

Regional-scale 100/30 m resolution bathymetry grids for north-eastern Australia

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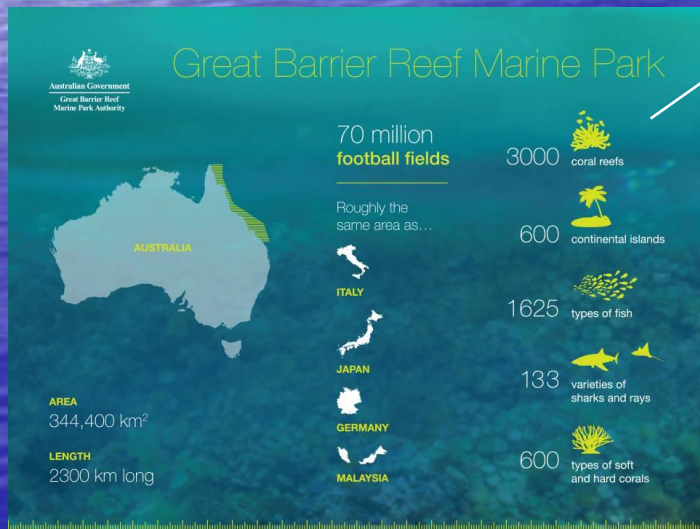
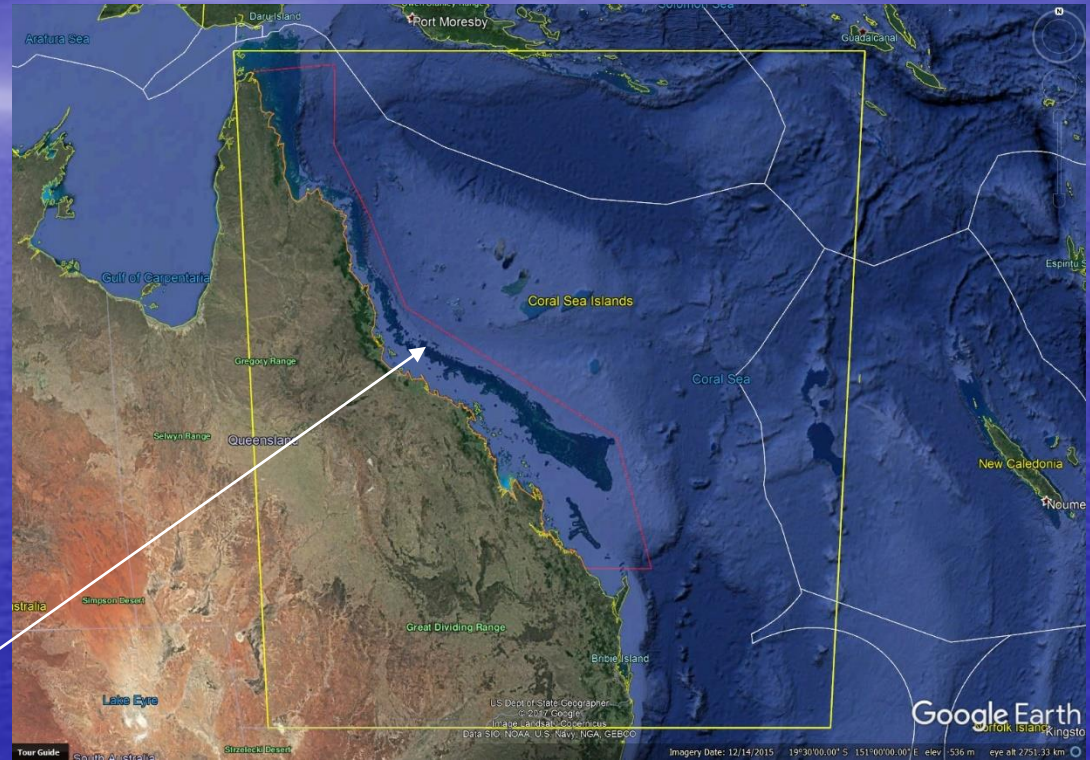
Australia's Great Barrier Reef and Coral Sea

Project 3DGBR since 2009

~3,000,000 km² in area

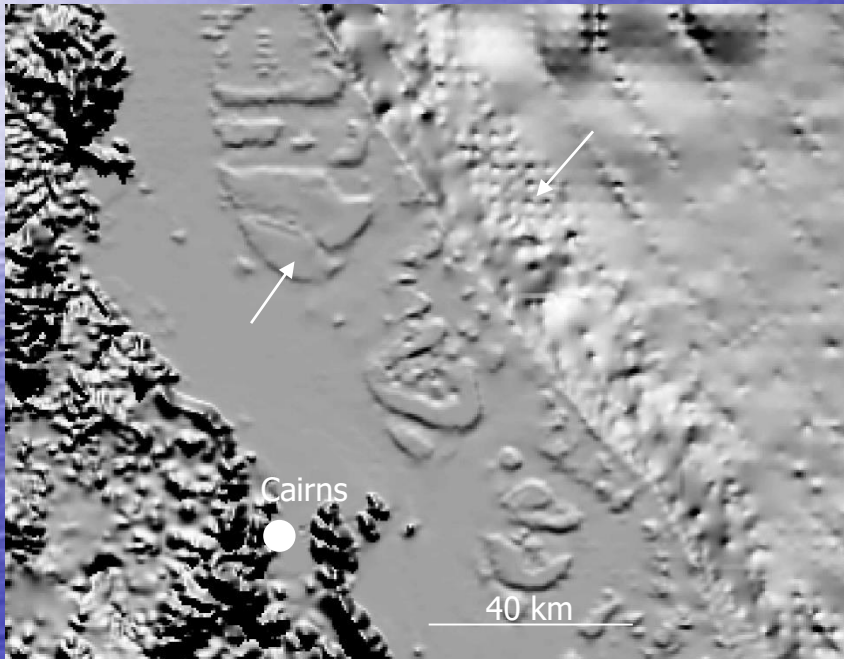
Australia, PNG, Solomon Is, New Caledonia EEZs, high seas

GBR Marine Park world's largest coral reef ecosystem

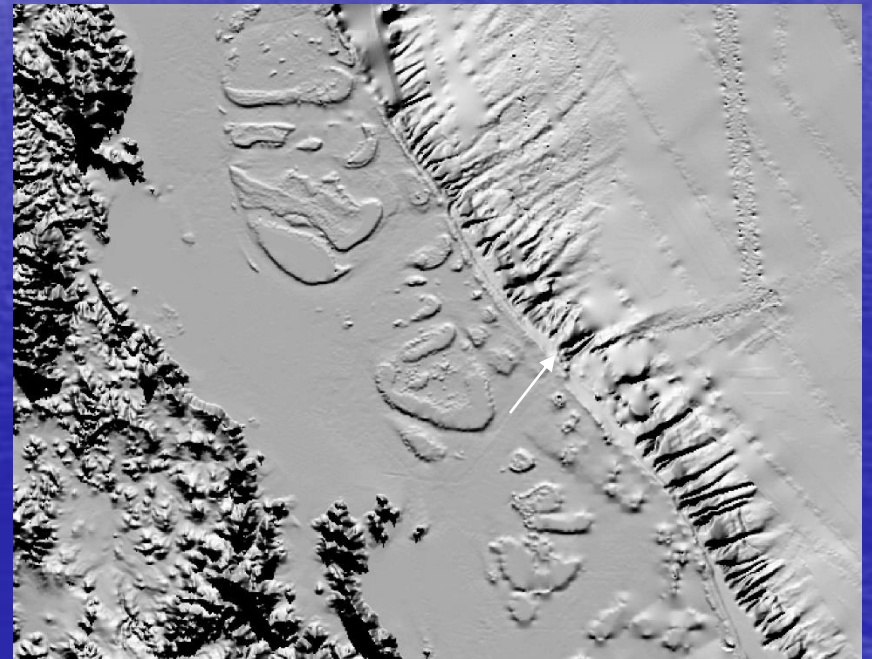


History

GBRDEM @ ~250 m



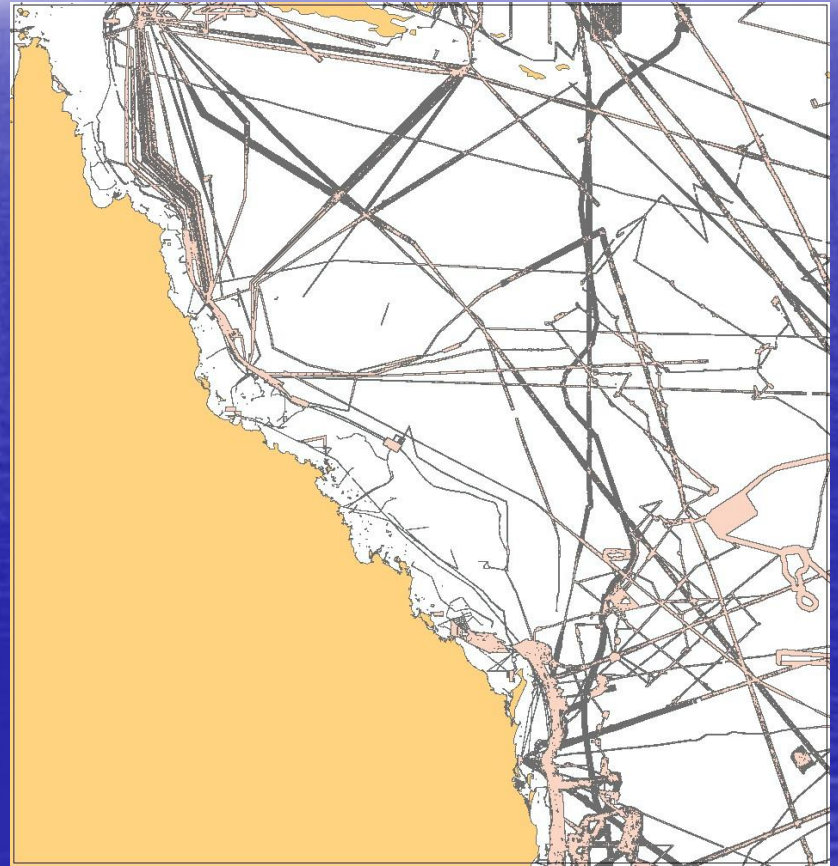
AusBathyTopo @ ~250 m



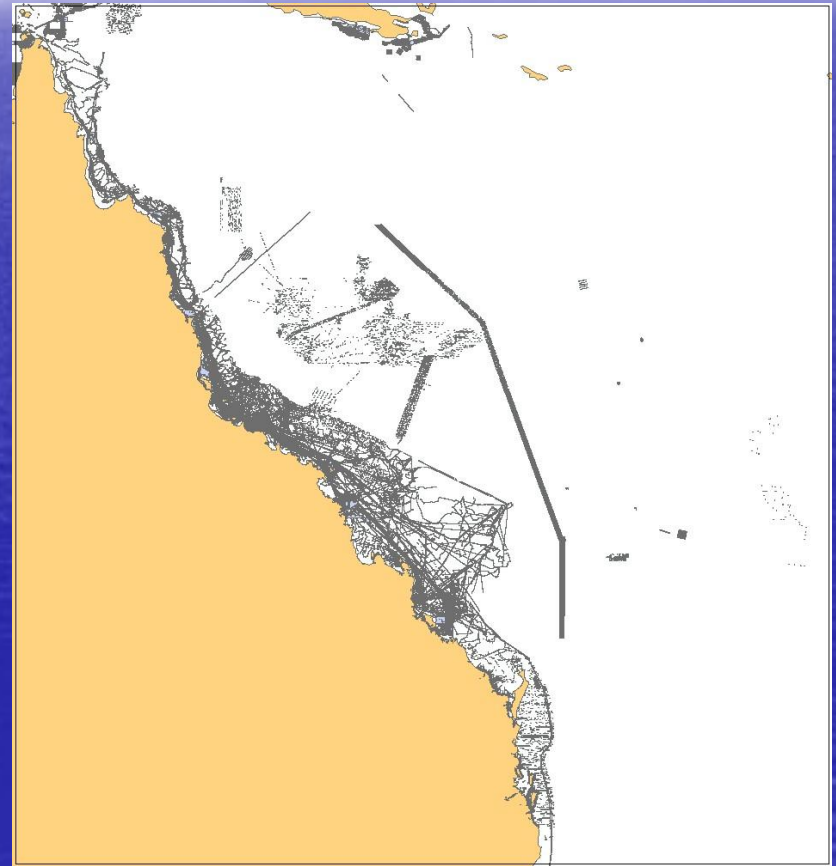
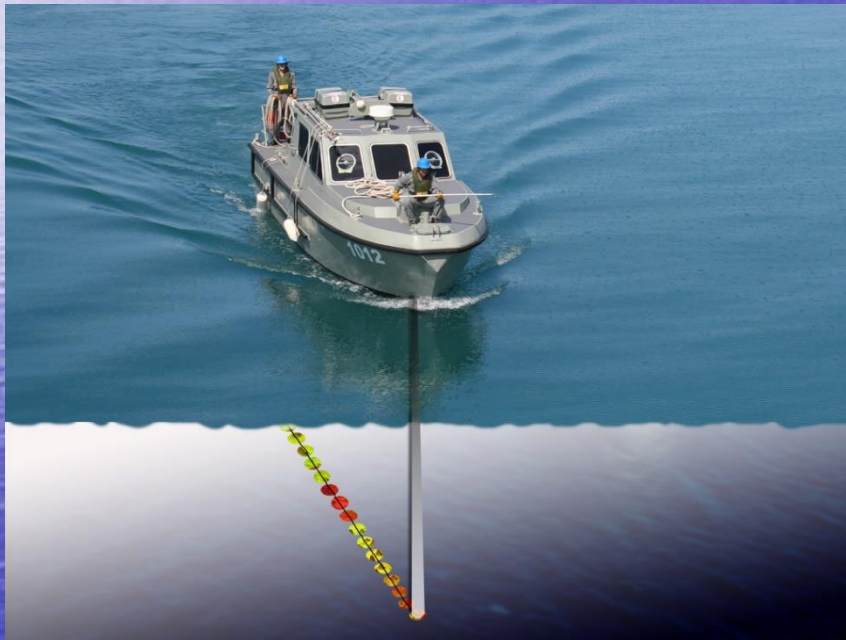
Lewis, A., 2001. Great Barrier Reef Depth and Elevation Model: GBRDEM. Technical Report No. 33, Townsville, Australia, pp. 58.

Whiteway, T.G., 2009. Australian Bathymetry and Topography Grid, June 2009. Geoscience Australia Record 2009/21, Canberra, Australia, pp. 46.

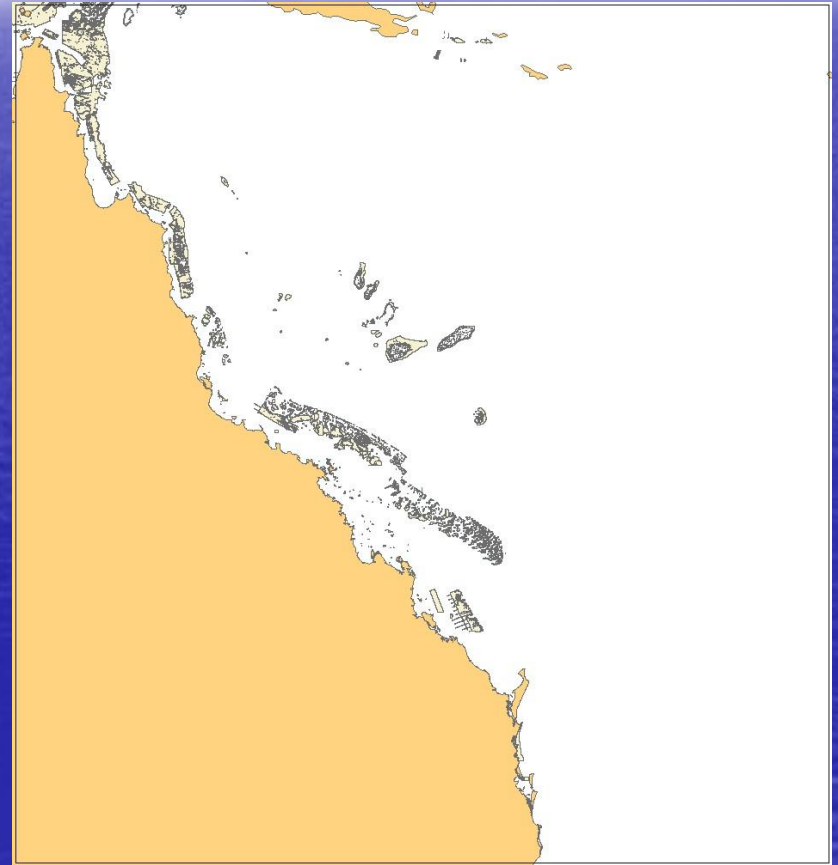
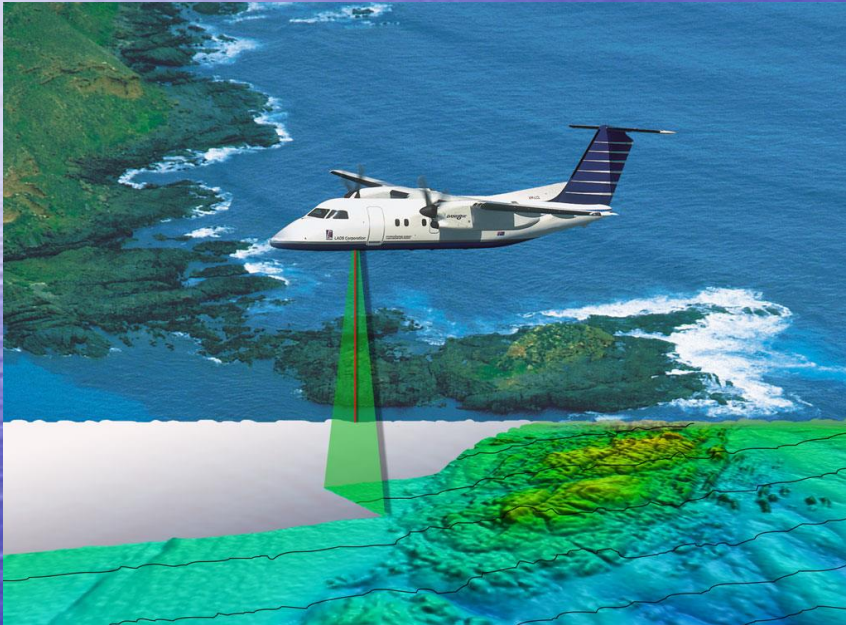
Multibeam

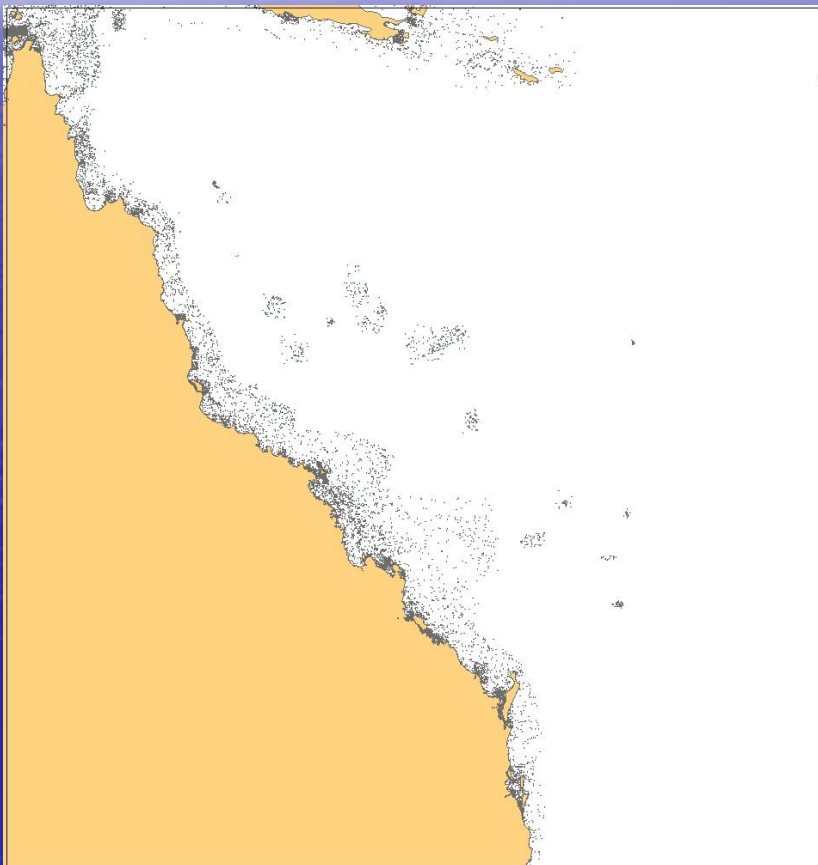


Singlebeam

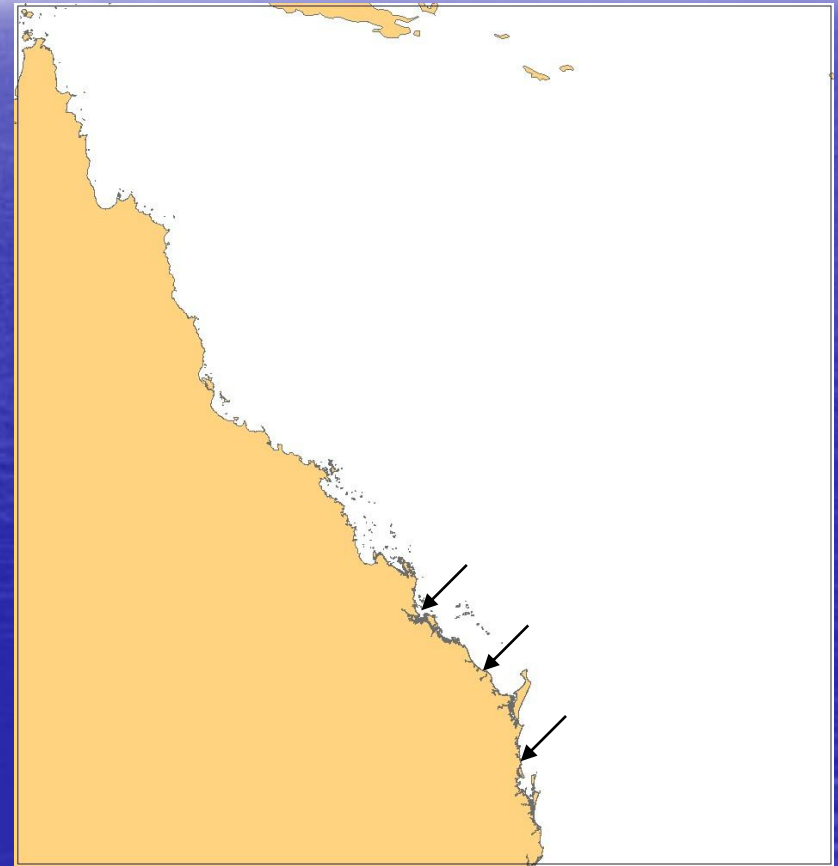
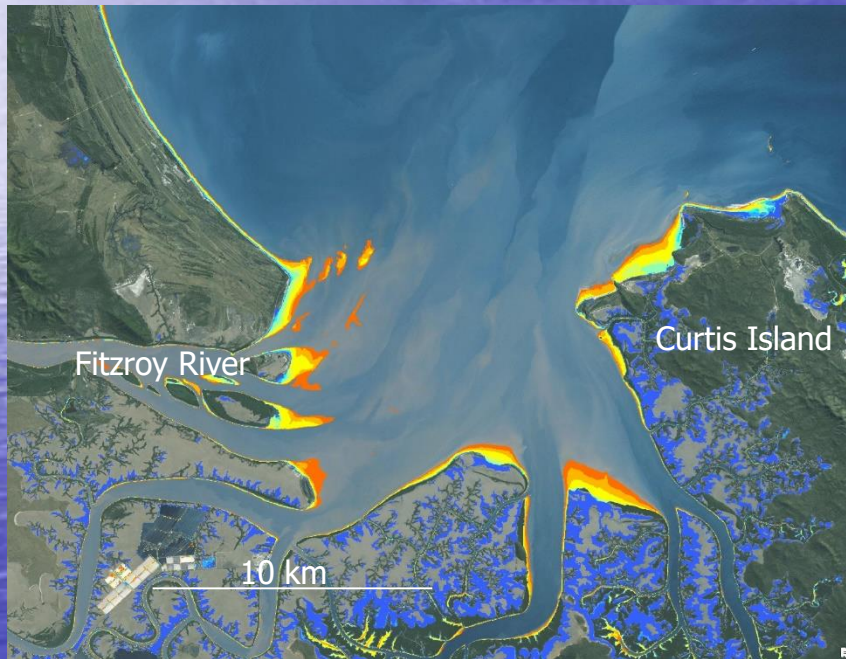


Lidar





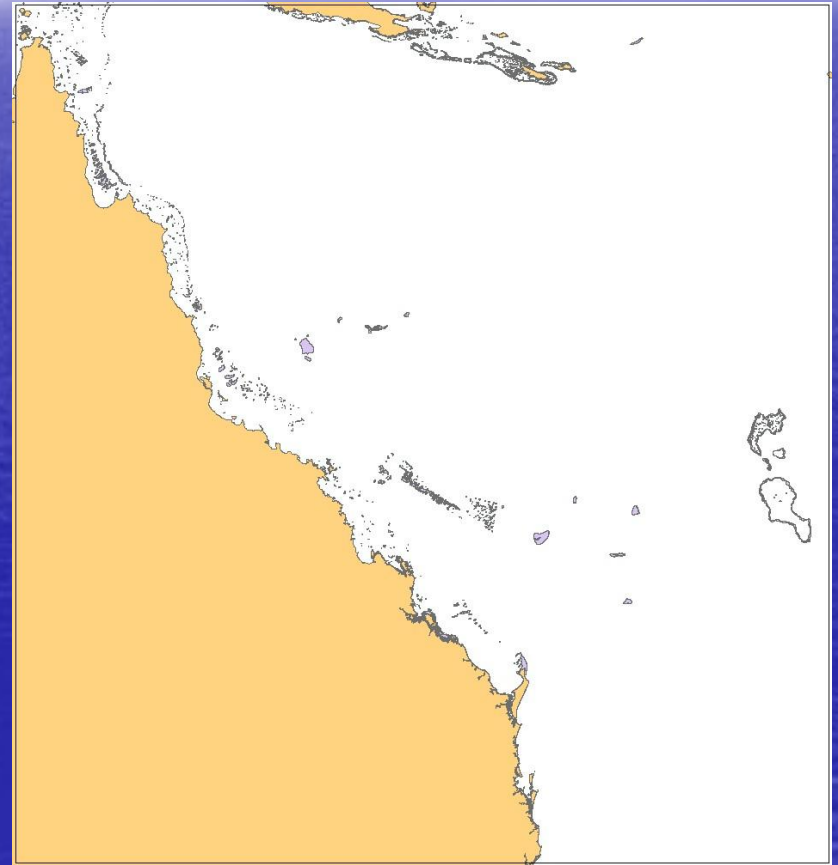
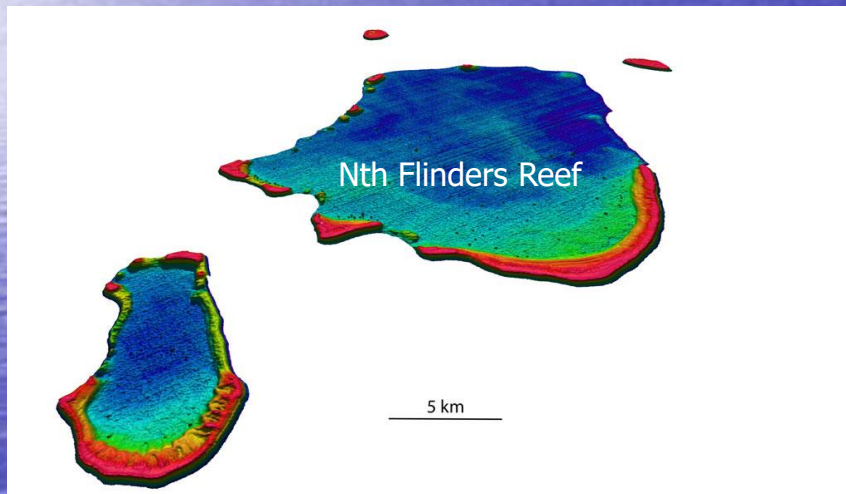
Intertidal Extents Model DEM



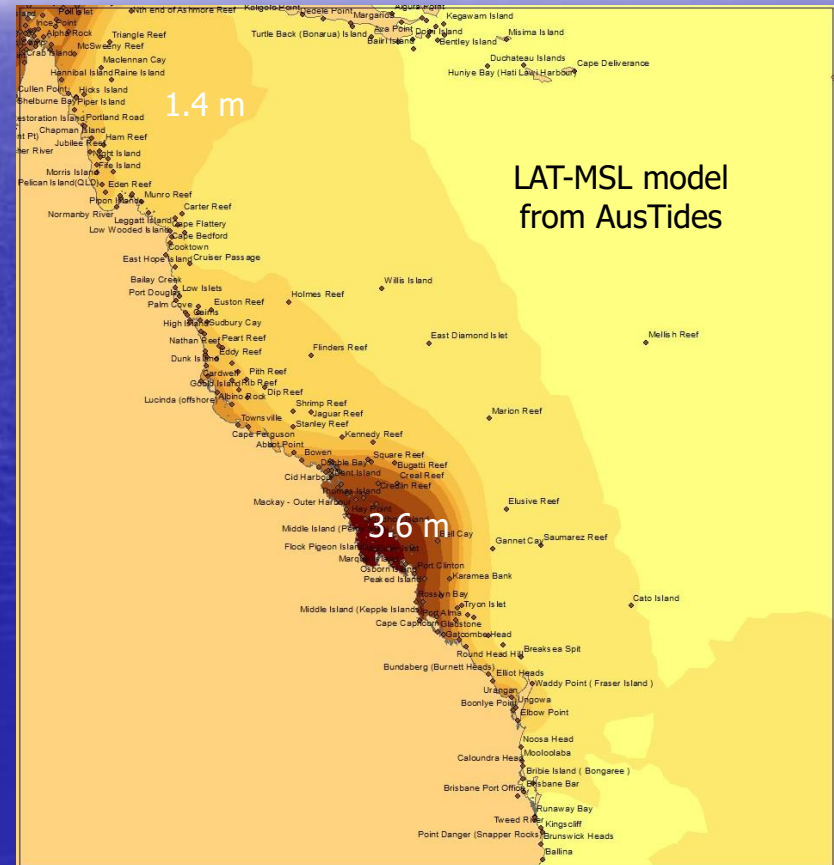
Digital Earth Australia: <http://www.ga.gov.au/about/projects/geographic/digital-earth-australia>

Sagar, S., Roberts, D., Bala, B., Lymburner, L., 2017. Extracting the intertidal extent and topography of the Australian coastline from a 28 year time series of Landsat observations. Remote Sensing of Environment 195, 153-169.

Satellite derived bathymetry



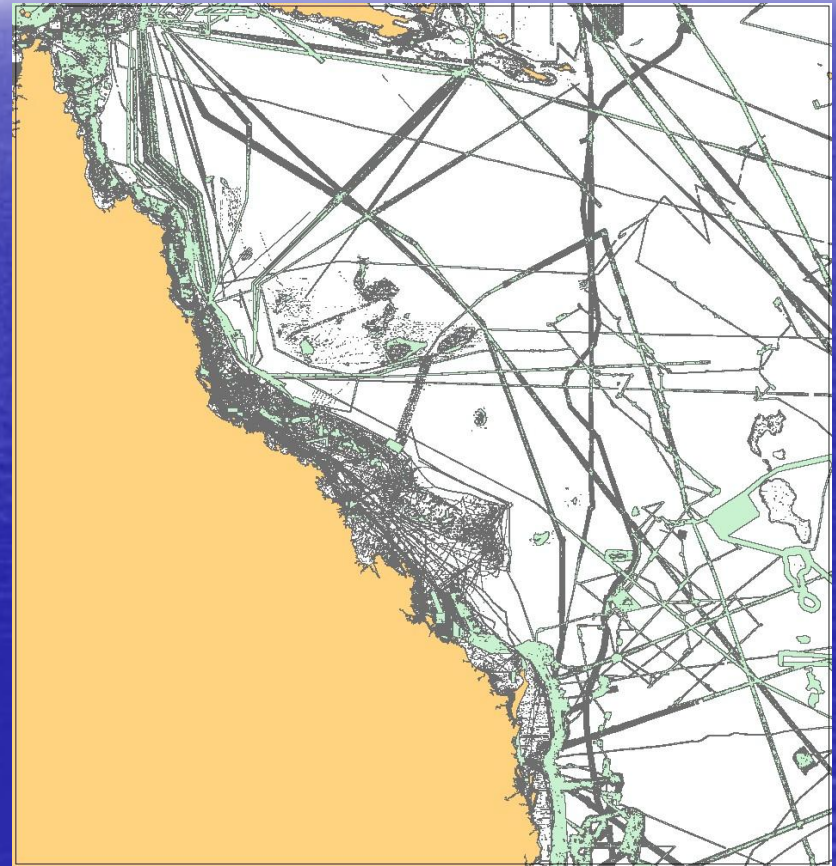
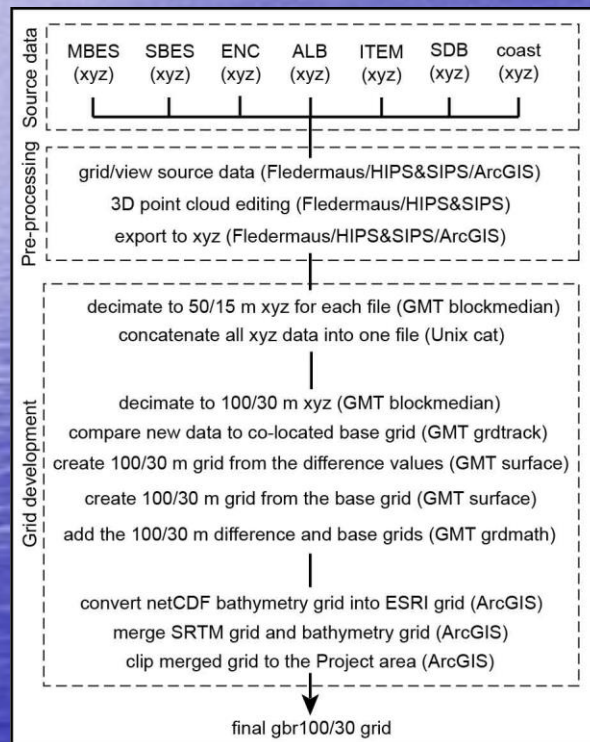
Tides



AusCoastVDT: <http://www.crcsi.com.au/research/commissioned-research/auscoast-vdt/>

AusTides: <http://www.hydro.gov.au/prodserv/publications/ausTides/tides.htm>

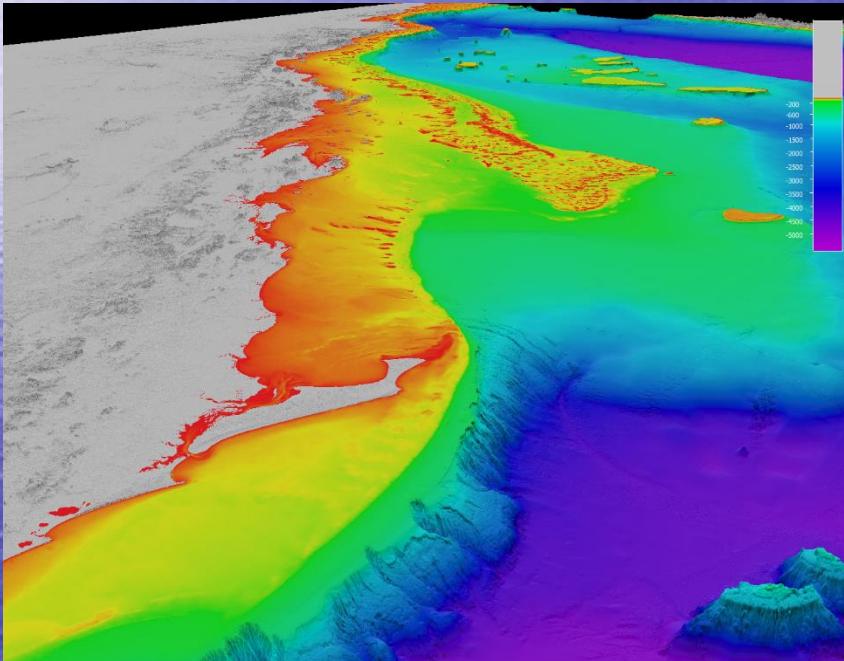
Grid development



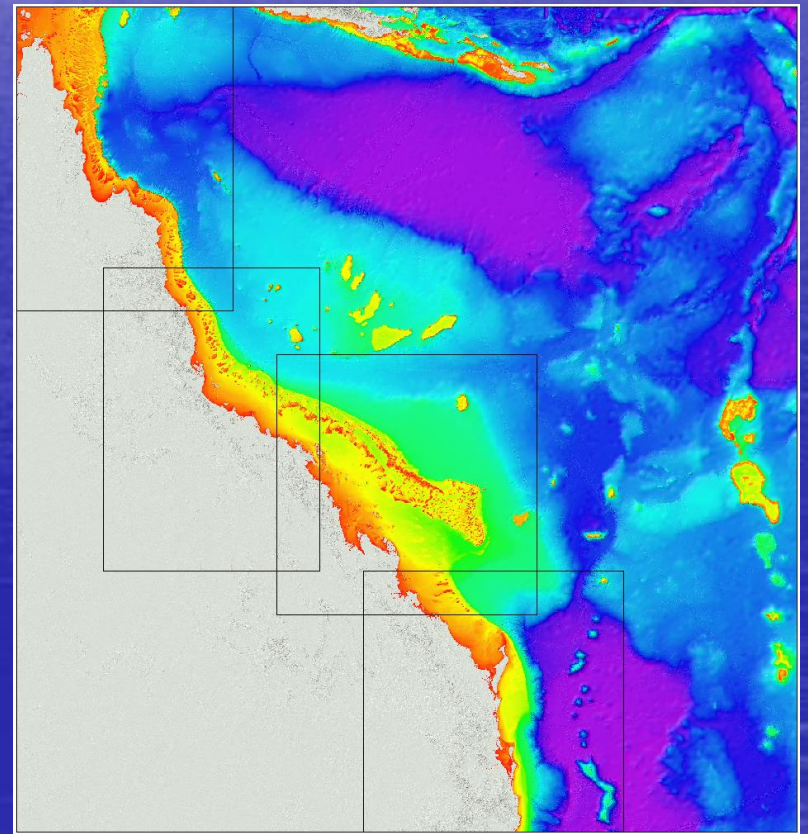
Becker, J.J., Sandwell, D.T., Smith, W.H.F., Braud, J., Binder, B., Depner, J., Fabre, D., Factor, J., Ingalls, S., Kim, S.-H., Ladner, R., Marks, K., Nelson, S., Pharaoh, A., Trimmer, R., Von Rosenberg, J., Wallace, G., Weatherall, P., 2009. Global bathymetry and elevation data at 30 arc seconds resolution: SRTM30 PLUS. *Marine Geodesy* 32(4), 355-371.

gbr100/30 grids

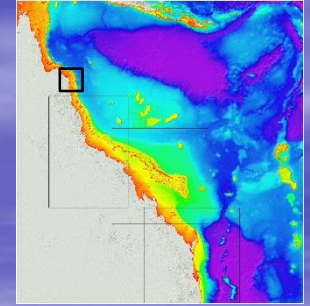
gbr100



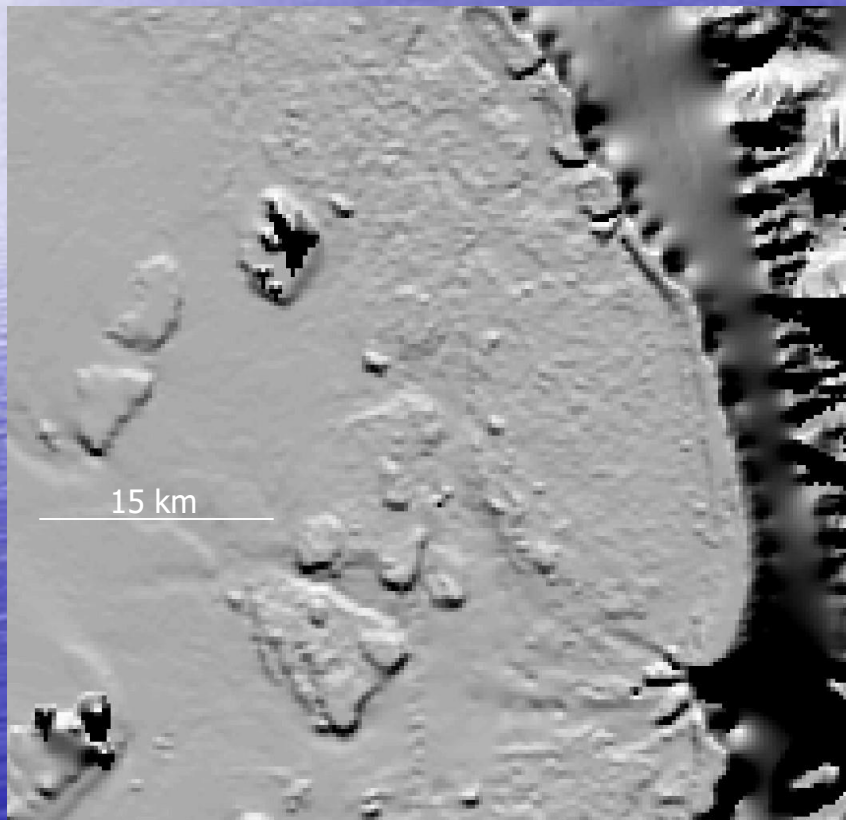
gbr30



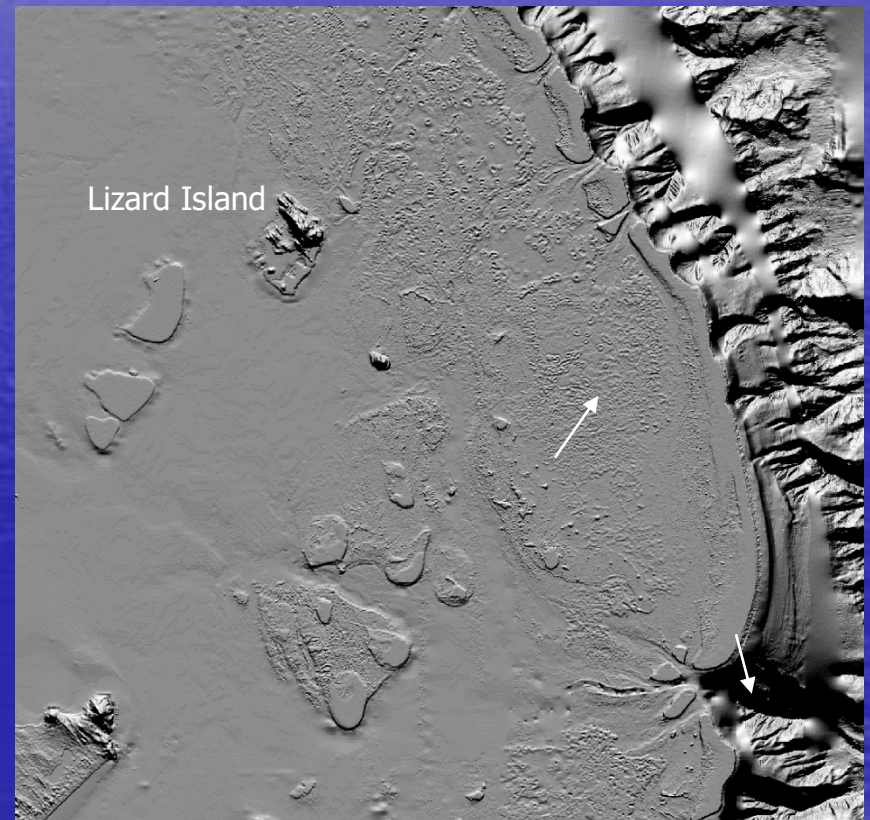
Comparison



AusBathyTopo

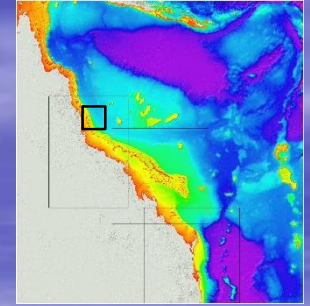


gbr30a

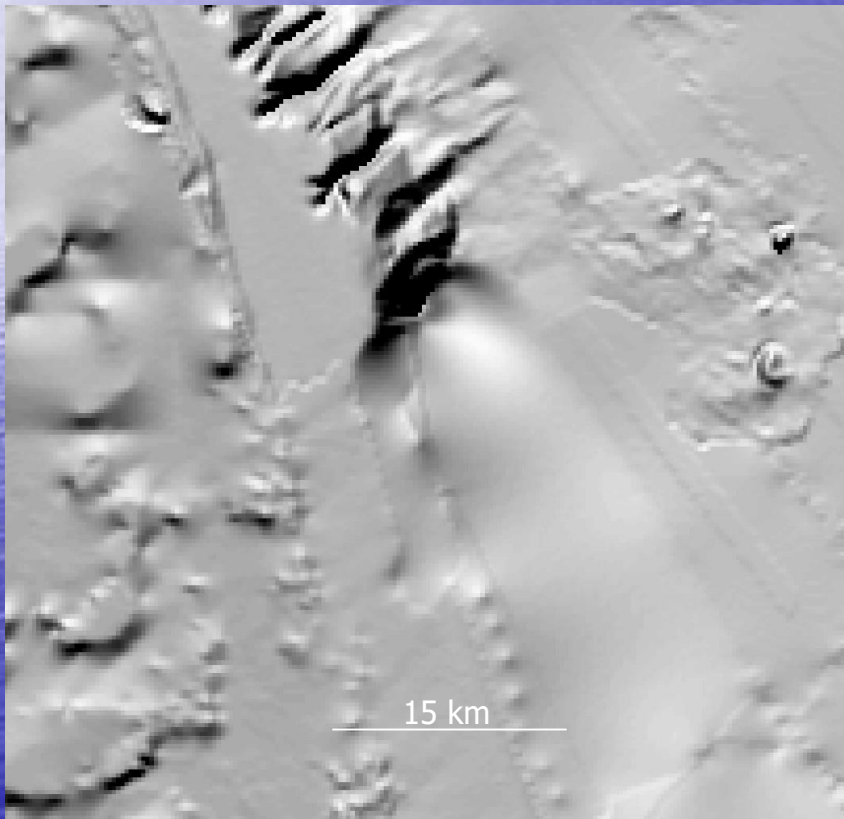


Puga-Bernabéu, A., Webster, J.M., Beaman, R.J., Guilbaud, V., 2013. Variation in canyon morphology on the Great Barrier Reef margin, north-eastern Australia: The influence of slope and barrier reefs. *Geomorphology* 191, 35-50.

Comparison



AusBathyTopo

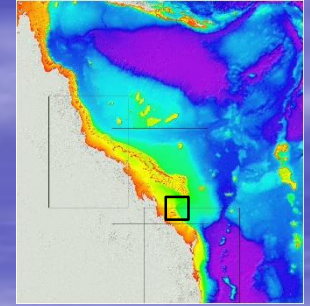


gbr30b

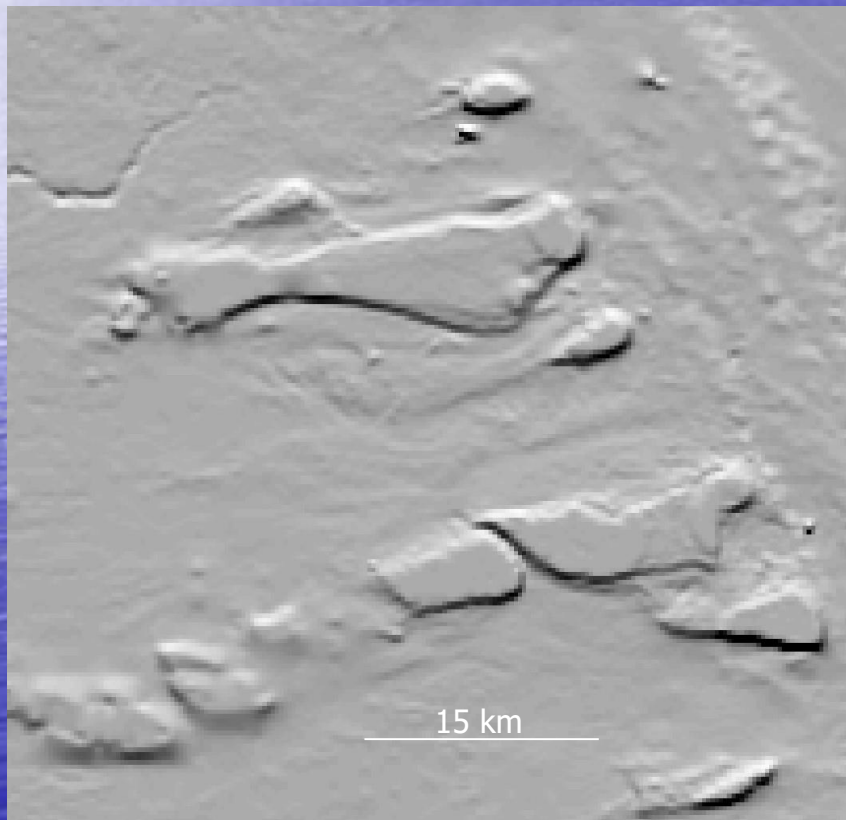


Puga-Bernabéu, A., Beaman, R.J., Webster, J.M., Thomas, A.L., Jacobsen, G., 2017. Gloria Knolls Slide: A prominent submarine landslide complex on the Great Barrier Reef margin of north-eastern Australia. *Marine Geology* 385, 68-83.

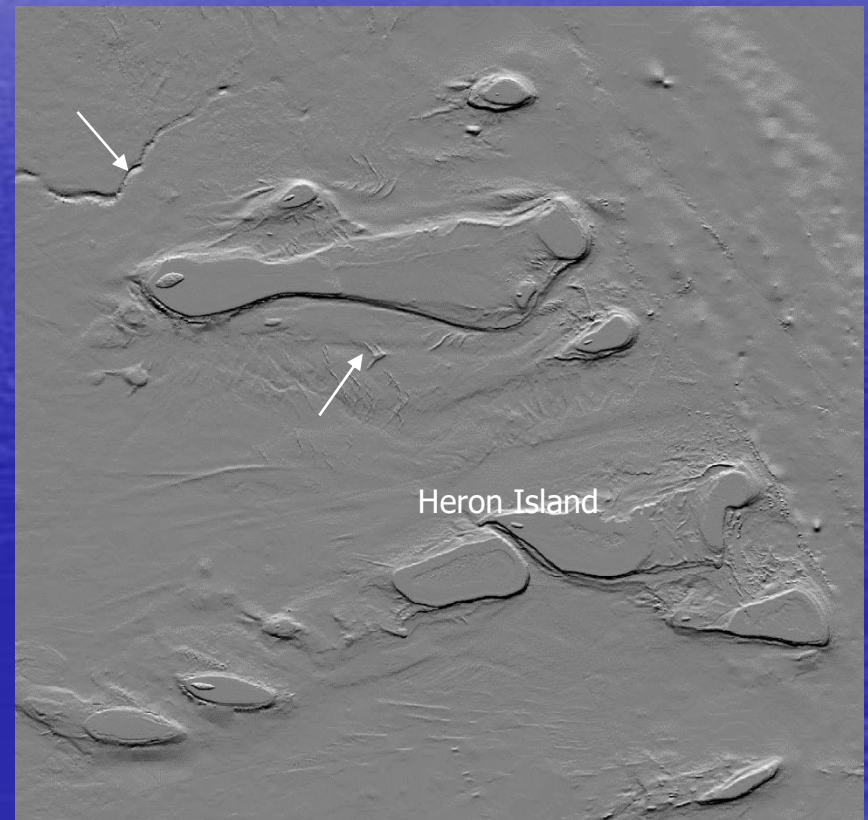
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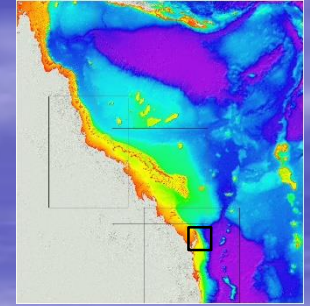


gbr30c

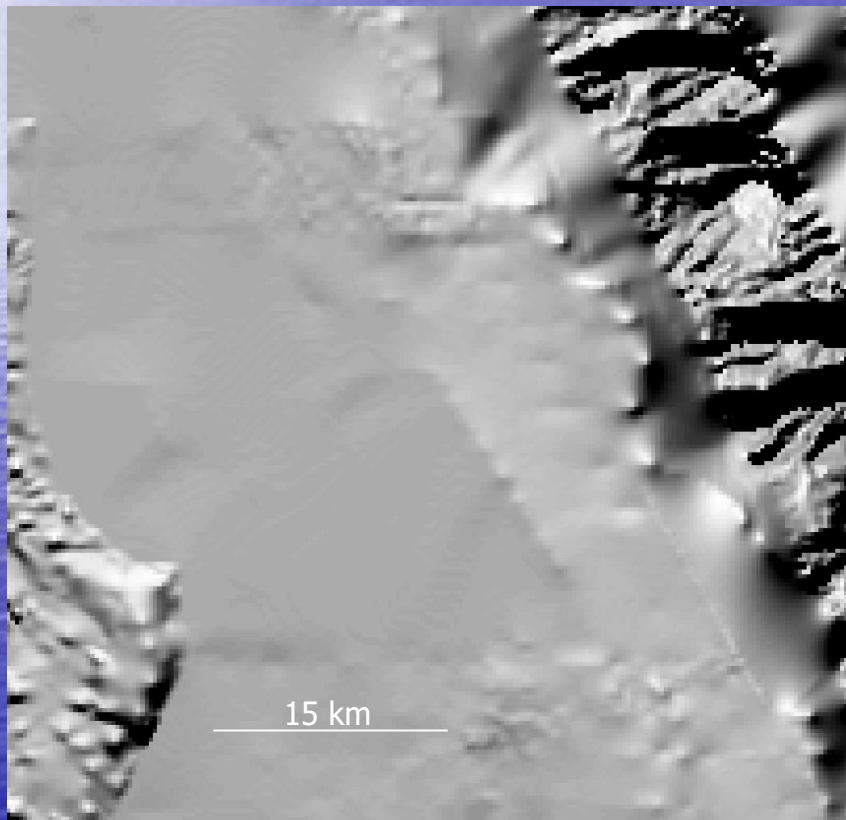


Duce, S., Vila-Concejo, A., Hamylton, S.M., Webster, J.M., Bruce, E., Beaman, R.J., 2016. A morphometric assessment and classification of coral reef spur and groove morphology. *Geomorphology* 265, 68-83.

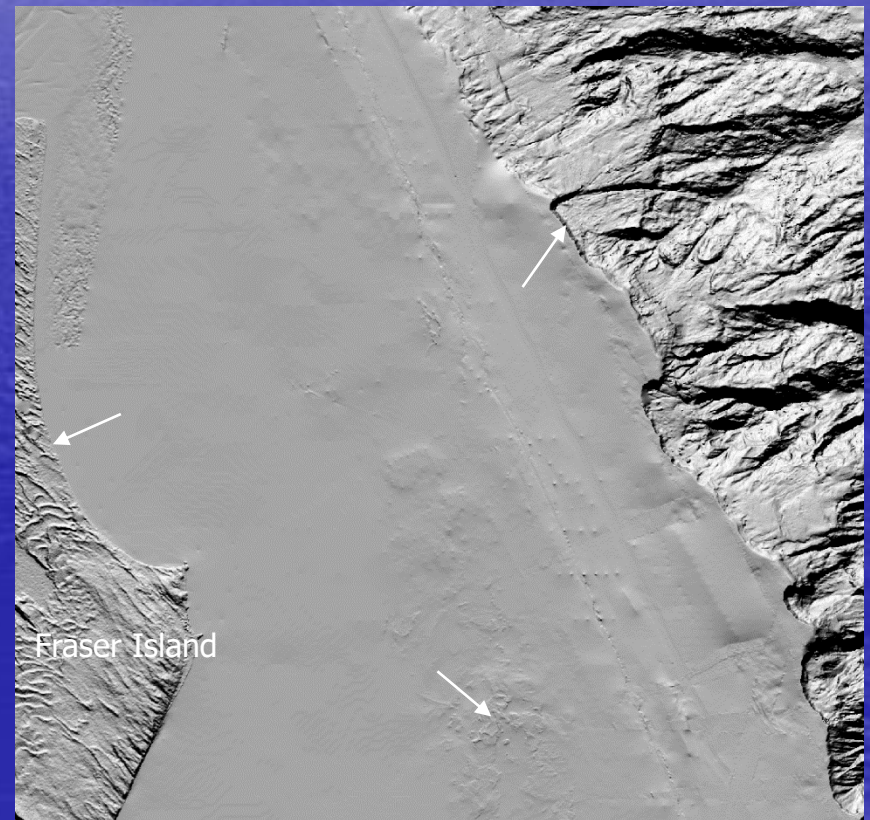
Comparison



AusBathyTopo



gbr30d



Boyd, R., Ruming, K., Goodwin, I., Sandstrom, M., Schroder-Adams, C., 2008. Highstand transport of coastal sand to the deep ocean: A case study from Fraser Island, southeast Australia. *Geology* 36(1), 15-18.

Delivery

gbr100 - [deeppreef.org](http://www.deeppreef.org)

gbr30 - [GA ELVIS](http://www.ga.gov.au/elvis/)

The screenshot shows the 'Bathymetry' section of the Project 3DGBR website. The page has a dark blue header with navigation links: Home, Biography, Projects, Publications, Bathymetry (highlighted), Technology, Gallery, Search, and Contact. The main content area is also dark blue. The title 'Bathymetry' is in a light blue font, followed by the subtitle 'Great Barrier Reef and Coral Sea bathymetry' in a lighter blue. The text describes the gbr100 dataset as a high-resolution bathymetry model of the Great Barrier Reef and Coral Sea, covering an area of about 3,000,000 km². It mentions that the data is available in various formats for public download. There is a 'Copyright Notice' section with a warning 'NOT TO BE USED FOR NAVIGATION.' and a reference to the e-Atlas website. A reference is provided for Beam, 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. (internal link to report). A seminar presentation to the Australian Hydrographic Service is dated 8 July 2010, with a link to Project3DGBR_AHS2010.pdf (3.59 Mb). A poster presentation at the Australian Marine Sciences Association conference is dated 3-7 July 2011, with a link to GBR Coral Sea_AMSA2011.pdf (909.79 Kb). The 'Gallery images' section displays eight small bathymetric maps of different regions: NW Qld Plateau, Tasmanid Seamounts, SE Qld Plateau, Offshore Townsville, Offshore Bowen, Offshore Brisbane, Offshore Bundaberg, and Offshore Cairns.

Home Biography Projects Publications **Bathymetry** Technology Gallery Search Contact

Bathymetry

Great Barrier Reef and Coral Sea bathymetry

This dataset provides the high-resolution bathymetry model of the Great Barrier Reef and Coral Sea, called gbr100, an output of Project 3DGBR. The 100 metre-resolution gridded bathymetry dataset covers an area of about 3,000,000 km², from the Gulf of Papua to northern New South Wales, and easterly into the deep Coral Sea. This page provides the data in a range of formats for public download.

Copyright Notice

NOT TO BE USED FOR NAVIGATION.

Additional content (posters, Google Earth imagery, Web Map) can be obtained at the [e-Atlas](#) website.

If using the data for publications, please quote the following reference:

- Beam, 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. ([internal link to report](#))

Seminar presented to the Australian Hydrographic Service 8 July 2010:

- [Project3DGBR_AHS2010.pdf](#) 3.59 Mb

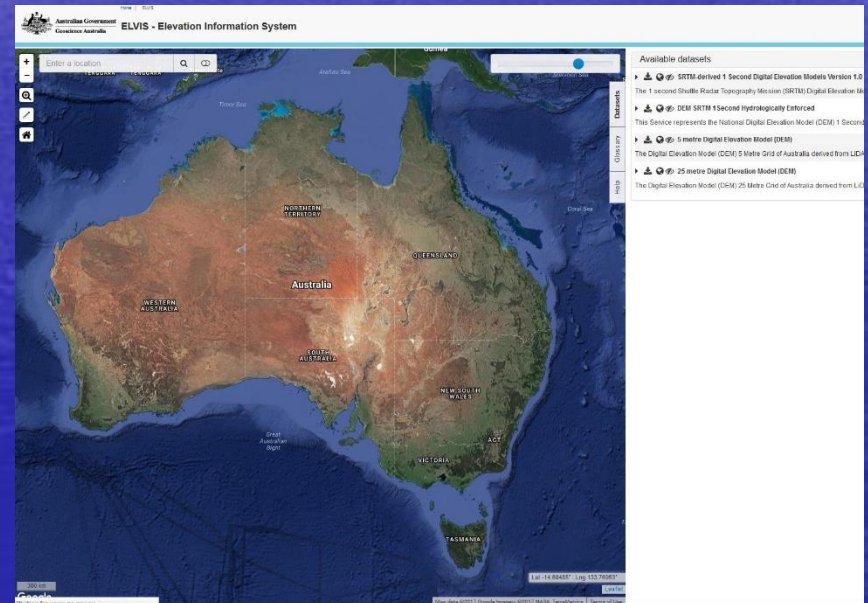
Poster presented at Australian Marine Sciences Association conference 3-7 July 2011:

- [GBRCoralSea_AMSA2011.pdf](#) 909.79 Kb

Gallery images

NW Qld Plateau Tasmanid Seamounts SE Qld Plateau Offshore Townsville

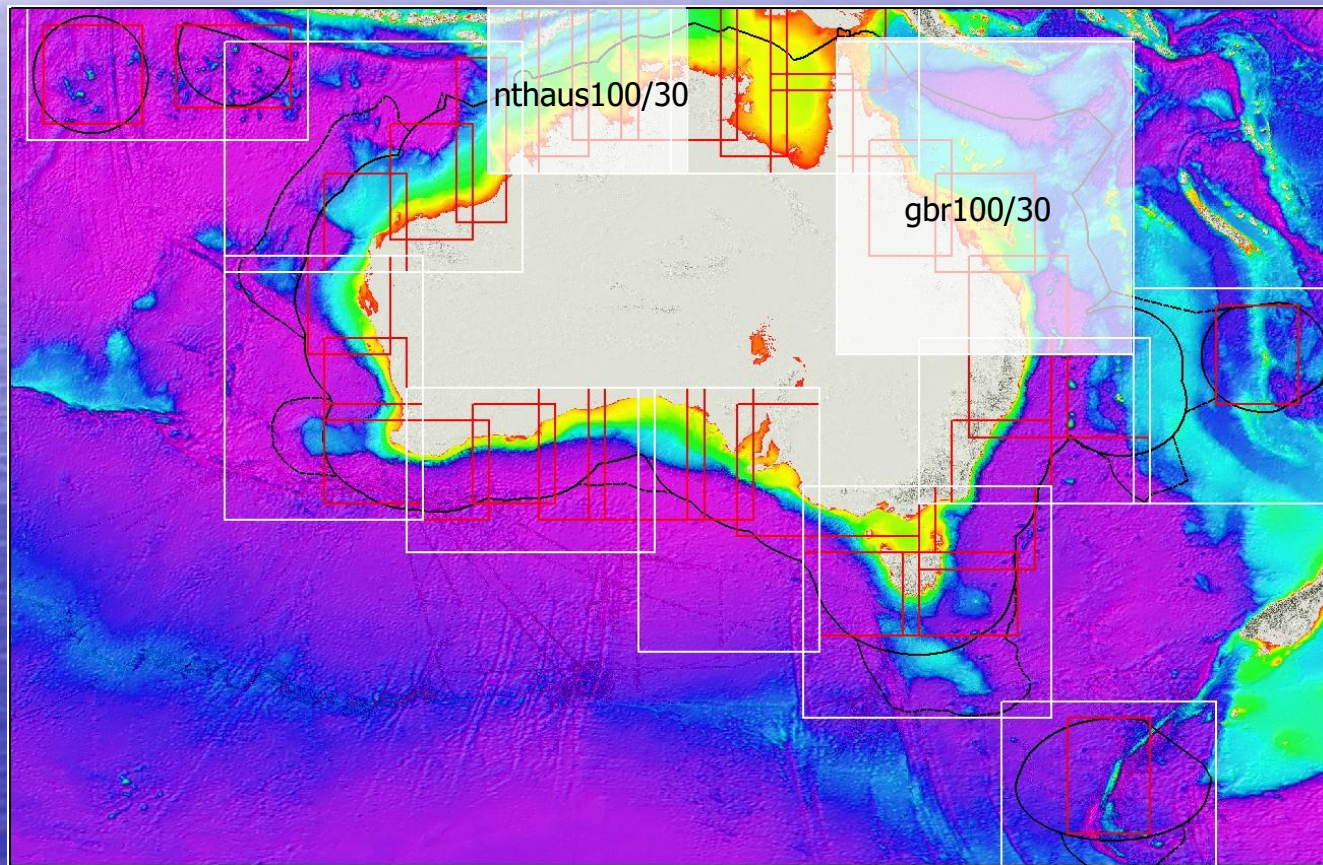
Offshore Bowen Offshore Brisbane Offshore Bundaberg Offshore Cairns



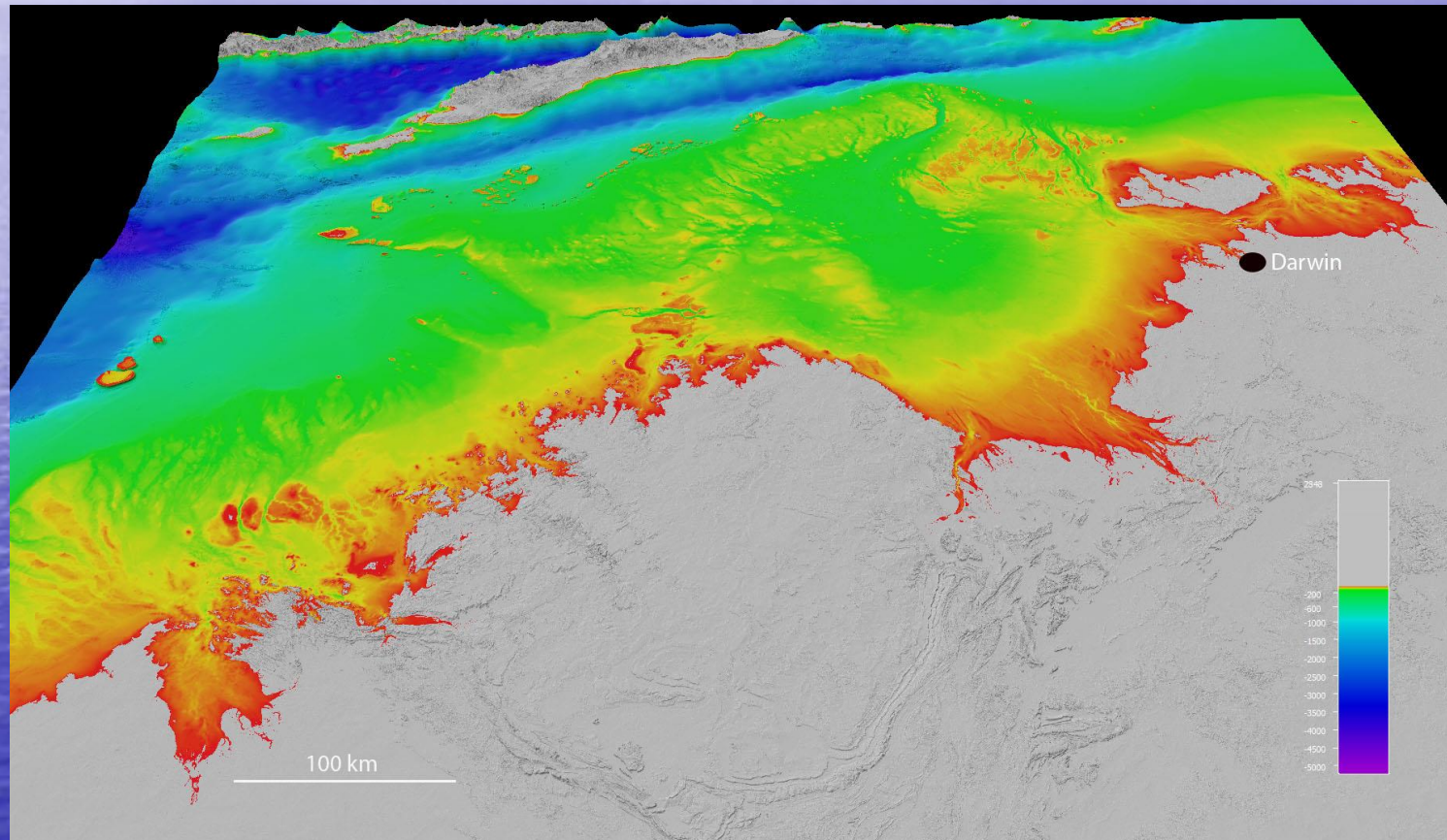
gbr100: <https://www.deeppreef.org/bathymetry/65-3dgbr-bathy.html>

gbr30: <http://www.ga.gov.au/elvis/>

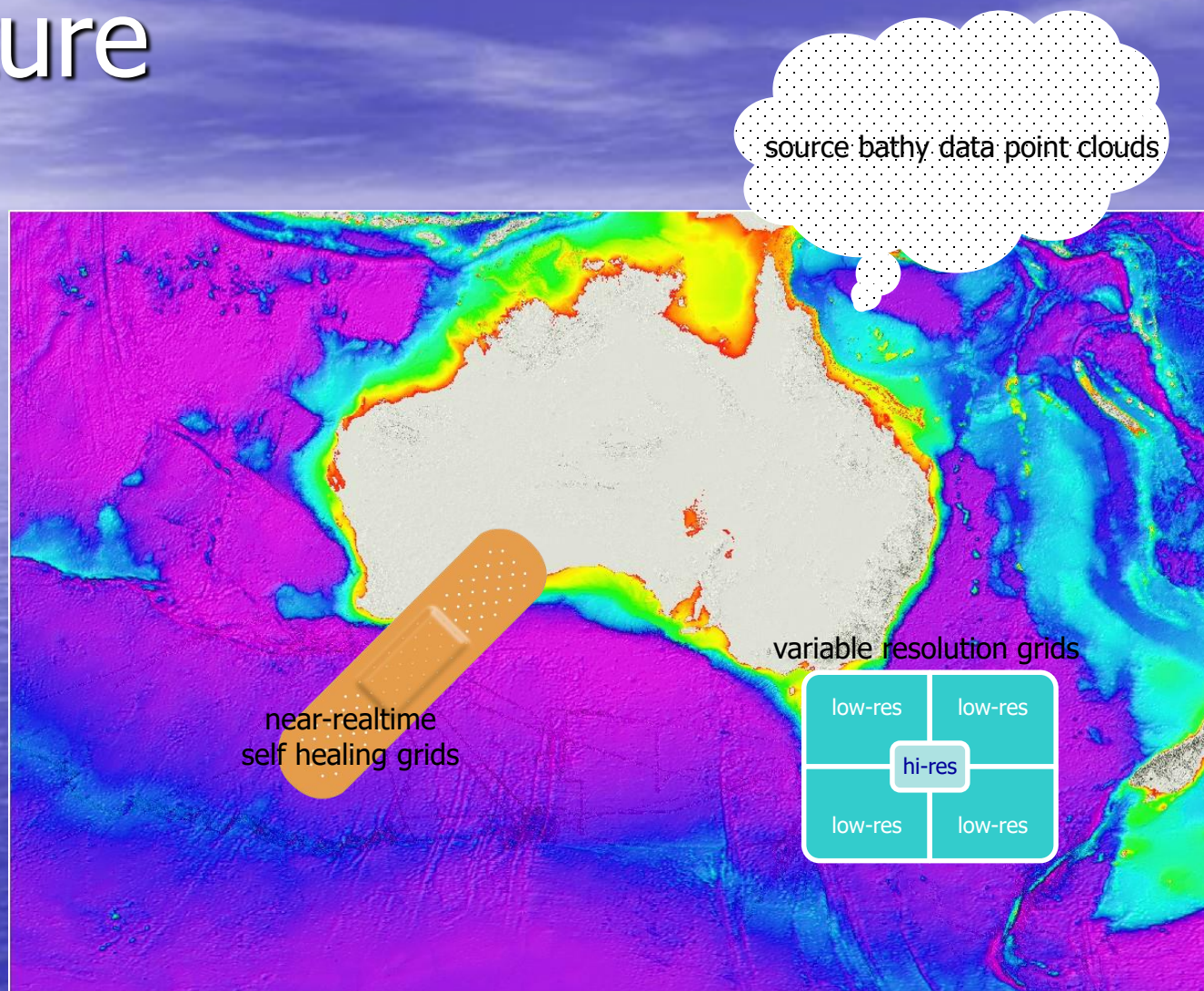
Future



nthaus grid (release Feb 2018)



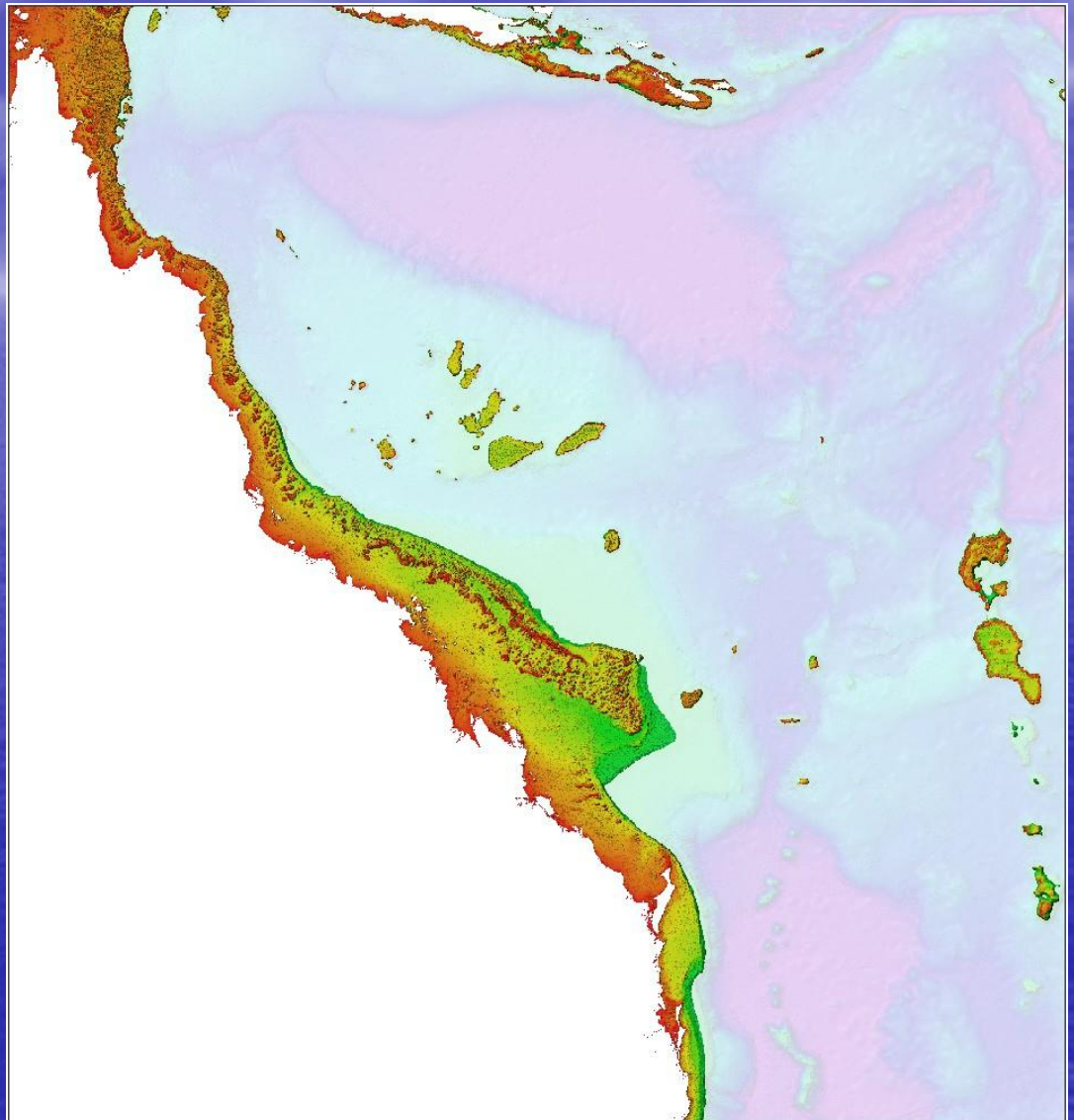
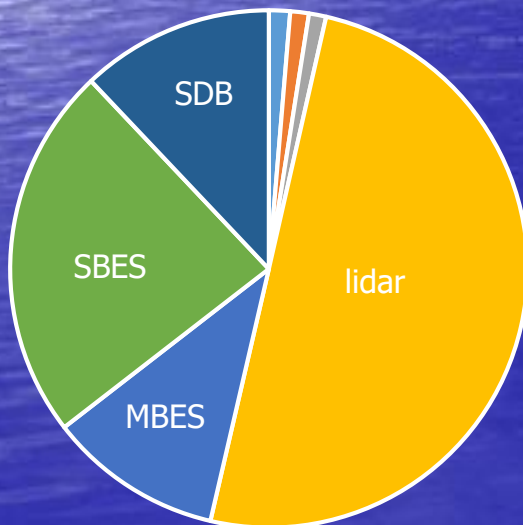
Future



Cover: 0-200m

Source bathy data area: 36.6%

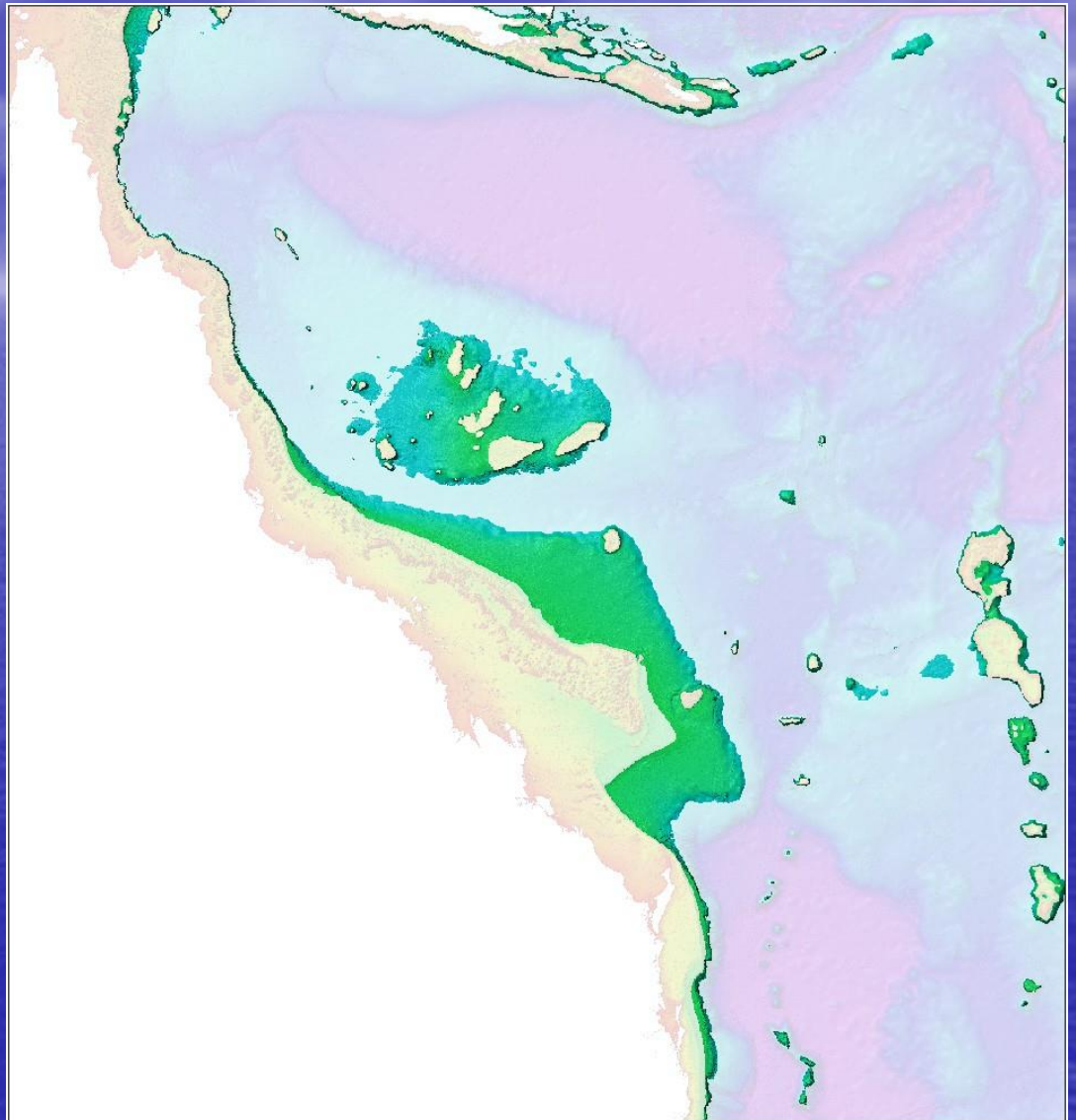
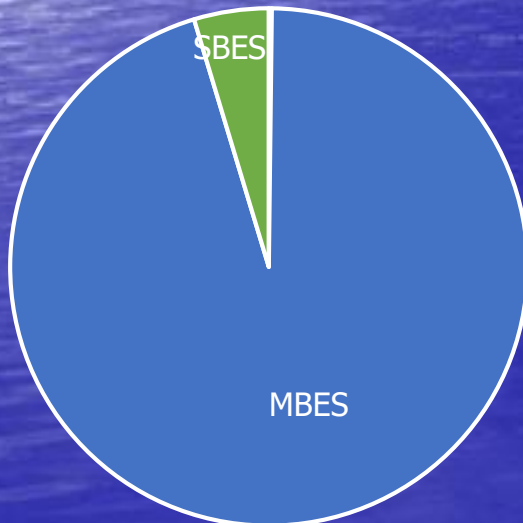
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ENC	0.4
ITEM	0.4
lidar	18.3
MBES	4.0
SBES	8.6
SDB	4.4



Cover: 200-1000m

Source bathy data area: 13.1%

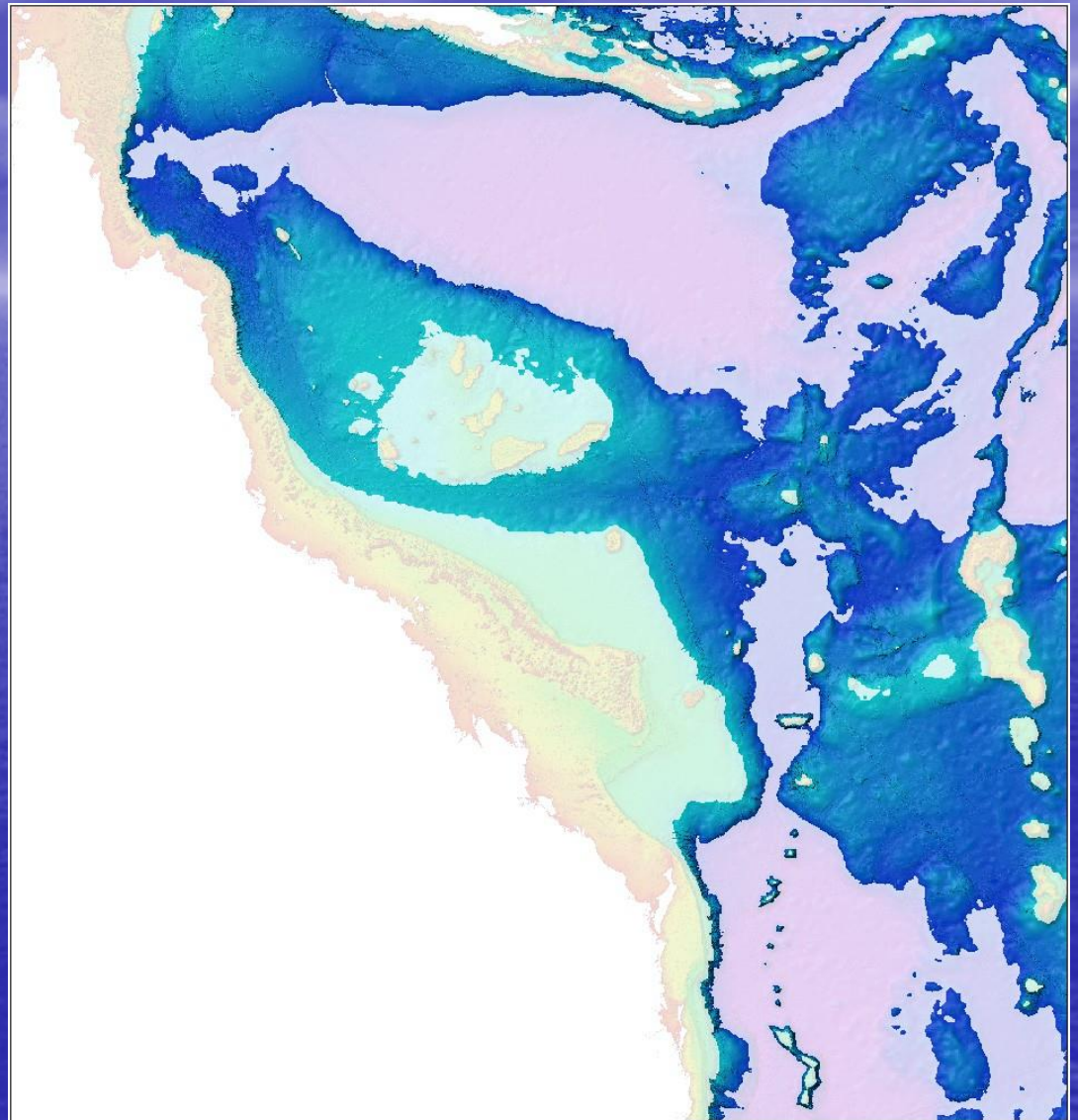
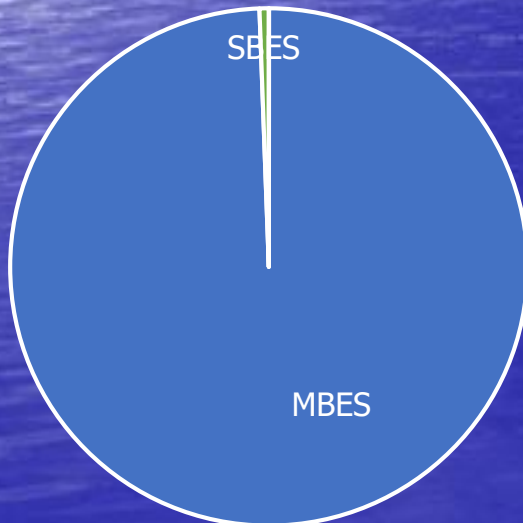
coast	0.0
ENC	0.0
ITEM	0.0
lidar	0.0
MBES	12.5
SBES	0.6
SDB	0.0



Cover: 1000-3000m

Source bathy data area: 19.9%

coast	0.0
ENC	0.0
ITEM	0.0
lidar	0.0
MBES	19.7
SBES	0.2
SDB	0.0



Cover: >3000m

Source bathy data area: 16.9%

coast	0.0
ENC	0.0
ITEM	0.0
lidar	0.0
MBES	16.9
SBES	0.0
SDB	0.0

