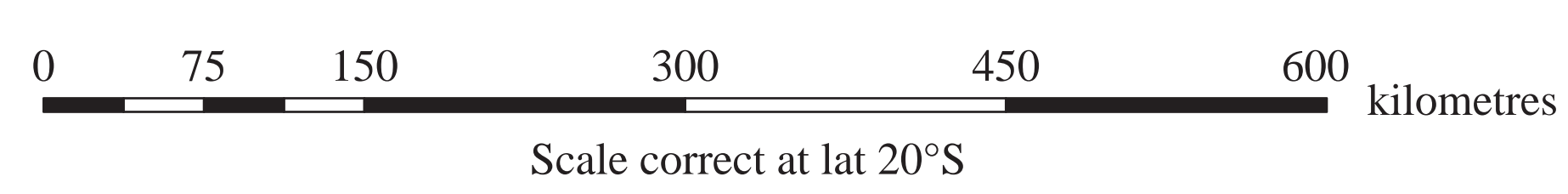
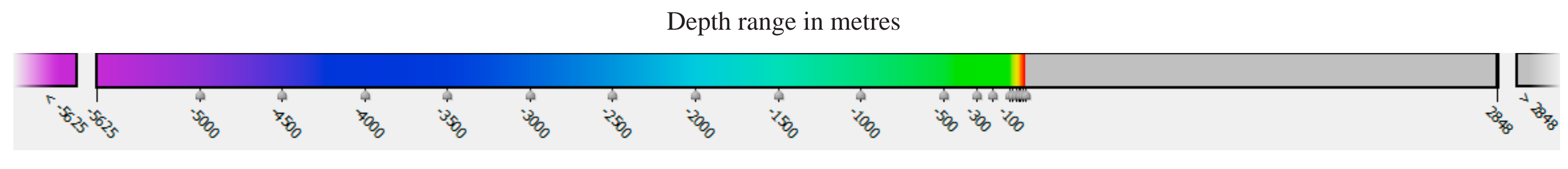


Great Barrier Reef and Coral Sea



Projection: Mercator.
 Horizontal datum: WGS84.
 Vertical datum: Mean Sea Level.
 Scale: 1 : 3 000 000 at lat 20°S.
 Not to be used for navigation.



The gbr100 DEM was generated from digital bathymetry data and SRTM land data at a grid pixel resolution of 0.001-arc degree (~100 m). Hillshading is from the NW at 51° above the horizon.

The problem
 A high-resolution digital elevation model (DEM) is a vital dataset required to accurately simulate water mixing and current flow within a whole-of-Great Barrier Reef (GBR) scale hydrodynamic model. The finer-scale detail of the undersea landscape underpins the ability of the hydrodynamic model to resolve the effects of coral reefs and inter-reefal passages on water circulation. There is also a critical lack of information about the location and spatial extent of deep-water ecosystems and habitats in the GBR and Coral Sea. Therefore, key seabed geomorphic features remain largely hidden from view and outside of effective management.

The 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, Reef and Rainforest Research Centre, Cairns, Australia, pp. 13 plus Appendix 1.

Created by: Dr Robin Beaman
 James Cook University, Cairns Qld 4870
 Email: robin.beaman@jcu.edu.au
 Web: www.deepreef.org

The solution
 Project 3DGBR has developed a new high-resolution DEM for the GBR and adjoining Coral Sea at a grid pixel resolution of 0.001-arc degree (~100 m). The geographic coverage ranges from latitude 10° to 29° South, longitude 142° to 160° East. Including the Queensland hinterland, the new grid represents an area of about 3,000,000 km². The project utilised the latest data sourced from ship-based multibeam and singlebeam echo sounder surveys, airborne lidar bathymetry surveys, and satellite remotely sensed imagery. The new grid is called gbr100 and is a significant improvement on current bathymetry grids.

The resources
 For access to the gbr100 DEM in a range of formats for public download, visit:
<http://www.deepreef.org/bathymetry/65-3dgb-bathy.html>
<http://e-atlas.org.au/content/gbr-jcu-bathymetry-gbr100>