Project 3D-GBR

Bathymetry grid development and geological science outputs

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AMSA 2018, Adelaide, 1-5 July 2018
Project 3D-GBR

- Running since 2009
- Multiple collaborators
- Multiple funding sources
- ~3,000,000 km² in area
- 10°-29° S 142°-160° E
- Australia, PNG, Solomon Is, New Caledonia EEZs
- Coral Sea/Tasman Sea
- GBR Marine Park
Source bathymetry data

<table>
<thead>
<tr>
<th>Source</th>
<th>Survey/Cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multibeam</td>
<td>197 surveys</td>
</tr>
<tr>
<td>Singlebeam</td>
<td>284 surveys</td>
</tr>
<tr>
<td>Airborne lidar bathy</td>
<td>108 surveys</td>
</tr>
<tr>
<td>ENC spot depths</td>
<td>136 cells</td>
</tr>
<tr>
<td>ITEM DEM</td>
<td>13 1°x1° cells</td>
</tr>
<tr>
<td>Satellite derived bathy</td>
<td>49 reefs</td>
</tr>
</tbody>
</table>
Grid development

~63 GB

~2 GB = gbr100
~2 GB x 4 = gbr30

gbr100/30 grids

**gbr100**

[Image of gbr100 grid]

- [https://www.deepreef.org/bathymetry/65-3dgbribathy.html](https://www.deepreef.org/bathymetry/65-3dgbribathy.html)

**gbr30**

[Image of gbr30 grid]

Comparison

AusBathyTopo (~250 m)  gbr30 (~30 m)

Submerged reefs

Submarine canyons

Detailed studies

Regional comparison

Sediment gravity flows

Undersea landslides

Gloria Knolls slide ~32 km$^3$

Natural hazards

Tsunami modelling

Global comparisons

Future voyages

Halimeda bioherms in the nth GBR
25/05/2020 to 26/06/2020
Cairns to Brisbane
IN2020_V04
33 days

Hotspot dynamics in the Coral Sea
7/8/2019 to 3/9/2019
Cairns to Brisbane
IN2019_V04
28 days

Deep seascapes of the GBR
5/10/2019 to 14/10/2019
Brisbane to Darwin
IN2019_T02
9 days