

## gbr100 grid Metadata

Field	Description
<b>Title</b>	High-resolution depth model for the Great Barrier Reef and Coral Sea - 100 m
<b>Metadata Identifier</b>	200ABA6B-6FB6-443E-B84B-86B0BBDB53AC
<b>Parent Record Identifier</b>	NA
<b>Topic Category</b>	ELEVATION: height above or below sea level. GEOSCIENTIFIC INFORMATION: earth sciences. OCEANS: features and characteristics of salt water bodies excluding inland waters.
<b>Keywords</b>	bathymetry, marine, continental shelf, elevation, SRTM, DEM, lidar bathymetry
<b>Key Dates</b>	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
<b>Citation and responsible party information</b>	NAME: Beaman, Robin, Dr ORGANISATION: School of Earth and Environmental Sciences, 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
<b>Point of Contact</b>	NAME: Beaman, Robin, Dr ORGANISATION: School of Earth and Environmental Sciences, 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
<b>Abstract</b>	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 file format with common horizontal (WGS84) and vertical (approximate

Field	Description
	<p>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.</p> <p>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:  <a href="http://www.deeppref.org/publications/reports/67-3dgbr-final.html">http://www.deeppref.org/publications/reports/67-3dgbr-final.html</a></p>
<b>Purpose</b>	<p>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.</p> <p>A full description of the project is available at:  <a href="http://www.deeppref.org/projects/48-depth-model-gbr.html">http://www.deeppref.org/projects/48-depth-model-gbr.html</a></p>
<b>Data limitations (optional)</b>	<p>AUSTRALIAN HYDROGRAPHIC SERVICE NOTICE: Not to be used for navigation. Certain material in this product are reproduced under licence by permission of The Australian Hydrographic Service © Commonwealth of Australia 2010-2017. All rights reserved. This information may not be copied, reproduced, translated, or reduced to any electronic medium or machine readable form, in whole or part, without the prior written consent of the Australian Hydrographic Service.</p> <p>GEOSCIENCE AUSTRALIA NOTICE: This gbr100 DEM incorporates data which are © Commonwealth of Australia (Geoscience Australia) 2010-2017. The Commonwealth gives no warranty regarding the data's accuracy, completeness, currency or suitability for any particular purpose.</p>

Field	Description
	This dataset has been compiled from a wide range of data sources of varying resolution and accuracy.
<b>Preview Image (optional)</b>	NA
<b>Data lineage (optional)</b>	See accompanying report
<b>Data file description (optional)</b>	<p>FILE: gbr100</p> <p>PROJECTION: Geographic Latitude/Longitude</p> <p>DATUM: WGS84</p> <p>SCALE: 0.001*0.001 arc-degree (about 100 m) grid cells</p> <p>STORED DATA FORMAT: ESRI raster grid</p> <p>AVAILABLE DATA FORMATS: GMT/netCDF (CF-1.0) grid and Fledermaus (V7.7.7) SD grid</p>
<b>Spatial Extent</b>	<p>NORTH LATITUDE: -10.0</p> <p>SOUTH LATITUDE: -29.0</p> <p>WEST LONGITUDE: 142.0</p> <p>EAST LONGITUDE: 160.0</p> <p>HORIZONTAL DATUM: WGS84</p> <p><sup>a</sup>ESRI raster Top                    -10.0001388886</p> <p>ESRI raster Left                    141.999861111</p> <p>ESRI raster Right                   159.999861111</p> <p>ESRI raster Bottom                -29.0001388886</p> <p>ESRI raster Columns               18000</p> <p>ESRI raster Rows                   19000</p> <p>ESRI raster Cell Size X, Y       0.001, 0.001</p> <p><sup>a</sup>Cell-registered, showing coordinates for edge of cells</p> <p><sup>b</sup>GMT/netCDF x_min                142.000361111</p> <p>GMT/netCDF x_max                159.999361111</p> <p>GMT/netCDF y_min                -28.9996388886</p> <p>GMT/netCDF y_max                -10.0006388886</p> <p>GMT/netCDF nx                    18000</p> <p>GMT/netCDF ny                    19000</p> <p>GMT/netCDF x_inc, y_inc       0.001, 0.001</p> <p><sup>b</sup>Grid-registered, showing coordinates of the centre of cells</p>
<b>Temporal Extent</b>	See Appendix in accompanying report for data temporal extent
<b>Vertical extent (optional)</b>	<p>MINIMUM HEIGHT: -5624 m</p> <p>MAXIMUM HEIGHT: 2843 m</p> <p>VERTICAL DATUM: approximates mean sea level (MSL)</p>
<b>Maintenance and Update</b>	STATUS: Ongoing

Field	Description
Frequency (optional)	FREQUENCY: As required
Resource Constraints and licensing	COPYRIGHT: The content on this website is released under the Creative Commons Attribution 4.0 International Licence: <a href="https://creativecommons.org/licenses/by/4.0/">https://creativecommons.org/licenses/by/4.0/</a> 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: <a href="http://www.deepreef.org/images/stories/publications/reports/Project3DGBRFinal_RRRC2010.pdf">http://www.deepreef.org/images/stories/publications/reports/Project3DGBRFinal_RRRC2010.pdf</a>
Credits and funding*	CREDITS: Sheriden Morris (Reef & Rainforest Research Centre) David Souter (Reef & Rainforest Research Centre) 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) 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)

Field	Description
	<p>Mike Ronan (Qld Dept of Environment and Heritage Protection)            Maria Zann (Qld Dept of Environment and Heritage Protection)</p> <p>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  <a href="https://wetlandinfo.ehp.qld.gov.au/resources/static/pdf/resources/fact-sheets/fs-inter-sub-tidal-class-map-aca-cq-31-05-2017.pdf">https://wetlandinfo.ehp.qld.gov.au/resources/static/pdf/resources/fact-sheets/fs-inter-sub-tidal-class-map-aca-cq-31-05-2017.pdf</a>)</p>
<b>Supplemental information</b>	NA
<b>Online resources</b>	<p>The data may be downloaded from the Deepreef Explorer site:  <a href="http://www.deepreef.org/bathymetry/65-3dgbr-bathy.html">http://www.deepreef.org/bathymetry/65-3dgbr-bathy.html</a>            , and within the e-Atlas website:  <a href="http://e-atlas.org.au/content/gbr-icu-bathymetry-gbr100">http://e-atlas.org.au/content/gbr-icu-bathymetry-gbr100</a></p>