THE NIPPON FOUNDATION-GEBCO SEABED 2030

13th Inter-Regional Coordination Committee Meeting
23-25 June 2021

Jamie McMichael-Phillips
Project Director

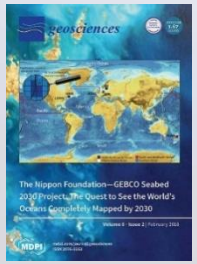
2021 2030 United Nations Decade of Ocean Science for Sustainable Development

THE NIPPON FOUNDATION | General Bathymetric Chart of the Oceans GEBCO | IHO International Hydrographic Organization | United Nations Educational, Scientific and Cultural Organization | Intergovernmental Oceanographic Commission

What is 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.

Forum for Future Ocean Floor Mapping



THE OCEAN CONFERENCE
UNITED NATIONS, NEW YORK, 5-9 JUNE 2017

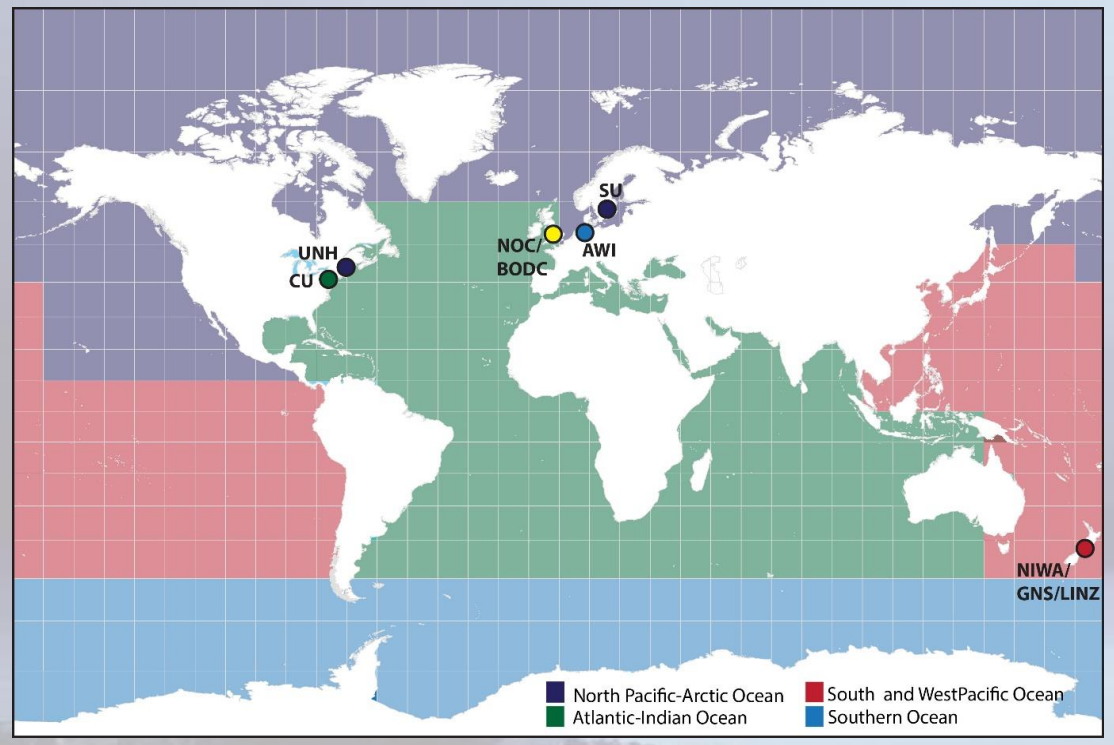
2021 2030 United Nations Decade of Ocean Science for Sustainable Development

1921~2021

Endorsed Decade Programme

June 2016 → **June 2017** → **June 2021**

The Network of Seabed 2030 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**)

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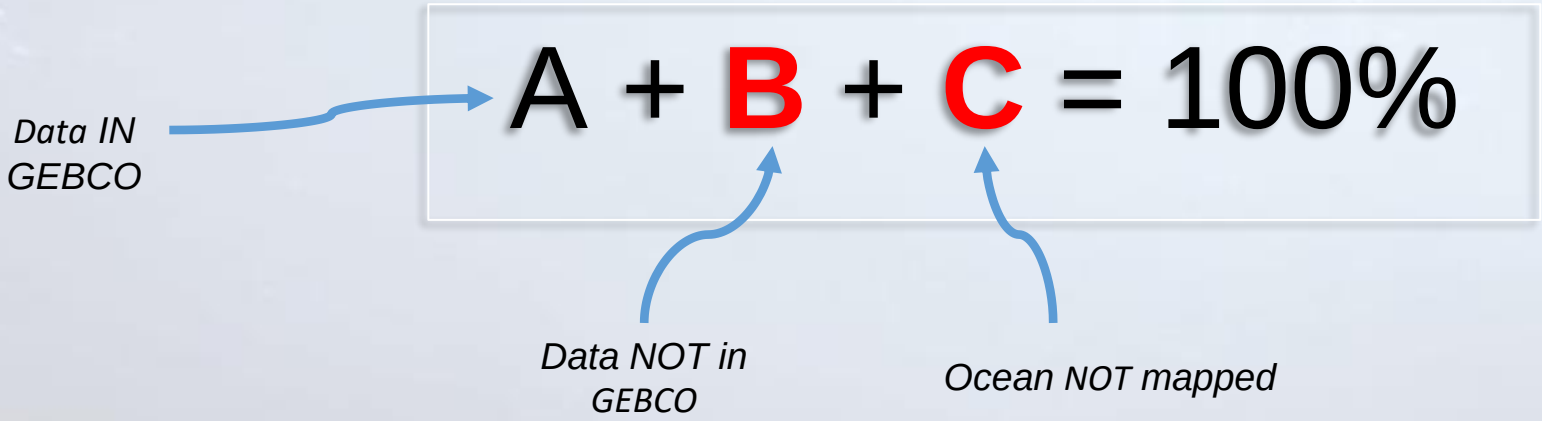
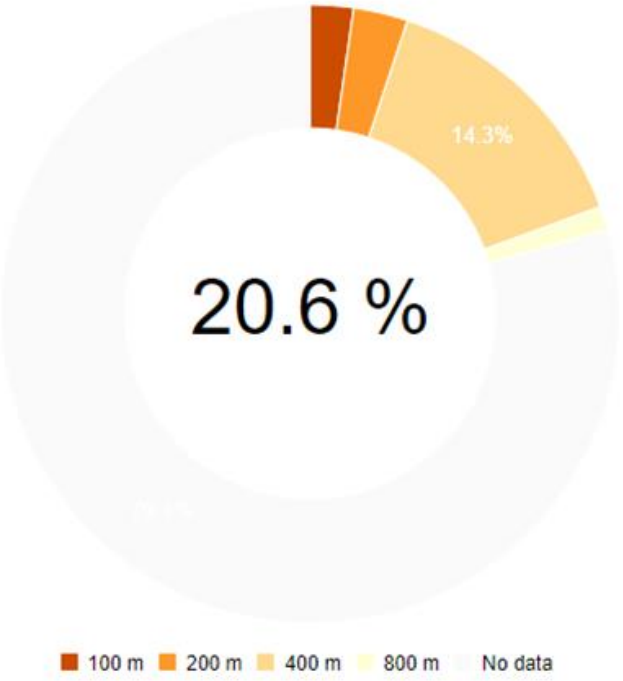


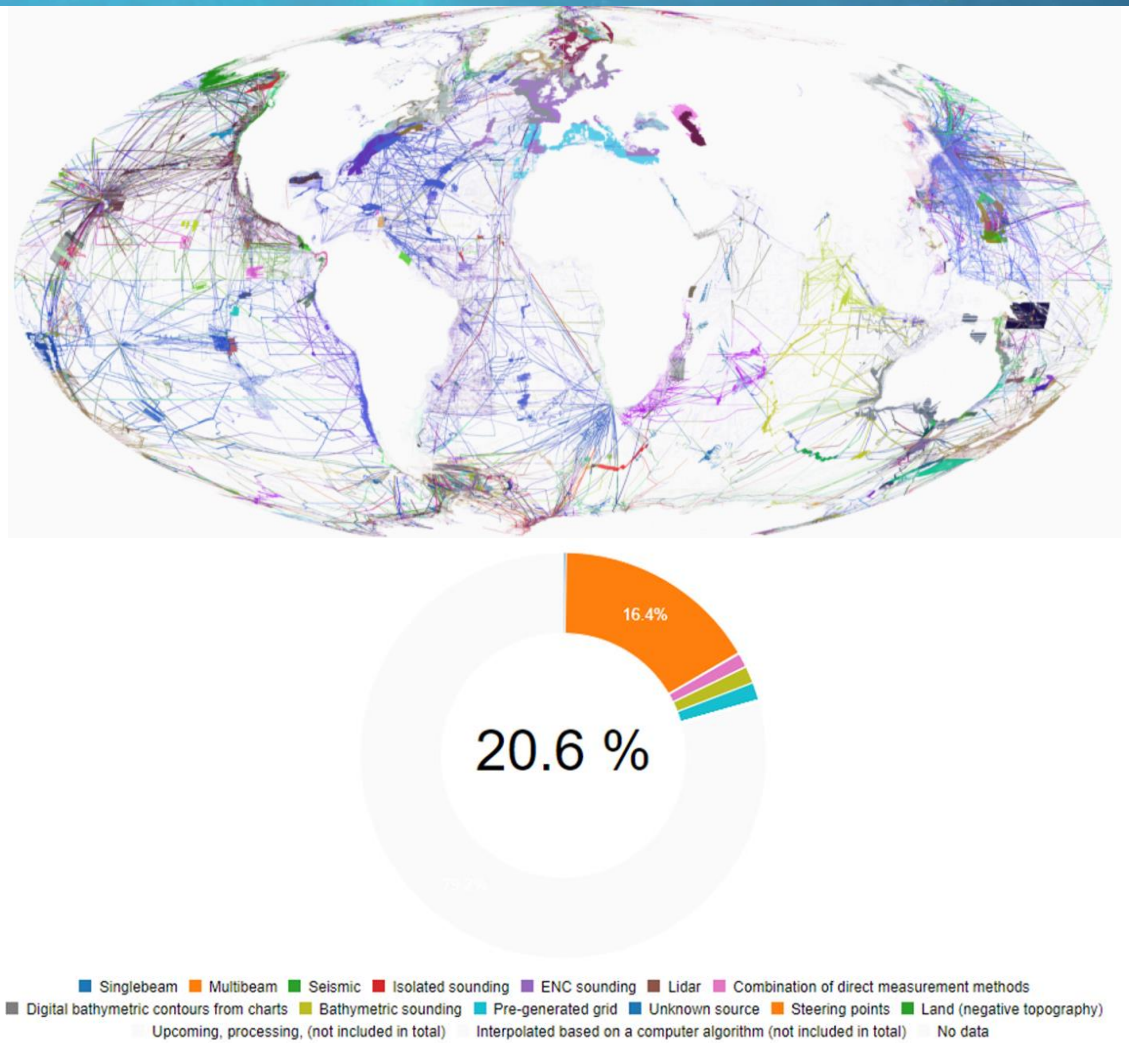
- **Ocean Frontier Mapping**
  - Use GEBCO Grid to inform location of future mapping
  - Advocate for greater mapping activity
  - Identify funding for mapping expeditions
- **Crowd Sourced Bathymetry**
  - Promoting CSB around the world
  - Gaining support of, and data from, contributors at all levels
  - Palau, South Africa & Greenland field trials
- **Technology Innovation**
  - What can Seabed 2030 do to accelerate uptake of Technology to accelerate rate of bathymetric mapping?

We need the support of:

- **Governments**
  - To make available existing data sets within areas of national jurisdiction for Seabed 2030 use
- **Industry & Academia & Citizens**
  - To work with stakeholders to free up existing data for Seabed 2030 use
- **All**
  - To gather new data for Seabed 2030 use

Grid Status – 2021





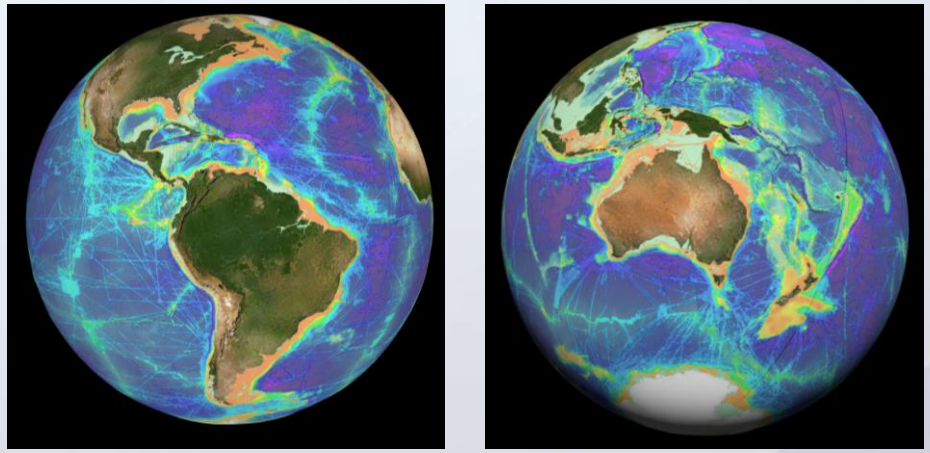
The GEBCO 2021 Grid

- Published June 2021 with **20.6%** coverage
- Still almost 4/5ths of the ocean floor still to be mapped
- Look in more detail either by downloading the Grid from gebco.net or via these very new *beta-version* interactive webapps:

  GEBCO 2021 Bathymetry Direct Measurement -WAB (unh.edu)

  GEBCO Globe 2021 (unh.edu)

  - *produced by Paul Johnson, UNH*
  - *donated by the University of New Hampshire to Seabed 2030*



Courtesy: Paul Johnson, UNH

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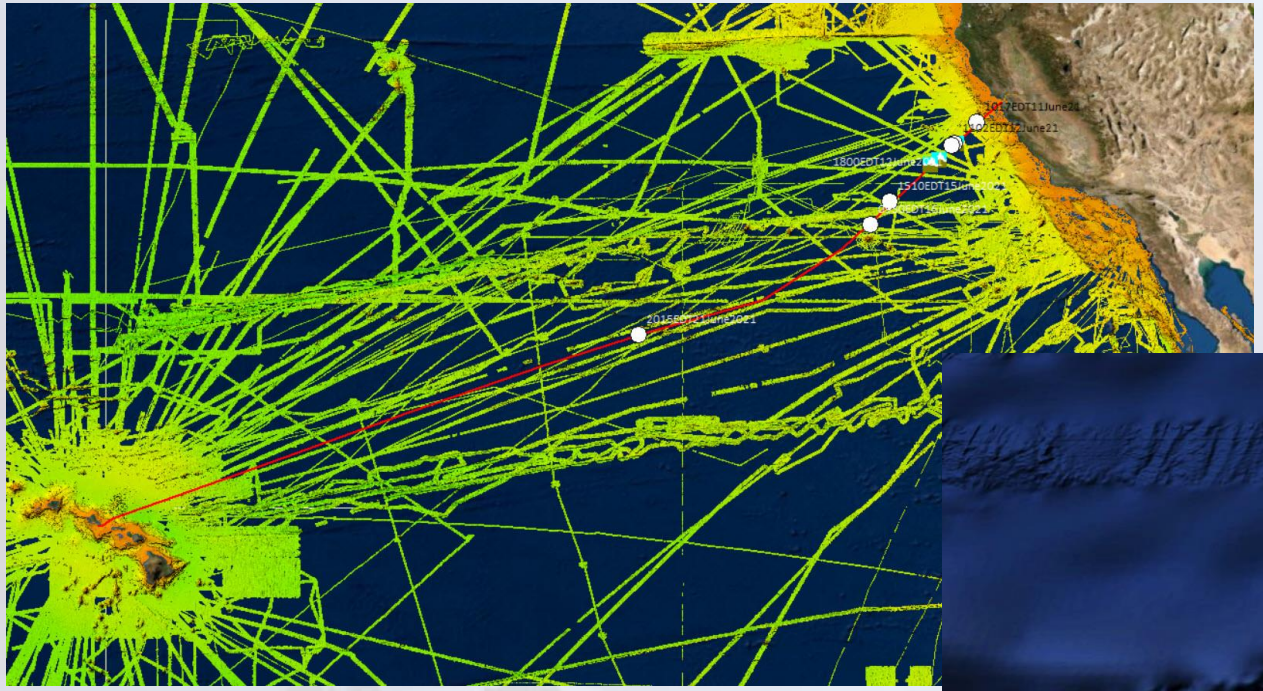
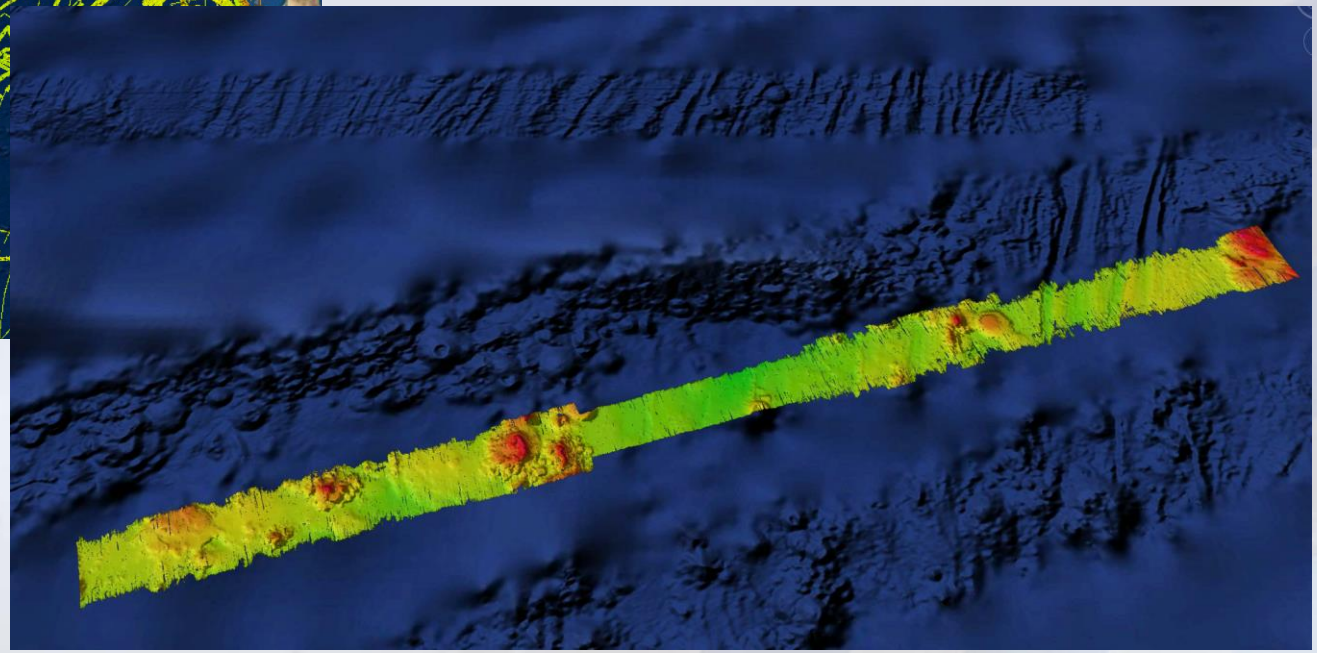
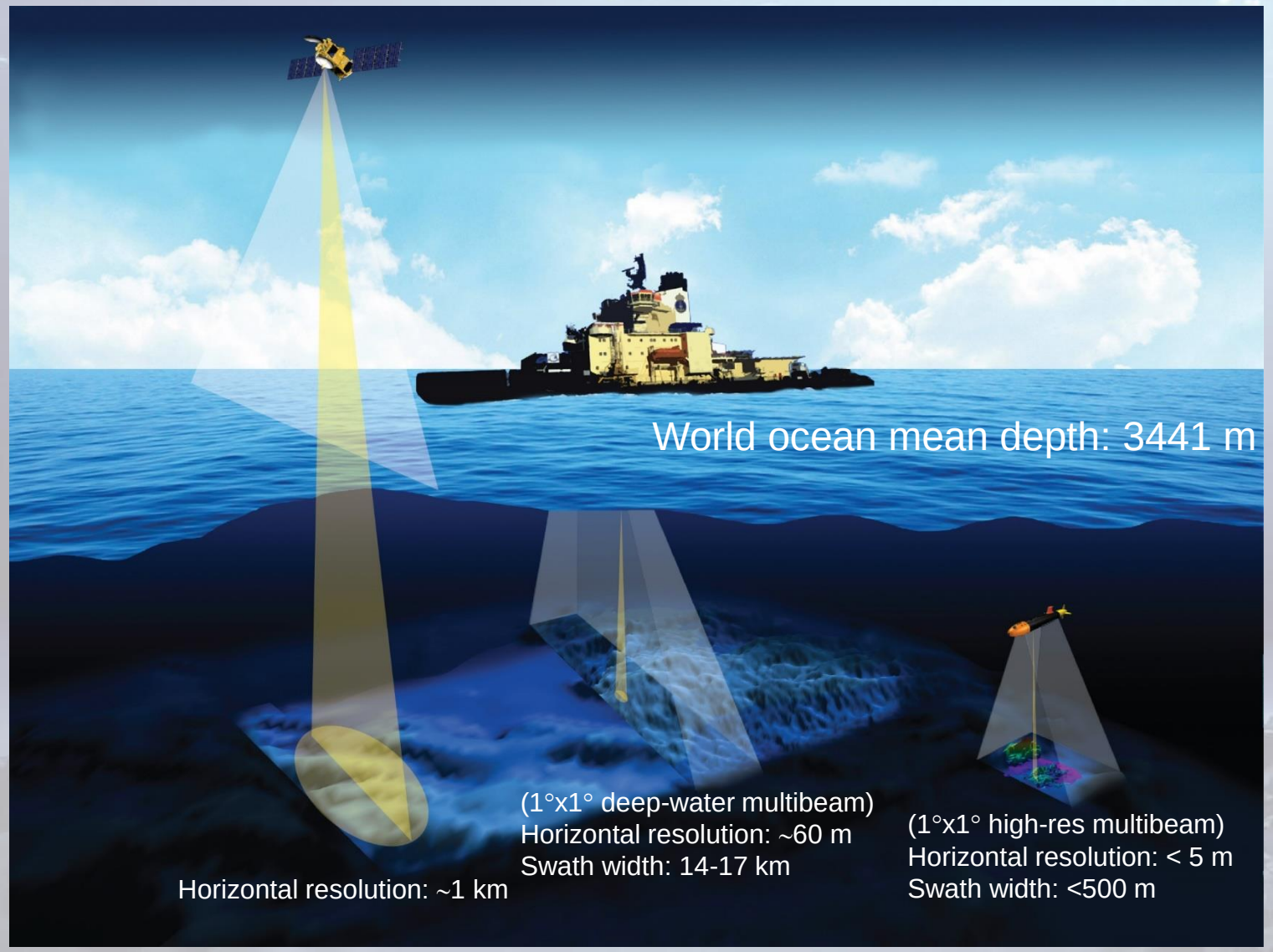
Autonomous Data Collection on World Hydrography Day 2021





Courtesy: Saildrone & Larry Mayer (UNH)

Seabed 2030:
A challenge with existing mapping technologies



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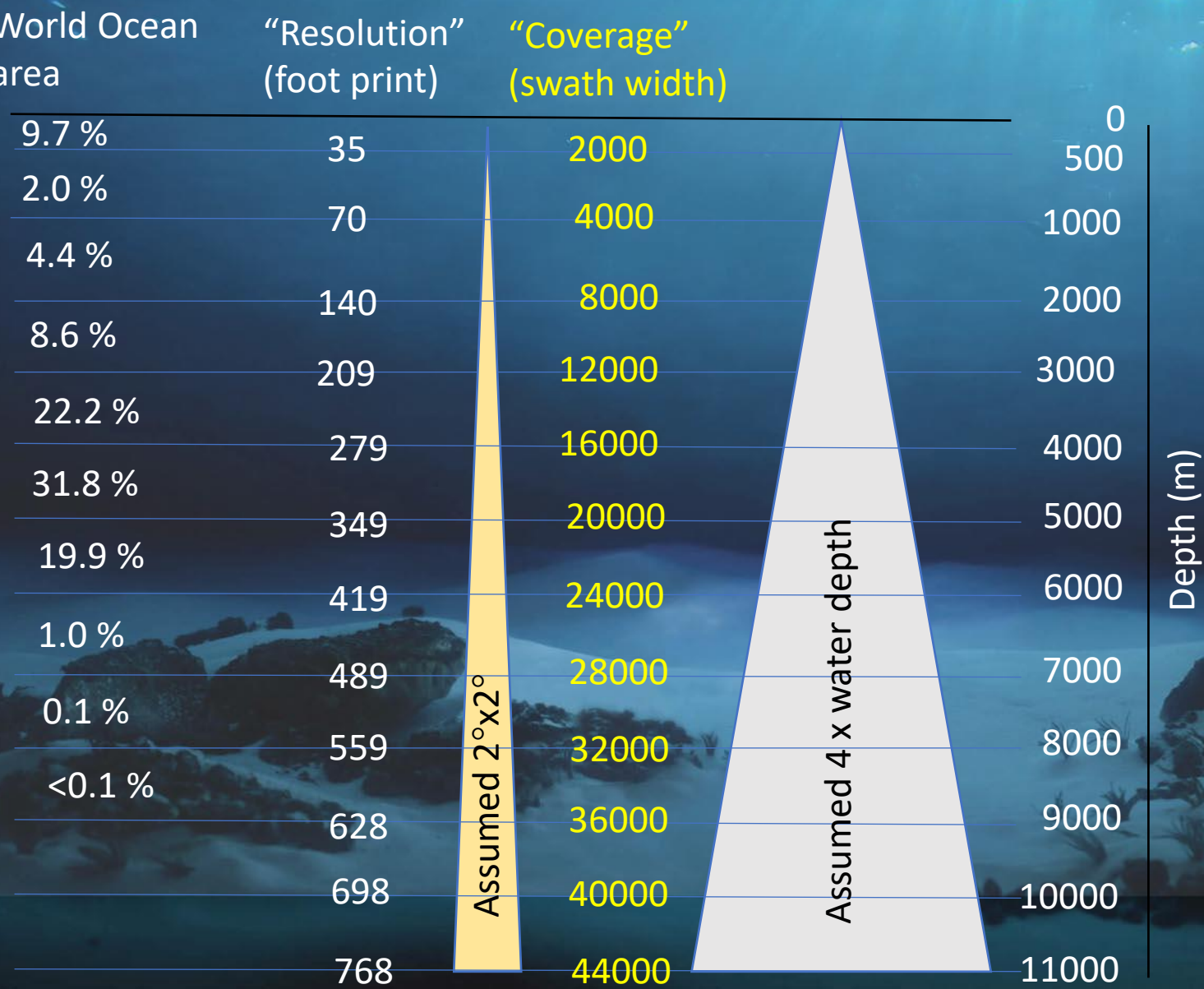
Courtesy: Martin Jakobsson, SU

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



Target Resolutions

- 100x100 m (0-1500 m)
- 200x200 m (1500-3000 m)
- 400x400 m (3000-5750 m)
- 800x800 m (5750-11000 m)

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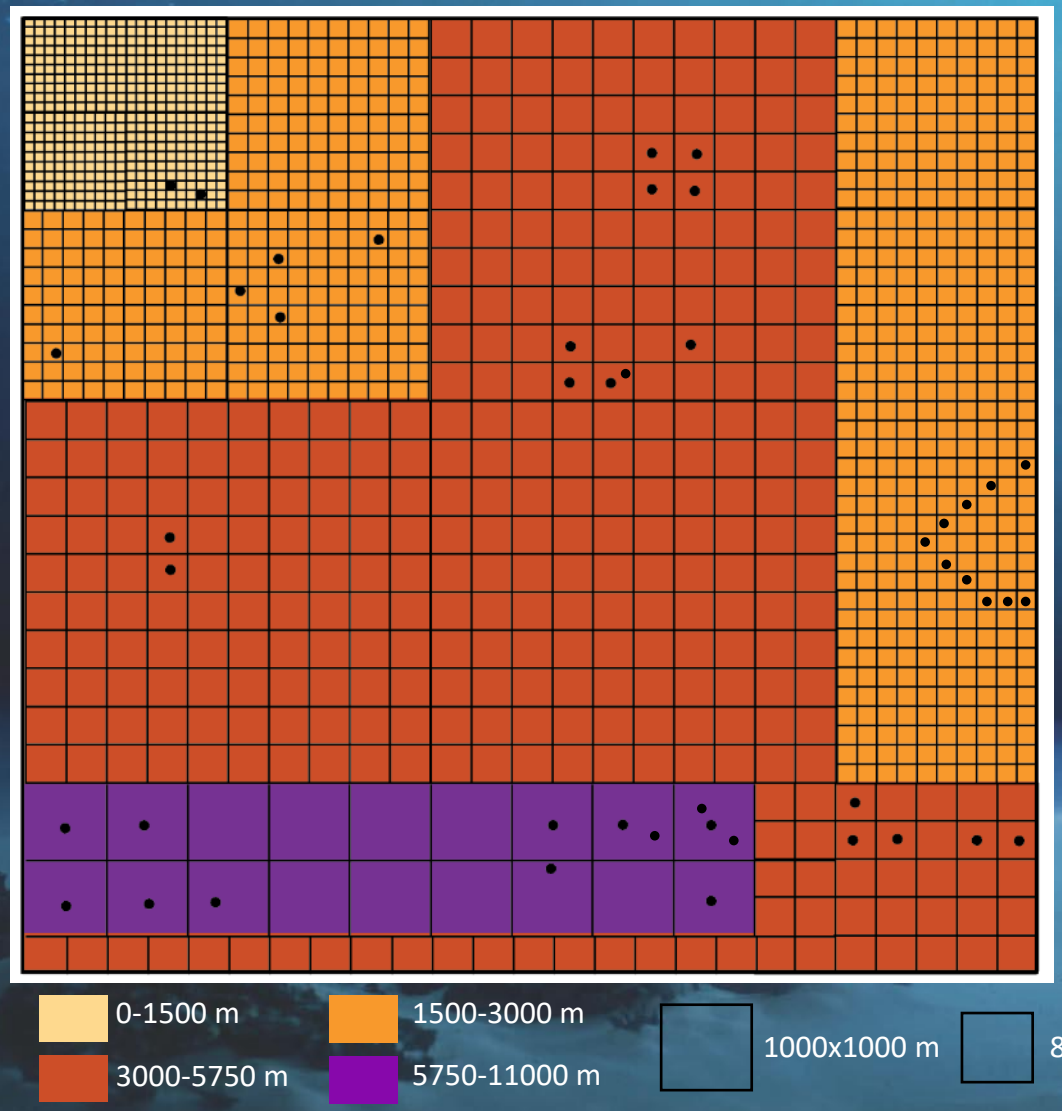
Courtesy: Martin Jakobsson, SU

Basic concept:



Courtesy: Martin Jakobsson, SU

Grid cell considered mapped if it contains one or more soundings.

Data used to compute values in the GEBCO Ocean Map (aka the GEBCO Grid) but <u>not</u> distributed as part of the end product.

We are pleased to accept decimated data at lower resolutions than that collected if data considered sensitive.

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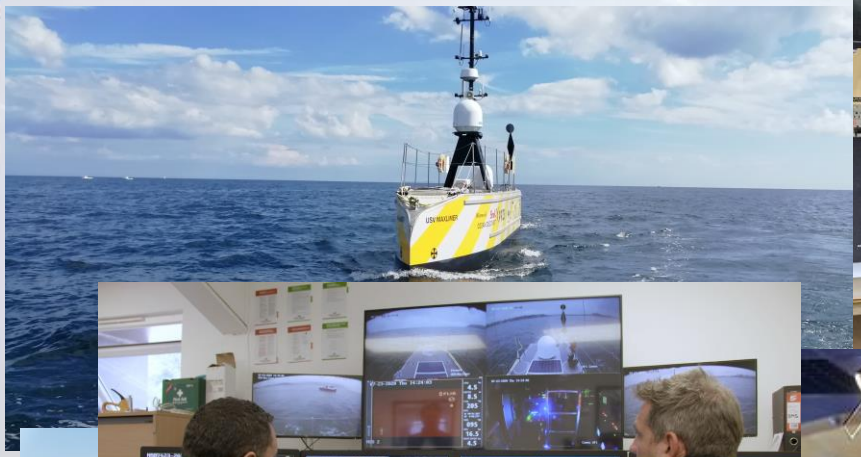

Making it happen …..

DECADE OUTCOMES

"THE OCEAN WE WANT"

- A clean ocean
- A healthy and resilient ocean
- A productive ocean
- A predicted ocean
- A safe ocean
- An accessible ocean
- An inspiring and engaging ocean

OCEAN DECADE CHALLENGES

Pollutants	Coastal -bathymetry
Ecosystems	Mapping central
Food from the Ocean	Bathymetry dependent
Ocean economy	Mapping intensive
Ocean-climate nexus	Modelling, SLR, etc.
Ocean-related risks	Bathymetry intensive
Ocean observing system	Georeferencing
Ocean digital representation	Central facility
Capacity development	Strongly needed
Behaviour change	Resonates with people

Please join us in 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

https://www.bbc.co.uk/news/science-environment-57530394

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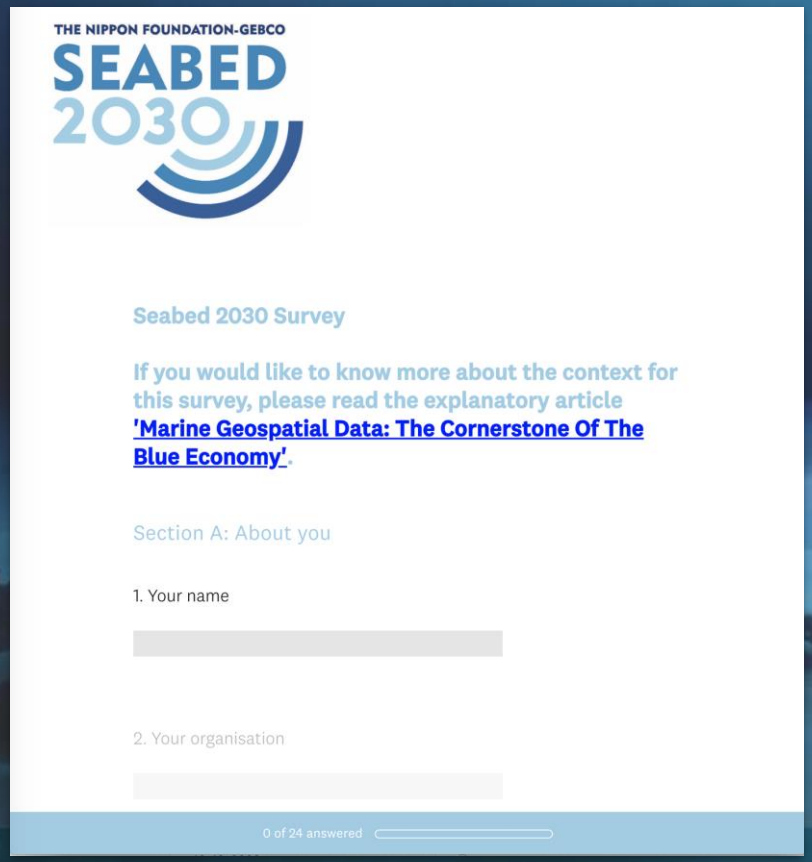
COMMUNITY INPUT REQUESTED: Community Survey



https://seabed2030.org/survey

- Tell us about your data needs
- Let us know your priority areas
- Point us at available data

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Thank you

THE NIPPON FOUNDATION

General Bathymetric Chart of the Oceans
GEBCO

IHO
International Hydrographic Organization

UNESCO
United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

University of New Hampshire

Lamont-Doherty Earth Observatory
COLUMBIA UNIVERSITY | EARTH INSTITUTE

National Oceanography Centre
NATURAL ENVIRONMENT RESEARCH COUNCIL

AWI
ALFRED-WEGENER-INSTITUT
HELMHOLTZ-ZENTRUM FÜR POLAR- UND MEERESFORSCHUNG

Stockholm University

NIWA
Taihoro Nukurangi

GNS SCIENCE

Land Information New Zealand

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