



# The vision of mapping the ocean

Webinar - EMODnet  
A decade of achievements  
connecting marine data to knowledge



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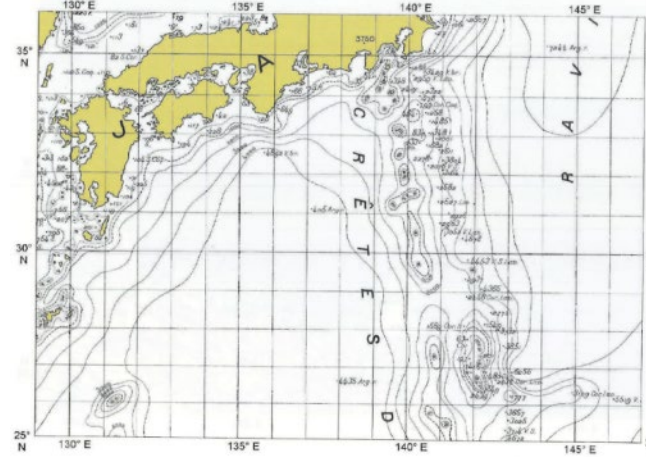


# The vision of mapping the oceans: The General Bathymetric Charts of the Oceans project started 1899

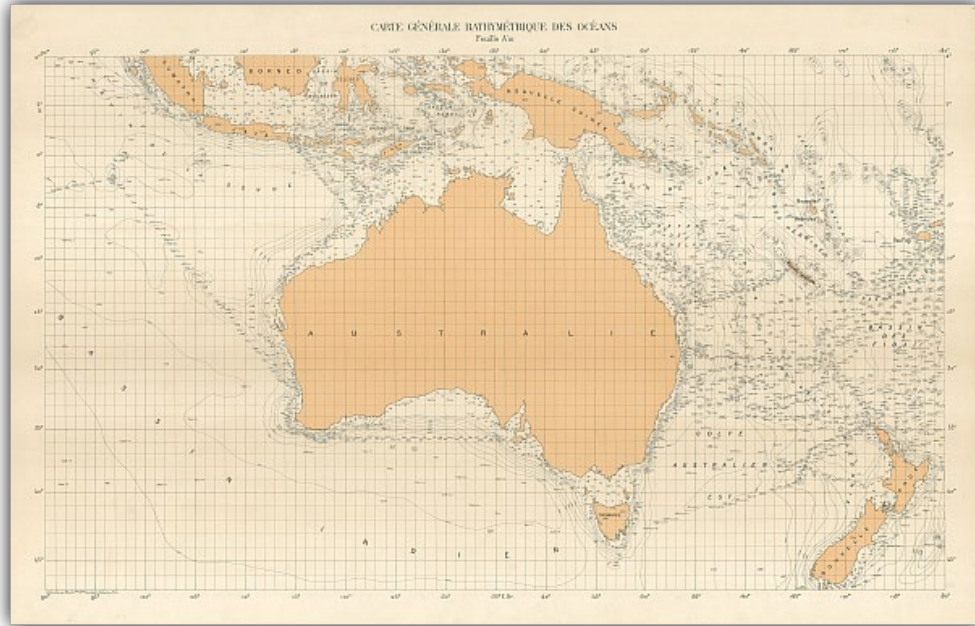
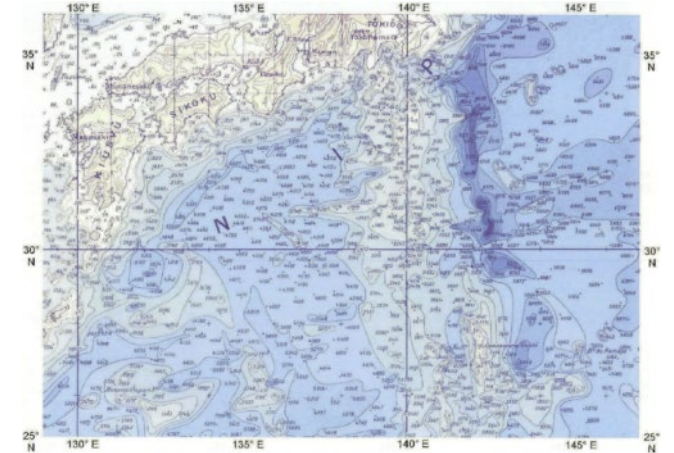


**The first edition** - also known as the Monaco Chart - was published in 1905.

18,400 Soundings, GEBCO 1st Ed. 1905

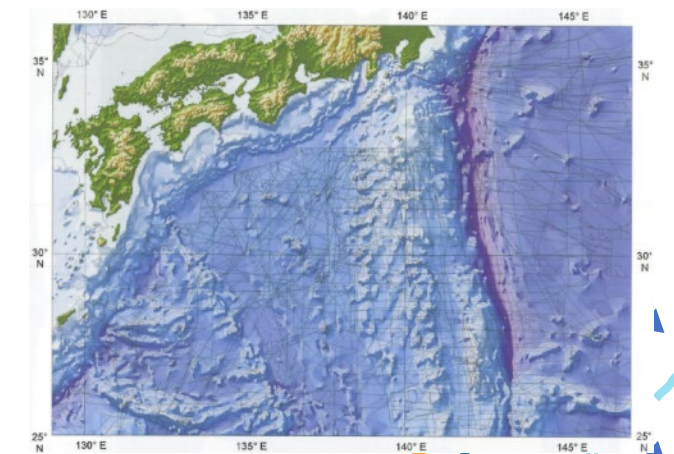


358,700 soundings GEBCO 3rd Ed. 1940



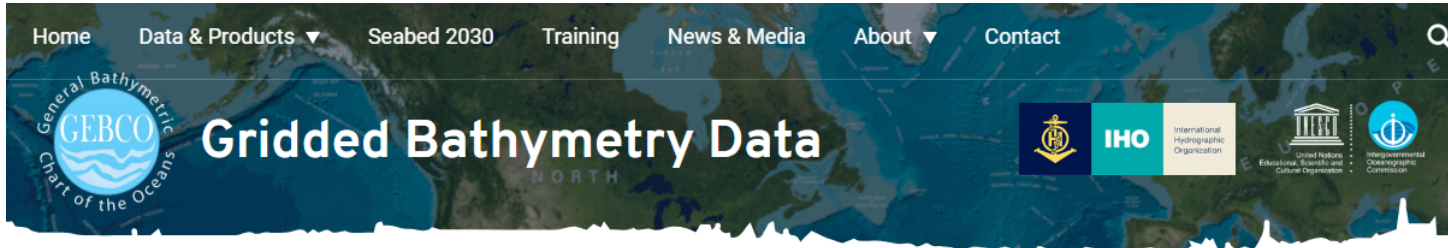
In the 90s, GEBCO moved to producing and making available digital bathymetric data sets – today known as the GEBCO Grid.

GEBCO Digital Atlas 1999



Since the early 1980s, GEBCO has become a collaborative effort between IHO and UNESCO IOC. Supervision is provided by the joint IHO-IOC GEBCO Guiding Committee.

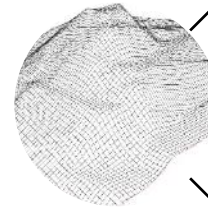
# GEBCO website – home of the GEBCO Grid



GEBCO / Seabed 2030 are taking benefit from collaboration with EMODnet thanks to:

- Memorandum of Understanding between EC and IHO (2012)
- Memorandum of Understanding between EU and Seabed 2030 (2019)
- EMODnet Bathy inserted in GEBCO since 2013 improving the GEBCO grid in resolution and quality

GEBCO_2020 Grid	<a href="#">netCDF</a> (4 Gbytes, 7.5 Gbytes uncompressed)	<a href="#">Data GeoTiff</a> (4 Gbytes, 8 Gbytes uncompressed)	<a href="#">Esri ASCII raster</a> (5 Gbytes, 20 Gbytes uncompressed)
GEBCO_2020 TID Grid	<a href="#">netCDF</a> 90 Mbytes, 4 Gbytes uncompressed)	<a href="#">Data GeoTiff</a> (96 Mbytes, 7 Gbytes uncompressed)	<a href="#">Esri ASCII raster</a> (108 Mbytes, 9.5 Gbytes uncompressed)



15 arc-second grid (500 m Resolution) of 43200 rows x 86400 columns, giving 3,732,480,000 data points



Now updated annually



Thanks to the Seabed2030 project boosted from 15% to 19% coverage of 100 m resolution in two years

Share this

[https://www.gebco.net/data\\_and\\_products/gridded\\_bathymetry\\_data/](https://www.gebco.net/data_and_products/gridded_bathymetry_data/)



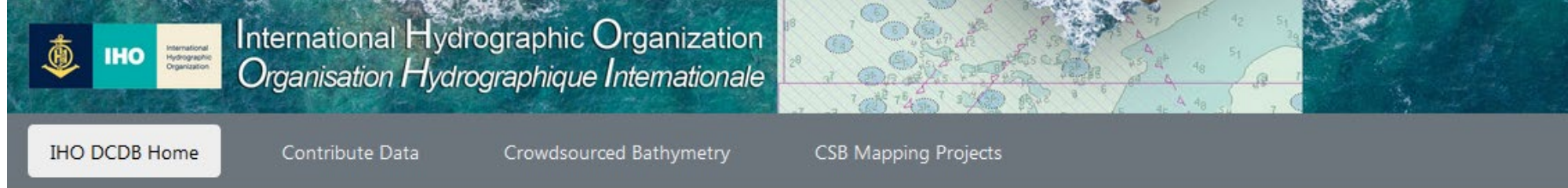




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# DCDB: established to advance the worldwide collection of bathymetric data

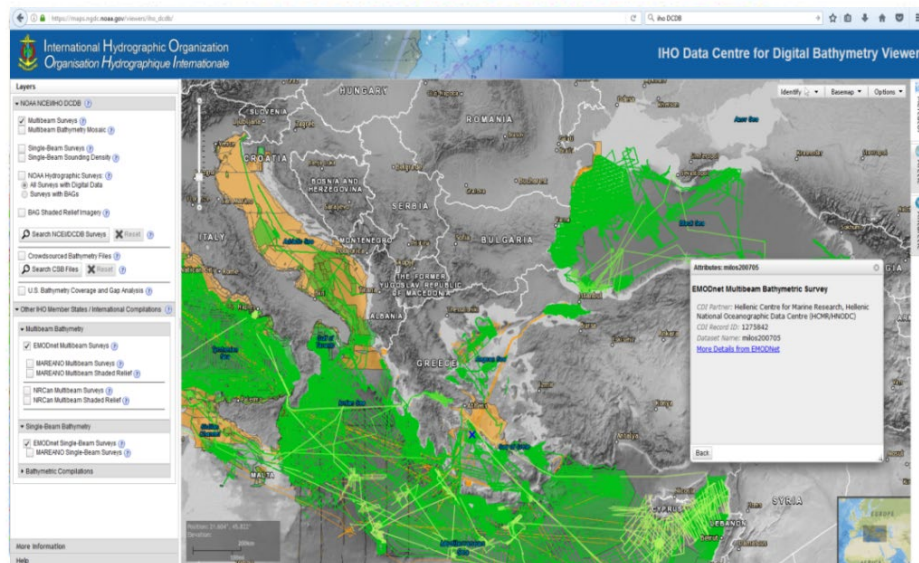
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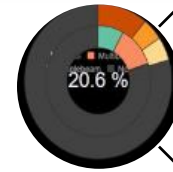
## IHO Data Centre for Digital Bathymetry (DCDB)

The IHO DCDB was established in 1990 to steward the worldwide collection of bathymetric data. The Centre archives and shares, freely and without restrictions, depth data contributed by mariners. The IHO DCDB is hosted by the [U.S. National Oceanic and Atmospheric Administration \(NOAA\)](#) on behalf of the IHO Member States.

<https://www.ngdc.noaa.gov/iho/>



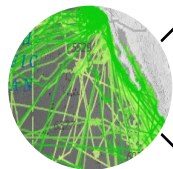
IHO DCDB Data Viewer highlighting ship tracks and data availability over the Pacific Ocean and neighboring regions



The **DCDB archive** includes over **30 terabytes** of oceanic depth soundings acquired with multibeam and single beam sonars by hydrographic, oceanographic and industry vessels during surveys or while on passage.



The DCDB also archives and provides access to data contributed in support of the **IHO Crowdsourced Bathymetry (CSB) initiative**.



The **IHO DCDB data viewer** shows the global coverage of the DCDB's bathymetric data holdings as well as the spatial extent of data archived at other repositories via web services.



# Who provides (can provide) data to DCDB?

Professional hydrographic, oceanographic and commercial surveys

- on mission
- in-transit to mission
- fishery in action
- on passage

All sorts of vessels while on passage operating depth sounding equipment to maintain safe navigation (Citizen Science = Crowd Sourced Bathymetry).

“EMODnet data Ingestion” Project acts here as a concentrator

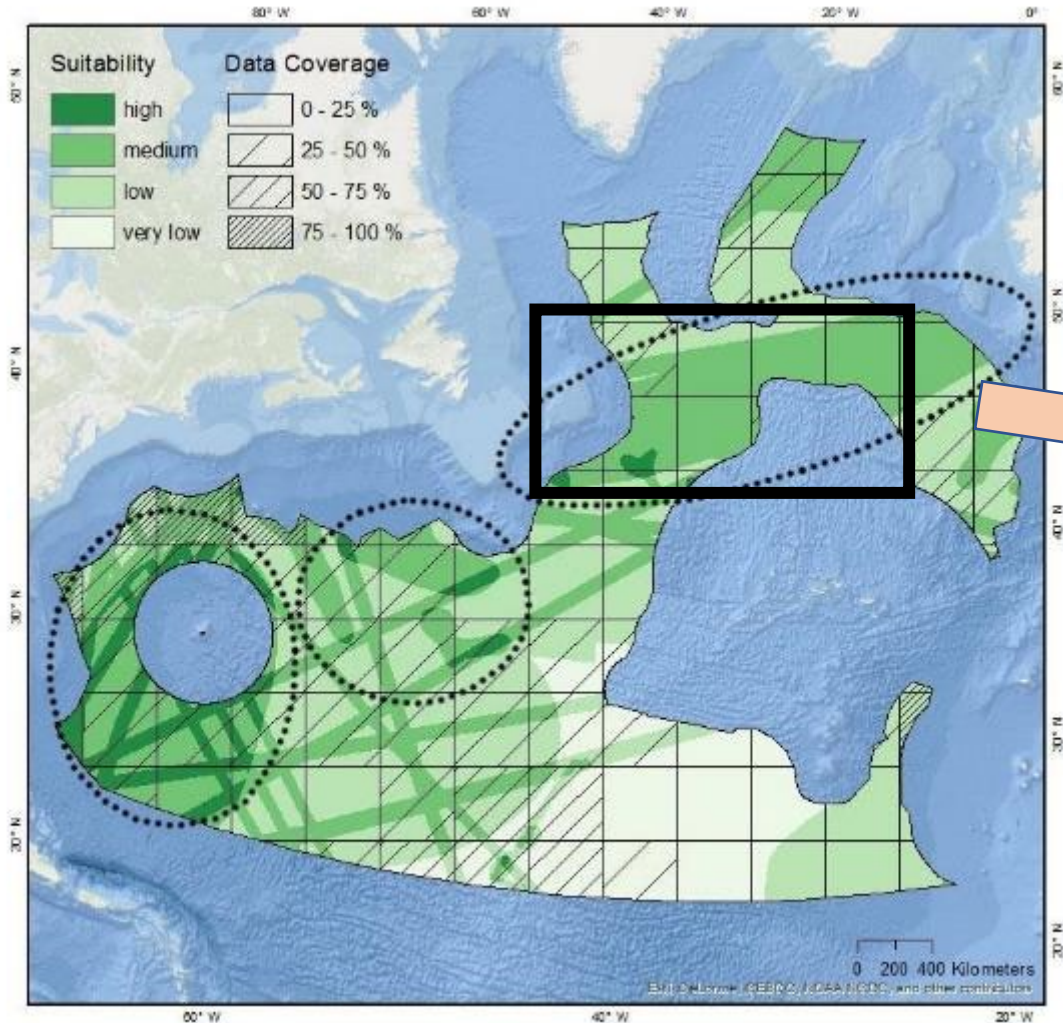




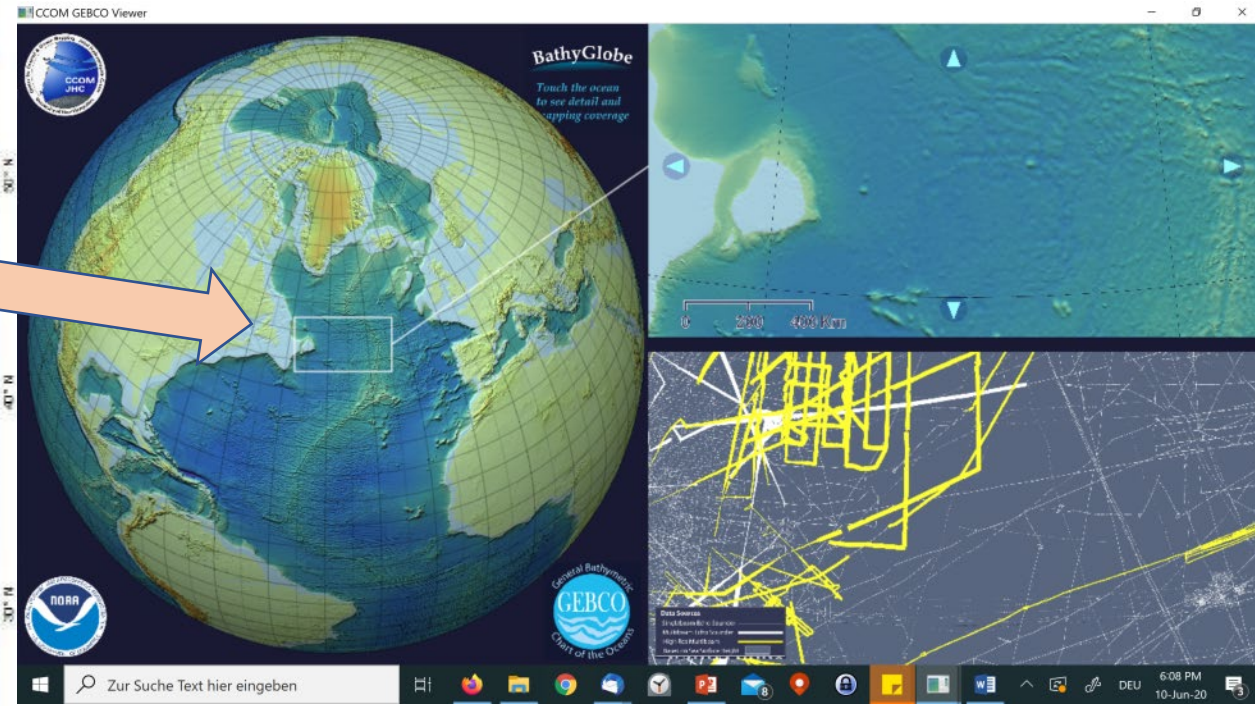
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# Coverage in European waters is excellent but how detailed is the database of the GEBCO Grid in blue water?



Percentage of multibeam data coverage divided in four classes



Increase in blue water survey activity is required. All EU financed research projects producing bathy data should be mandated to forward to EMODnet.



# What prevents parties from providing data to DCDB?



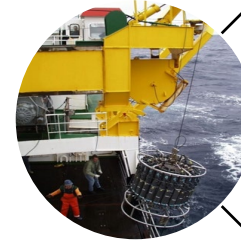
**National security reasons**  
Some Hydrographic offices keep data for territorial waters confidential



**Coastal states are skeptical to accept crowd sourced bathymetry in their waters of jurisdiction**



**Scientific “confidentiality”**  
Oceanographers tend not to share their data before they analyzed them for their scientific goals.



Commercial data owners are reluctant to share for free since acquisition of data was so costly to them



Data management and delivery requires extra effort but without compensation

GEBCO/SeaBed2030 needs to develop better mechanisms to:

- Recognize the data provider.
- Track data uses and data users to justify the effort of data donation / ingestion .



# Why is industry such as **FUGRO** supporting us?



The direct and indirect benefits of participation



## Business Opportunities

GEBCO/Seabed2030 and the UN Ocean Decade will create collaborative ocean science business opportunities for public-private-academic partnerships.



## Sustainability Agenda

Deliver a low cost, but meaningful contribution to GEBCO/Seabed2030 and UN Ocean Decade initiatives by filling data gaps while contributing very positively to corporate Sustainability Objectives.



## Access to Improved Global Bathymetry

The success of GEBCO/Seabed2030 and the UN Ocean Decade will lead to larger and more complete public data sources for global bathymetry and ocean observation data to support future business needs.



## Potential Tax Benefits (tbd)

Still to be confirmed, but the contribution of bathymetric and/or ocean observation data could be considered a charitable contribution, subject to tax benefits in some jurisdictions.



## Engagement

Participation in such high-profile global sustainability initiatives leads to thoughtful discussions and positive engagement with employees, suppliers, clients and shareholders.



## Reputation Benefits

Engagement with and participation in these initiatives will promote the corporate brand and enhance corporate reputation in ocean science to new communities and stakeholders.







## EMODNET BATHYMETRY DELIVERS BEST PRACTICE

### EXAMPLE IN MANY WAYS:

- CONTRIBUTING PARTIES
- COVERAGE
- RESOLUTION
- ACCESS AND GRANTED RIGHTS FOR RE-USE

IHO AND EMODNET ARE IDEAL PARTNERS TO IMPROVE  
OUR GLOBAL TOPOGRAPHIC IMAGE OF THE SEAS!

Thank you!

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