Global Multi-Resolution Topography (GMRT) Synthesis Update

Vicki Ferrini
GMRT Overview

- User experiences seamless transition between resolutions based on chosen zoom level
- Access provided through multiple interfaces to images & grids
- Attribution to data contributors (CruiseID, Chief Sci, dates etc)
- Content continually expanding (2 scheduled releases/year)
GMRT Components

Global & Regional Grids (>= 500 m res.)
e.g. GEBCO_08, IBCAO

Contributed Grids (< 500 m res.)

LDEO 100-m compilation* (ping files in public domain)

*LDEO team performs QC of ping files
GMRT: Multibeam Data QC

- Bad navigation
- Noisy outer beams
- Attitude problems
- Bad soundings
- Instrument problems
- Bad weather
- Sound velocity
- Slow speed in turns
- Quality assessment for grid weighting and resolution
Attribution to original data sources
**Attribution to original data sources**

![GMRT Contributors](image)

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<tr>
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<td>David Checkley</td>
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<td>Stanley Hart</td>
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Access to original data files

cruise: EW9903, file: 9903hs.d93.gz
GMRT History

- **1992** – Ridge Multibeam Synthesis Project
- **2003** – Compilation expanded to include US-funded data from Southern Ocean
- **2004 – present** -- Expanded to include public domain data from throughout global oceans
- **2010** – complete rebuild of tiles & creation of discrete backend components
- **2010 – present** – ongoing growth of compilation by > 60 cruises/yr
- **2010** – presentation of GEBCO 100 concept

GMRTv2.3 ~650 cruises (Oct 2012)
GEBCO 100: Concept

Regional & Global Grids (> 500 m res.)
e.g. GEBCO_08

Contributed Grids (< 500 m res.)

LDEO 100-m compilation + 100-m contributed grids = GEBCO-100
GEBCO 100: Progress

• **2011** -- GEBCO Data Flow Meeting
• **2011** -- 400 m export of LDEO 100-m synthesis
  – Provided to BODC for inclusion in GEBCO_08
  – Provided for GEBCO Data Store
  – Attribution kml (ship-track, cruise ID, Chief sci., etc)
• **2012** – Prototype GEBCO100 webpage developed following 2011 meeting
GEBCO 100

GEBCO 100 is a prototype effort to create a new GEBCO product at 100-m resolution. Data currently displayed in the map include data from the LDEO 100-m synthesis effort as well as several contributed grids provided by international colleagues. Use the map to explore data sources and contributors. Please contact us with comments or suggestions.
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Next Steps…

- **LDEO 100m Compilation**
  - Ongoing growth of compilation
    - *US Academic fleet MB data delivered routinely to NGDC (via Rolling Deck to Repository)*
  - Enhanced metadata
  - QC reports summarizing work performed

- **GEBCO 100 Concept**
  - Further develop GEBCO100 Prototype Web Page
  - Develop data sharing/licensing agreements & protocols
  - Continue workflow development for contributing new data