UK Hydrographic Office

ADMIRALTY

UKHO and The Nippon Foundation – GEBCO Seabed 2030 Project Collaboration

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The Nippon Foundation – GEBCO Seabed 2030 Project

- **Mission:** To create a comprehensive, publicly available map of the entire ocean floor by 2030.
- **Why:** To support informed policy decisions, use the ocean sustainably and undertake scientific research based on detailed bathymetric information.
- **Aim:** To discover how much of the seafloor has been mapped and what is held in private databases. All existing bathymetric data will be compiled into the freely available GEBCO digital map.
- **Progress:** Since its launch in 2017 Seabed 2030 has collectively mapped **24.9%** of world's seabed, an increase from 6% when first launched.

THE NIPPON FOUNDATION-GEBCO SEABED 2030

THE NIPPON FOUNDATION

General Bathymetric Chart of the Oceans GEBCO

International Hydrographic Organization IHO

United Nations Educational, Scientific and Cultural Organization UNESCO

Intergovernmental Oceanographic Commission

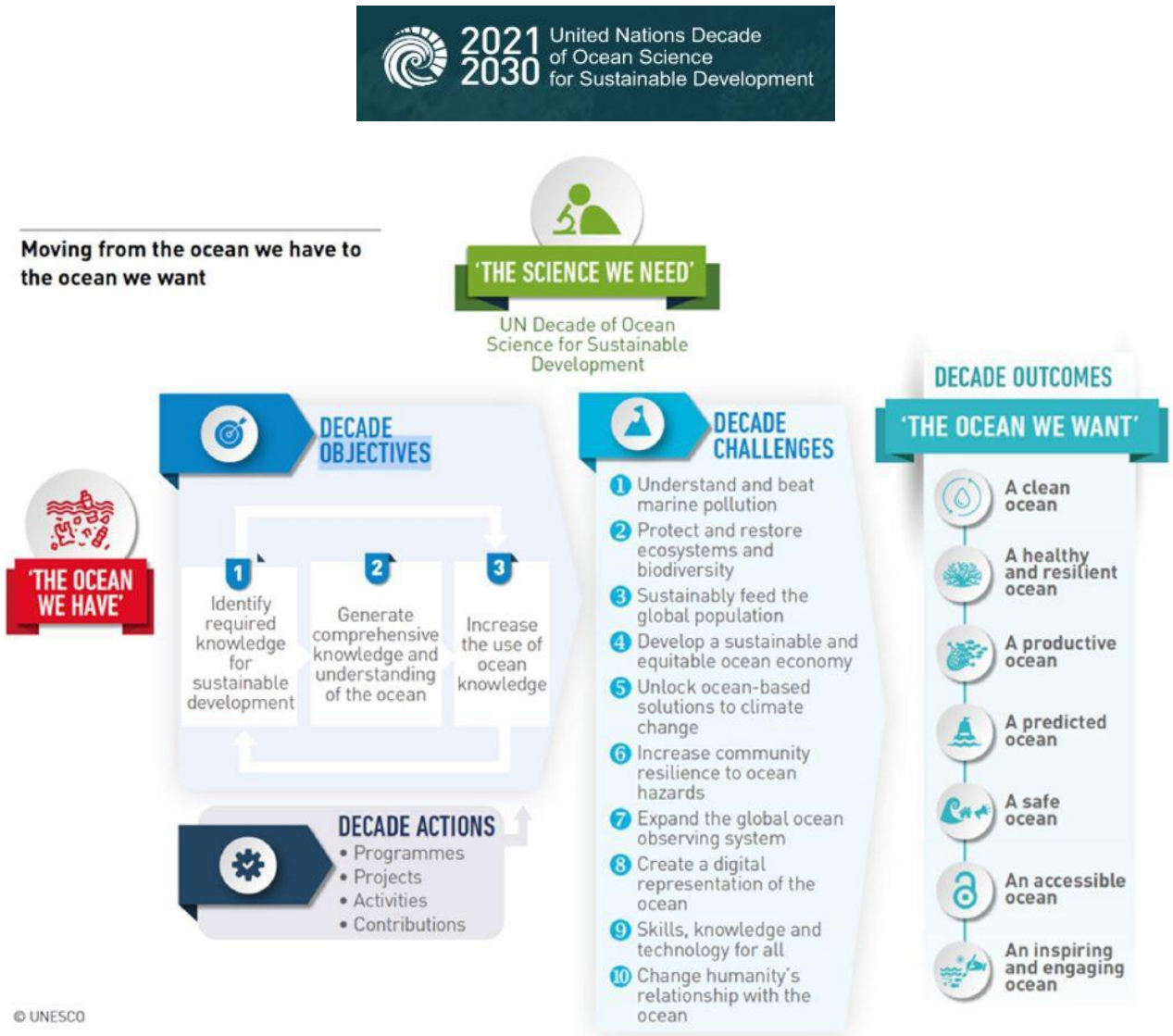
The UN Ocean Decade and Seabed 2030

- The UN Decade of Ocean Science was launched in 2021 with the vision:

  The Science We Need for the Ocean We Want

- Improving our understanding of the seabed is fundamental to the achieving the UN Decade of Ocean Science for Sustainable Development societal outcomes and the UN Sustainable Development Goals.

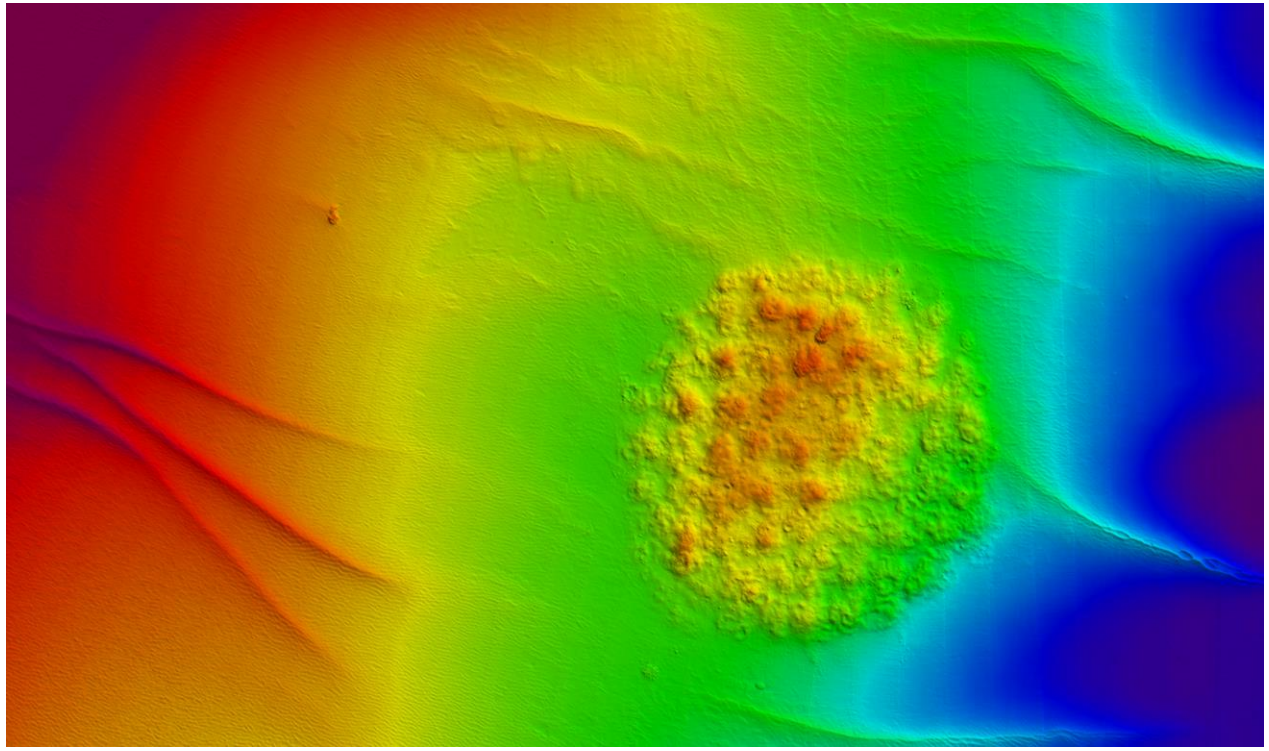
- In 2021 it was announced that Seabed 2030 had become one of the first actions officially endorsed as part of the UN Ocean Decade.



UKHO commitment to Seabed 2030

- UKHO aims to be a significant contributor to the Seabed 2030 Project. We aim to achieve this by sharing both;
  - Bathymetric Data, and,
  - Technical and Practical Survey and Survey Processing Expertise

- UKHO have already put in place two Memorandums of Understanding with Seabed 2030 to facilitate these contributions:
  - ADMIRALTY Generalised Additive Model (GAM) Service MOU
  - Data Sharing MOU



Admiralty GAM Service

- Tripartite MOU between UKHO, Teledyne Caris and Seabed 2030
- Under the MOU Seabed 2030 data centres trial using the ADMIRALTY GAM service to clean noise in bathymetry survey data.
- Intended outcomes of the MOU/trial are:
  - Collaboration and co-operation to improve the speed and human effort associated with processing of bathymetry data for the Seabed 2030 project.
  - To gain a greater mutual understanding of the operation of the GAM capability and its benefits.
  - Demonstrate joint leadership in innovation, such as the use of AI in the seabed mapping domain.
  - Development of a joint marketing roadmap that defines joint public relations opportunities.

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TELEDYNE CARIS
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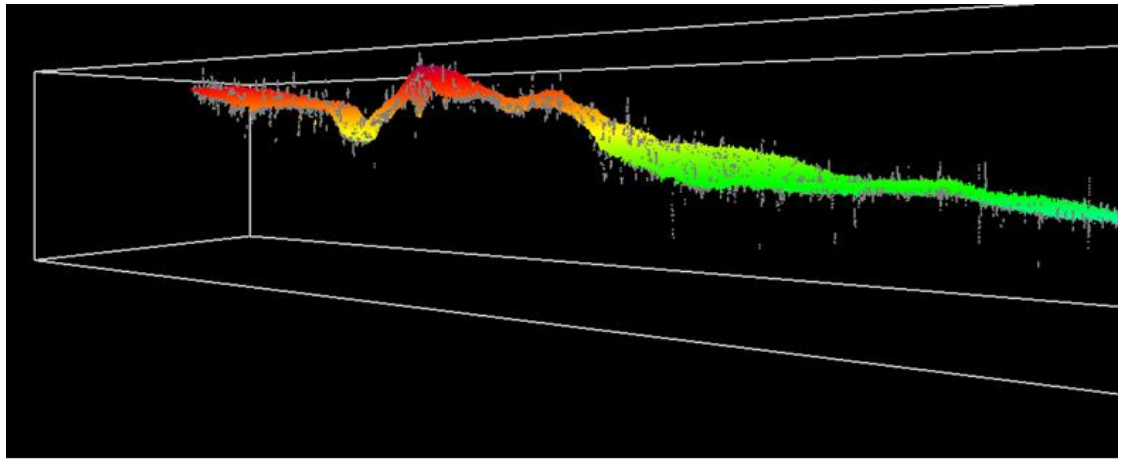
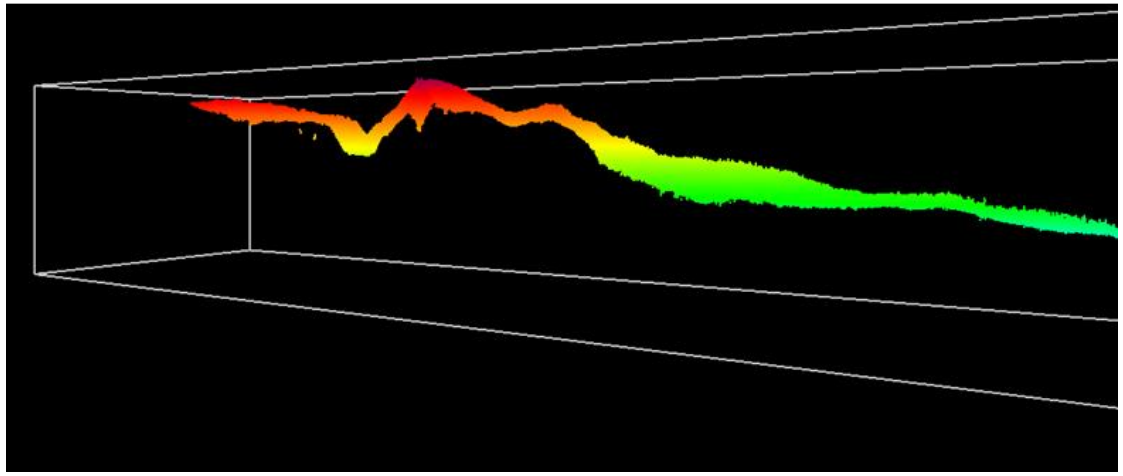
SEABED 2030

Admiralty GAM Service

- Seabed 2030 receive a mix of data from a variety of sources so need a mix of approaches to tackle identifying noise in bathymetry data.
- Processing data for Seabed 2030 involves numerous steps.
- The ADMIRALTY GAM service offers the identification of random errors (noise) in multi beam bathymetry data.
- ADMIRLATY GAM has proven to save time in identifying noise in data sets – the most human intensive part of the process.
- Saves time and money for Seabed 2030.

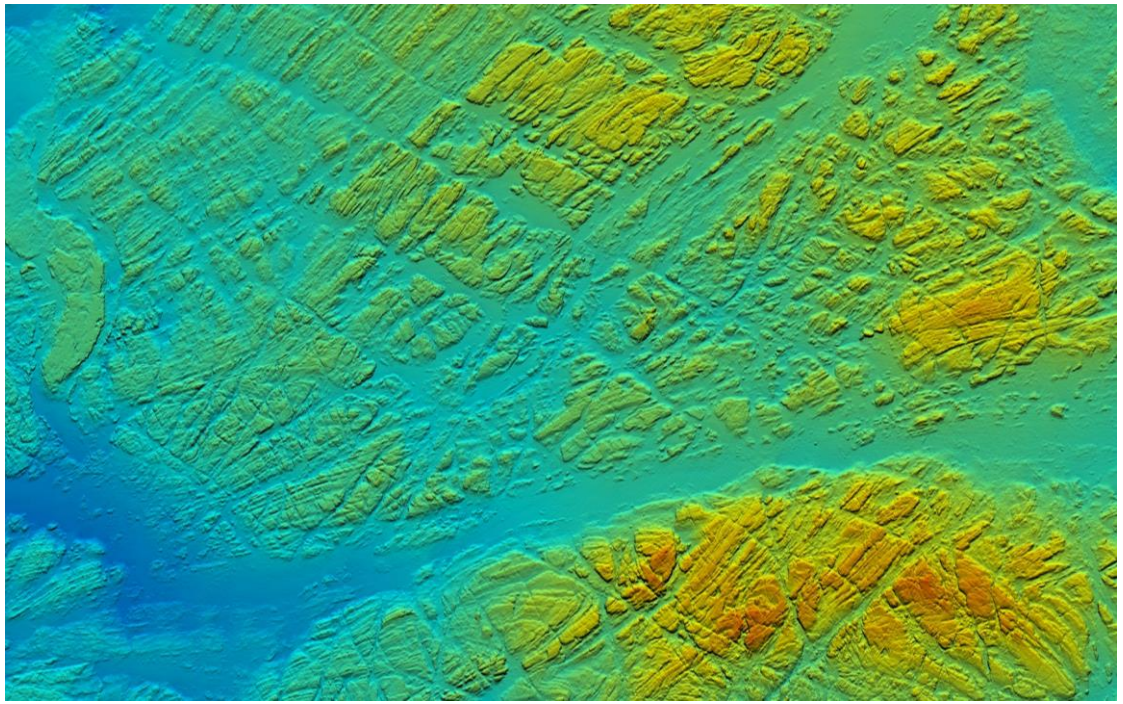




Sharing Bathymetry Data

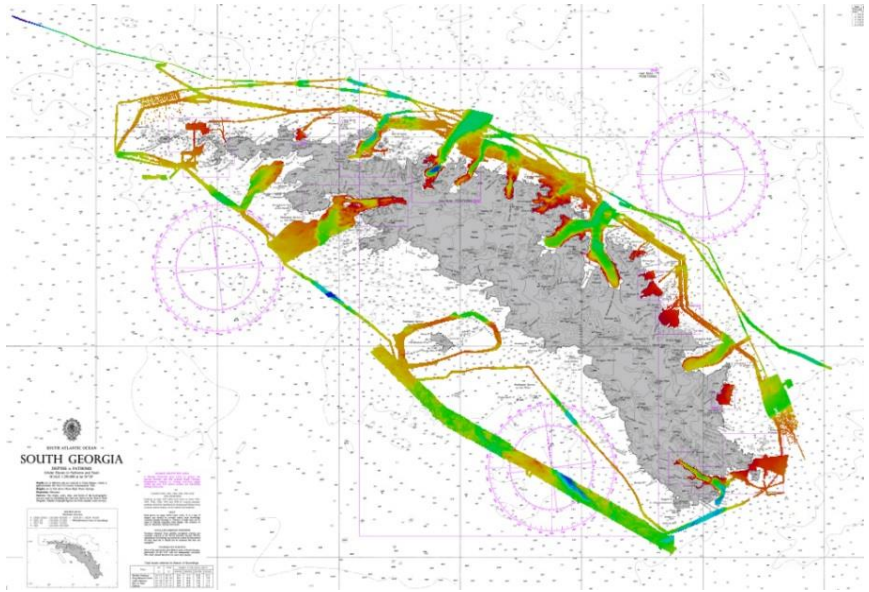
- Seabed 2030 aims to map the entire ocean floor at the best possible resolution within practical limits: ranging from 800m at the greatest depths to 100m at the shoalest.
- UKHO and Seabed 2030 have a Bathymetry Data Sharing MOU which allows the UKHO to share releasable bathymetry datasets with Seabed 2030.
- UKHO first undertook a Data Sharing Trial with the Seabed 2030 Southern Ocean Regional Centre with the aims:
  - To gain an understanding of the gaps in the GEBCO dataset and where UKHO held data could improve coverage.
  - To test the processes and formatting of the data for sharing and incorporation into the GEBCO grid.

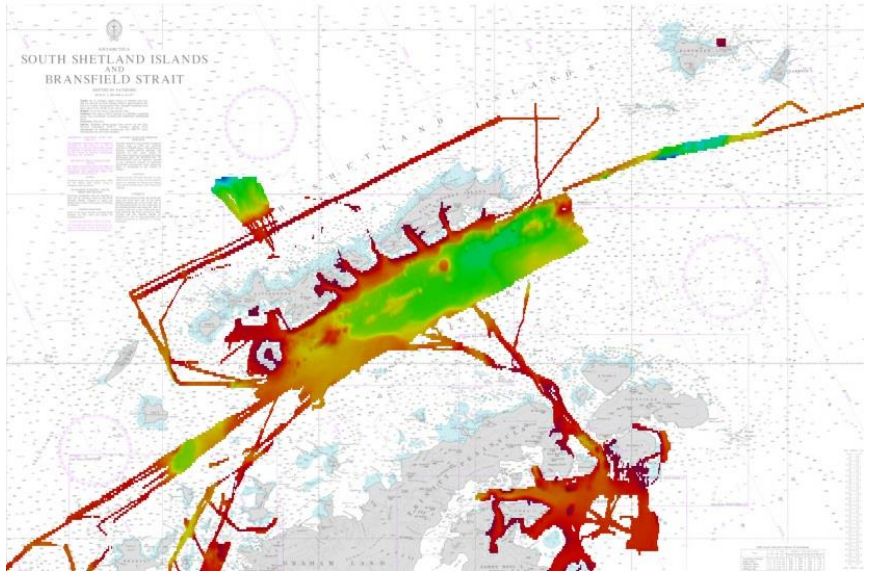
Depth range	Grid cell size	% of world ocean floor
0–1500 m	100 × 100 m	13.7
1500–3000 m	200 × 200 m	11
3000–5750 m	400 × 400 m	72.6
5750–11,000 m	800 × 800 m	2.7



Sharing Bathymetry Data

- UKHO have now supplied over 75,000 km^2 of bathymetry data at 100m resolution covering areas in:
  - Southern Ocean
  - Caribbean Region
  - Atlantic
  - Pacific Region
- UKHO will continue to extend the geographic footprint of areas of data shared with the goal to share all releasable data at a 100m resolution.





Administered by the:

UK Hydrographic Office

UK CSM and Seabed 2030

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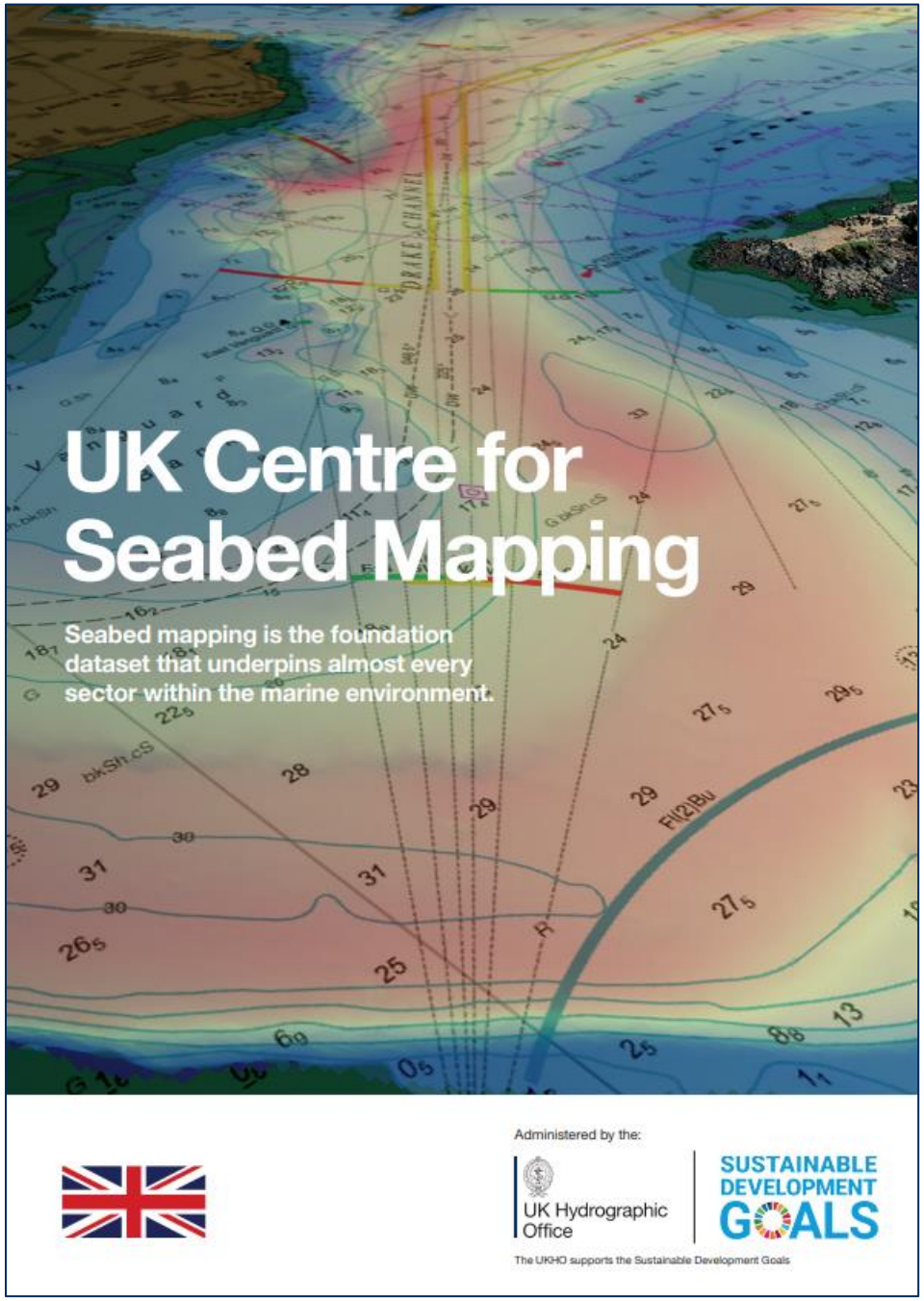
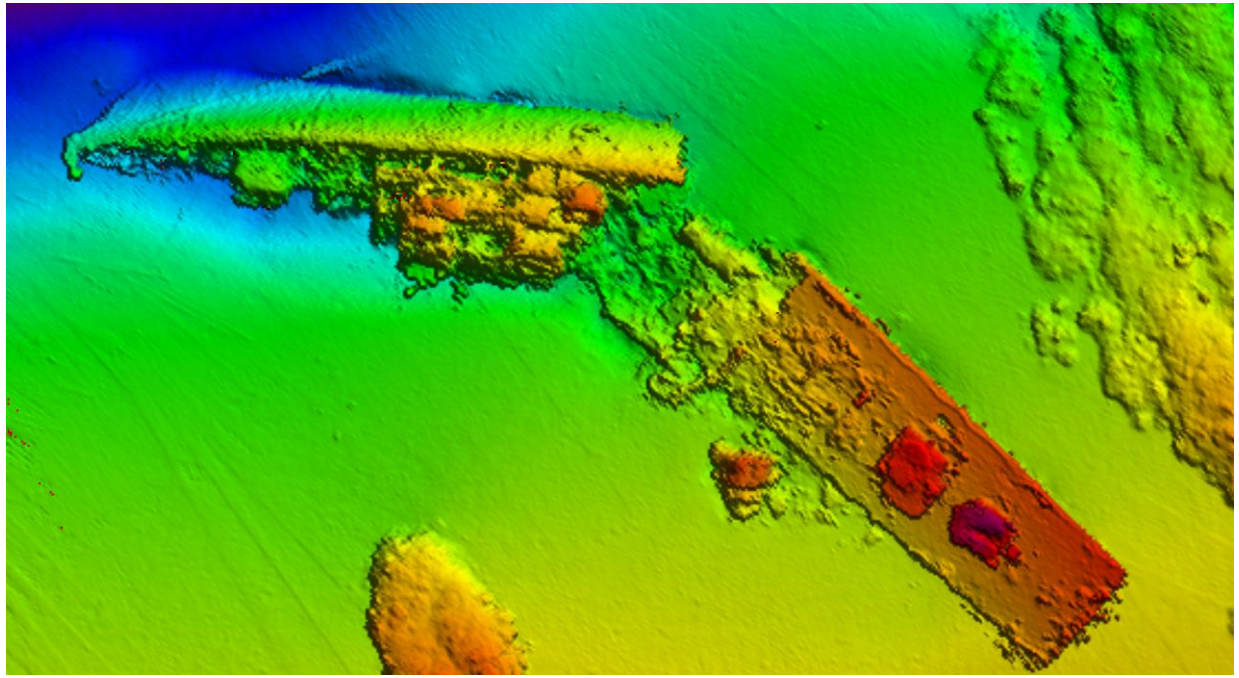


The UK Centre for Seabed Mapping

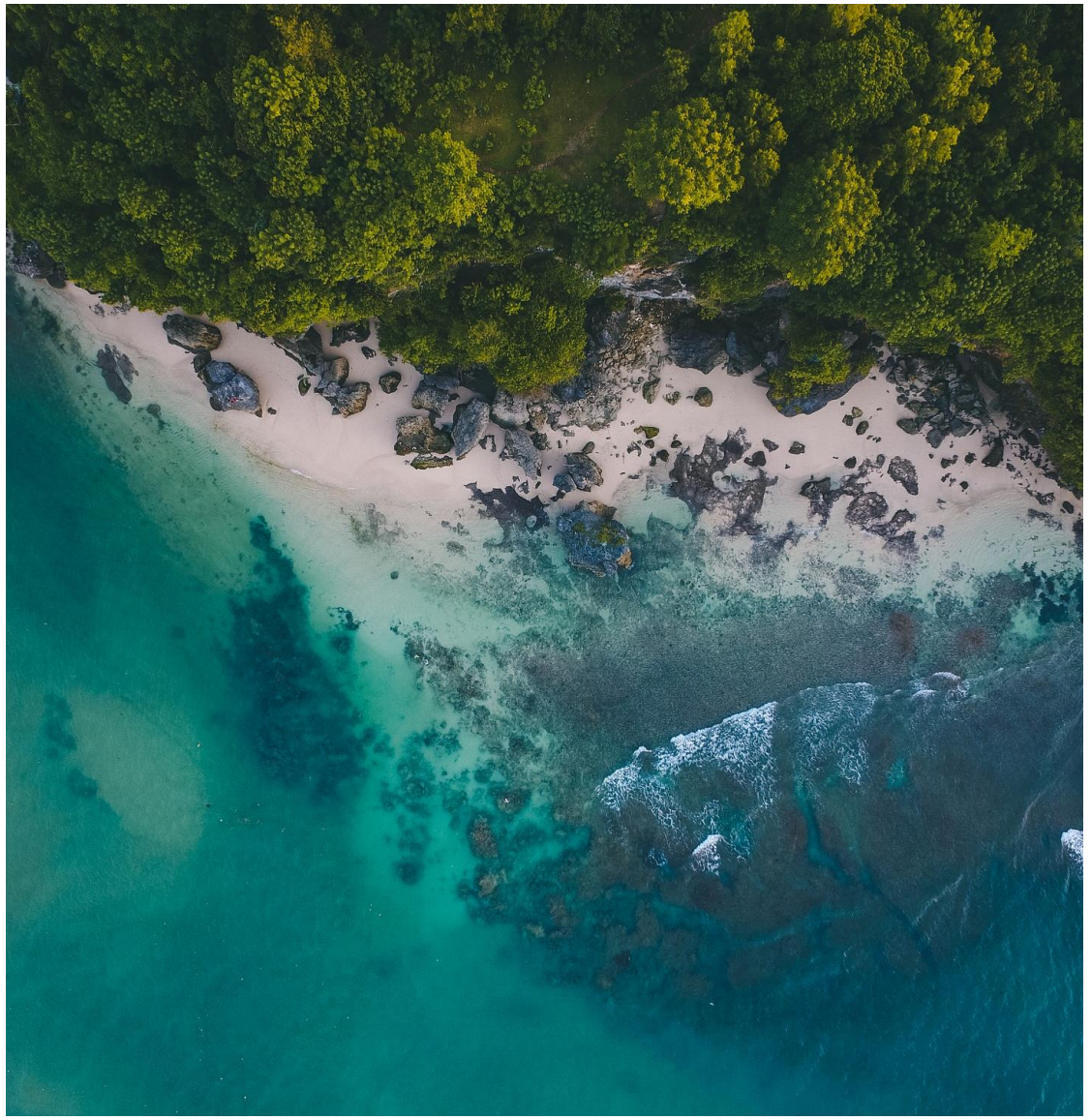
- Organisations who are part of the UK Centre for Seabed Mapping have the opportunity to contribute data to this global mapping initiative and actively support the UN Decade of Ocean Science.

- The UKHO, on behalf of our partners, will process the bathymetry data provided to the Centre into a 100m resolution grid and provide onwards to Seabed 2030 for use in the GEBCO digital product.



Next Steps…

- As a Hydrographic Office we hold a lot of third-party data from other countries, commercial companies and organisations.
- We are currently reviewing our databases to understand where this data can fill gaps in the GEBCO grid.
- We are then reaching out to the data owners to establish if we can acquire the necessary permissions to release this to GEBCO on their behalf, at 100m resolution.



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Thank you