

The GEBCO_2014 Grid



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In December 2014 GEBCO released its latest global bathymetric model, the GEBCO_2014 grid. The grid is a global terrain model for oceans and land at 30 arc-second intervals and is shown in Fig. 1. The grid uses as a base the SRTM30_plus v5 data set - a gridded data set developed from a database of ship-track soundings with interpolation between soundings guided by satellite-derived gravity data. Where they improve on this model, data sets generated by other methods have been included in the GEBCO_2014 grid.

This release of the GEBCO_2014 grid is a substantial update to the previous version (GEBCO_08). Approximately 33% of ocean grid cells (not area) have been updated in GEBCO_2014 compared with the previous release, including both new bathymetric data sets and grids and interpolated depth values.

The latest GEBCO grid has greatly benefited from contributions from regional bathymetric projects and other data providers including: the International Bathymetric Chart of the Arctic Ocean (IBCAO) v3; the International Bathymetric Chart of the Southern Ocean (IBCSO) v1; EMODnet 2013, and the Baltic Sea Bathymetry Data Base.

Comparisons between GEBCO_2014 and the previous release, GEBCO_08, in some of the updated areas are shown in Figs. 3,4 and 5 showing the improvements that these new data sets are making to the global GEBCO grid.

The GEBCO grid is accompanied by a Source Identifier (SID) grid indicating which cells are based on soundings or existing grids and which are interpolated. The SID grid is shown in Fig. 2 along with a key identifying the data sets included in the GEBCO_2014 grid.

Further details about the GEBCO_2014 grid can be found in: Weatherall P., K. M. Marks, M. Jakobsson, T. Schmitt, S. Tani, J. E. Arndt, M. Rovere, D. Chayes, V. Ferrini, and R. Wigley (2015), A new digital bathymetric model of the world's oceans, Earth and Space Science, 2, doi: 10.1002/2015EA000107. This manuscript is available for free download from: <http://onlinelibrary.wiley.com/doi/10.1002/2015EA000107/full>.

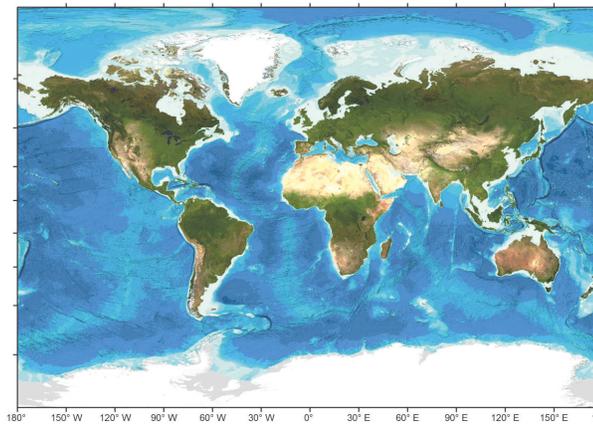


Fig. 1 - The GEBCO_2014 grid

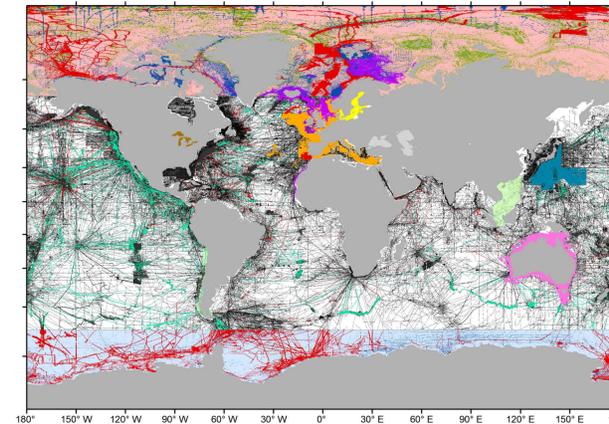


Fig. 2 - Source Identifier (SID) grid which references the source data set to the corresponding grid cell in GEBCO_2014

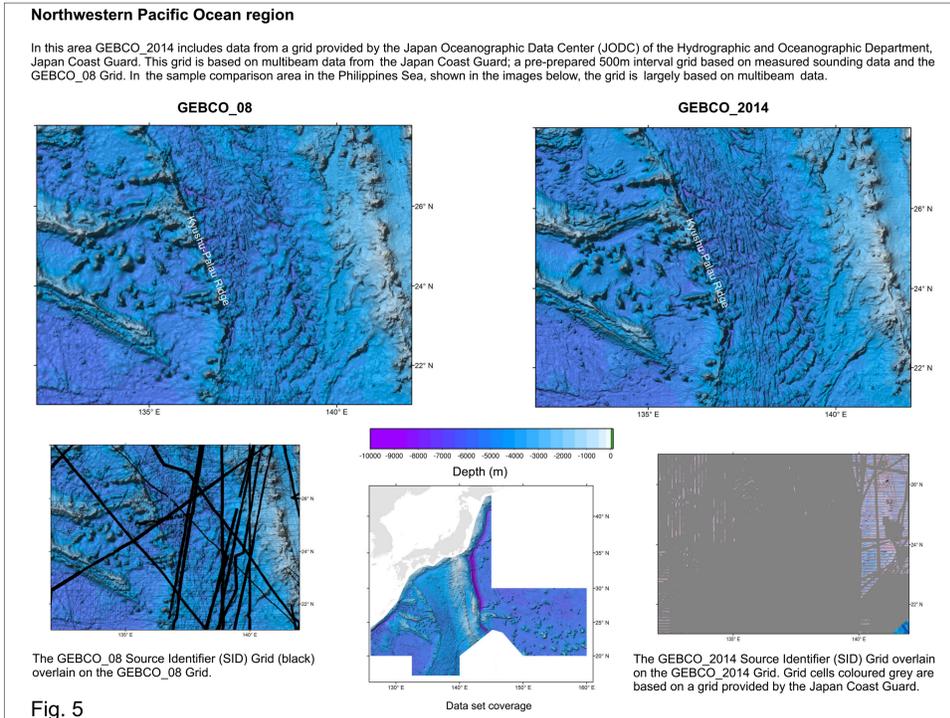
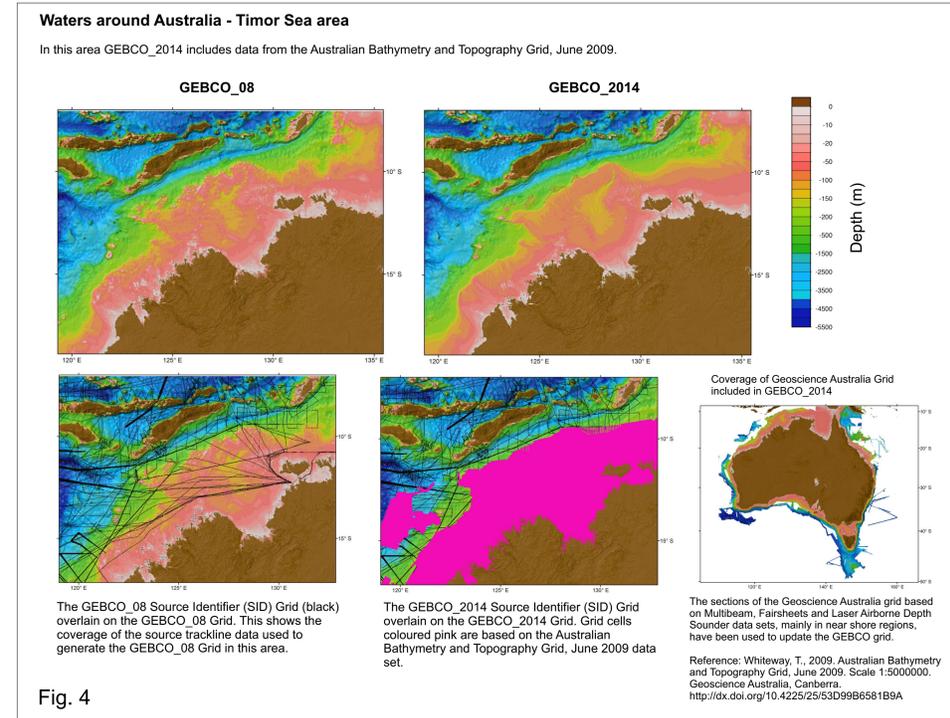
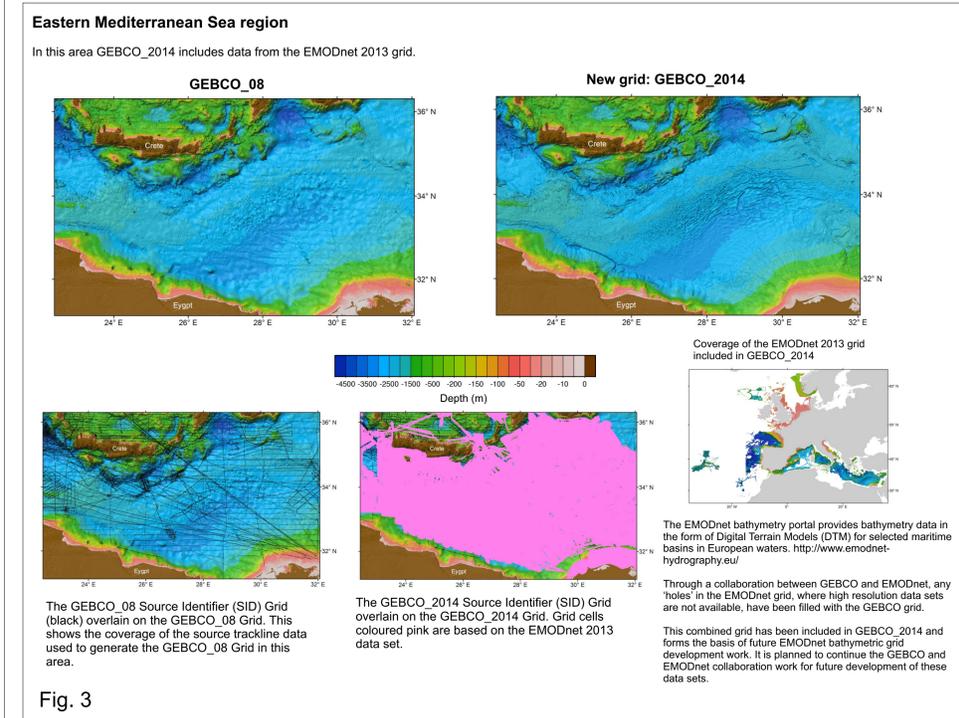
Key for the GEBCO_2014 SID grid

Region taken from IBCAO v3	Single beam bathymetry
Region taken from IBSCO v1	Bathymetric contours from charts
EMODnet 2013	North American Great Lakes bathymetry
Baltic Sea Bathymetry Database	Coastal area updated using ENC soundings
Geoscience Australia Grid 2009	Regions based on pre-prepared grids, first included in the GEBCO_08 Grid
Japan Oceanographic Data Center (JODC) of the Japan Coast Guard Grid	Trackline control information from the SRTM30_plus (v5) base grid
Olex AS data	Region based on interpolation guided by satellite-derived gravity data within the SRTM30_plus (v5) base grid
LDEO Global Multi-Resolution Topography Synthesis	
Multibeam bathymetry	

Purple text indicates data sets new to this release of the GEBCO grid, including regional grids: IBCAO v3, IBSCO v1, EMODnet 2013, Geoscience Australia Grid 2009, grid for waters around Japan, data sets supplied by LDEO plus additional ENC data sets.

Fig. 2 shows the content of the GEBCO_2014 SID grid. Within this data set, each grid cell is assigned a number (or index) which references the source data set that the corresponding grid cell in the GEBCO_2014 grid is based on.

Comparisons between GEBCO_08 and GEBCO_2014 in the some of the regions updated in this release



GEBCO's gridded data sets: www.gebco.net/data_and_products/gridded_bathymetry_data/

GEBCO's data sets and products: www.gebco.net/data_and_products/

Regional mapping: www.gebco.net/regional_mapping/

Undersea Feature Names: www.gebco.net/data_and_products/undersea_feature_names/

Web services: www.gebco.net/data_and_products/gebco_web_services/

GEBCO world map: www.gebco.net/data_and_products/gebco_world_map/

IHO-IOC GEBCO Cook Book: www.gebco.net/data_and_products/gebco_cook_book/

Nippon Foundation/GEBCO training project: www.gebco.net/training/training_project/