General Bathymetric Chart of the Oceans (GEBCO) - mapping the global seafloor

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www.gebco.net

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

United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

About GEBCO

For over one hundred years GEBCO has been at the forefront of producing maps and digital data sets showing the shape of the global seafloor in the deep oceans with the first GEBCO chart series initiated in 1903 by Prince Albert I of Monaco.

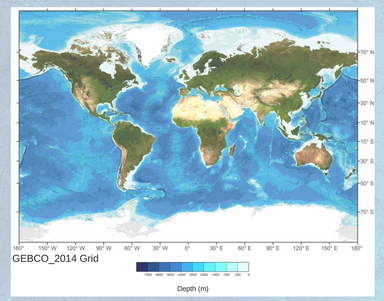
Today the GEBCO community consists of an international group of experts in seafloor mapping who develop a range of data sets and data products with the aim of providing the most authoritative publicly-available bathymetric data sets for the world's oceans.

GEBCO's latest 30 arc-second interval DTM, **GEBCO_2014**, has benefited from contributions from many regional mapping projects such as the International Bathymetric Charts of the Arctic Ocean (IBCAO) and Southern Ocean (IBCSO); the Baltic Sea Bathymetry Database and EMODnet for European waters.

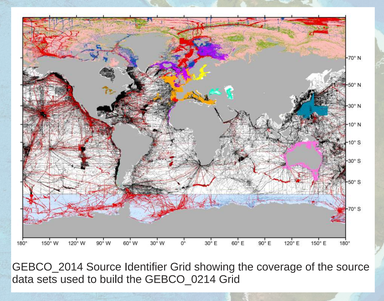
Our products

Global Digital Terrain Model (DTM)

GEBCO makes available a global terrain model at 30 arc-second intervals. The latest version,**GEBCO_2014**, was released in December 2014. It uses depths from bathymetric surveys and depths estimated from satellite altimetry where needed. The grid is accompanied by a Source Identifier (SID) Grid showing which cells are based on soundings and which are interpolated. It marks a significant improvement on the previous release, GEBCO_08.



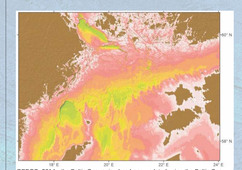
GEBCO_2014 Grid



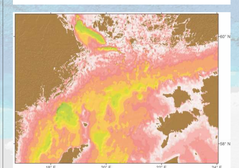
GEBCO_2014 Source Identifier Grid showing the coverage of the source data sets used to build the GEBCO_0214 Grid

The above key provides information on the some of the source data sets included in the GEBCO_2014 Grid.

Below are some comparison plots and details from the new GEBCO_2014 Grid



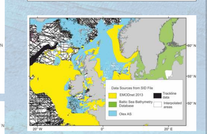
GEBCO_2014 - the Baltic Sea region has been updated using the Baltic Sea Bathymetry Database



GEBCO_08 Grid; note the lack of detail in the central Baltic Sea region compared with the GEBCO_2014 Grid (above)

Baltic Sea region

The GEBCO_2014 Grid includes bathymetry data from the **Baltic Sea Bathymetry Database** (http://data.bshc.pro/). The images on the left show the improvement that this data set has made to the existing GEBCO grid in the central Baltic Sea region.



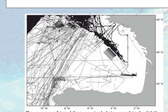
The above image shows a section of the Source Identifier (SID) Grid that accompanies the GEBCO_2014 Grid. It shows which cells are based on measured data and which are based on interpolation.

Depth (m) - legend for Baltic Sea bathymetry images

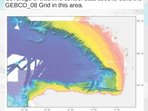
European waters

EMODnet (www.emodnet-hydrography.eu/) is a project, funded by the European Commission, that is developing a Digital Terrain Model (DTM) for European waters from Norwegian Seas through to the Mediterranean Sea.

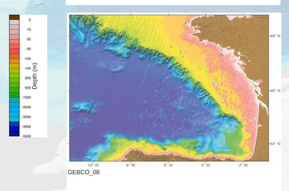
GEBCO is collaborating with EMODnet- using their gridded data set to update its global DTM, and EMODnet is using the GEBCO grid to fill "data gaps" in its model. The images to the right show an example of how the EMODnet data set has improved the GEBCO grid in the Bay of Biscay region.

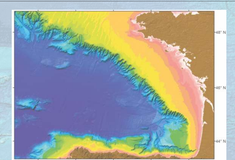


Coverage of trackline control data used to build the GEBCO_08 Grid in this area.



Coverage of the EMODnet 2013 data set for part of the Bay of Biscay region.





GEBCO_2014 Grid - produced by merging the GEBCO_08 Grid and the EMODnet 2013 grid. It shows a marked improvement on the GEBCO_08 Grid.

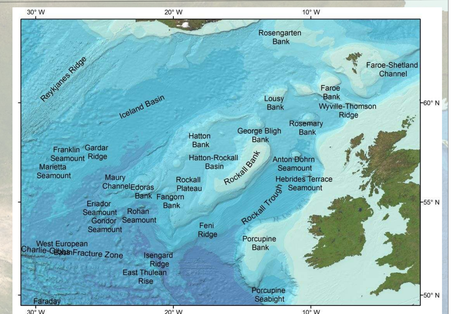
GEBCO_08

Undersea Feature Names

The GEBCO Sub-Committe on Undersea Feature Names (SCUFN) maintains and makes available a gazetteer giving the name, geographic location and extent of features on the sea floor.

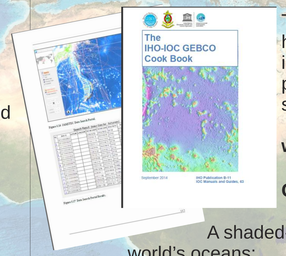
The data set is available to view, search and download via the internet in GIS-friendly formats such as shapefile and KML and as a web service.

www.gebco.net/data_and_products/undersea_feature_names/



Displaying information from the GEBCO Gazetteer of Undersea Feature Names

IHO-IOC GEBCO Cook Book



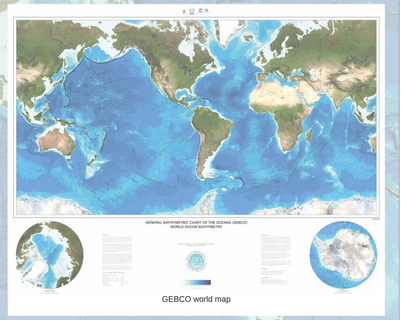
The Cook Book is a technical reference manual on how to build bathymetric grids. It includes information on: data gathering and cleaning; producing bathymetric grids plus information on some of the software packages available to do this work.

www.gebco.net/data_and_products/gebco_cook_book/

GEBCO world map

A shaded-relief colour map image showing the bathymetry of the world's oceans:

www.gebco.net/data_and_products/gebco_world_map/



GEBCO world map

Web services

We make available a Web Map Service (WMS) providing imagery from the GEBCO 30 arc-second grid in shaded relief form. It includes a layer showing the SID grid coverage - i.e. those grid cells constrained by measured data in the GEBCO grid.

www.gebco.net/data_and_products/gebco_web_services/web_map_service/

GEBCO Digital Atlas

The GDA is a collection of GEBCO's grids and bathymetric contour data sets on DVD with accompanying viewing and data access software: **www.gebco.net/data_and_products/gebco_digital_atlas/**

Other activities

Nippon Foundation/GEBCO Training Programme

The Nippon Foundation/GEBCO Training Programme is helping to train a new generation of seafloor mappers. The 12 month-course leads to a Postgraduate Certificate in Ocean Bathymetry and has been held at the University of New Hampshire, USA since 2004. Funding for the programme is provided by the Nippon Foundation of Japan.

THE NIPPON FOUNDATION

Since it began over 60 scholars have taken part in the course, representing 32 coastal states — helping to create and strengthen GEBCO's links in all regions.

www.gebco.net/training/