

# GEBCO & Seabed 2030

A BODC Perspective

# What is GEBCO?

**The General Bathymetric Chart of the Oceans**

**GEBCO aims to provide the most authoritative publicly-available bathymetry of the world's oceans.**

Operates under the joint auspices of the International Organization (IHO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO



# Pre-digital GEBCO

## First Charts - 1903

- Under the leadership of Prince Albert I of Monaco – took 7 months

## Second Edition – 1910-1930

- Generated by the International Hydrographic Bureau (IHB)

## Third Edition – 1932-1966

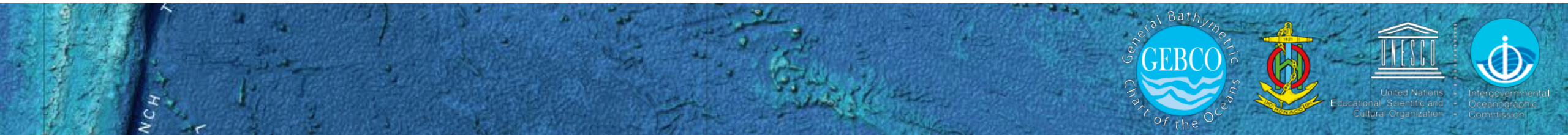
- Only 21 of intended 24 sheets produced

## Fourth Edition – 1958-1973

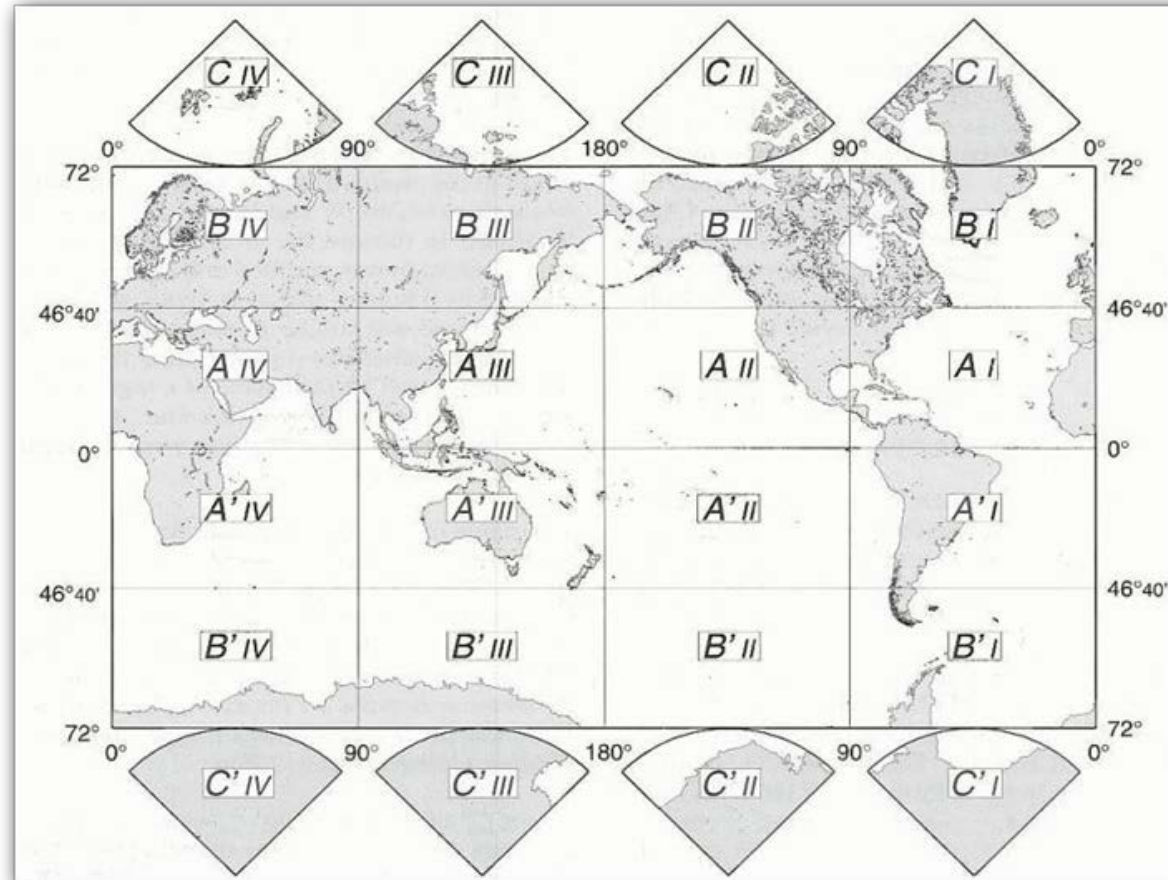
- Prepared by regional HO, reviewed by IHB with contours drawn by French Institut géographique National (IGN)

## Fifth Edition – 1973-1982

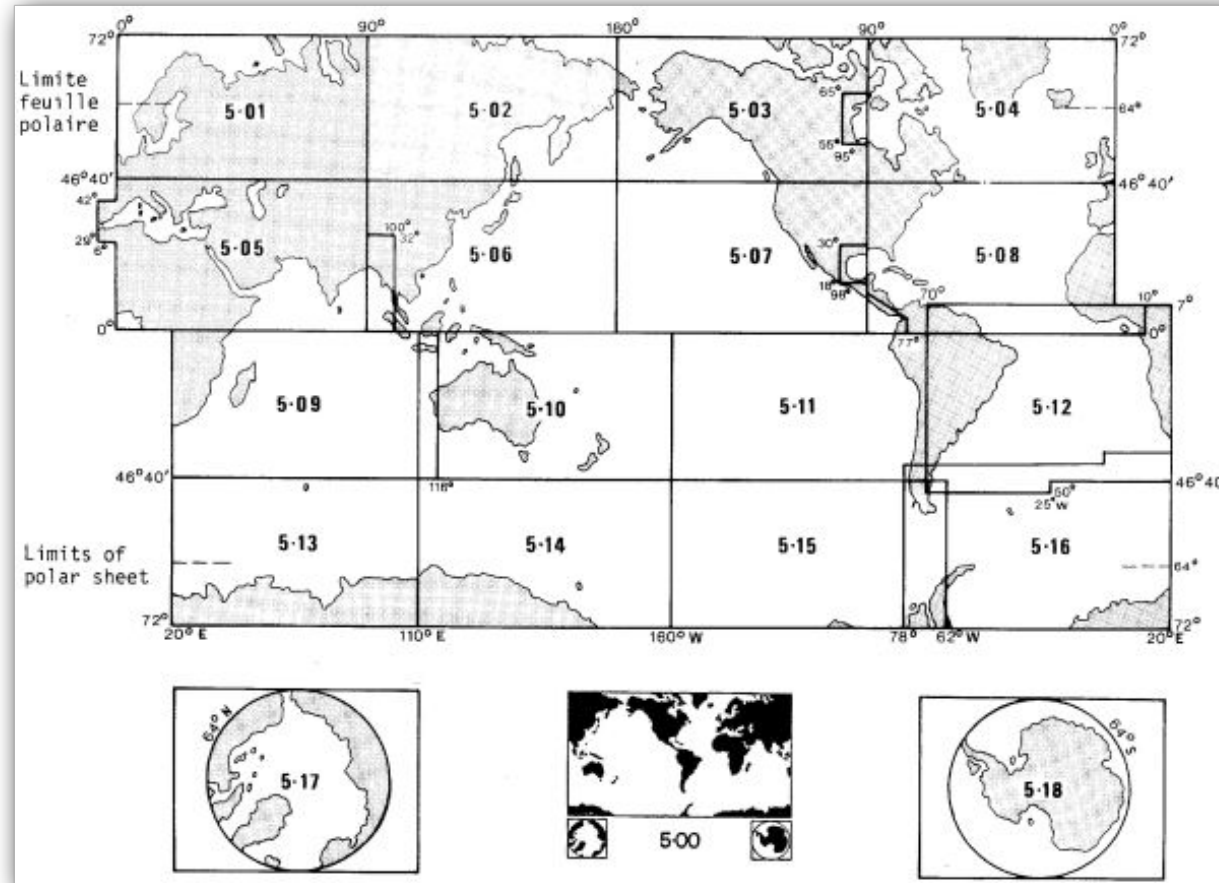
- Responsibility of the joint committee



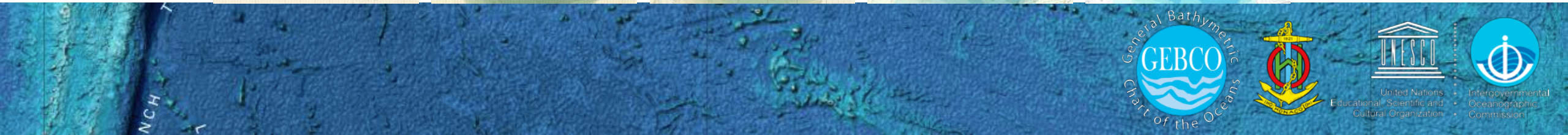
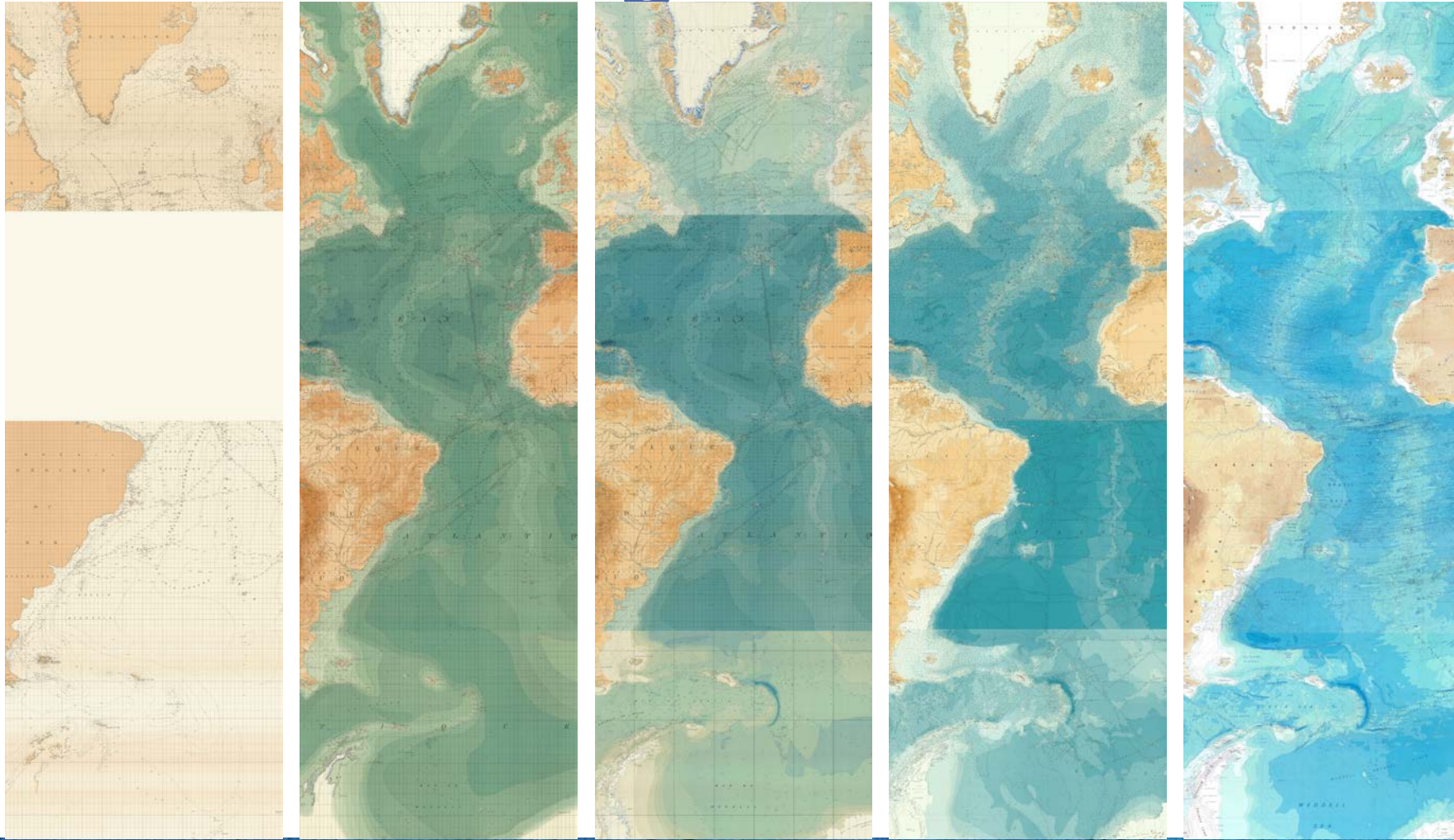
# Chart Indices



# Chart Indices



# Mid-Atlantic Ridge in GEBCO



# Digital GEBCO

**May 1977: a (one man) subcommittee instructed to report on**

**“is there an advantage to having digital bathymetric data?”.**

**1980 – report decided this was a good idea!**

**First Sub Committee on Digital Bathymetry henceforth formed**

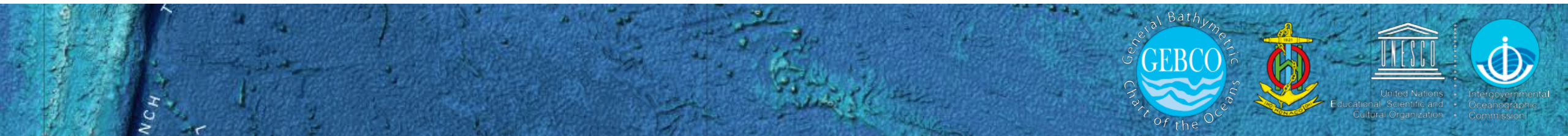
chaired by Mr Gerald N Ewing (Canada)

Chair passed to one **Dr Meirion T Jones** in 1982

**Digitizing the charts began in August 1982**

at the International Gravity Bureau in Toulouse under Georges Balmino

**Completed in 1992.**



# GEBCO & BODC

Digitization was paused in 1989 when BGI had lack of resources

NERC stepped in, in 1990, to fund completion of the project

Support in form of 2 posts:

- GEBCO Bathymetric Editor at the Institute of Oceanographic Sciences – Peter Hunter
- Digital Atlas Manager at BODC – **Pauline Weatherall**

**BODC responsible for providing a global consistent products**

- Digitized charts distributed by BODC on a single 6250bpi magnetic tape in GF3 format (Antarctic first in 1987).
- GEBCO Digital Atlas (GEBCO 94) on CD-ROM



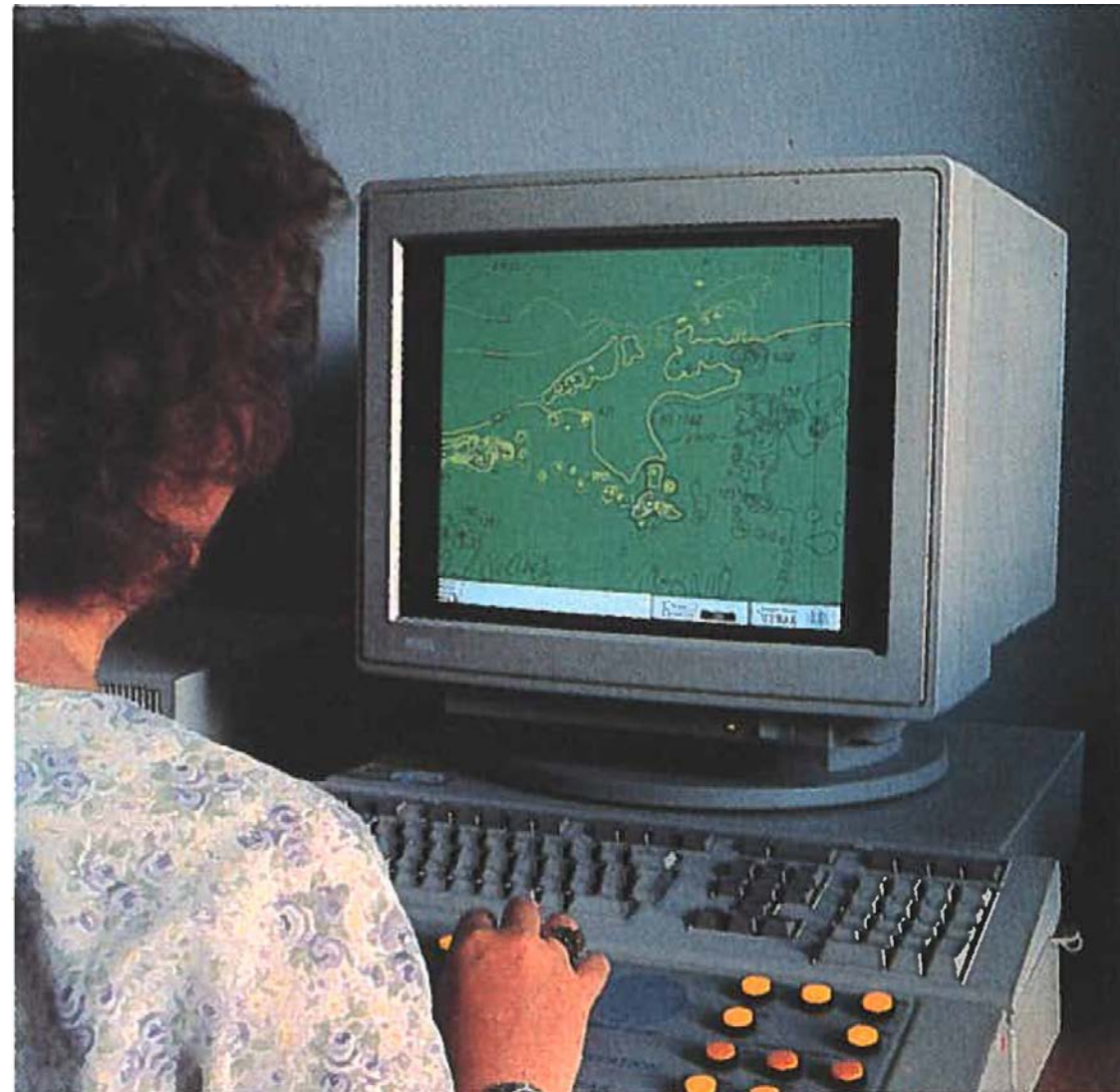


## TERMS OF REFERENCE FOR THE GEBCO DIGITAL ATLAS MANAGER

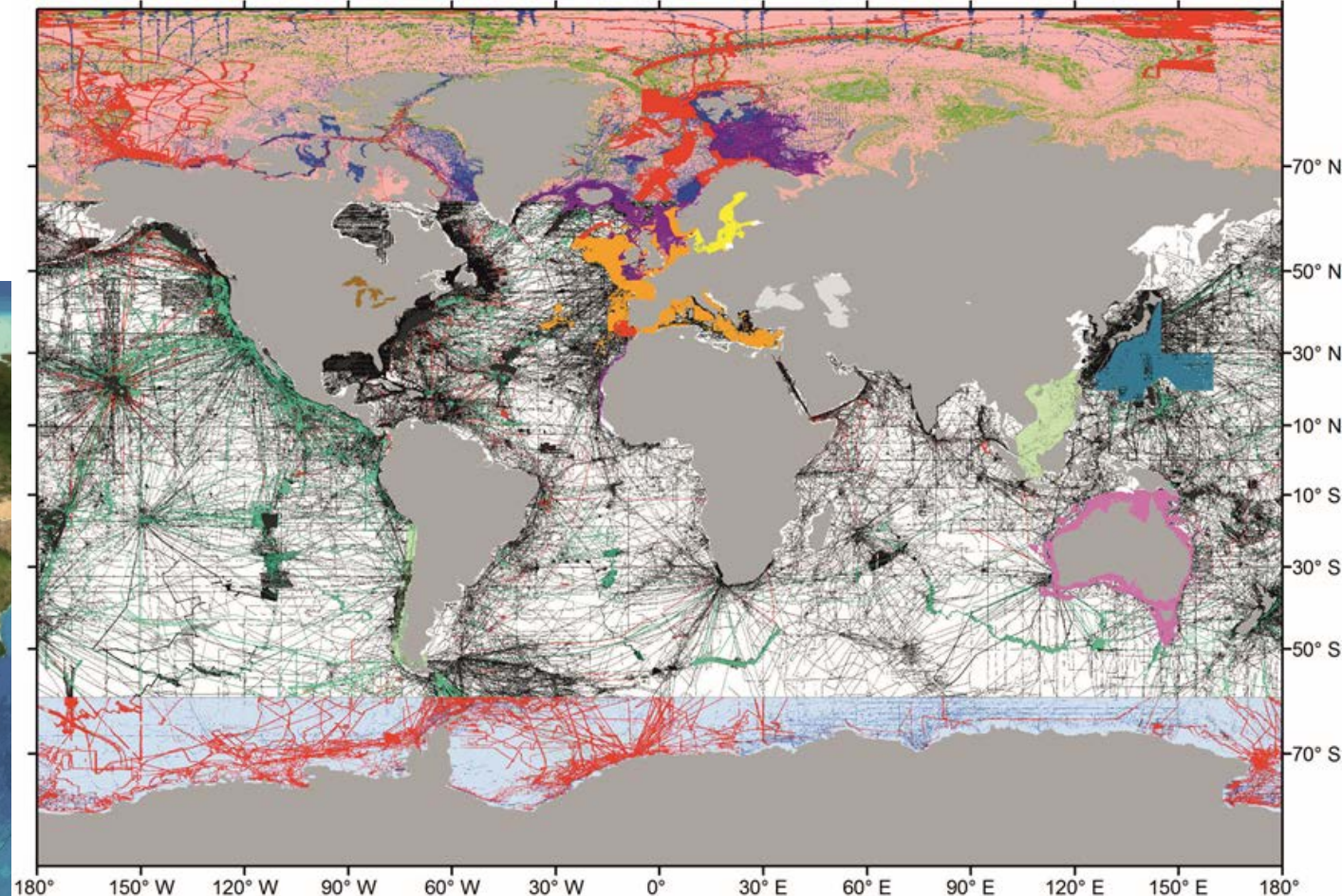
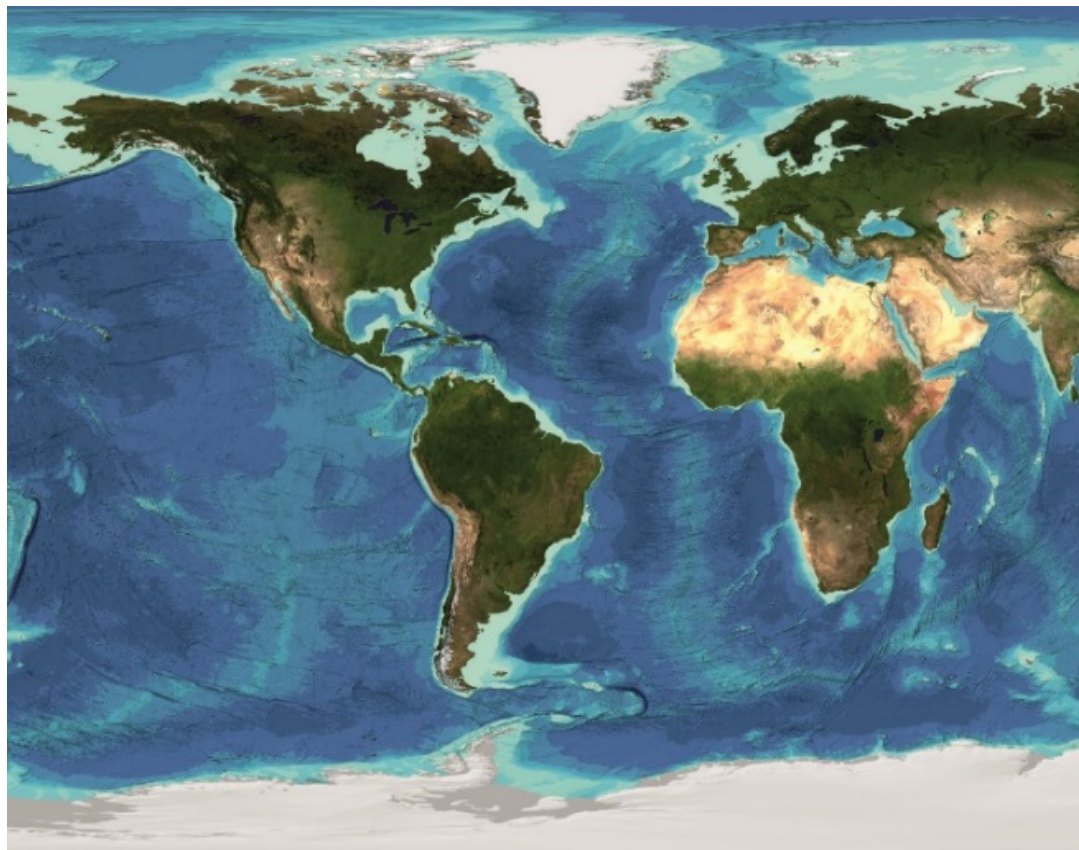
(Miss Pauline Weatherall, British Oceanographic Data Centre, Bidston, UK)

















The GEBCO Digital Atlas Manager will be responsible for:

1. receipt of digital tapes from IGN/BGI, HDNO, JODC, IHB and elsewhere, of digitised contours, ships tracks and geographical names from the 5th edition GEBCO;
2. receipt of tapes of digitised data from other sources (e.g. IOC regional mapping projects);
3. examination and editing of all tapes received for errors, ambiguities and inconsistencies;
4. merging inputs into a unified database in a standard format suitable for subsequent distribution and sales;
5. maintenance and periodical updating of the GDA by the integration of new blocks of data when supplied through the GEBCO Bathymetric Editor, and digitising where necessary;
6. substitution of the existing coastline in the GDA by the new USA-DMA coastline (World Vector Shoreline) making necessary adjustments to nearshore bathymetric contours;
7. researching and implementing new data files such as gridded databases (DTMs);
8. researching and implementing new output presentations from the GDA to meet the needs of users and to demonstrate its flexibility;
9. advising on programmes of output presentations that could be available to users;
10. preparing for conversion of GDA to (e.g.) CD-ROM.



# GEBCO\_2014



- |   |                                |   |  |   |  |
|---|--------------------------------|---|--|---|--|
|   | Region taken from IBCAO V3     |   | LDEO Global Multi-Resolution Topography Synthesis                          |   | 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   |   |  |
|  | Baltic Sea Bathymetry Database |  | Bathymetric contours from charts   |   |  |
|  | Geoscience Australia Grid 2009 |  | North American Great Lakes bathymetry                                      |   |  |
|  | JHOD grid                      |  | Coastal area updated using ENC soundings                                   |   |  |
|  | Olex AS data                   |  | Regions based on pre-prepared grids, (first included in the GEBCO_08 Grid) |   |  |





**CONSERVE AND SUSTAINABLY USE THE  
OCEANS, SEAS AND MARINE RESOURCES  
FOR SUSTAINABLE DEVELOPMENT**

**14** LIFE  
BELOW WATER





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.



United Nations  
Educational, Scientific and  
Cultural Organization



Intergovernmental  
Oceanographic  
Commission

-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



Collaboration and cooperation at  
local, regional and global scales





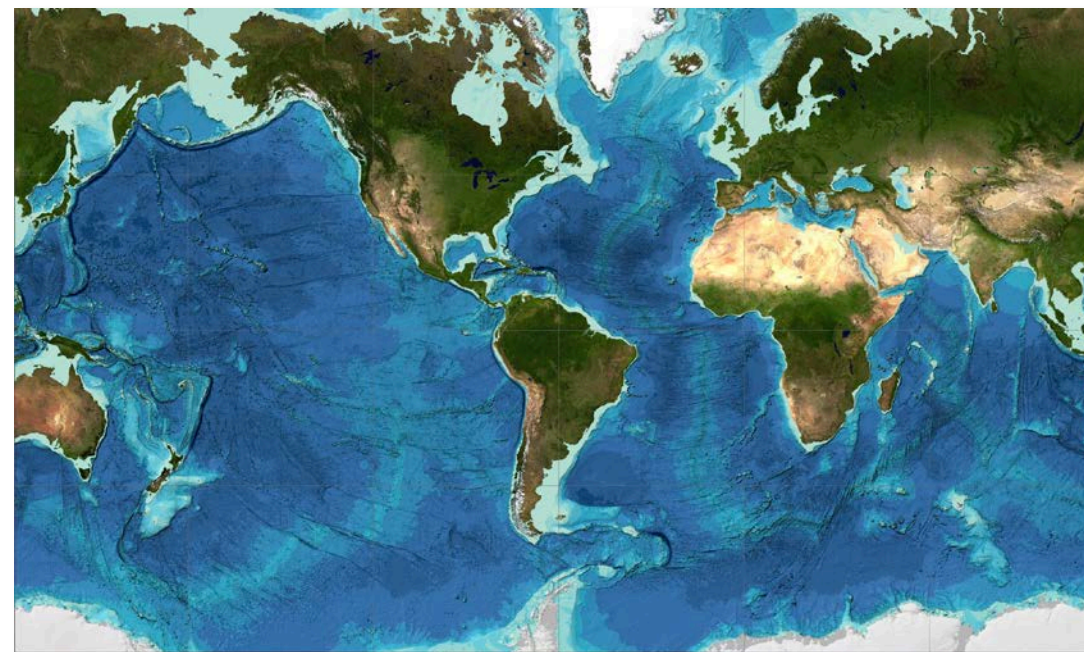


GEBCO Global Products





- 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



[doi:10/c33m](https://doi.org/10.1002/c33m)



# Seabed 2030 – next steps



### GEBCO 2019 Gridded Bathymetry Data Download

**ENTER BOUNDARIES**

40  
-100   -50  
0

[Clear](#)

---

**SELECT FORMATS**

GEBCO 2019	Grid	SID Grid
2D netCDF	<input type="checkbox"/>	<input type="checkbox"/>
INT16 GeoTIF	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Esr ASCII	<input type="checkbox"/>	<input type="checkbox"/>

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**YOUR DATA SELECTION**

**Bounds**  
N 40 W -100 S 0 E -50

**Grid dimensions**  
W 12000 H 9800

**File formats**  
Grid: INT16 GeoTIF  
SID grid: none

**File size (estimated)**  
231 MB

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