gbr100 grid Metadata

Field	Description
Title	High-resolution depth model for the Great Barrier Reef and Coral Sea - 100 m
Metadata Identifier	200ABA6B-6FB6-443E-B84B-86B0BBDB53AC
Digital Object Identifier	http://dx.doi.org/10.26186/5e2f8bb629d07
Topic Category	ELEVATION: height above or below sea level. GEOSCIENTIFIC INFORMATION: earth sciences. OCEANS: features and characteristics of salt water bodies excluding inland waters.
Keywords	bathymetry, marine, continental shelf, elevation, SRTM, DEM, lidar bathymetry
Key Dates	CREATED: V1 - 20 Aug 2010 UPDATED: V2 - 23 Jun 2011 UPDATED: V3 - 10 Oct 2014 UPDATED: V4 - 16 Jan 2016 UPDATED: V5 - 02 Sep 2017 UPDATED: V6 - 10 Nov 2020
Citation and responsible party information	NAME: Beaman, Robin, Dr ORGANISATION: College of Science and Engineering, James Cook University POSITION: Research Fellow ROLE: Principal Investigator PHONE: +61 7 4232 1693 FAX: +61 7 4232 1284 EMAIL: robin.beaman@jcu.edu.au ADDRESS: PO Box 6811, Cairns, Queensland , Australia , 4870
Point of Contact	NAME: Beaman, Robin, Dr ORGANISATION: College of Science and Engineering, James Cook University POSITION: Research Fellow ROLE: Principal Investigator PHONE: +61 7 4232 1693 FAX: +61 7 4232 1284 EMAIL: robin.beaman@jcu.edu.au ADDRESS: PO Box 6811, Cairns, Queensland , Australia , 4870
Abstract	The accompanying report contains an explanation of the various source datasets used in the development of the ~100m-resolution grid, called 'gbr100', and how the data were treated in order to convert to a similar

Field	Description
	file format with common horizontal (WGS84) and vertical (approximate mean sea level - MSL) datums. Descriptive statistics are presented to show the relative proportion of source data used in the new grid. The report continues with a detailed explanation of the pre-processing and gridding process methodology used to develop the grid. A description is also provided for additional spatial analysis on the new grid in order to derive associated grids and layers. The results section provides a short overview of the improvement of the new grid over the current Australian Bathymetry and Topography Grid (Whiteway, 2009). The report then presents the results of the gbr100 grid, and the derived map outputs as a series of figures. A table of metadata for the current source data (for V1) accompanies this report as Appendix 1. The report is available at: http://www.deepreef.org/publications/reports/67-3dgbr-final.html
Purpose	This project aimed to develop a new high-resolution digital elevation model (DEM) for the Great Barrier Reef (GBR) and adjoining Coral Sea at a grid pixel resolution of 0.001-arc degree (about 100 m). A high-resolution DEM is a critical 3D dataset required to accurately simulate water mixing and current flow within a whole-of-GBR scale hydrodynamic model. In addition, a new grid is required to improve the geomorphic detail about the location and spatial extent of seabed features for much of the GBR shelf and Coral Sea region. The new grid utilised the latest data sourced from ship-based multibeam and singlebeam echosounder surveys, airborne LiDAR bathymetry surveys, and satellite derived bathymetry data. A full description of the project is available at: http://www.deepreef.org/projects/48-depth-model-gbr.html
Data limitations (optional)	AUSTRALIAN HYDROGRAPHIC OFFICE NOTICE: Not to be used for navigation. This gbr100 DEM product incorporates source bathymetry data reproduced under licence by permission of the Australian Hydrographic Office © Commonwealth of Australia 2005-2020. GEOSCIENCE AUSTRALIA NOTICE: This gbr100 DEM product incorporates data which are © Commonwealth of Australia (Geoscience Australia) 2010-2020. The Commonwealth gives no warranty regarding the data's accuracy, completeness, currency or suitability for any particular purpose. CSIRO MARINE NATIONAL FACILITY NOTICE: This gbr100 DEM product

Field	Description
	incorporates source bathymetry data provided by the CSIRO Marine National Facility and made available under a Creative Commons Attribution 4.0 International Licence. We acknowledge the use of the CSIRO Marine National Facility (https://ror.org/01mae9353) in undertaking this research. This gbr100 DEM product has been compiled from a wide range of data sources of varying resolution and accuracy. Data are supplied 'as is' without any warranty or guarantee. The data may not be free of error, comprehensive, current or appropriate for your particular purpose. You accept all risk and responsibility for its use.
Preview Image (optional)	NA
Data lineage (optional)	See accompanying report
Data file description (optional)	FILE: gbr100 PROJECTION: Geographic Latitude/Longitude DATUM: WGS84 SCALE: 0.001*0.001 arc-degree (about 100 m) grid cells STORED DATA FORMAT: ESRI raster AVAILABLE DATA FORMATS: ESRI raster grid, GMT/netCDF (CF-1.0) grid, Floating point geotiff, and Fledermaus (V7.8.10) SD grid
Spatial Extent	NORTH LATITUDE: -10.0 SOUTH LATITUDE: -29.0 WEST LONGITUDE: 142.0 EAST LONGITUDE: 160.0 HORIZONTAL DATUM: WGS84 [a]ESRI raster Top -10.0001388886 ESRI raster Left 141.999861111 ESRI raster Right 159.999861111 ESRI raster Bottom -29.0001388886 ESRI raster Columns 18000 ESRI raster Rows 19000 ESRI raster Cell Size X, Y 0.001, 0.001 [a]Cell-registered, showing coordinates for edge of cells [b]GMT/netCDF x_min 142.000361111 GMT/netCDF x_max 159.999361111 GMT/netCDF y_min -28.9996388886 GMT/netCDF y_max -10.0006388886

Field	Description
	GMT/netCDF nx 18000 GMT/netCDF ny 19000 GMT/netCDF x_inc, y_inc 0.001, 0.001 [b]Grid-registered, showing coordinates of the centre of cells
Temporal Extent	See Appendix in accompanying report for data temporal extent
Vertical extent (optional)	MINIMUM HEIGHT: -5584 m MAXIMUM HEIGHT: 2843 m VERTICAL DATUM: approximates mean sea level (MSL)
Maintenance and Update Frequency (optional)	STATUS: Ongoing FREQUENCY: As required
Resource Constraints and licensing	COPYRIGHT: The content on this website is released under the Creative Commons Attribution 4.0 International Licence: https://creativecommons.org/licenses/by/4.0/ ATTRIBUTION: "© www.deepreef.org"
Processing*	See accompanying report
References	REFERENCE: Whiteway, T.G., 2009. Australian Bathymetry and Topography Grid, June 2009. Geoscience Australia Record 2009/21, Geoscience Australia, Canberra, Australia, pp. 46. REFERENCE: Beaman, R.J., 2010. Project 3DGBR: A high-resolution depth model for the Great Barrier Reef and Coral Sea. Marine and Tropical Sciences Research Facility (MTSRF) Project 2.5i.1a Final Report, MTSRF, Cairns, Australia, pp. 13 plus Appendix 1. Available at: http://www.deepreef.org/images/stories/publications/reports/Project3DGBRFinal_RRRC2010.pdf
Credits and funding*	CREDITS: Sheriden Morris (Reef & Rainforest Research Centre) David Souter (Australian Institute of Marine Science) Rod Nairn (Royal Australian Navy) Brett Brace (Royal Australian Navy) Michael Andrew (Australian Hydrographic Service) Mark Bolger (Australian Hydrographic Service) Anne Worden (Australian Hydrographic Service) Hanna Draper (Australian Hydrographic Service) Douglas White (Australian Hydrographic Service) Mark Alcock (Geoscience Australia) Grant Boyes (Geoscience Australia) Stephen Sagar (Geoscience Australia) Peter Harris (Geoscience Australia) Phil Tickle (Geoscience Australia)

Field	Description
	Andrew Owens (Geoscience Australia) Robert Parums (Geoscience Australia) Michele Spinoccia (Geoscience Australia) Cameron Buchanan (Geoscience Australia) Tanya Whiteway (Geoscience Australia) Adam Lewis (Geoscience Australia) Magnus Wettle (EOMAP Australia Pty Ltd) Knut Hartmann (EOMAP GmbH & Co) Owen Cantrill (Maritime Safety Queensland) Mike Ronan (Qld Dept of Environment and Heritage Protection) Maria Zann (Qld Dept of Environment and Heritage Protection) FUNDING: Queensland Government Smart Futures Fellowship Reef and Rainforest Research Centre James Cook University Geoscience Australia National Environmental Science Program Queensland Government Wetlands Program (see https://wetlandinfo.ehp.qld.gov.au/resources/static/pdf/resources/fact-sheets/fs-inter-sub-tidal-class-map-aca-cq-31-05-2017.pdf
Supplemental information	NA
Online resources	The data may be downloaded from the Deepreef Explorer site: http://www.deepreef.org/bathymetry/65-3dgbr-bathy.html , and from the Geoscience Australia ecat site: https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/133163