GEBCO Data Flow Workshop

March 9-11, 2011

National Geophysical Data Center

Boulder, Colorado USA

Motivation

- Seafloor mapping systems have evolved over the last 30 years
  - More ships at sea collecting multibeam sonar
  - Much higher data volumes per system
  - Satellite altimetry is providing global coverage
- We have moved to the digital age for map compilation
- GEBCO must streamline it's data flow from contributions to the final product

Attendees

- Suzanne Carbotte   Lamont Doherty Earth Observatory (Day 1 and 2 only)
- John Cartwright   National Geophysical Data Center (Day 3 only)
- Dave Clark   GEBCO Permanent Secretary
- Justin Coplan   Lamont Doherty Earth Observatory
- Barry Eakins   NOAA/NGDC
- David Fabre   U.S. Naval Oceanographic Office
- Vicki Ferrini   Lamont Doherty Earth Observatory
- Chris Fox   NOAA/NGDC and GEBCO Guiding Committee
- Colin Jacobs   Southampton Oceanography Centre and GEBCO Editor
- Martin Jakobsson   University of Stockholm and GEBCO iSCRUM
- David Sandwell   Scripps Institution of Oceanography
- Walter Smith   NOAA/STAR and GEBCO TSCOM
- Lisa Taylor   NOAA/NGDC and IHO Data Center for Digital Bathymetry
- Pauline Weatherall   British Oceanographic Data Center and GEBCO Digital Atlas

Meeting Agenda

- Day 1: Capabilities, methodologies, and tools of the participating organizations.

- Day 2: Formulation of a data flow model, with additional discussions of copyright issues, standards, methodologies, and tools.

- Day 3 (half day): Proposed GEBCO-100 meter grid product and how it would be integrated into the work flow.
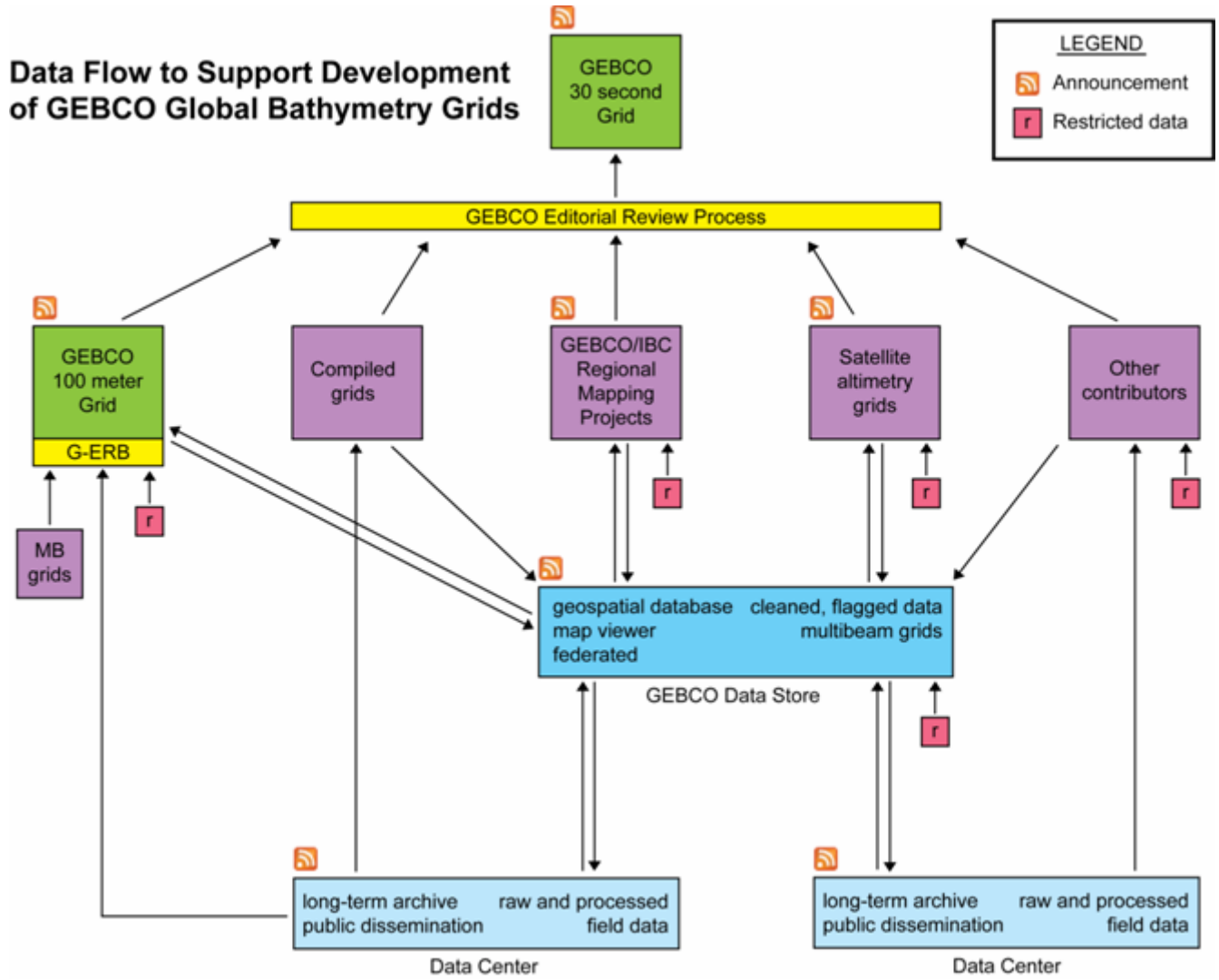
Major conclusions

- **GEBCO Data Store**: The production of new bathymetric data sets, whether grids derived from altimetry or soundings, clean multibeam surveys producing GEBCO-100m grids, new compilations from GEBCO regional mapping efforts, or other sources contributed to GEBCO will be stored in a common "GEBCO Data Store," which will be hosted by the IHO Data Center for Digital Bathymetry at NGDC.

Major conclusions

- **GEBCO Editorial Review Process**: Before any contributions are incorporated in the GEBCO grid, they will be subjected to some level of editorial review by the GEBCO group of experts. The details of this process have not been worked out. If a contribution is accepted, it will be incorporated into the GEBCO grid and permanently included in the GEBCO Data Store.

GEBCO Data Flow Model

Data Flow to Support Development of GEBCO Global Bathymetry Grids

LEGEND
- Announcement
- r — Restricted data

GEBCO 30 second Grid

GEBCO Editorial Review Process

GEBCO 100 meter Grid
G-ERB

Compiled grids

GEBCO/IBC Regional Mapping Projects

Satellite altimetry grids

Other contributors

MB grids

geospatial database   cleaned, flagged data
map viewer   multibeam grids
federated

GEBCO Data Store

long-term archive   raw and processed
public dissemination   field data

Data Center

long-term archive   raw and processed
public dissemination   field data

Data Center

Roles in developing and distributing GEBCO Grids

- Maintain web site [BODC]
- Integrate compiled products and approved, cleaned data [BODC]
- Review contributed products and evaluate and approve each new GEBCO grid release [GEBCO Editorial Review Process]
- Develop and support contributor attribution [BODC, NGDC, LDEO, Smith/Sandwell, SRTM30_PLUS]
- Build global 100-m cleaned multibeam grids [LDEO]
- Build global altimetry 30 arc second grids using blockmedianed data in GEBCO Data Store [Smith/Sandwell]
- Build regional compilation grids (e.g., IBCAO) using "working store" pulled from GEBCO Data Store [ISCRUM lead]
- Contribute other compiled products [e.g., NGDC (Coastal Relief Model)]
- Build GEBCO Data Store [NGDC, using rsync]
- Manage GEBCO Data Store [NOC]
- Select data in public data centers for use in GEBCO grid, and clean and ingest that data into GEBCO Data Store [NOC]
- Manage, archive and distribute field data (raw and processed) [IHO DCDB, BODC, etc.]
- Solicit other agencies, organizations for bathymetric data and products to contribute [IHO DCDB, "GEBCO", GEBCO Regional Teams]
- Manage restricted data [each agency responsible for the data]

Other Outcomes

- Other topics discussed included:
  - the use of Digital Object Identifiers (DOIs)
  - standardization of tools
  - best practices
  - OLEX
  - attribution of contributors
  - use of the GEBCO Gridding Cookbook
  - including the GEBCO-100 products into the GEBCO grid.
- 23 specific actions were assigned and are being completed
- The publicly accessible data store has been created and is being tested
- Copyrights are being removed from the GEBCO product