



GENERAL BATHYMETRIC CHART OF THE OCEANS (GEBCO)
WORLD OCEAN BATHYMETRY

BACKGROUND

The GEBCO community consists of an international group of experts in seafloor mapping who work on the development of a range of bathymetric data and data products with the aim of providing the most authoritative publicly available bathymetry for the world's oceans. It operates under the joint auspices of the International Hydrographic Organization (IHO) of UNESCO and the International Geographical Union (IGU).

First proposed at the 14th International Congress on Geography held in 1989 in Berlin, the General Bathymetric Chart of the Oceans was established in 1993 under the direction of Prince Albert of Monaco. It was intended that bathymetric data from all cruises and expeditions, regardless of their national origin, would be brought together in one series of maps covering the entire world ocean. That intent was realized as oceanographic and hydrographic organizations and institutions, governments, commercial entities, and scientists have supplied the data on which five printed editions of GEBCO were produced between 1982 and 1985.

As part of the transition to digital cartography, the depth contours of the GEBCO Fifth Edition were digitized and put onto a CD-ROM (the GEBCO Digital Atlas, or GDA) in 1994. This digital data base was then improved as new bathymetric data became available, and new versions of the GDA were published in 1997 and 2005. A 30 arc-second grid was produced in 2008 by combining quality-controlled ship depth soundings with interpolations between soundings guided by satellite-derived gravity data following the method developed by Walter H.C. Smith and David T. Sandwell. The Arctic Ocean and areas above 64°N is in this grid portrayed by the International Bathymetric Chart of the Arctic Ocean (IBCAO). This combined grid of the World Ocean bathymetry is the base for this printed map and the undersea feature names are from the GEBCO Gazetteer, publication S-8 (2010).

Future editions of the GDA are dependent upon continuing contributions of data from the seafloor community. It is hoped that wide dissemination of this map will highlight the importance of international collaboration in projects such as the GDA, and will result in contributions of new bathymetric data to GEBCO. Further information on GEBCO can be found at www.gebco.net.

JOINT IHO-IGU GUIDING COMMITTEE FOR GEBCO 2012

Dr Robin K. H. Fothergill (Chairman)	New Zealand
Dr Christopher G. Fox (Vice-Chairman)	USA
Ing Erlend Gyllen	France
Dr Mario Jakobsson (Chairman IAGLR)	Italy
Dr Mario Jakobsson (Chairman IAGLR)	Germany
Dr Walter H.C. Smith (Chairman IAGLR)	USA
Dr Hyeon-Ho Bui	Republic of Korea
Dr Liang A. Tsai	USA
Dr Naoki Yoshida	Japan
Dr Kunita Yoshida	Japan
Dr David Clark (Secretary)	USA



MAP PRODUCTION

With the advent of the GEBCO Digital Atlas (GDA), it was intended that the GDA would form the basis of any future printed version of GEBCO. It is recognized that for certain audiences, such as geologists and modelers of climate or tectonics, the GDA is the ideal means of dissemination of bathymetric information. However, for other purposes a printed version of the bathymetric map is still the preferred representation. This map, at a scale of 1:25,000,000 is the second GEBCO printed publication based on the digital bathymetry.

The printed map, initiated as a laboratory workshop project of the GEBCO/NIPOON Foundation Ocean Mapping Program at the Center for Coastal and Ocean Mapping of the University of New Hampshire, USA, is a cartographic representation of the bathymetry of the world ocean floor, based upon the GEBCO 08 bathymetric grid (30 arc seconds resolution) available through www.gebco.net. Bathymetry is portrayed as shaded relief, hypsometrically colored with tint boundaries at 200m, 500m, and every 1000m.

Bathymetric source data and compilation are described at www.gebco.net. Land imagery is from the satellite mosaic Blue Marble (NASA). Shoreline is from World Vector Shoreline (National Geospatial Data Center). Revision of the seafloor was done with the GIS Expedition software, data merging and cartographic production was done with the ArcGIS Professional (Esri) and Global Mapper (Global Mapper Software).

This map is produced and printed with support from the Nippon Foundation of Japan and Stockholm University, Sweden. Two of the cartographers, LCDRs Hago Morimoto and Akabara Akabara, are former students of the GEBCO/NIPOON Foundation training program in Ocean Mapping at the Center for Coastal and Ocean Mapping/NOAA Joint Hydrographic Center of the University of New Hampshire, USA.

REFERENCES

General Bathymetric Chart of the Oceans (GEBCO) www.gebco.net
Blue Marble satellite mosaic, NASA Earth Observatory, www.nasa.gov/content/blue_marble/
World Vector Shoreline, National Geospatial Data Center, <http://www.ngs.noaa.gov/geod/shapefiles/>

CARTOGRAPHERS

Dr Mario Jakobsson, Stockholm University, Sweden
Dr Hans-Werner Scherka, Alfred Wegener Institute (AWI), Germany
Dr Hyeon-Ho Bui, British Oceanographic Data Centre, UK
Dr Naoki Yoshida, Geol. Inst. of Russian Academy of Science, Russian Federation
LCDR Hago Morimoto, Princeton Navy Hydrographic Office, Peru
LCDR Akabara Akabara, Nigerian Navy Hydrographic Office, Nigeria