



**British Oceanographic
Data Centre**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Updating the GEBCO_08 Grid with regional compilations and surveys

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GEBCO TSCOM/iSCRUM meeting, SIO, October 2011



Grid update work

- **Release of an updated version of the GEBCO_08 Grid**
- **Grid update work in progress**



A world map showing the continents of North America, South America, Europe, Africa, Asia, and Australia. The map is rendered in a light blue and green color scheme, with the oceans in shades of blue and the landmasses in shades of green and brown. The map is centered on the Atlantic Ocean.

Grid update work

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Other GEBCO related activities

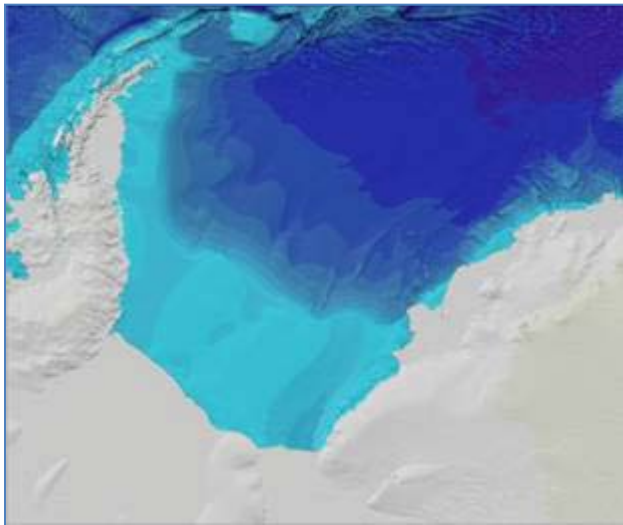
- **Development work**
- **Access to GEBCO's data sets and web site**

Release of an updated version of the GEBCO_08 Grid

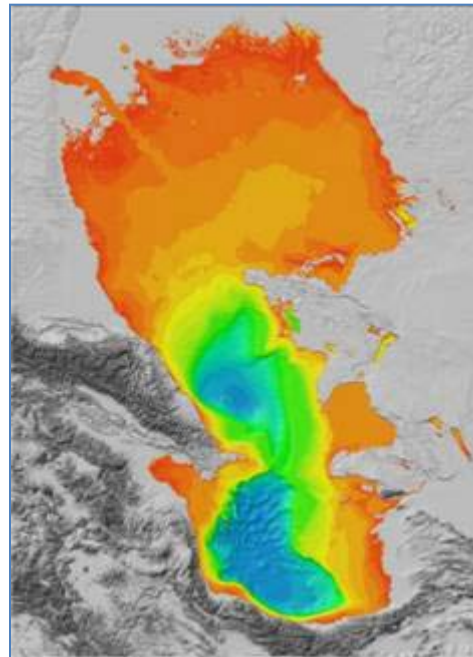
The latest version of the GEBCO_08 Grid, a global terrain model at 30 arc-second intervals, was released in November 2010.

This release includes updates for :

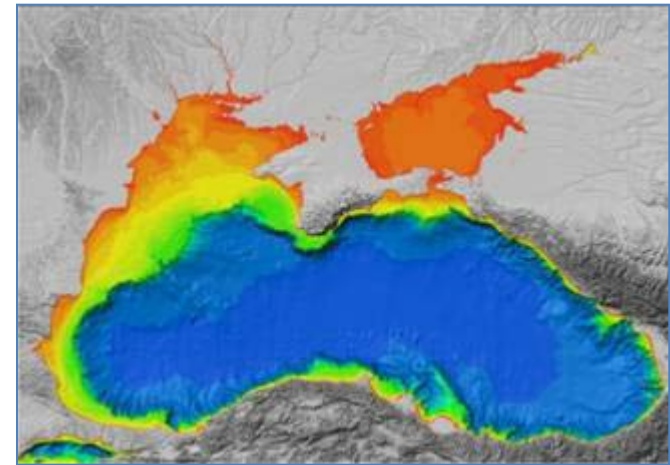
Weddell Sea



Caspian Sea



Black Sea



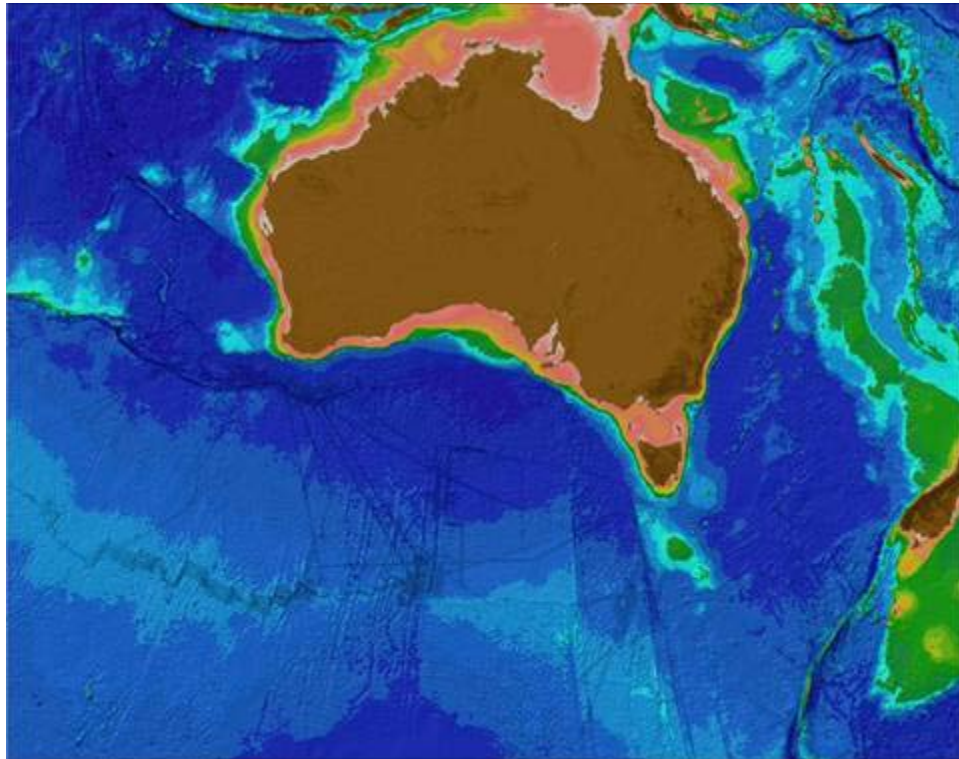
Grid update work in progress

It is aimed that the GEBCO_08 Grid will be frequently updated. Some of the planned updates for the next release includes data from:

- Geoscience Australia's Bathymetry and Topography Grid, 2009**
- Sub-regions from the Olex data set**
- ENC-extracted bathymetric soundings for the South China Sea region**
- Data from the LDEO Global Multi-Resolution Topography (GMRT) synthesis (400m resolution)**
- Gulf of Cadiz region – using a grid based on multibeam data**
- Great Lakes bathymetry**

Grid update work in progress

**Inclusion of data from the Geoscience
Australia (GA) Bathymetry and Topography
Grid, 2009**



Grid update work in progress - inclusion of data from GA Grid

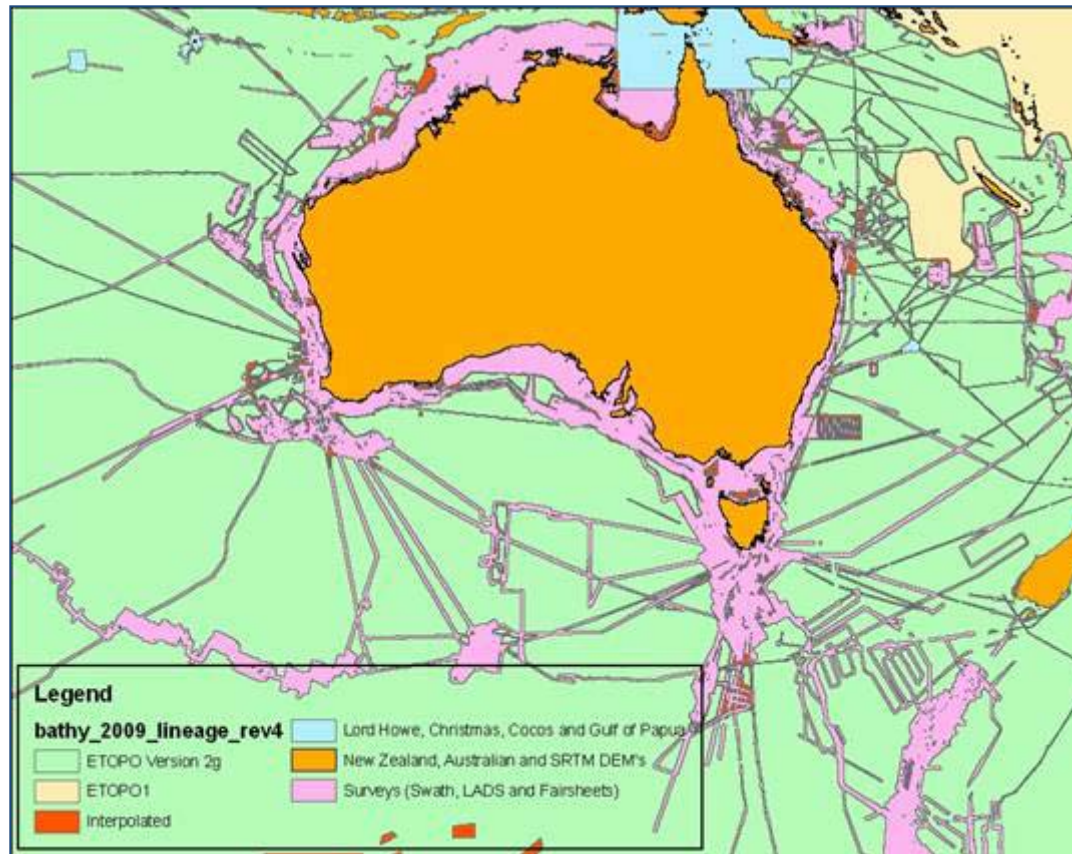
The data set covers the area 92 E-172 E; 8 S-60 S and is at 9 arc-second intervals.

Work is in progress to include data from the grid for near-shore regions around Australia that is based on:

- Multibeam data**
- Fairsheets (1:250,000 Series)**
- Laser Airborne Depth Sounder (LADS) data**

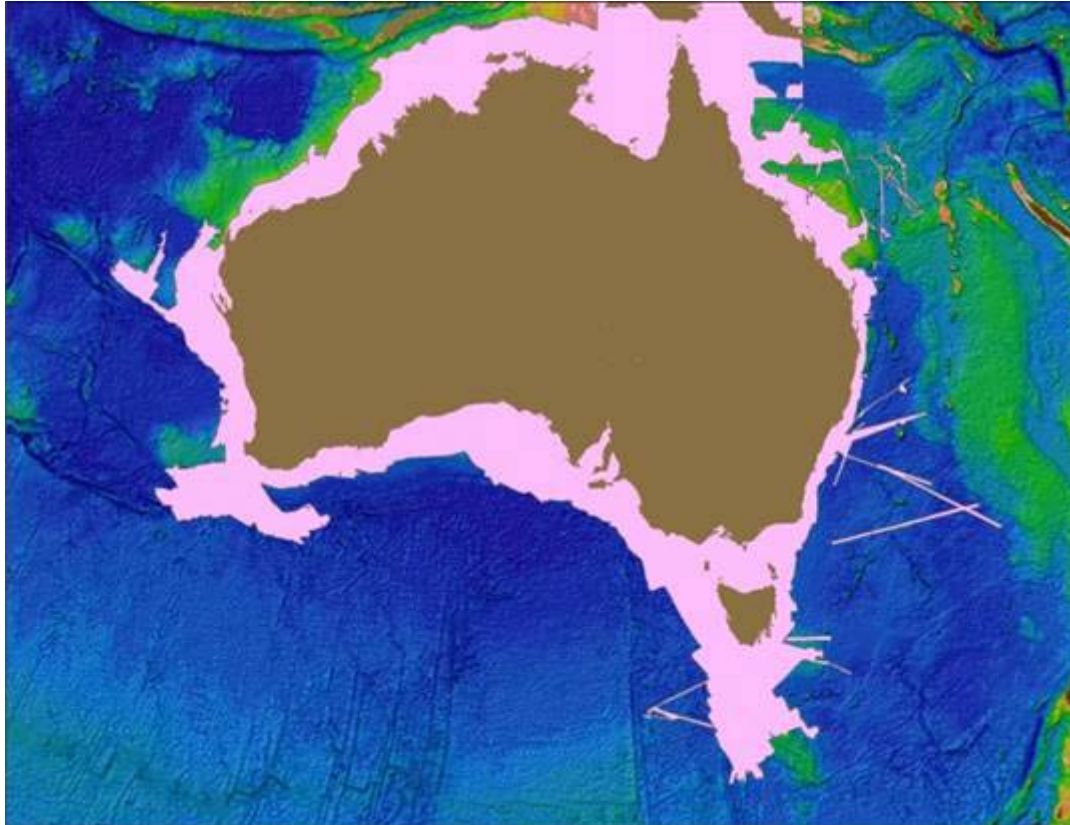
Grid update work in progress - inclusion of data from the GA Grid

Lineage of data set used in the development of the grid



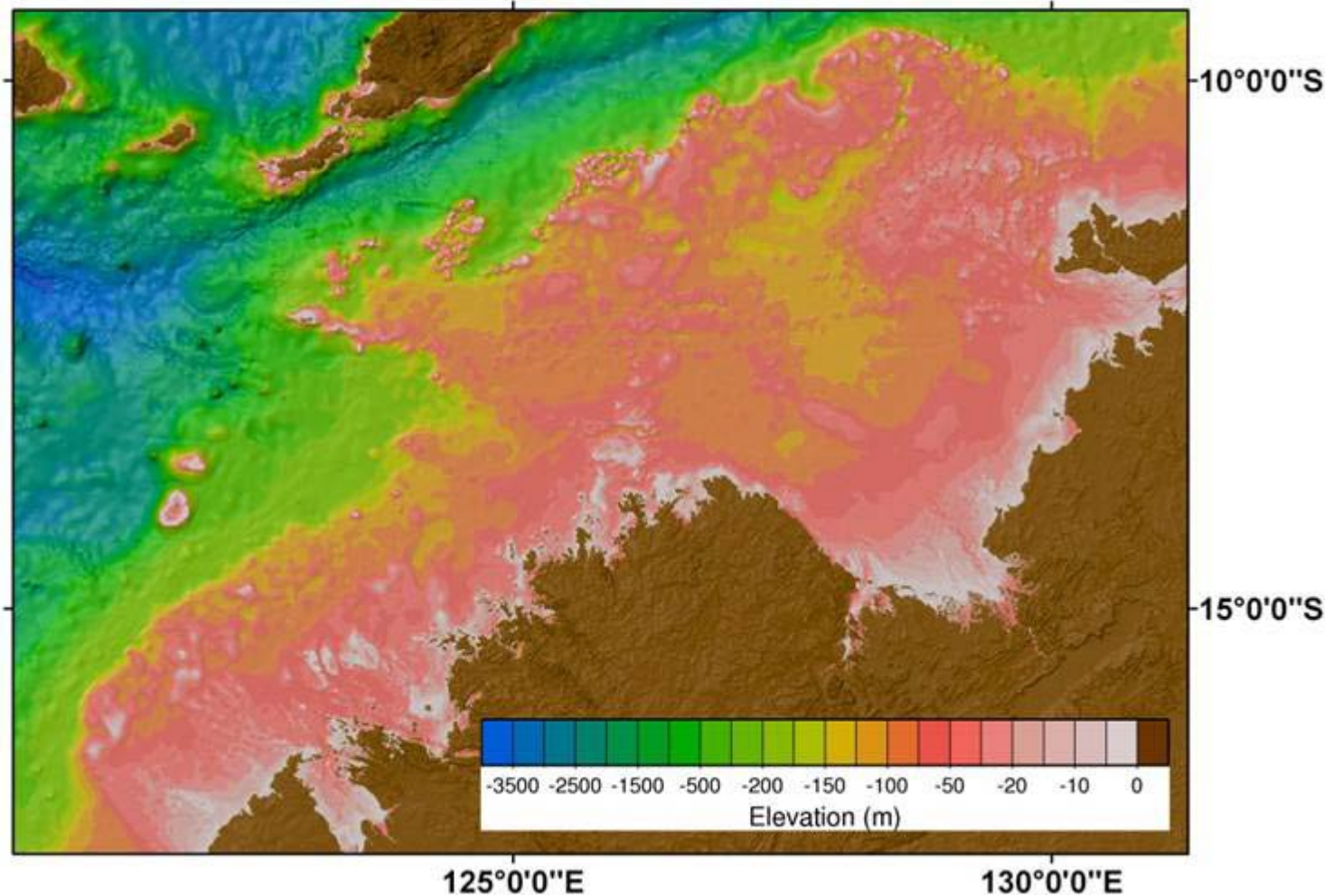
Grid update work in progress - inclusion of data from the GA Grid

Outline of the region of the GA grid (using areas based on multibeam, fairsheets and LADS data) proposed for inclusion in the GEBCO_08 Grid.



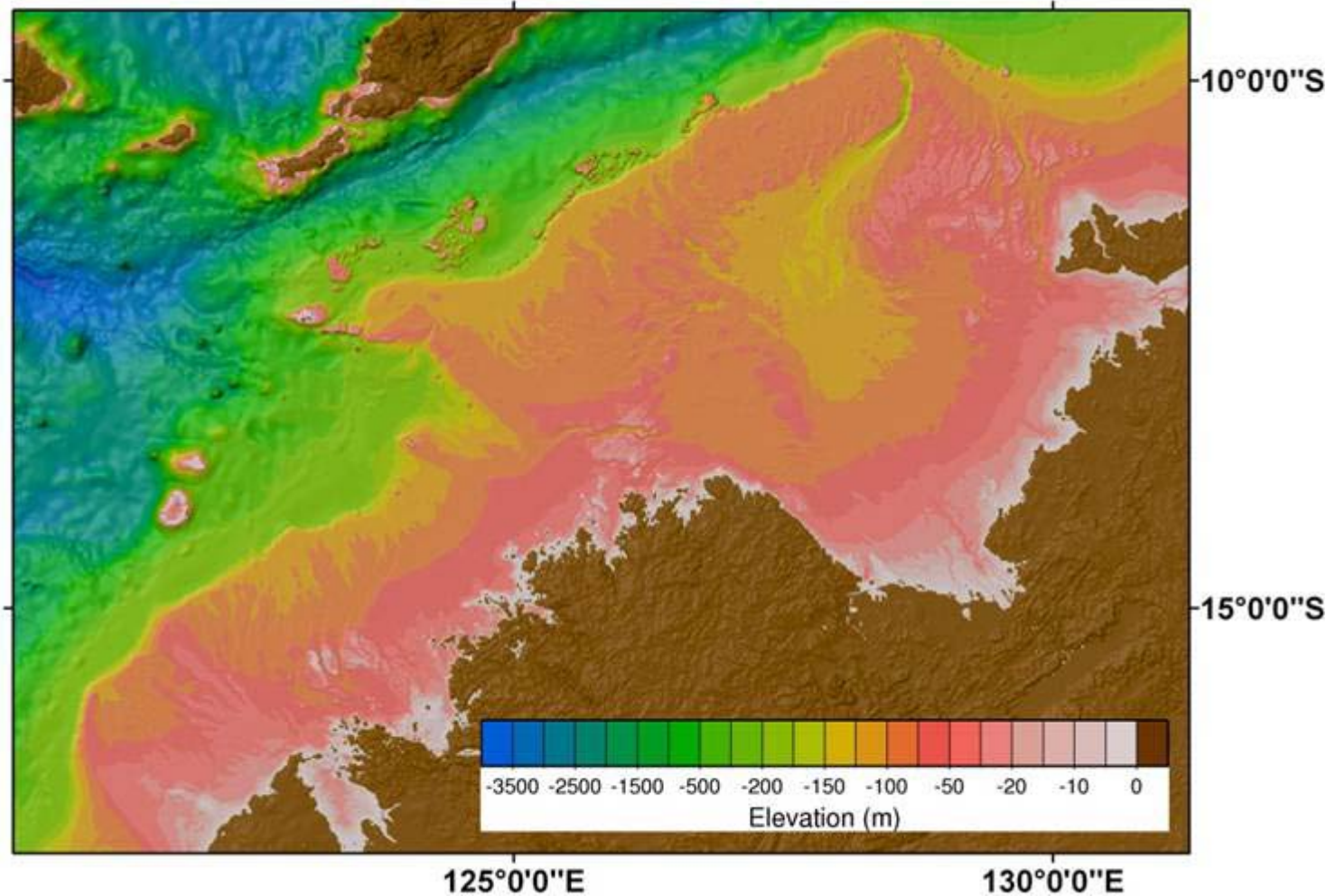
Grid update work in progress - inclusion of data from the GA Grid

Current GEBCO_08 Grid – off north western coast of Australia



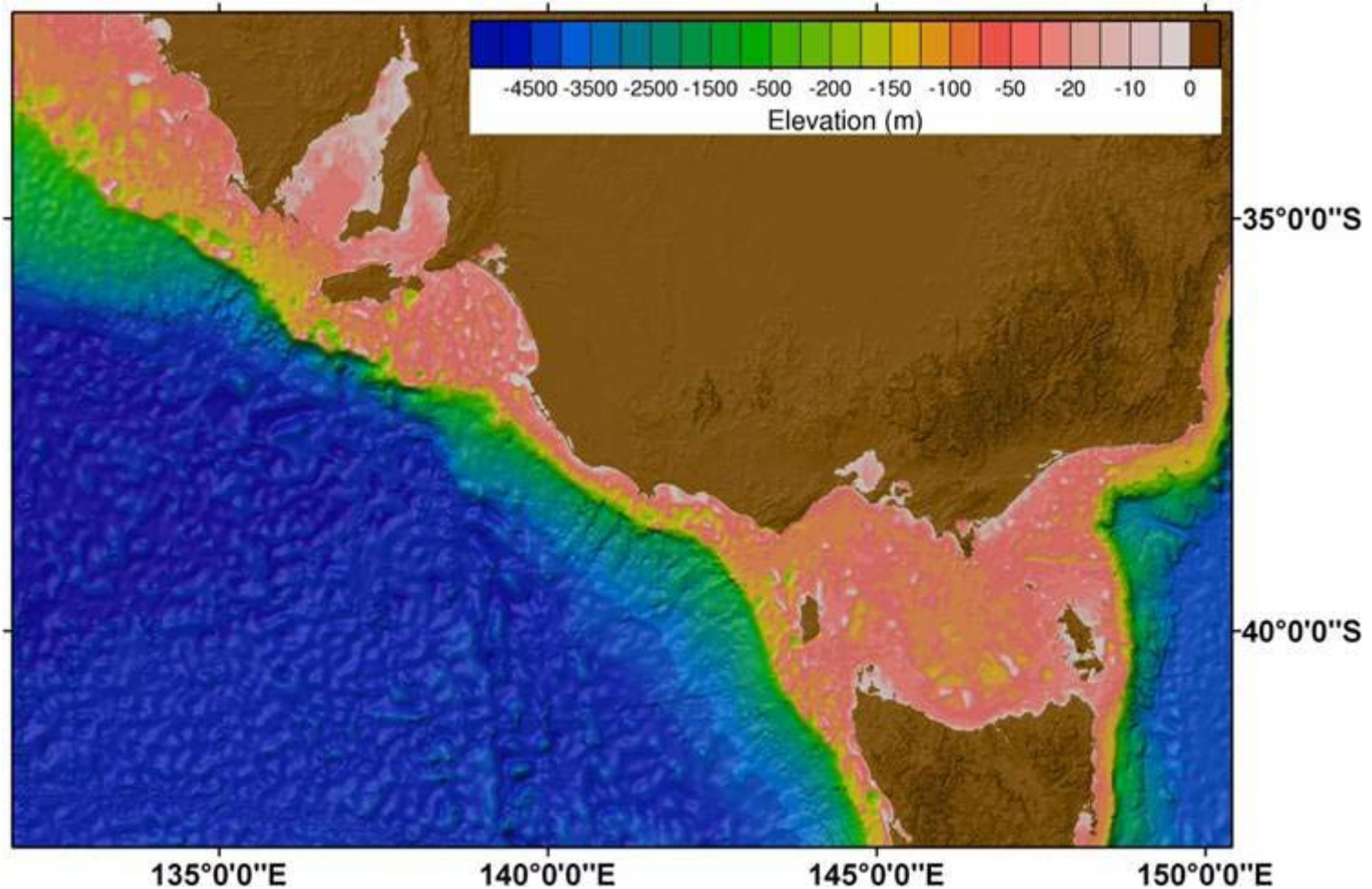
Grid update work in progress - inclusion of data from the GA Grid

Combined GEBCO_08 and GA grid



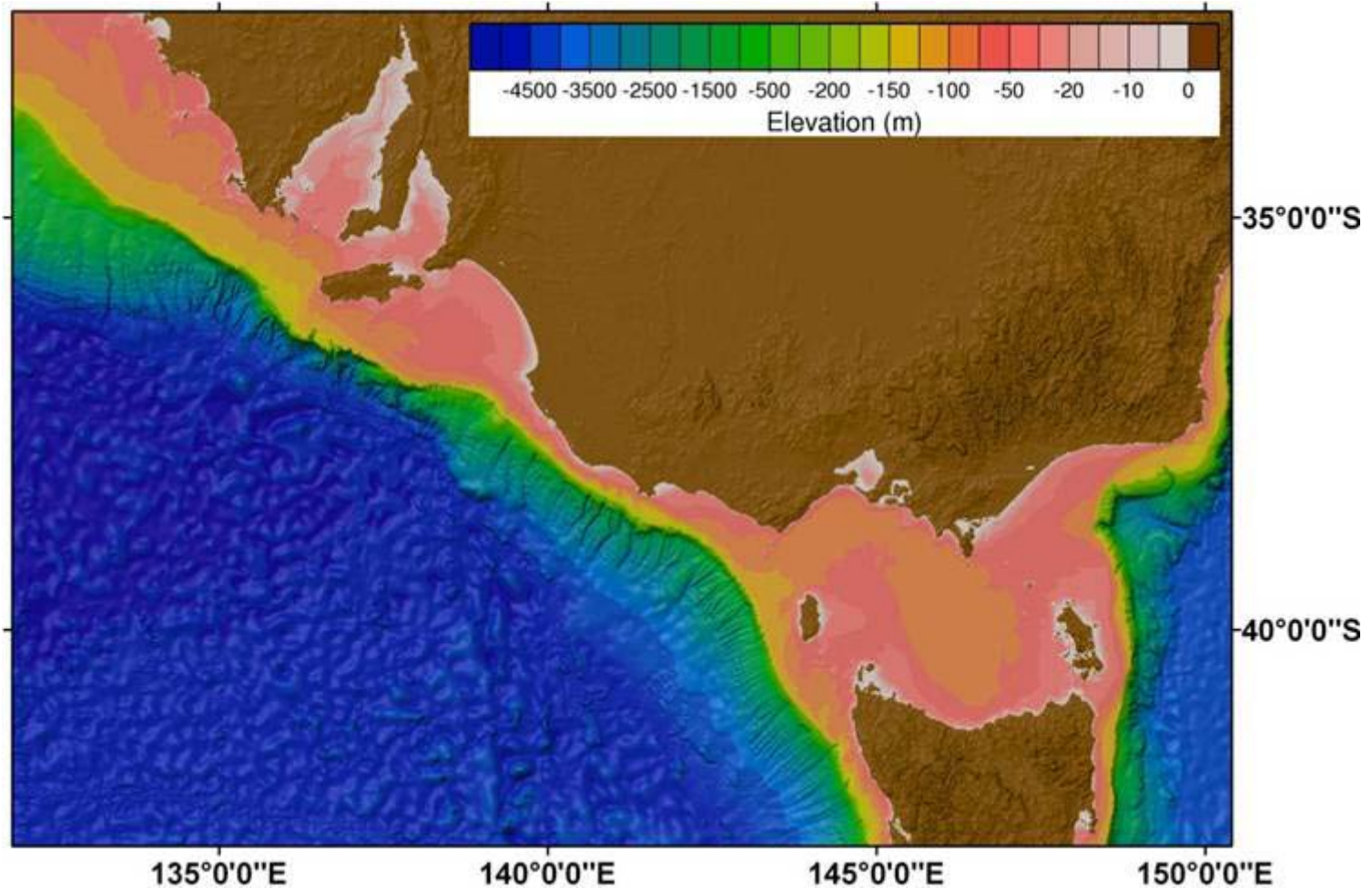
Grid update work in progress - inclusion of data from the GA Grid

Current GEBCO_08 Grid



Grid update work in progress - inclusion of data from the GA Grid

Combined GEBCO_08 and GA grid

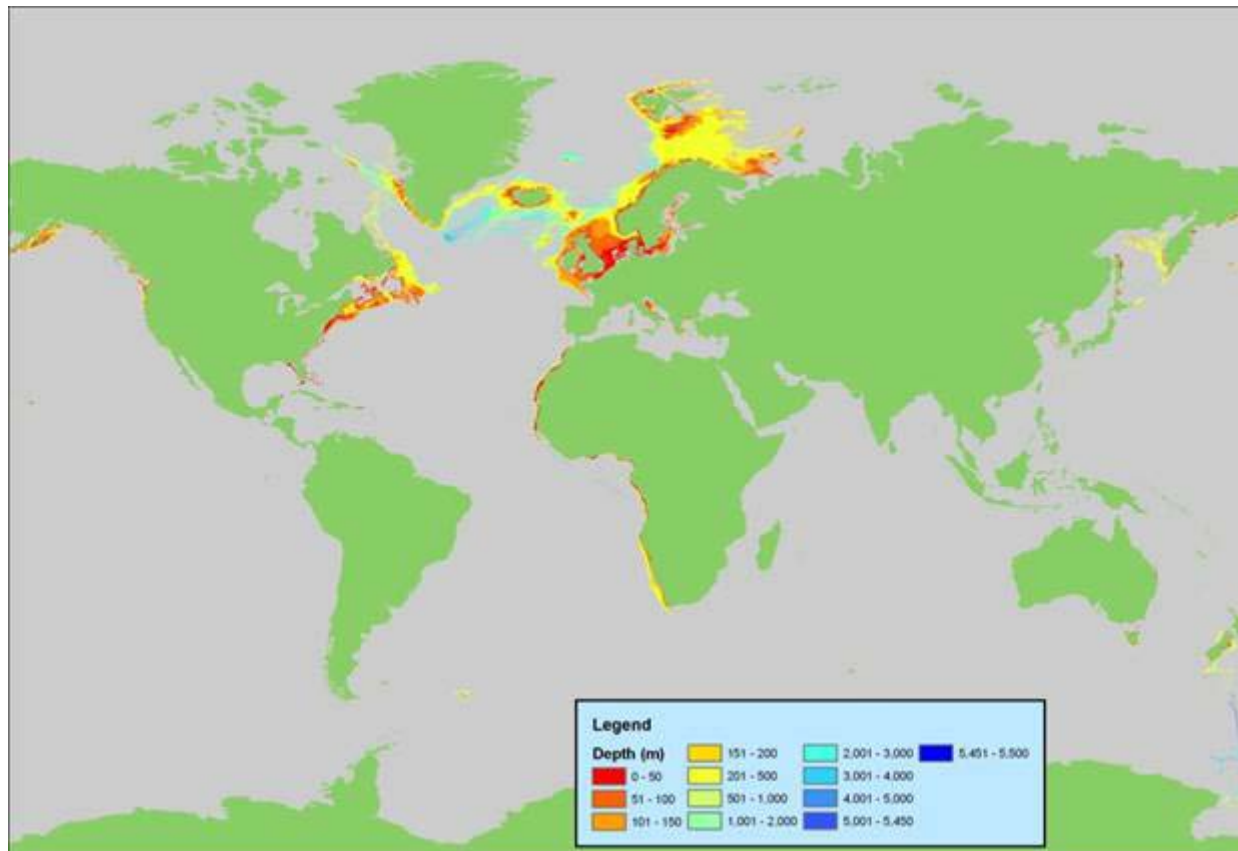


Grid update work in progress

Inclusion of data from the Olex data set

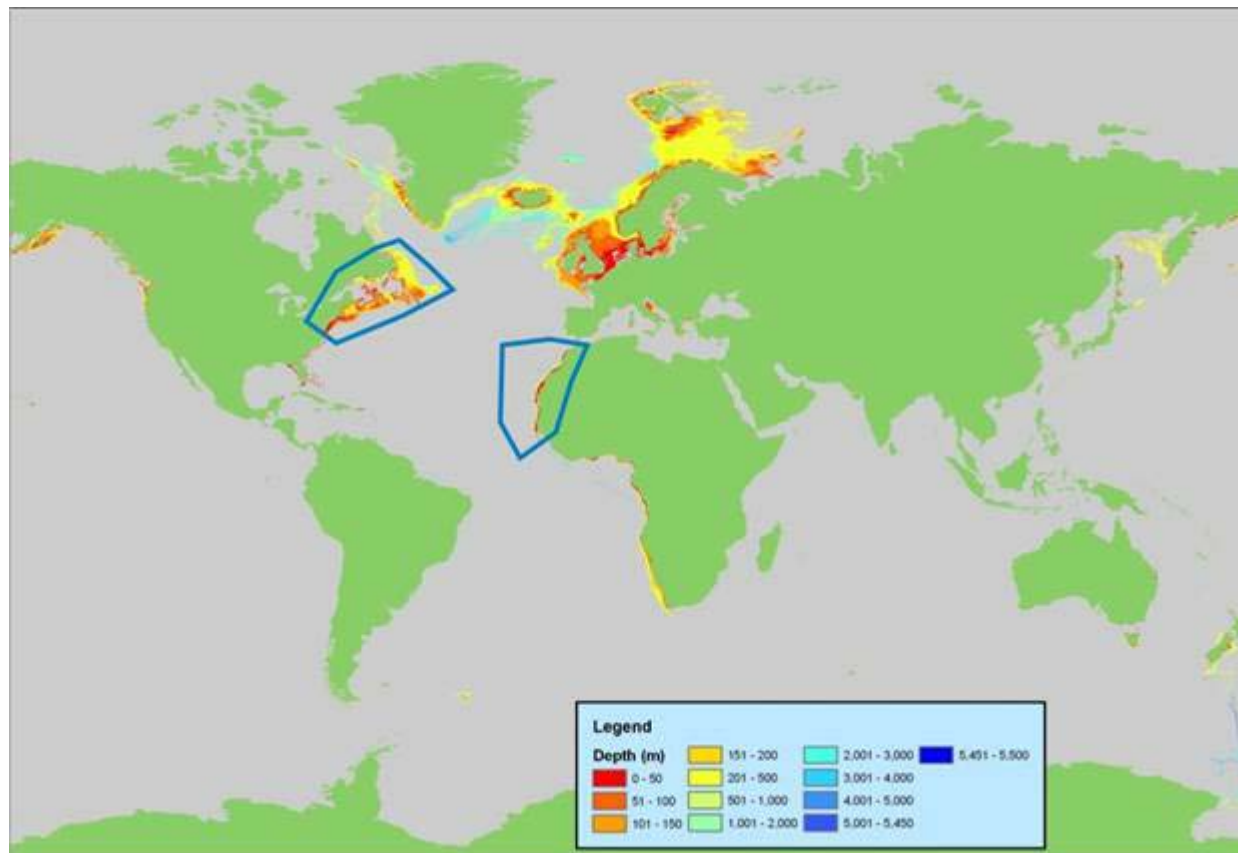
Grid update work in progress – inclusion of data from the Olex data set

Olex, has made available to GEBCO a sub-sample of their global marine soundings database. This data set is largely focussed in shallower water regions, mainly in the North Atlantic region.



Grid update work in progress – inclusion of data from the Olex data set

Work is in progress to include data for the region off West Africa and Nova Scotia and Newfoundland



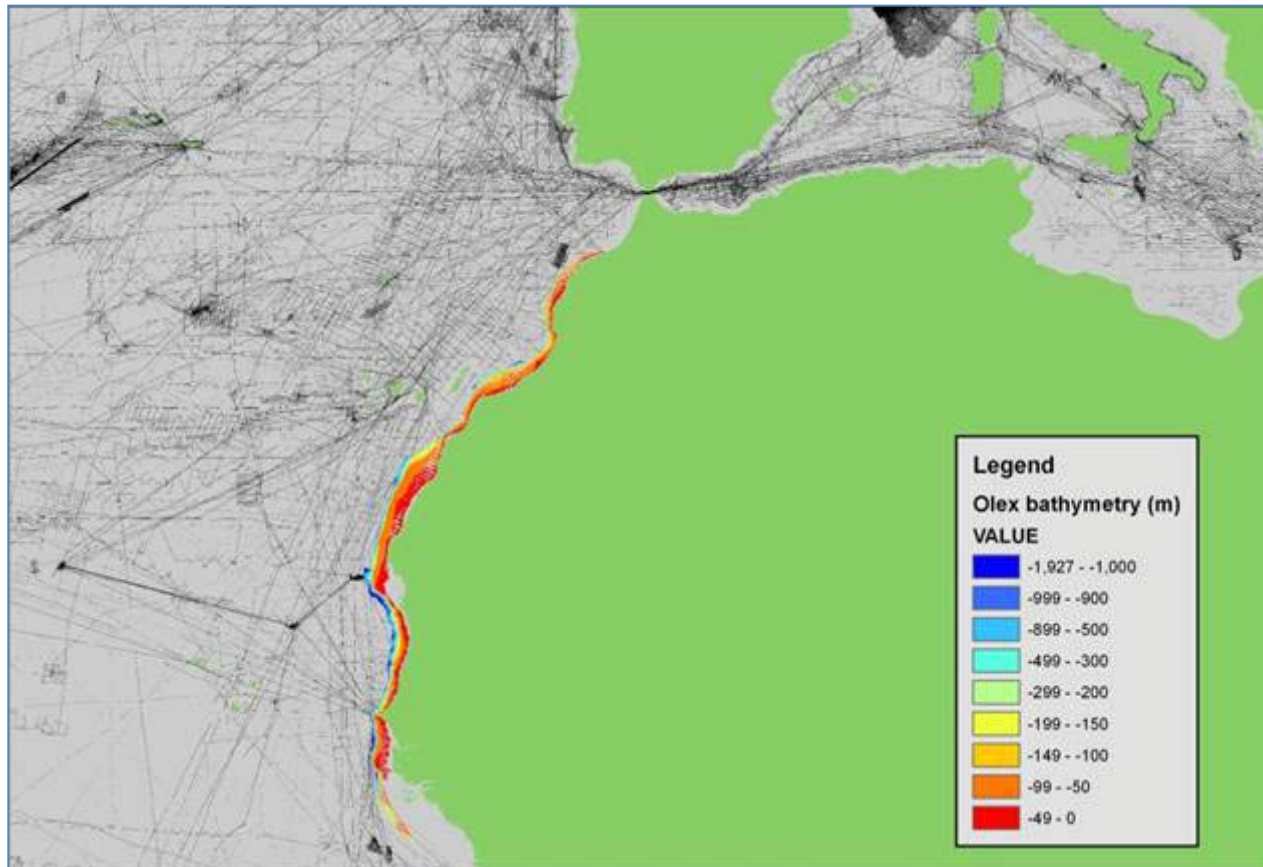
Grid update work in progress – inclusion of data from the Olex data set – region off west coast of Africa

Coverage of GEBCO_08 SID file – showing source sounding data



Grid update work in progress – inclusion of data from the Olex data set – region off west coast of Africa

Coverage of GEBCO_08 SID file – showing source sounding data

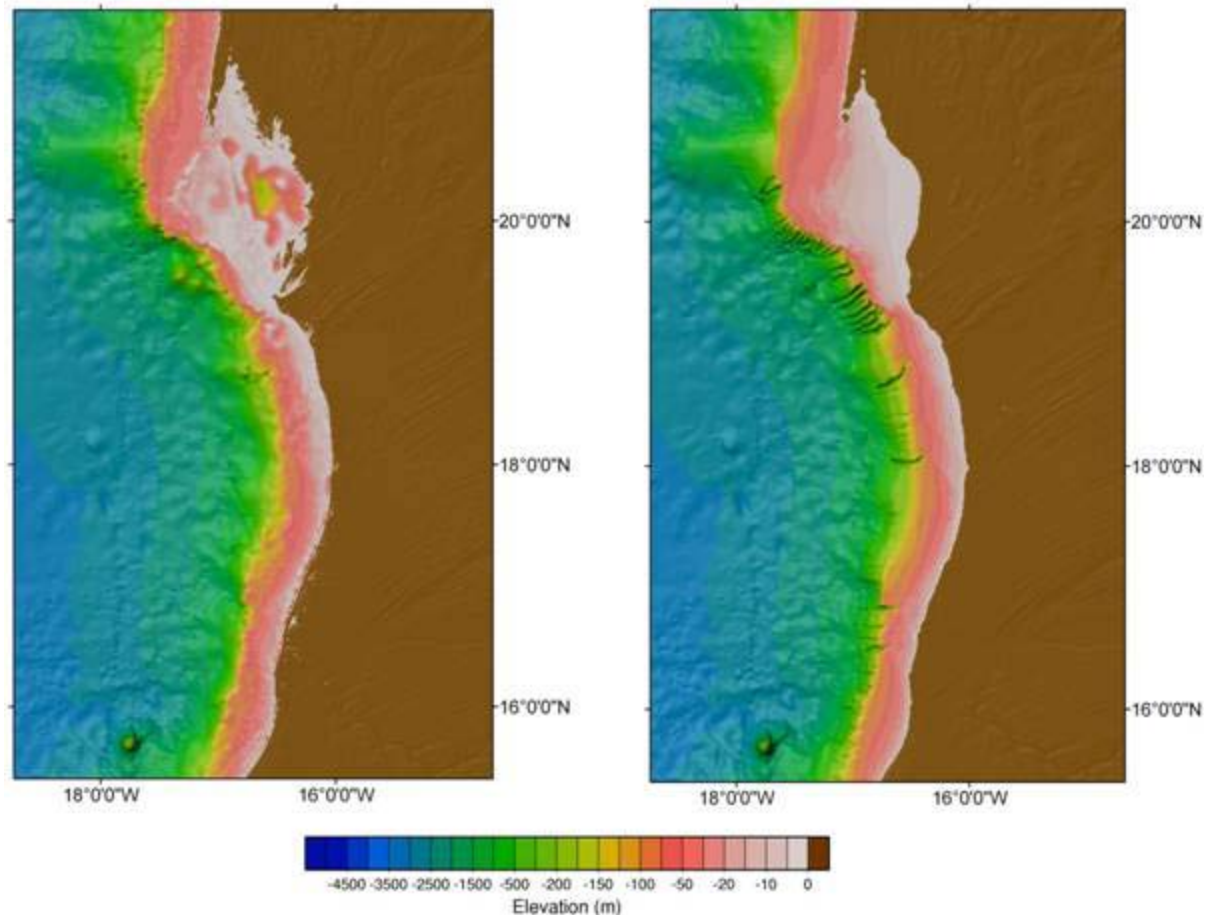


Grid update work in progress – inclusion of data from the Olex data set

Example area off West Africa

Current GEBCO_08 Grid

Grid updated using Olex data



Grid update work in progress

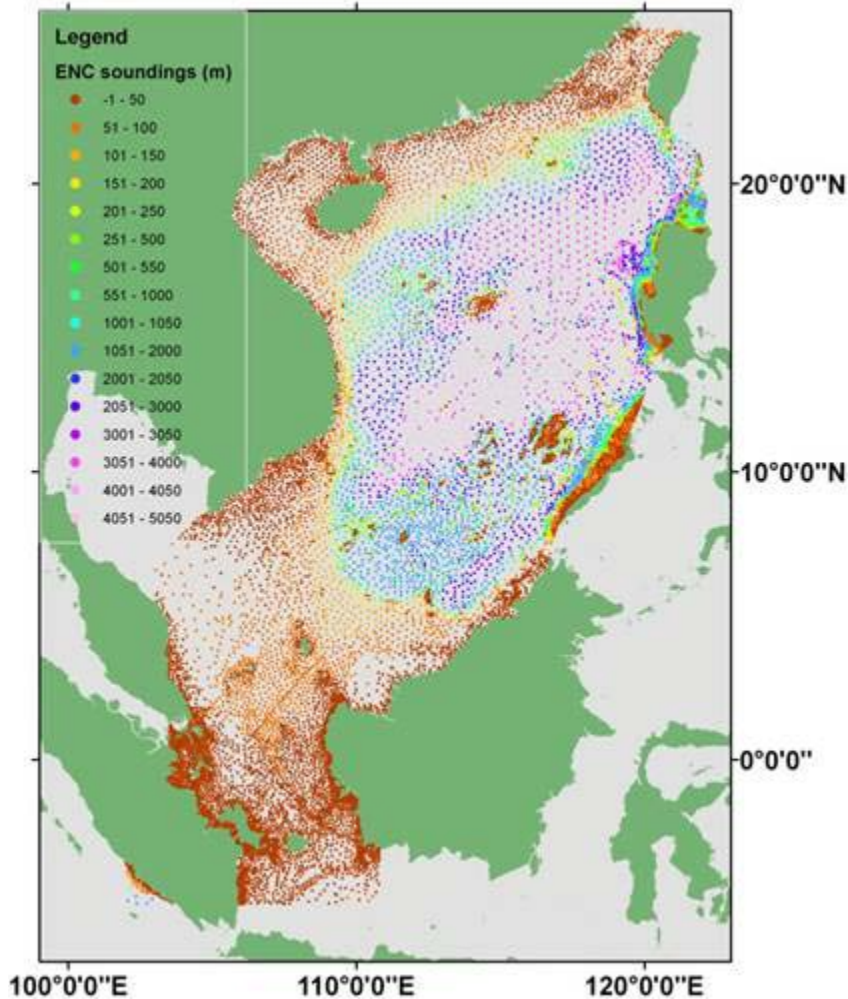
**ENC soundings in the South China Sea
region**

Grid update work in progress – ENC soundings in the South China Sea region

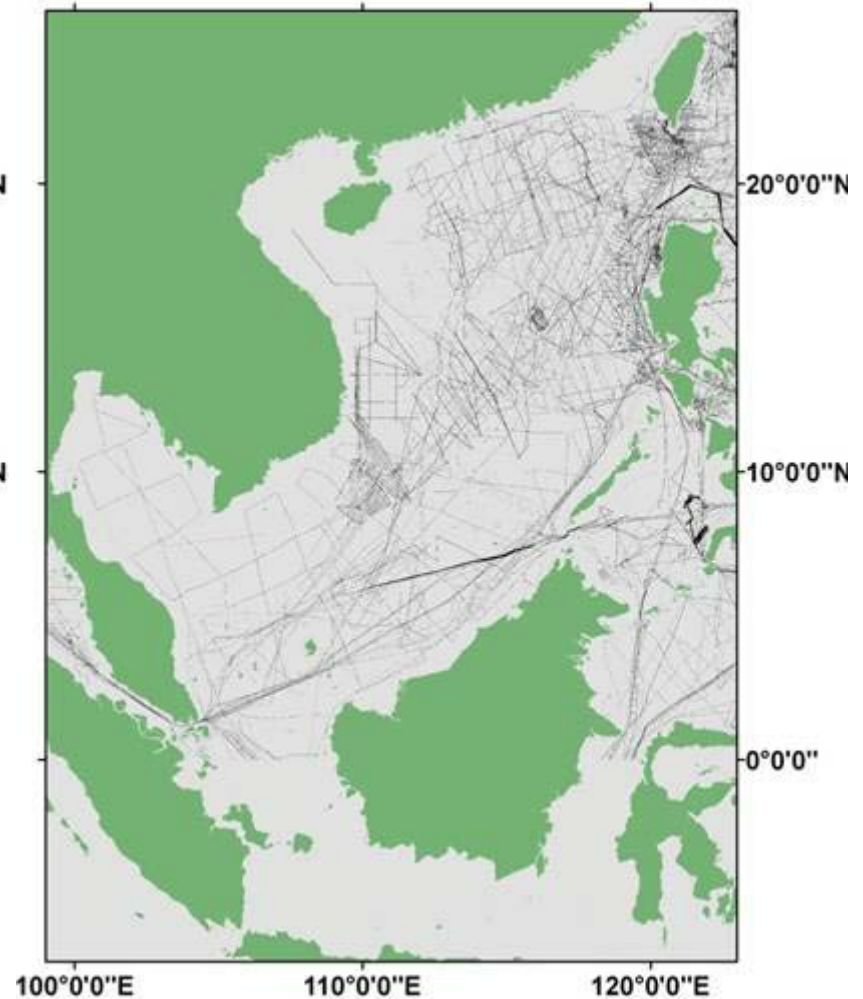
- **Data supplied by East Asia Hydrographic Commission for part of the South China Sea region (101 E-122 E; 5 22 S-26 N).**
- **Over 8,500 soundings in waters of a depth of 200m or shallower.**
- **Work in progress to use this data for these shallower water regions has been used to update the GEBCO_08 Grid.**

Grid update work in progress – ENC soundings in the South China Sea region

ENC sounding coverage

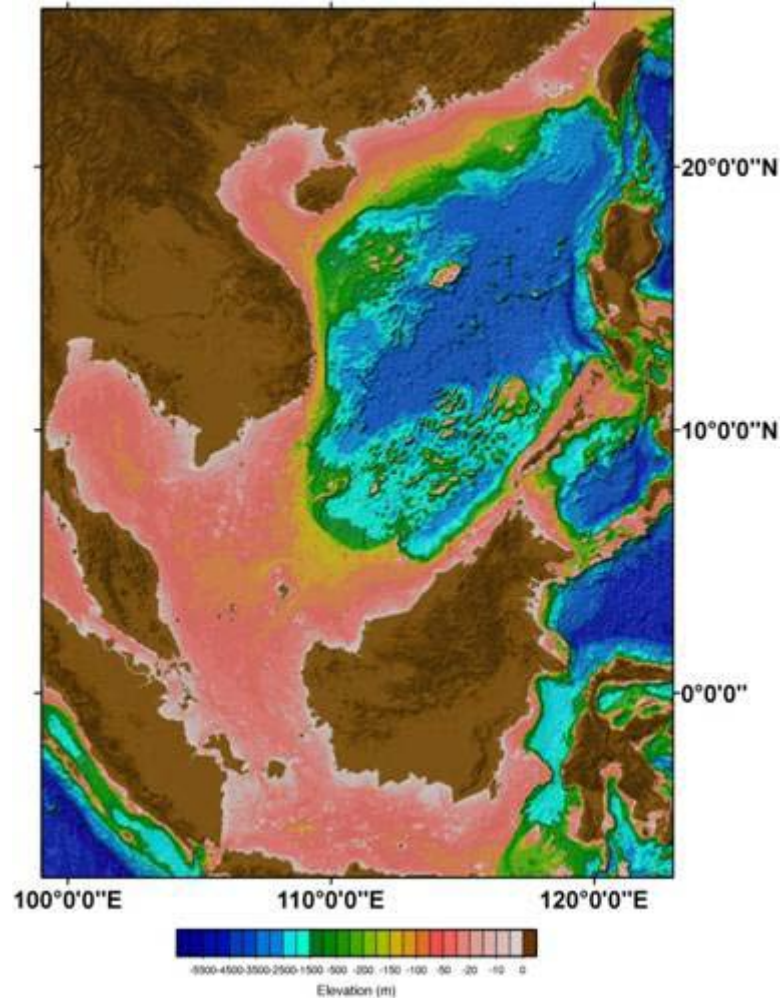


GEBCO_08 Source trackline coverage



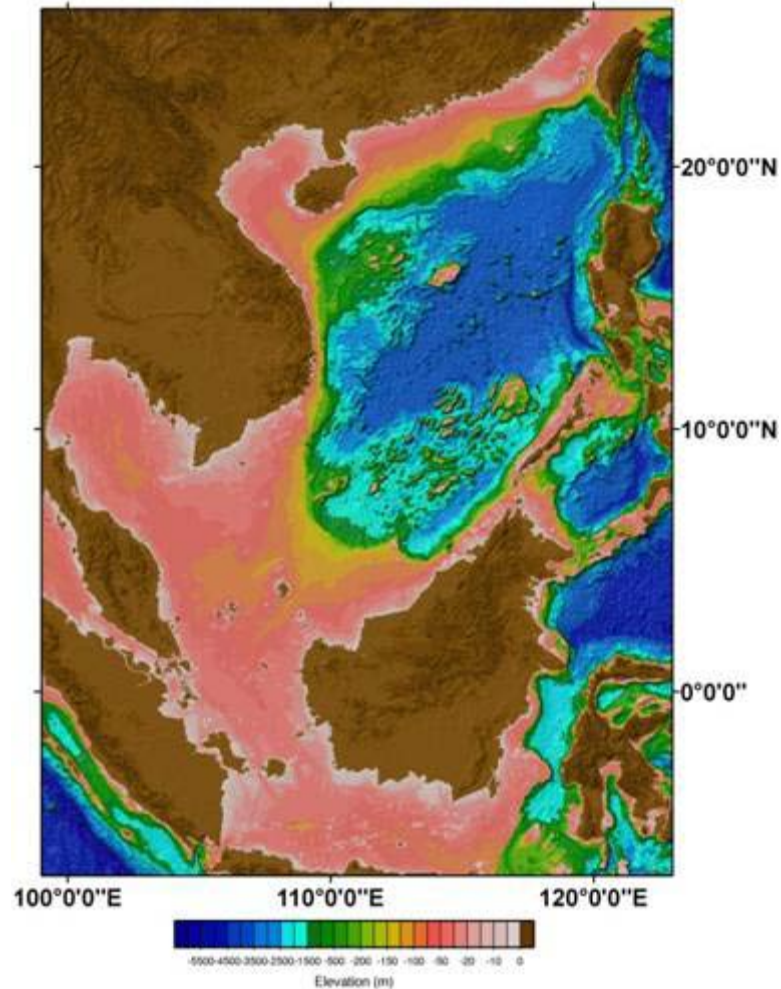
Grid update work in progress – ENC soundings in the South China Sea region

Current GEBCO_08 Grid



Grid update work in progress – ENC soundings in the South China Sea region

Updated GEBCO_08 Grid



Grid update work in progress

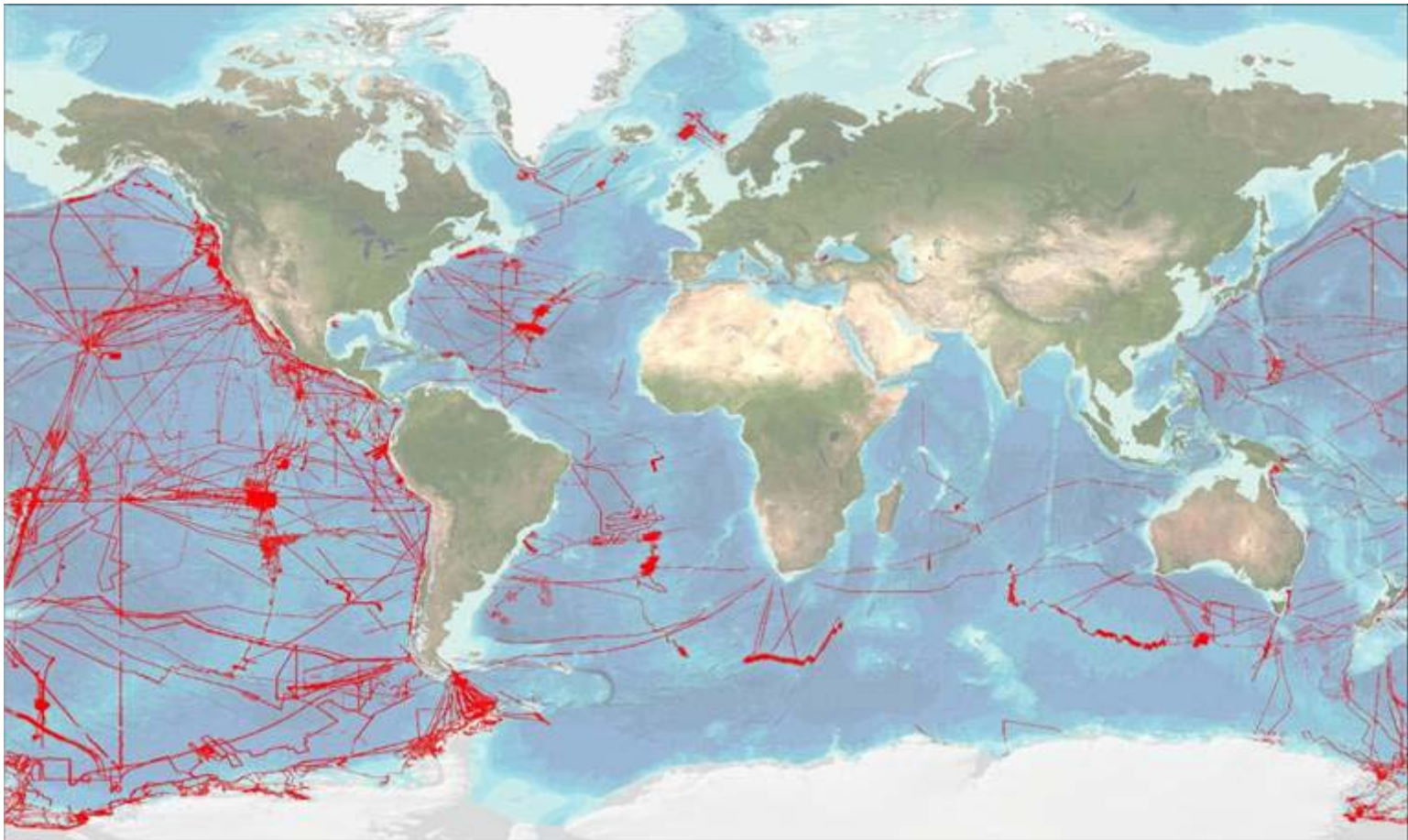
**Lamont-Doherty Earth Observatory (LDEO)
Global Multi-Resolution Topography (GMRT)
Synthesis**

Grid update work in progress – LDEO GMRT Synthesis

- **LDEO have provided over 9,600 data tiles from their Global Multi-Resolution Topography (GMRT) synthesis (400m resolution) for updating GEBCO's grid.**
- **The data set contains significant data contributions in all ocean regions.**

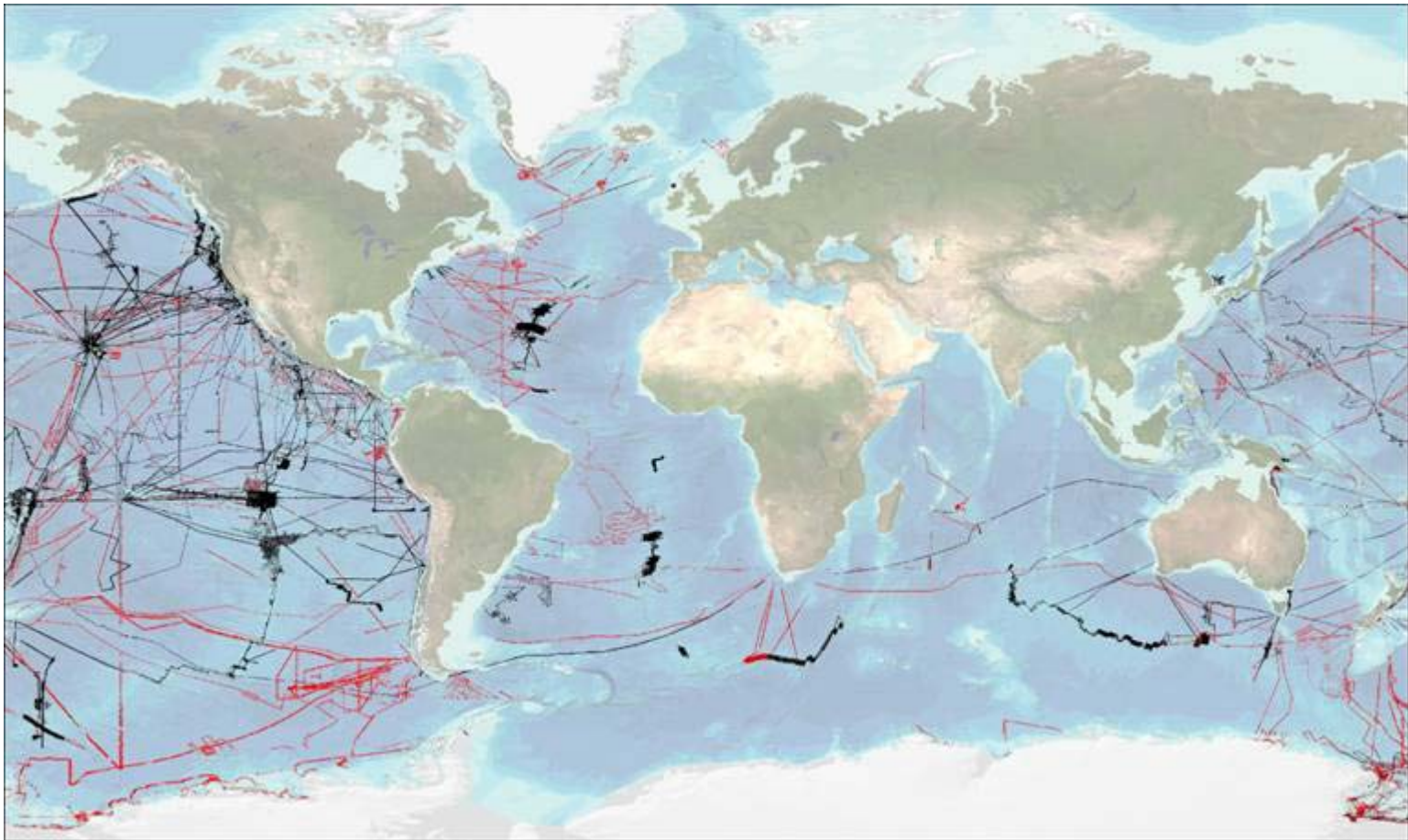
Grid update work in progress – LDEO GMRT Synthesis

Coverage of the LDEO GMRT tile set supplied to GEBCO



Grid update work in progress – LDEO GMRT Synthesis

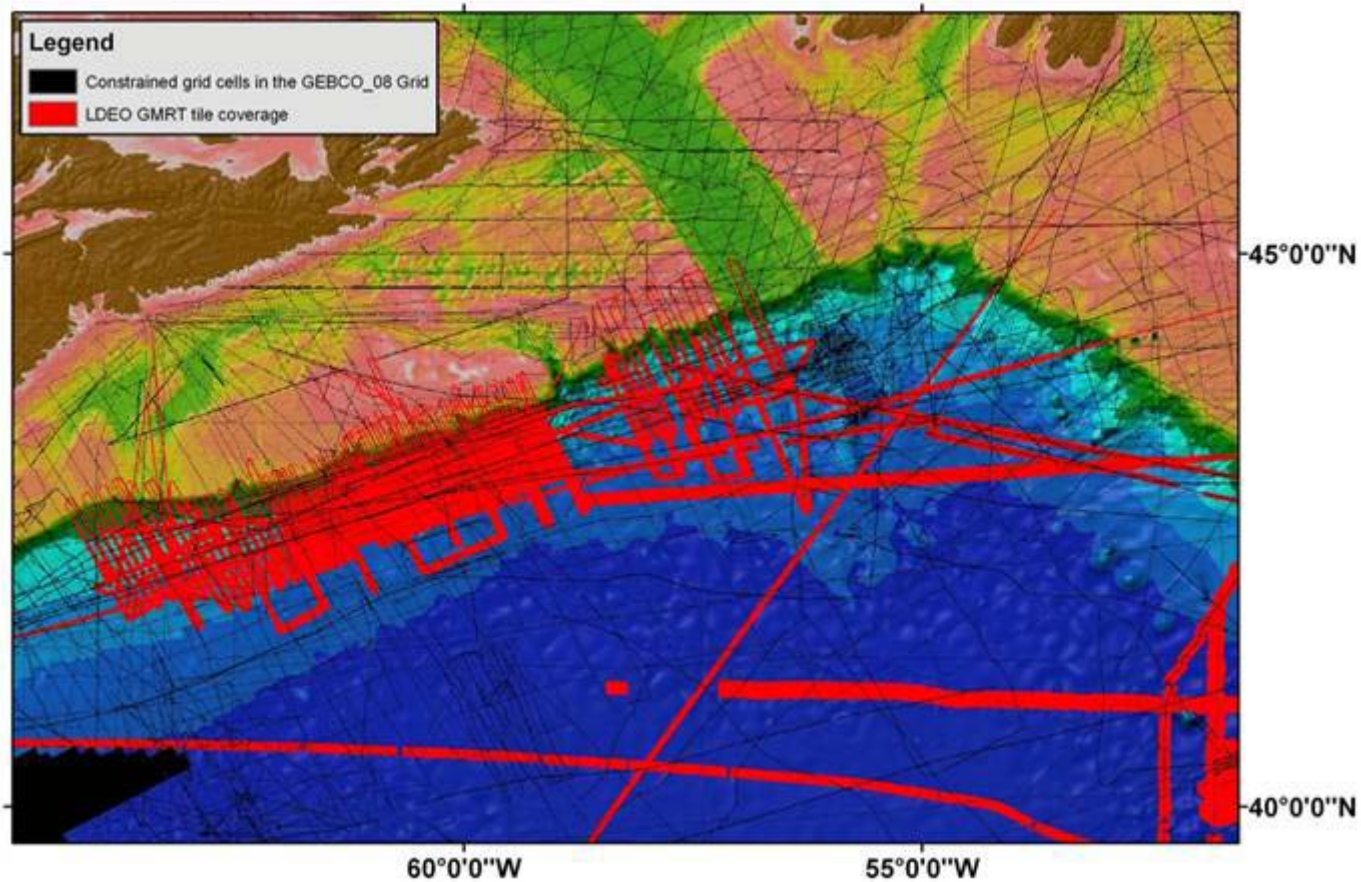
Coverage of GMRT tiles – red = previously empty grids, black = grid cells which contain exiting soundings



Grid update work in progress – LDEO GMRT Synthesis

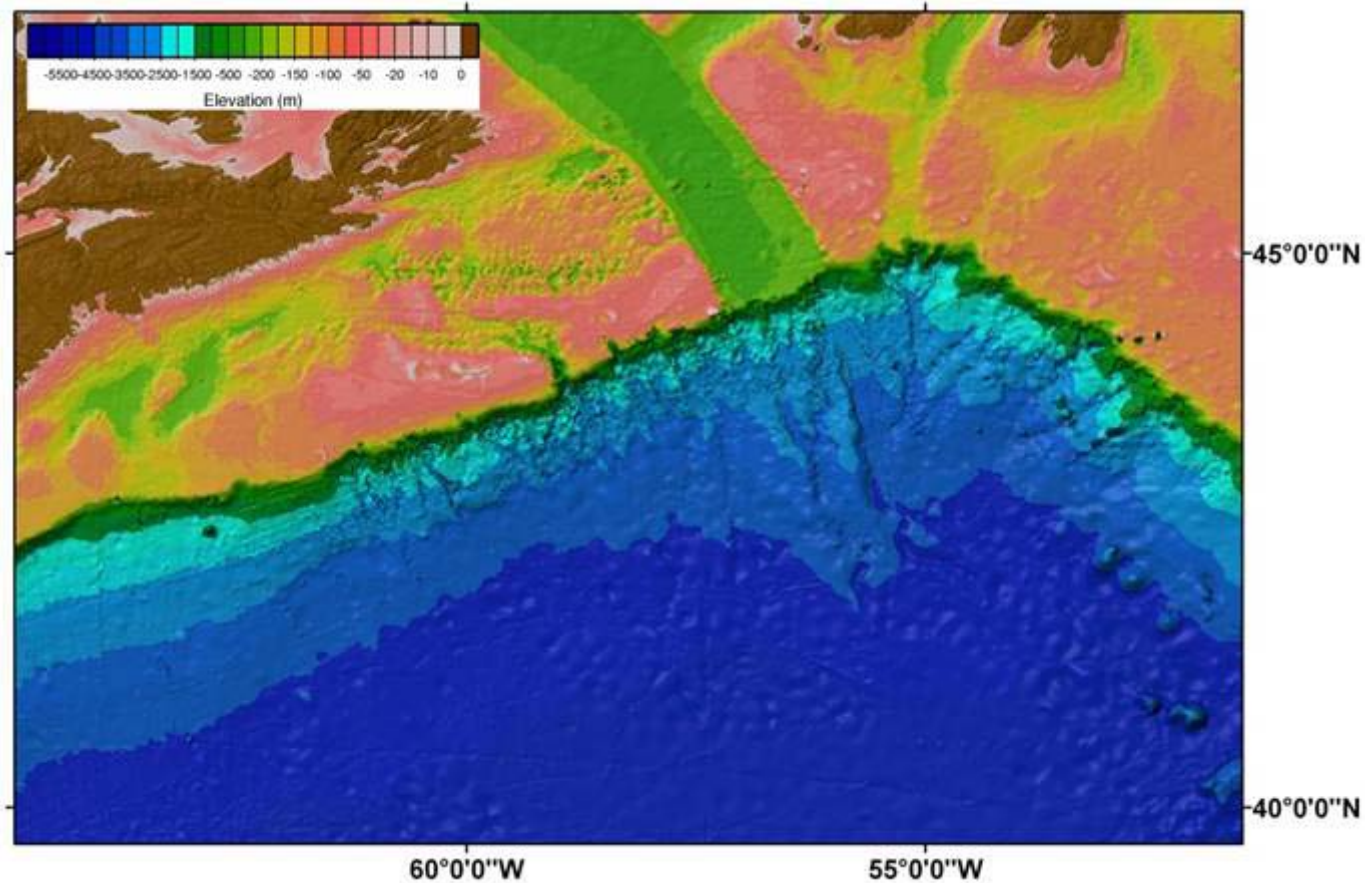
Initial attempt to combine LDEO data and GEBCO_08 Grid

Coverage of LDEO tiles – red and GEBCO_08 source data - black



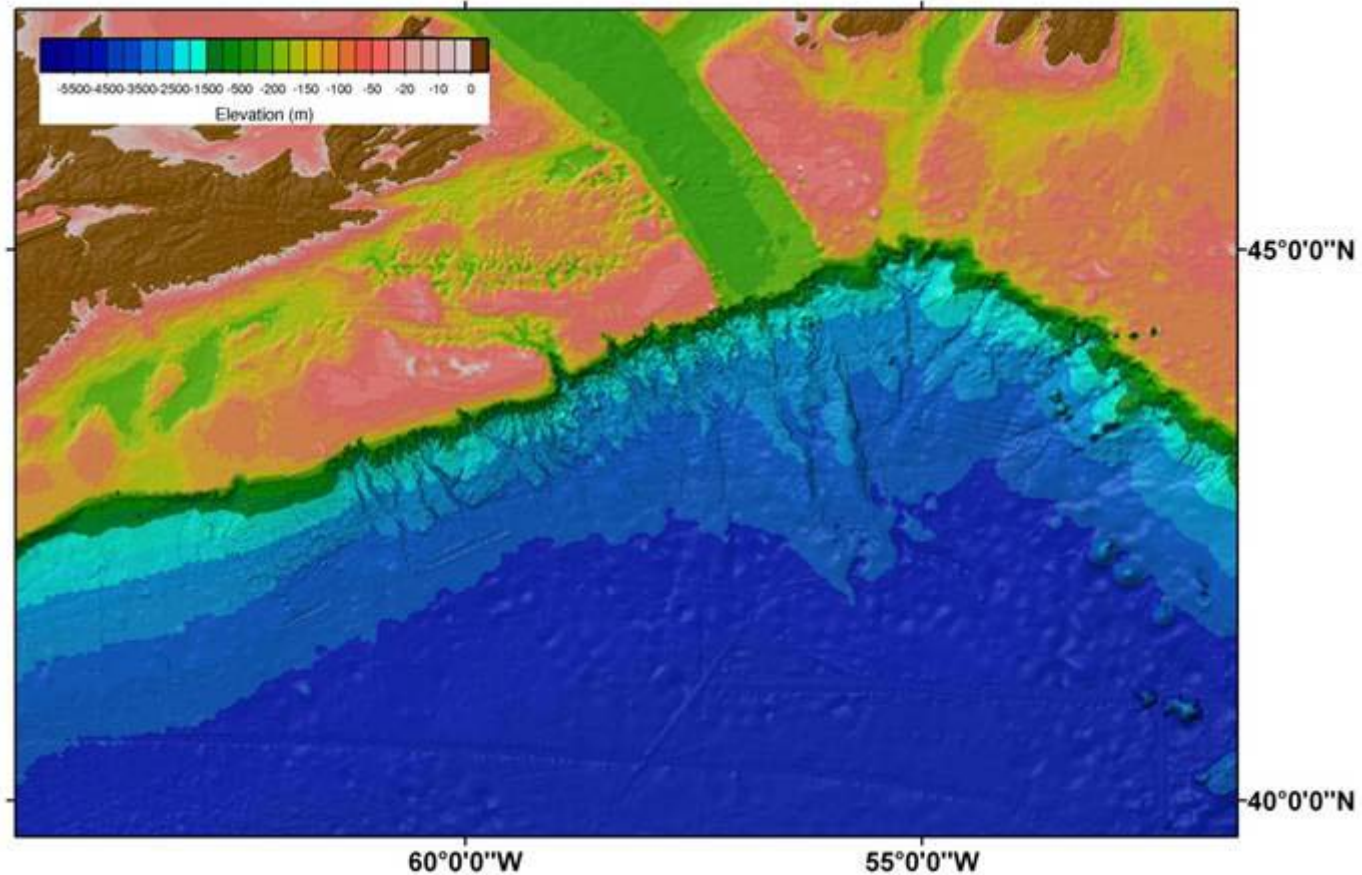
Grid update work in progress – LDEO GMRT Synthesis

Current GEBCO_08 Grid



Grid update work in progress – LDEO GMRT Synthesis

Combined GMRT data and GEBCO_08 Grid



Grid update work in progress

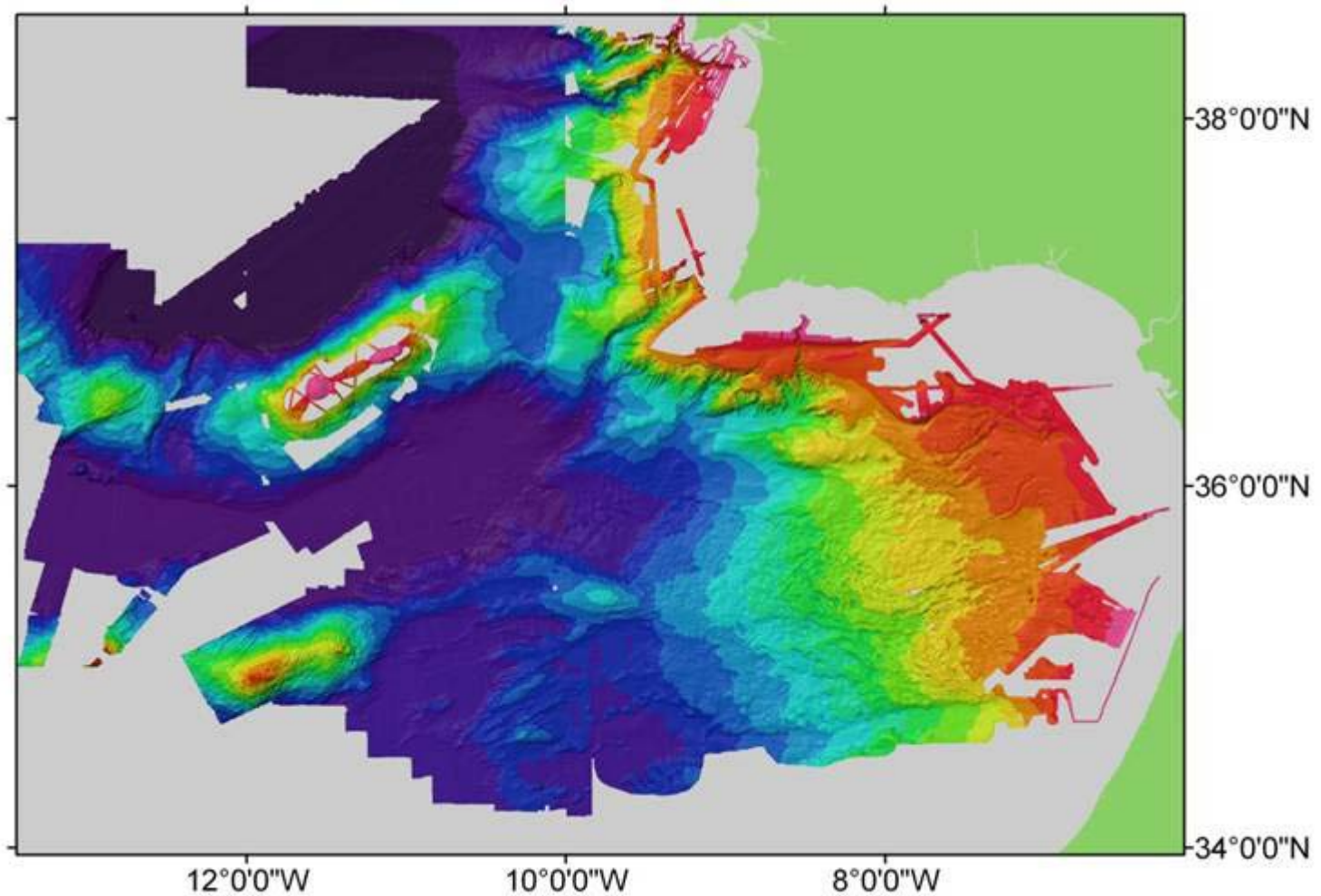
North Atlantic Ocean – Gulf of Cadiz region

Grid update work in progress – Gulf of Cadiz region

- **A bathymetric grid, based on multibeam data, has been received for the Gulf of Cadiz region, west of the Strait of Gibraltar.**
- **The data set has been developed as part of a study into the fault system at the plate boundary between Eurasia and Africa in the central Atlantic.**
- **Reference: The quest for the Africa–Eurasia plate boundary west of the Strait of Gibraltar: Zitellini, N., Gràcia, E., Matias, L., Terrinha, P., Abreu, M.A., DeAlteriis, G., Henriët, J.P., Dañobeitia, J.J., Masson, D.G., Mulder, T., Ramella, R., Somoza, L. and Diez, S. (2009). *Earth and Planetary Science Letters*, 280, (1-4), 13-50. (doi:10.1016/j.epsl.2008.12.005)”.**

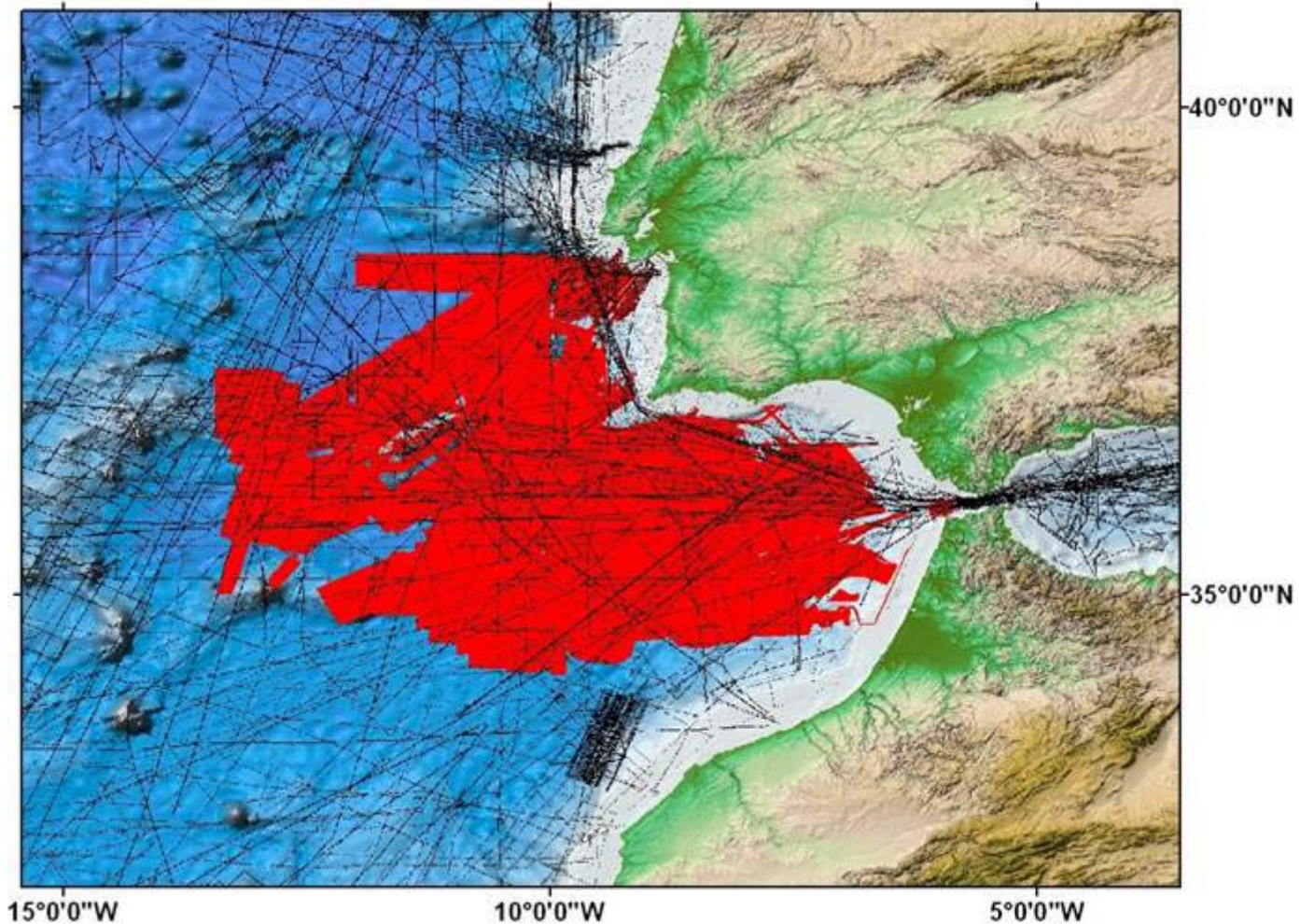
Grid update work in progress – Gulf of Cadiz region

Contributed grid



Grid update work in progress – Gulf of Cadiz region

GEBCO_08 Grid source data coverage (black), contributed grid (red)



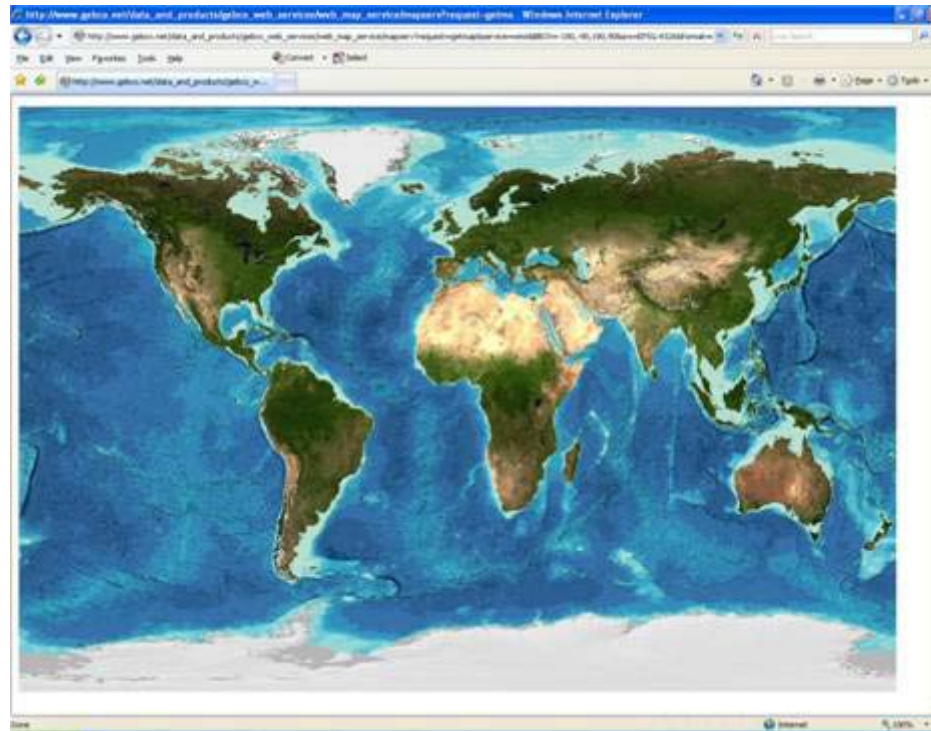
Other GEBCO related activities

- **Development work**
- **Access to GEBCO's data sets and web site**

Development work

Release of the GEBCO Web Map Service in February 2011

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



Access to GEBCO's data sets and web site

- **Distribution of GEBCO's data sets and products**
- **Statistics on access to GEBCO's web site**

Making GEBCO's grids available

On behalf of GEBCO, GEBCO's bathymetric data sets are made available by BODC via the internet and on DVD as part of the GEBCO Digital Atlas.

Since the last GEBCO meeting in September 2010 there have been over:

- **5,600 downloads of the GEBCO_08 Grid**
- **1,670 downloads of the GEBCO_08 SID Grid**
- **2,300 downloads of the GEBCO One Minute Grid**

Total since release of GEBCO_08 Grid in January 2009

- **11,700 downloads of the GEBCO_08 Grid**

Access to GEBCO's web site – www.gebco.net

GEBCO's web site is maintained, on behalf of GEBCO, by BODC

Since the last GEBCO meeting in September 2010

- **Over 213,000 pages viewed**
- **Over 71,700 visitors to the site**

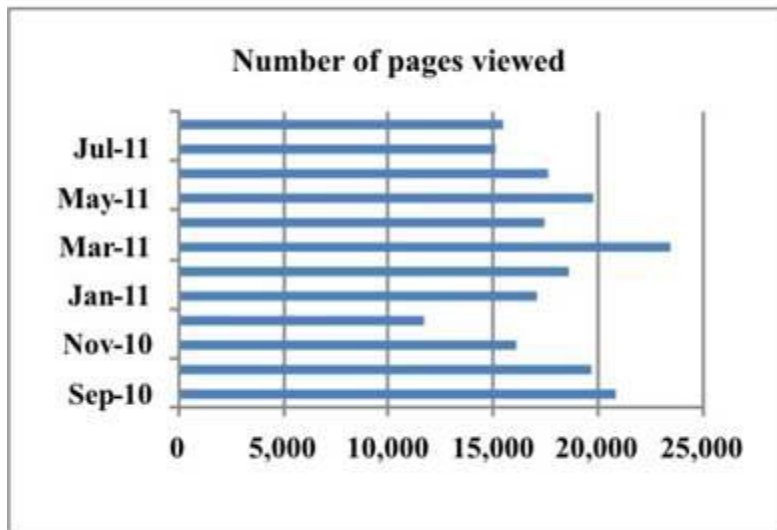
Total since launch in July 2008

- **Over 569,000 pages viewed**

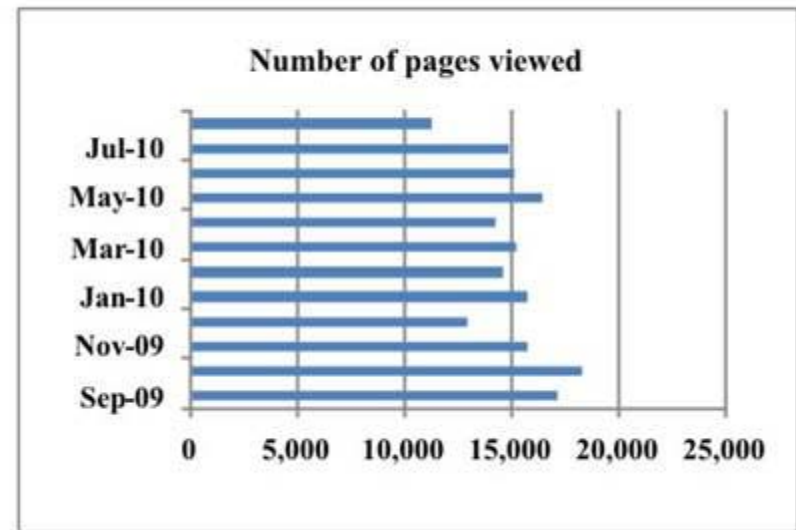
Access to GEBCO's web site – www.gebco.net

Comparison plots – access to GEBCO's web site

Year 2010/2011



Year 2009/2010



Thank you

Any questions?