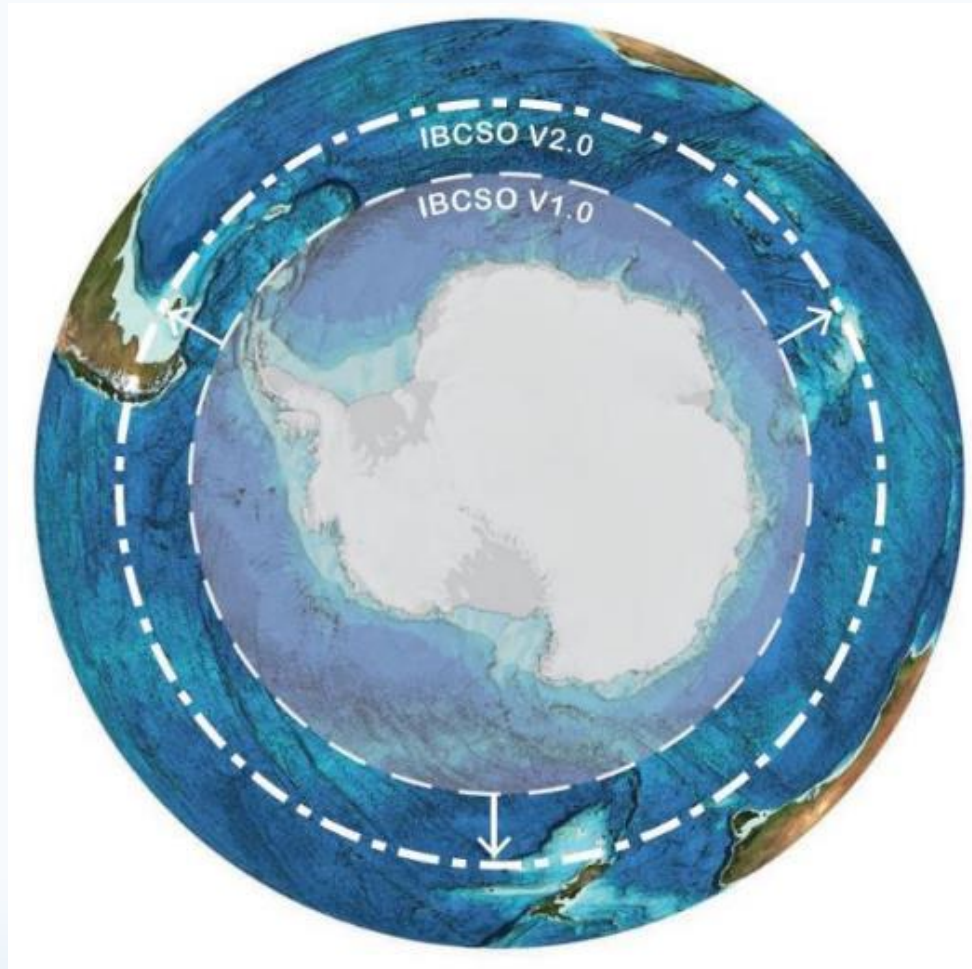


## International Bathymetric Chart of the Southern Ocean

- Area south of 60°S
- Raster resolution of 500 m
- Ice surface topography
- Bed rock topography

# IBCSO V2.0

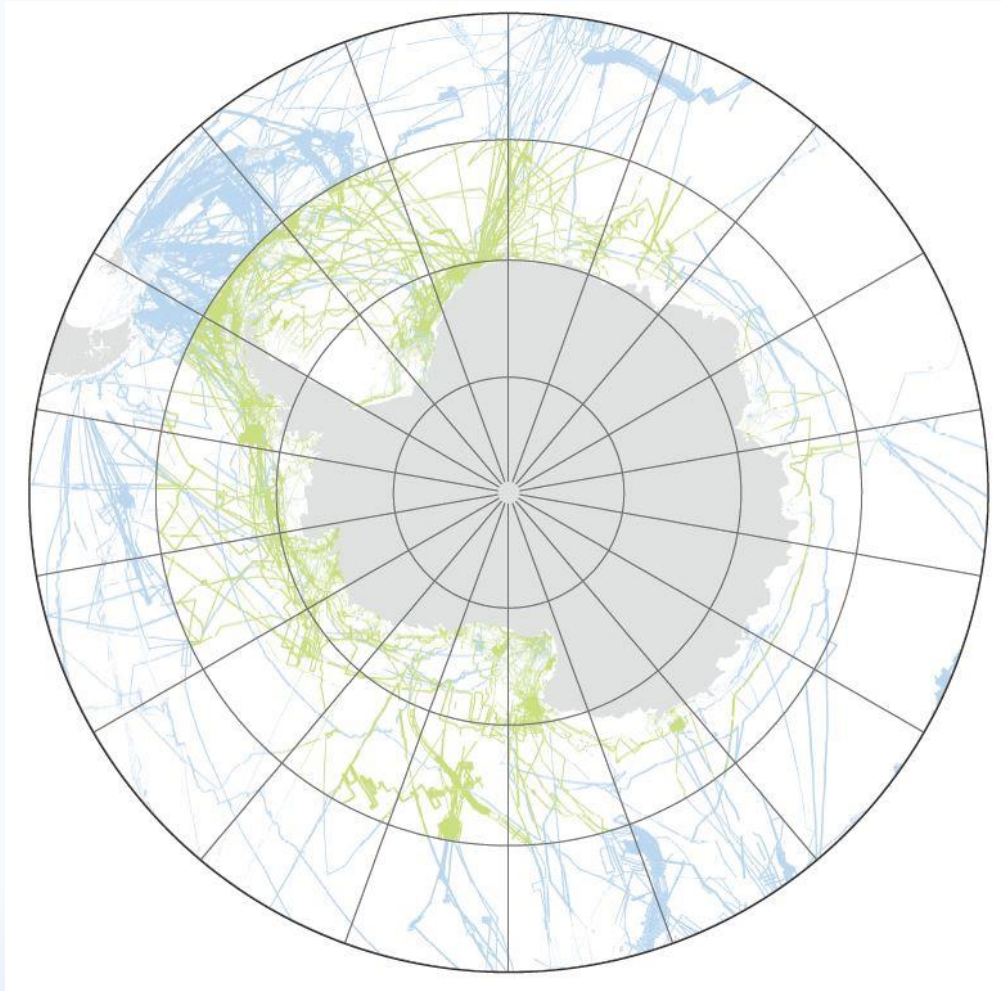
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## IBCSO V2.0

- Area south of 50°S  
2.5 seafloor times the area of IBCSO V1.0
- Raster resolution of 500 m
- IBCSO V2 grid published in an international, peer-reviewed journal

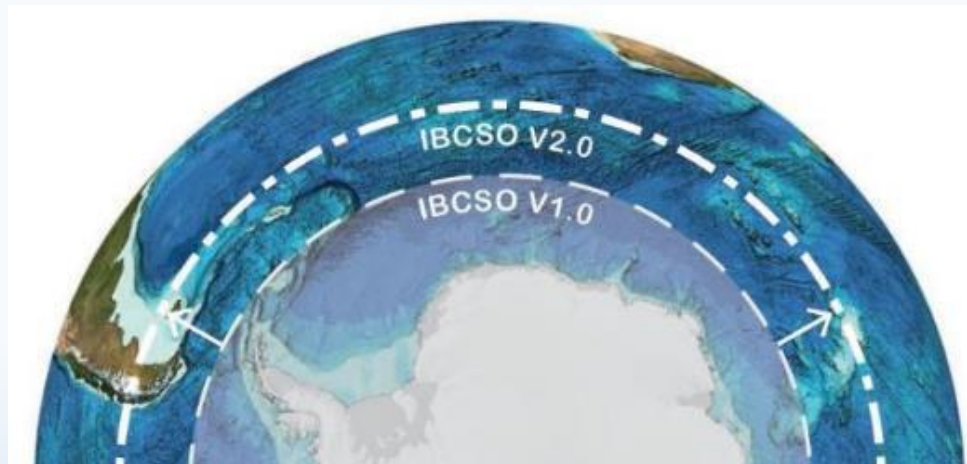
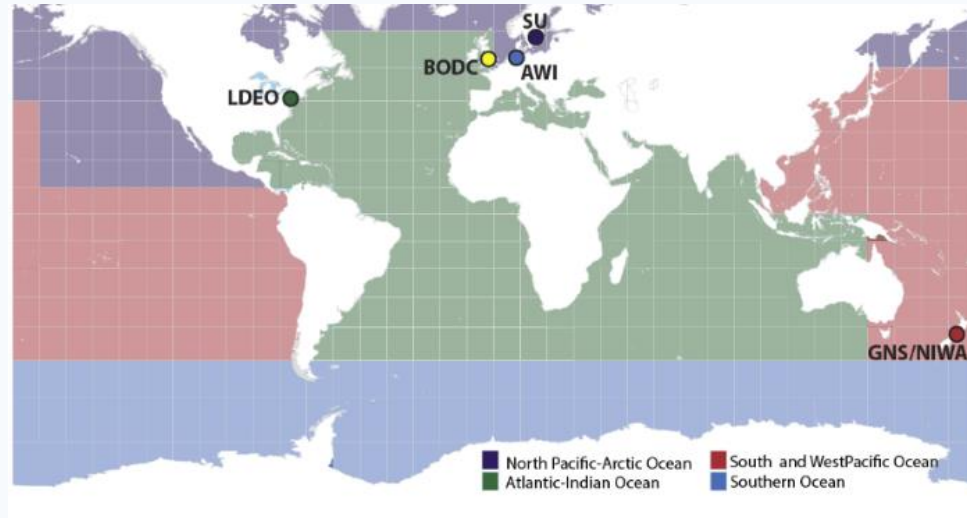




## Data Source

- **Multibeam Echosounder Coverage**
  - Green = IBCSO V1
  - Blue = Additional multibeam coverages

# IBCSO ↔ Seabed 2030



## IBCSO V2 – Seabed 2030 – GEBCO

- Area of IBCSO V2 is similar to area of RDACC-Southern Ocean
- ↓ ↓
- Grid provided by RDACC Southern Ocean to GDACC for annual updates of GEBCO grid
- ↓ ↓
- IBCSO V2 is part of the GEBCO grid



# IBCSO ↔ Seabed 2030

## IBCSO V2

RDACC Southern Ocean

Data acquisition (end of summer 2019)

Data processing (end of summer 2019)

Grid production for IBCSO V2 (autumn 2019)

Publication of IBCSO V2 (second half 2019)

Delivery of IBCSO V2 to GDACC for GEBCO grid  
(after publication)

5 to 10 year intervals

## Seabed 2030 – GEBCO 2019 grid

RDACC Southern Ocean

Data acquisition – ongoing

Data processing – in progress

Grid production for GEBCO 2019 – in progress

Delivery of Grid to GDACC (end of 2019)

Yearly interval



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# Thank you for your attention



# PS118

