



# 19<sup>th</sup> Conference of the IHO Hydrographic Commission on Antarctica

## **National Report (United Kingdom)**

### **Agenda item 07.2A**

HCA-19, Venice, Italy (hybrid), 15 – 18 April 2024



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# Surveys and Charting progress in Antarctica since HCA-18 (May 2022) – Requirements Identified

International  
Hydrographic  
Organization

- Holistically, progress made towards surveying region to modern standards based on UK and HCA priorities.
- Continue to raise the profile and importance of the HCA & MS collaboration in achieving its goals.



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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Areas Surveyed

International  
Hydrographic  
Organization

## UK Antarctic Campaign: OP AUSTRAL (2022-2023)



24Nm<sup>2</sup> of Antarctic region data gathered including:

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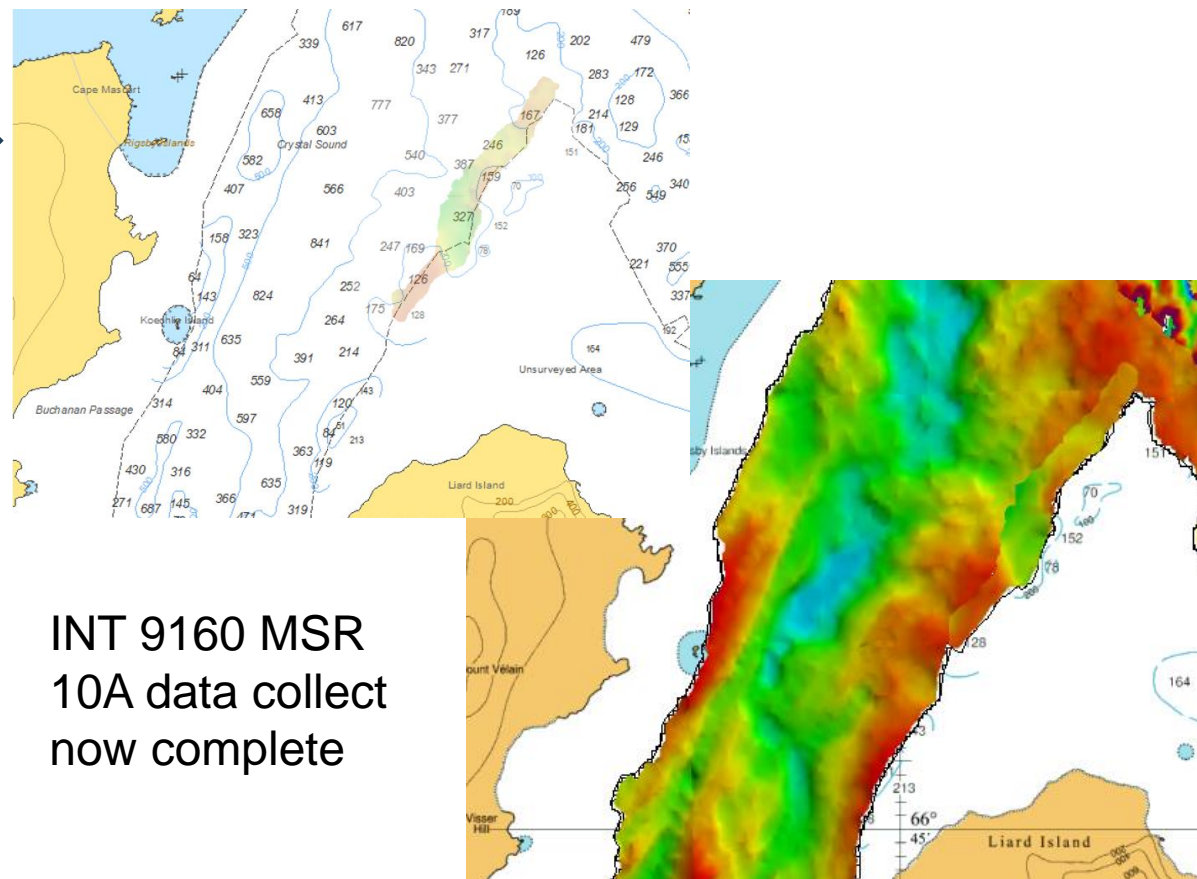
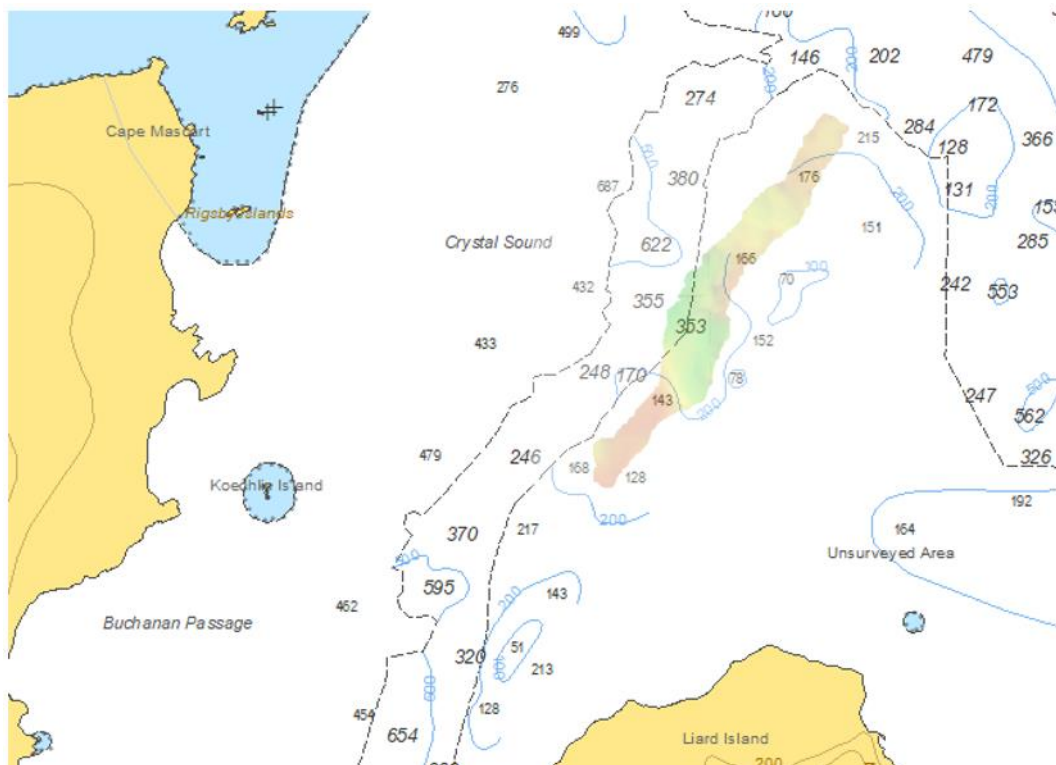


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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Areas Surveyed

## MSR '10A' Liard Island – Buchanan Passage (INT 9160)

International Hydrographic Organization



INT 9160 MSR  
10A data collect  
now complete

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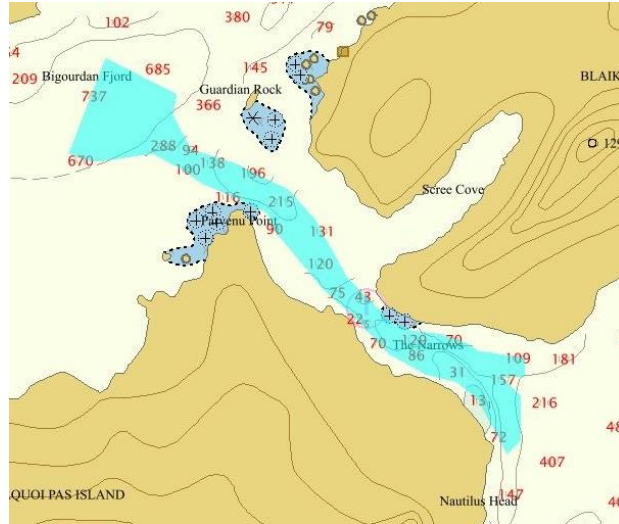
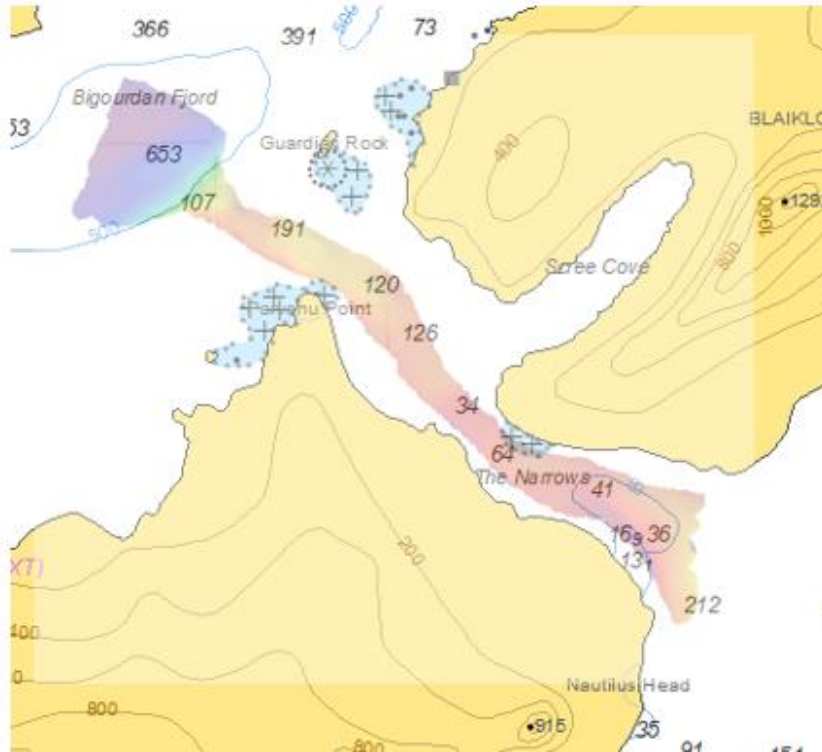


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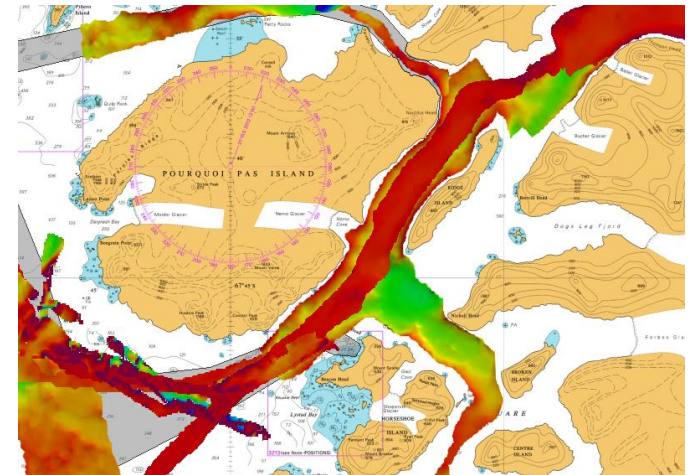
# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Areas Surveyed

## BC 'AV' Pourquoi Pass Island (INT 9163)

International Hydrographic Organization



BC AV data collect now 80% complete



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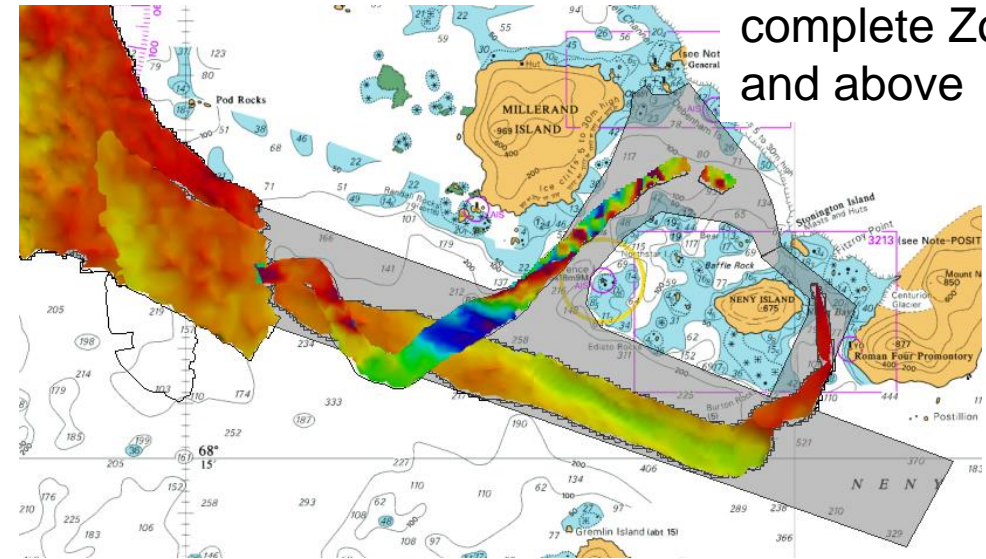
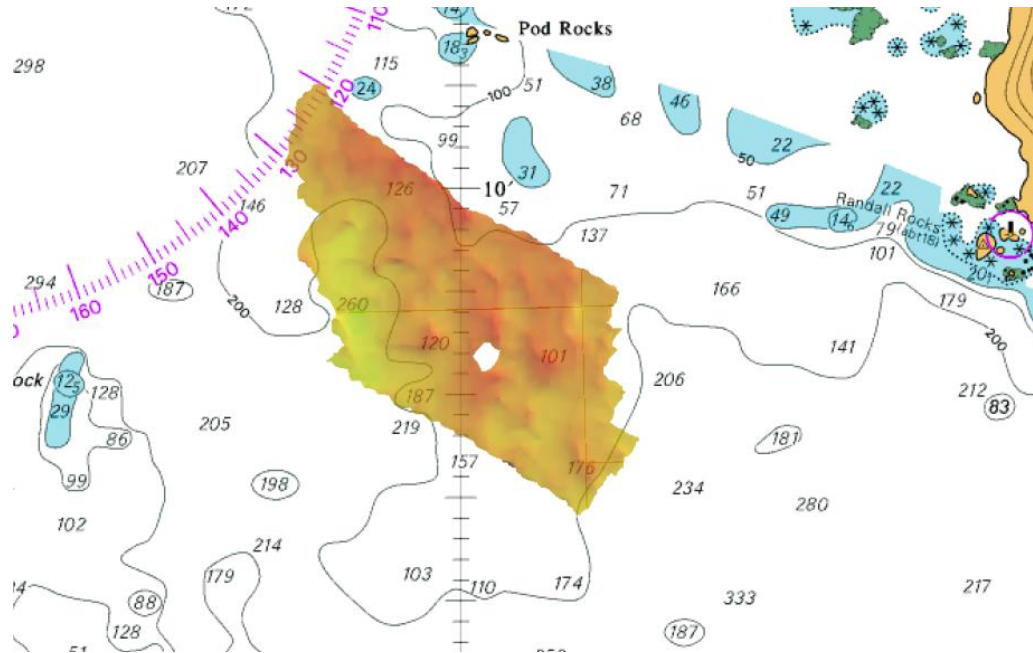
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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Areas Surveyed

International Hydrographic Organization

## BC 'Ab' Approaches to Millerand Island (INT 9163)

BC 'AV' data collect now 50% complete ZoC B and above



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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Areas Surveyed

International  
Hydrographic  
Organization

## UK Antarctic Campaign: OP AUSTRAL (2022-2023)



90Nm<sup>2</sup> of Antarctic region data gathered including:

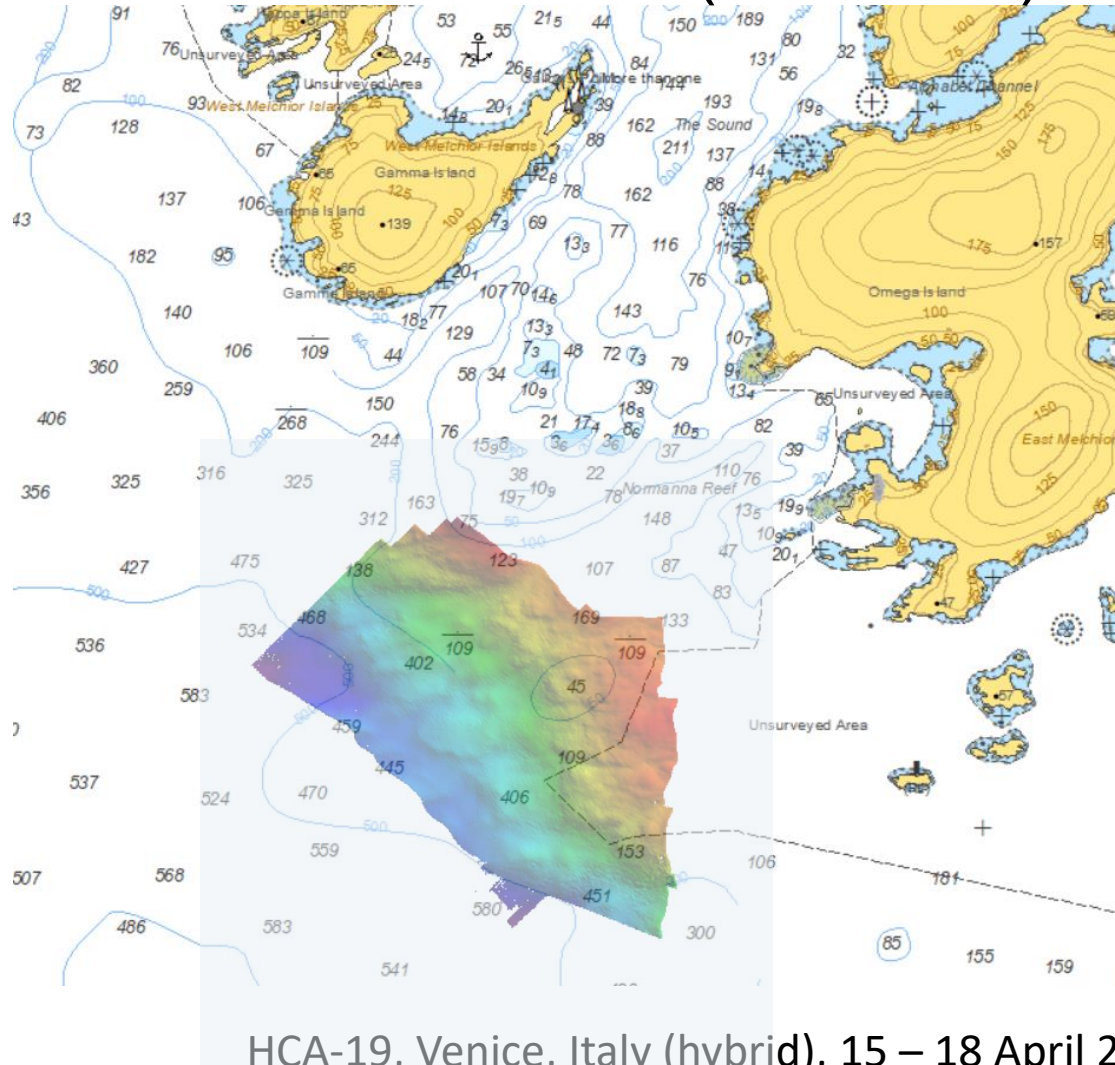
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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Significant Areas Surveyed

## MSR 'Ma' Melchior Islands (INT 9117)



MBES survey of  
ZoC D in MSR Ma

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International  
Hydrographic  
Organization

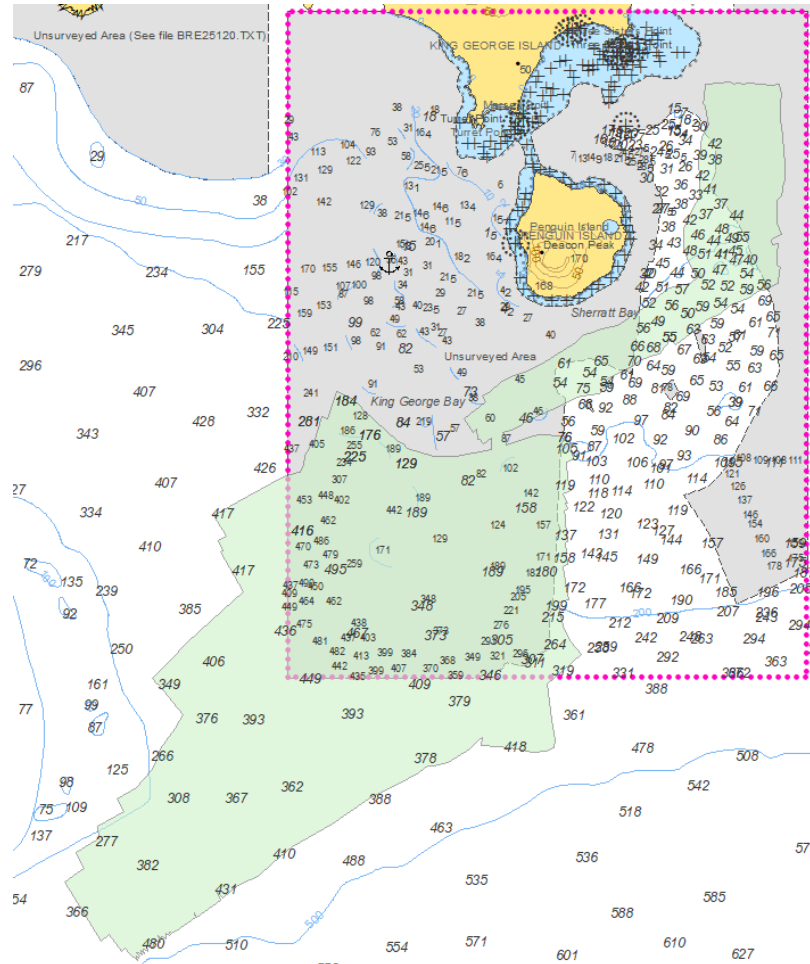




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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Significant Areas Surveyed

## BC 'Ak' Liard Island – Penguin Island & Approaches (INT 9112 & 9126)



MBES surveys of ZoC C & D

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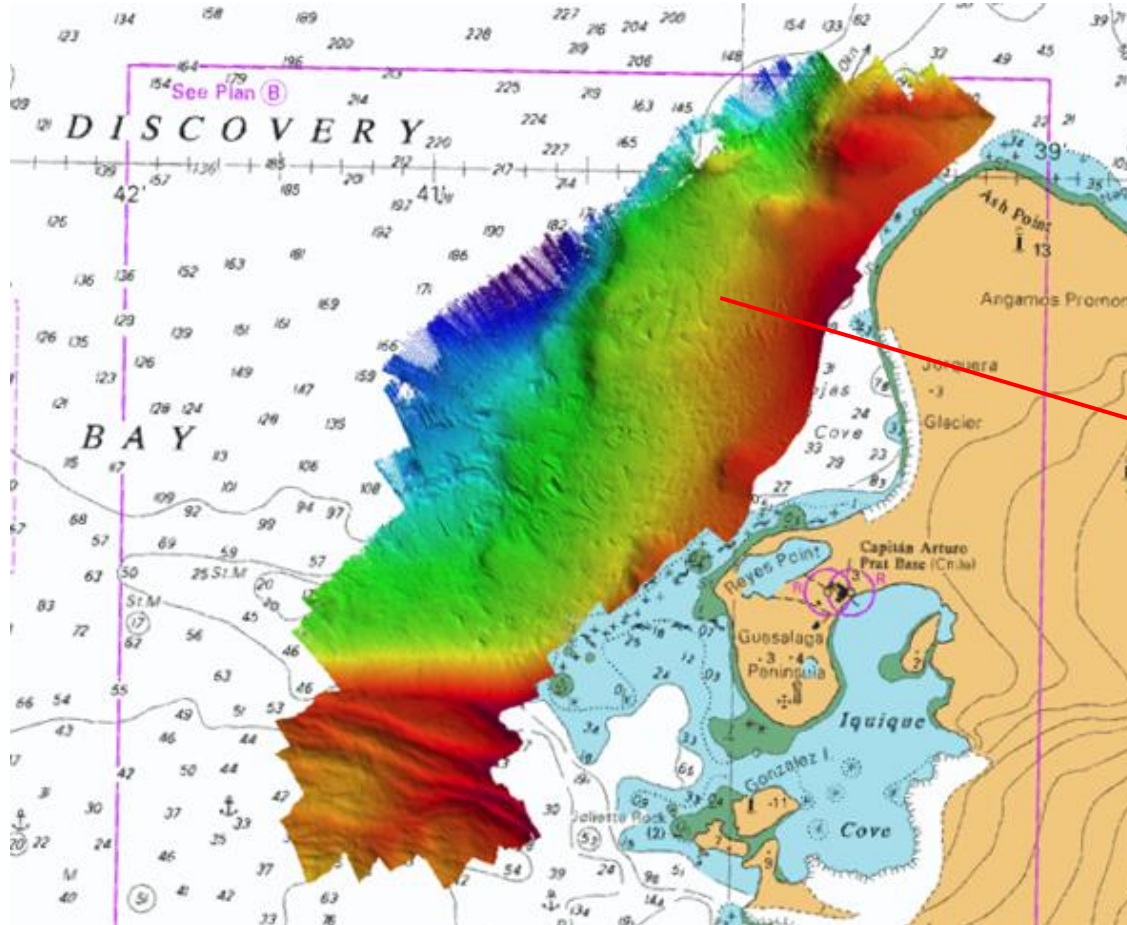
International Hydrographic Organization



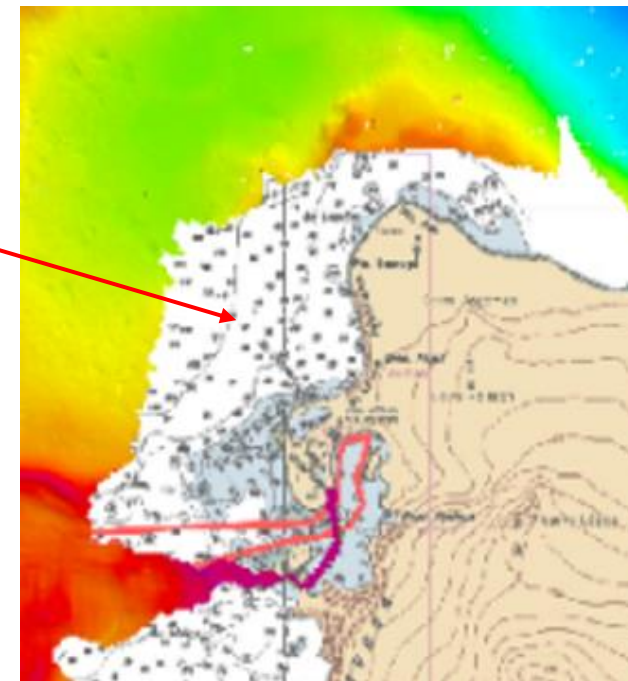
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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Significant Areas Surveyed

## BC 'Af' English Strait (INT 9122)



Opportunistic MBES survey in area of 1988 data to support CL ENC production



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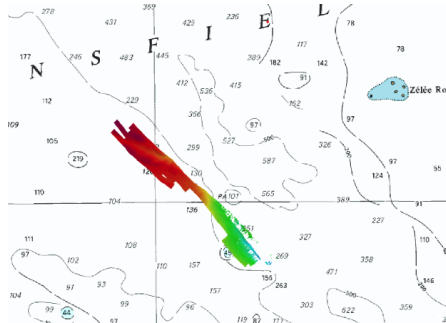


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# Surveys and Charting Progress in Antarctica Since HCA-18 (May 2022) – Other Areas Surveyed

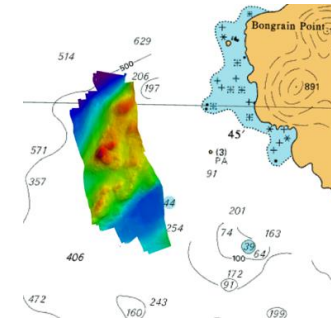
International Hydrographic Organization

## MSR '2A' Antarctic Sound (JRRCR) (INT 9154)



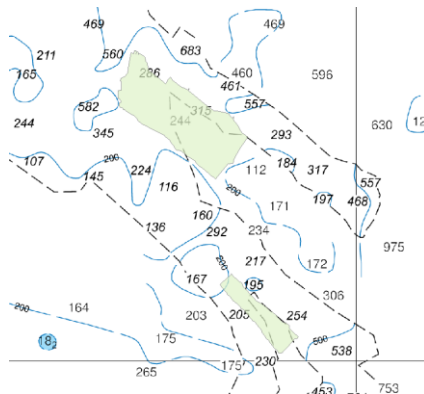
MBES survey of ZoC D

## MSR '11A' Pourquoi Pass Island (INT 9163)



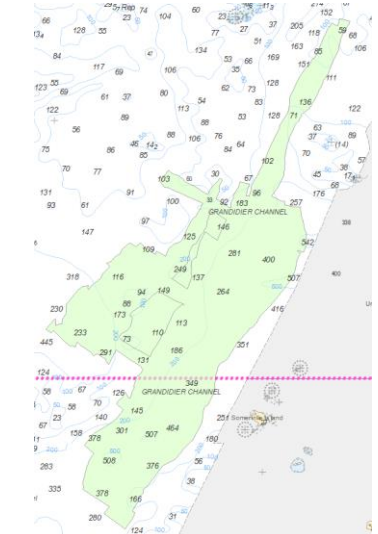
MBES survey of ZoC D in MSR 11A

## MSR '10b' Liard Island – Isacke Passage (INT 9160)



MBES surveys of ZoC C & D

## MSR '07' Grandidier Channel (INT 9122)



MBES resurvey of 1965-71 single beam data

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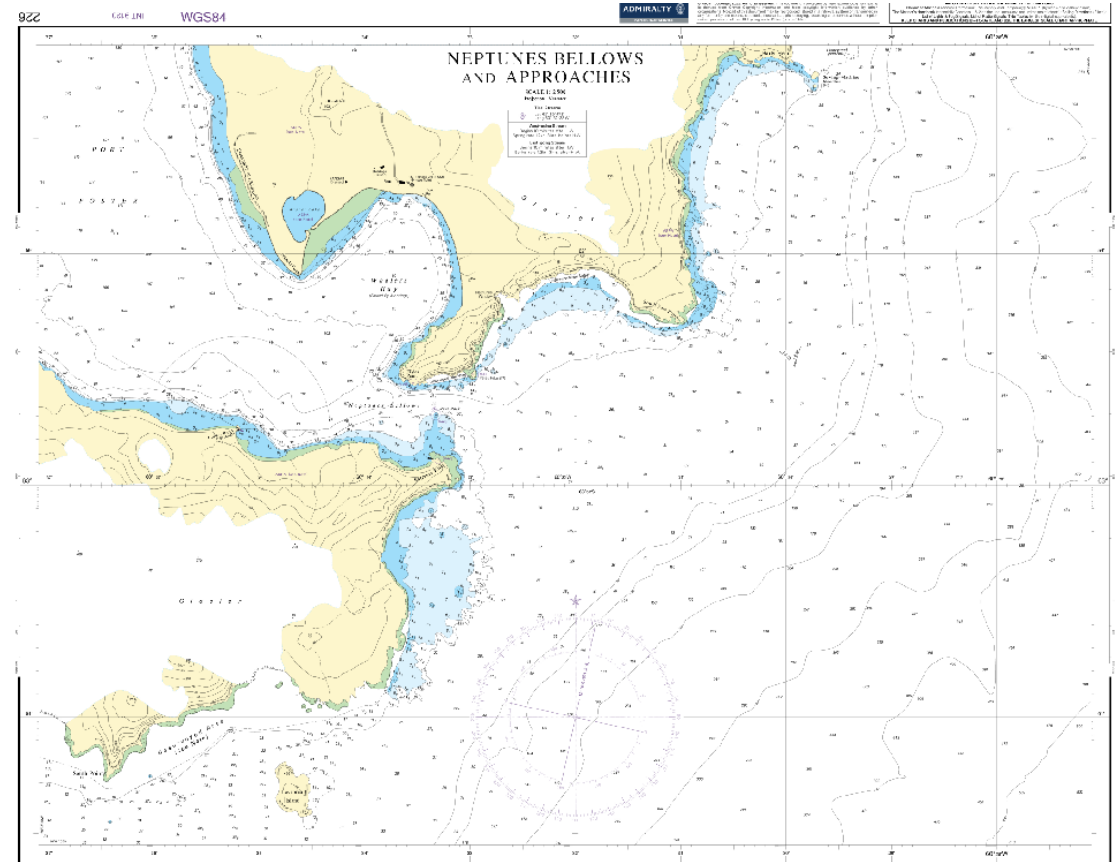
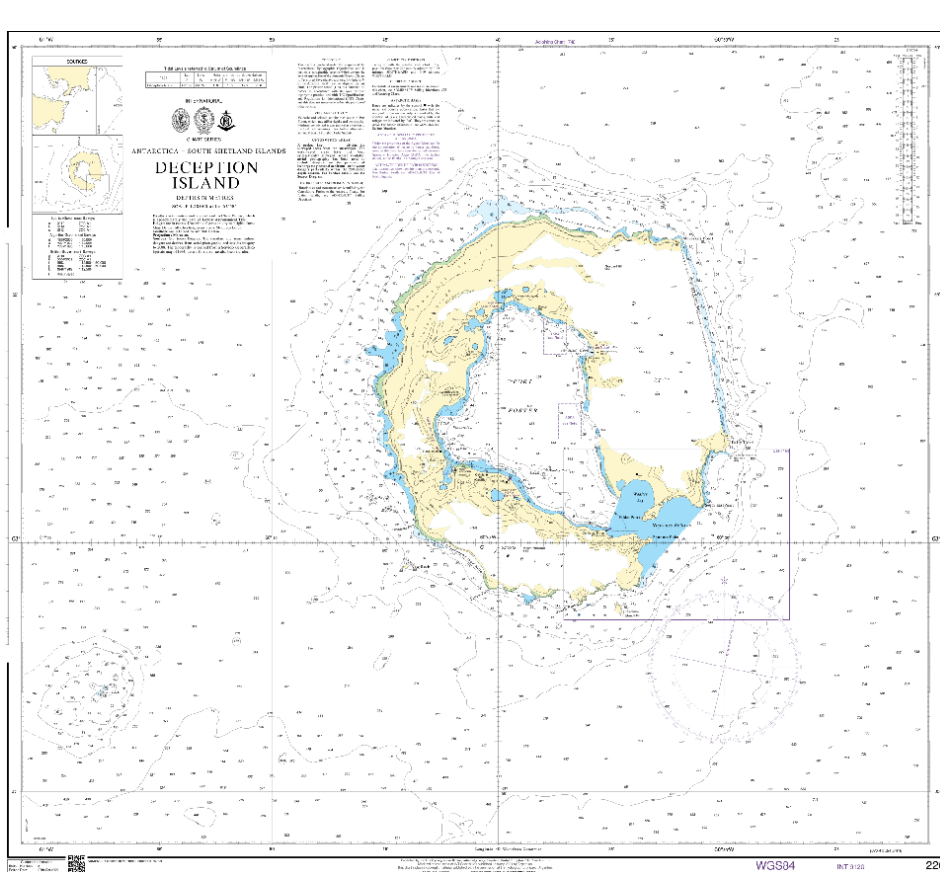
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – INT Charts Produced

International Hydrographic Organization

INT 9120 (BA226) Deception Island – 27<sup>th</sup> October 2022

Modified Reproduction of INT9120 published by Argentina in response to action HCA18/19



HCA-19, Venice, Italy (hybrid), 15 – 18 April 2024

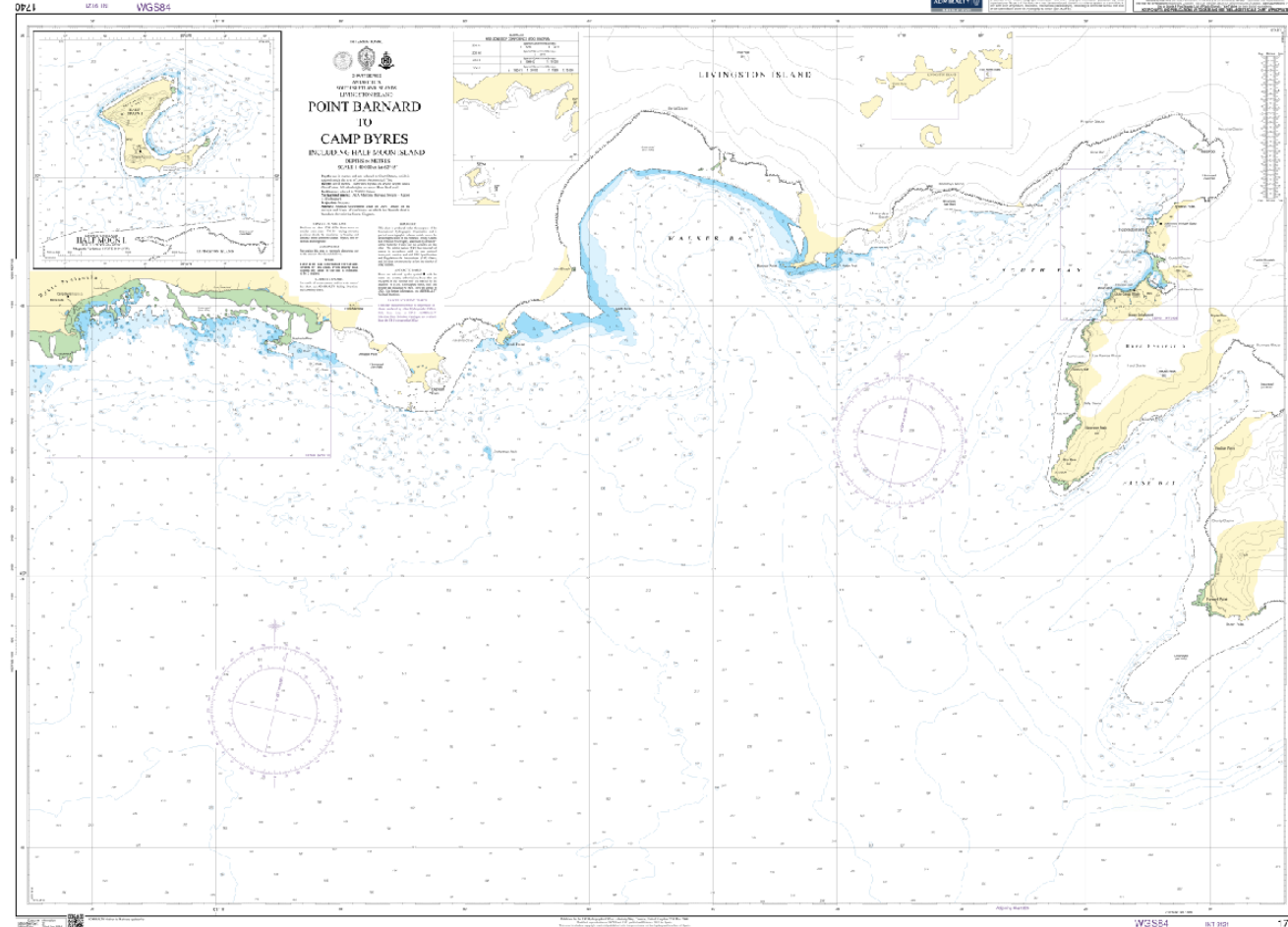


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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – INT Charts Produced

International Hydrographic Organization

INT 9121 (BA1740) Point Barnard to Camp Byres – 22<sup>nd</sup> February 2024  
Modified Reproduction of INT9121 published by Spain (2019)



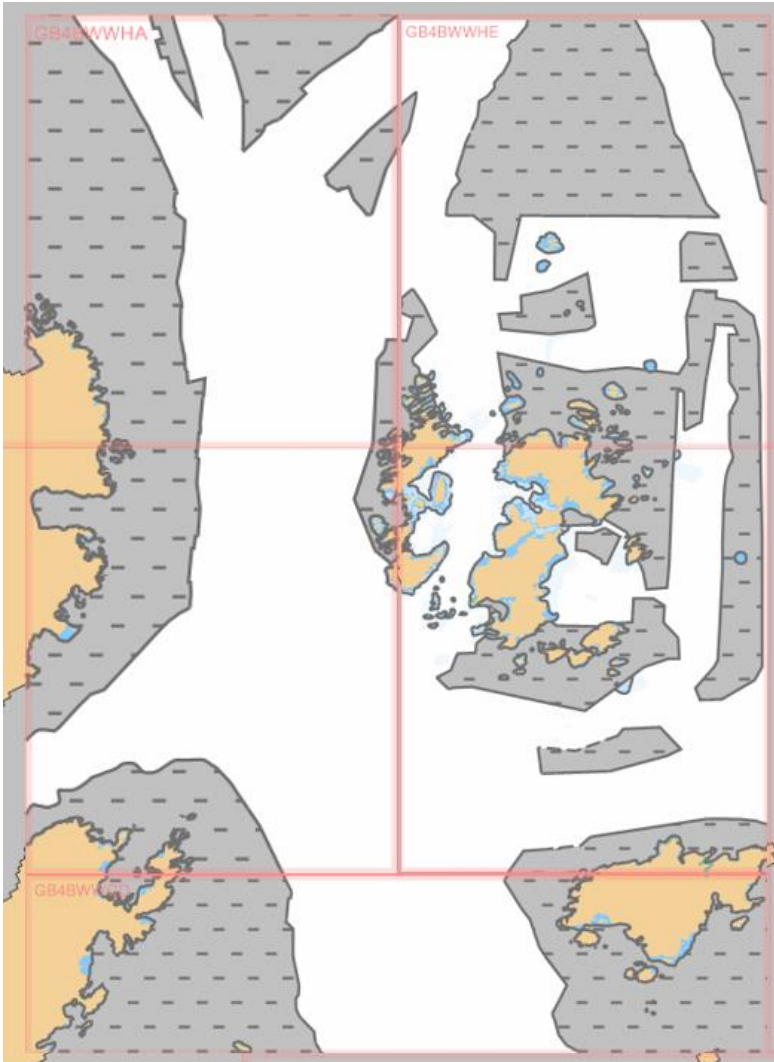
HCA-19, Venice, Italy (hybrid), 15 – 18 April 2024



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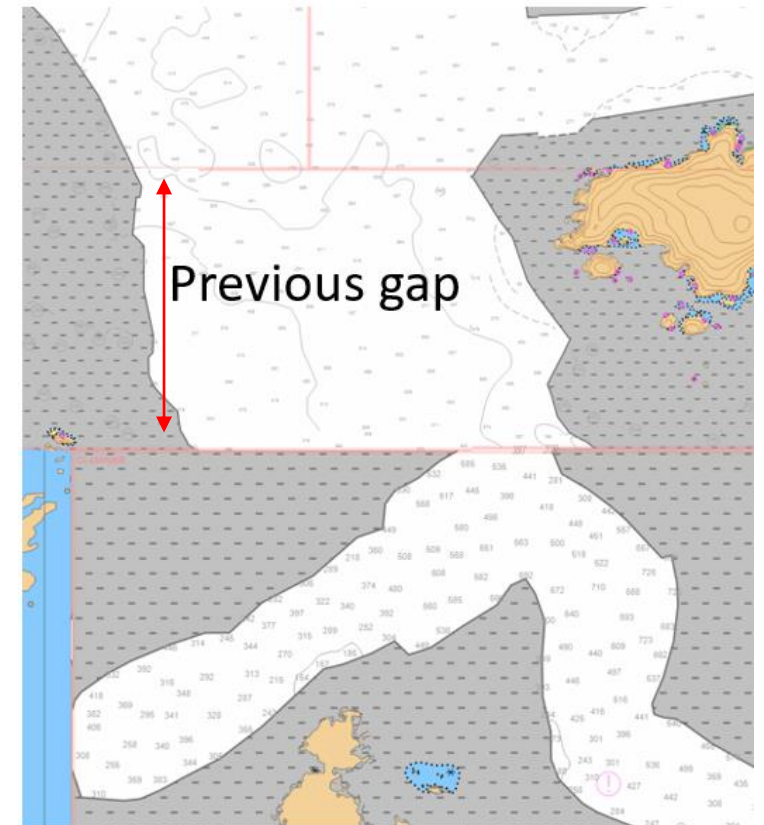
# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENCs Produced (including significant updates for surveys)

International Hydrographic Organization



New gridded ENC providing additional MBES coverage of transit west of Melchior Islands (MSR M) and to remove coverage gap between adjoining CL ENC, (HCA ICCWG eCL 1-2023 refers).

Published 4<sup>th</sup> January 2024:  
GB4WWHA  
GB4WWHE  
GB4WWGD



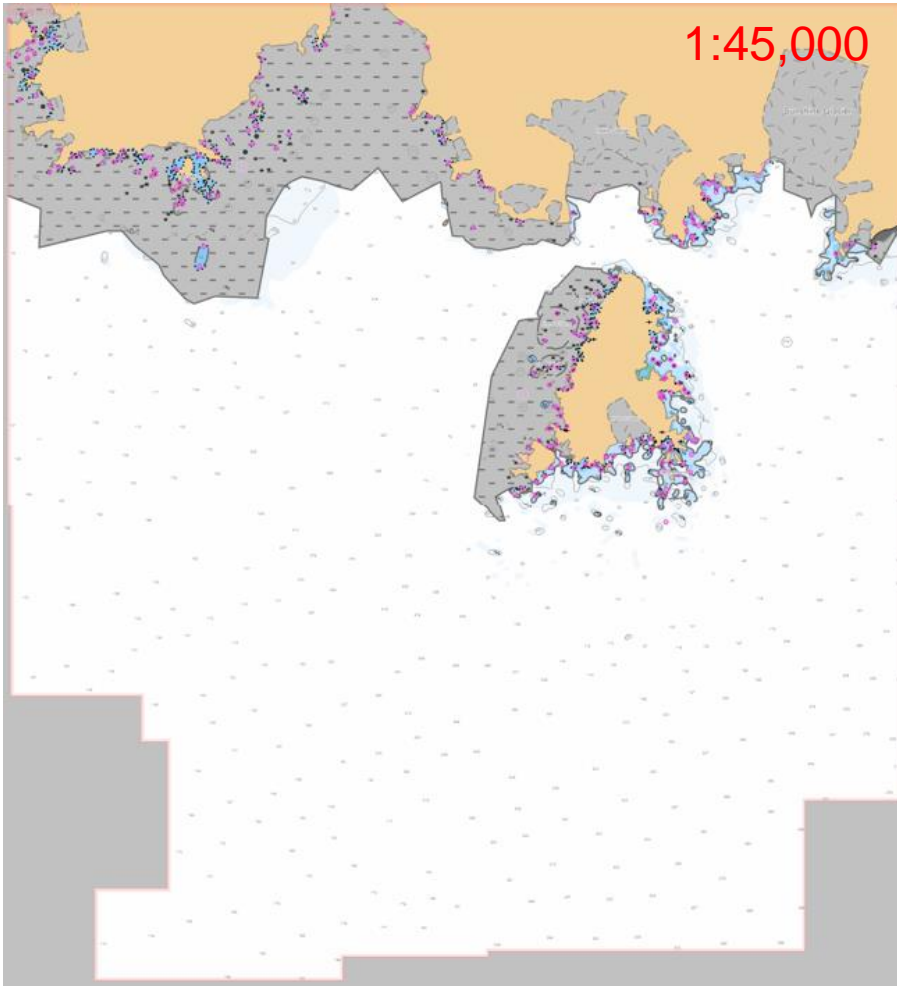
HCA-19, Venice, Italy (hybrid), 15 – 18 April 2024



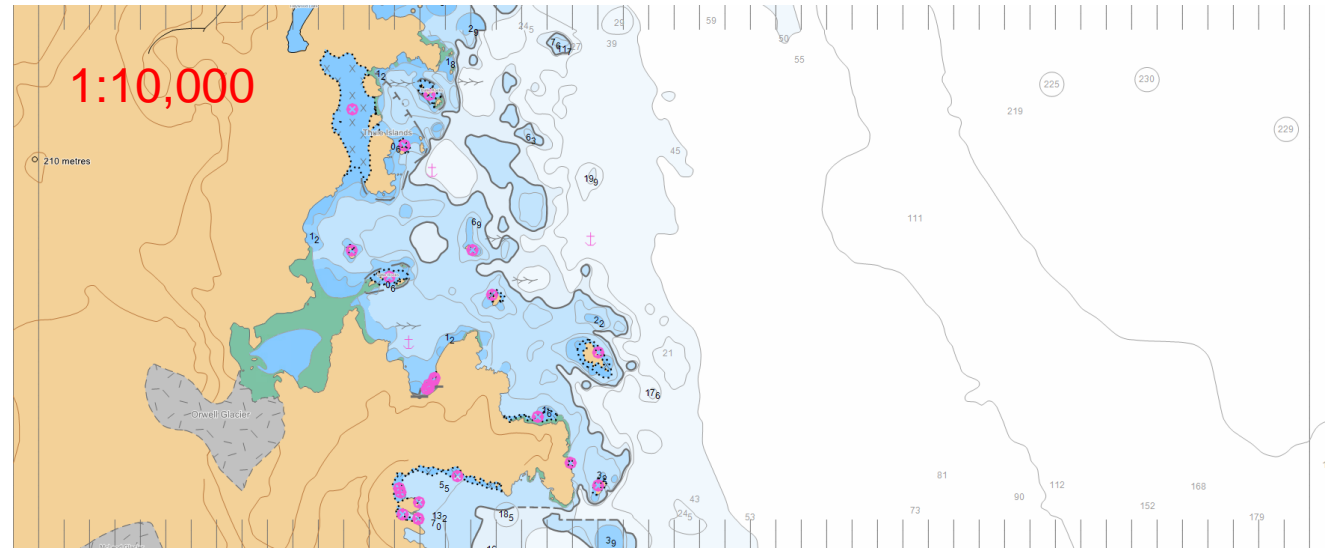
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENCs Produced (including significant updates for surveys)

International Hydrographic Organization



GB401779 published 1<sup>st</sup> December 2023 providing new large scale ENC coverage of Signy



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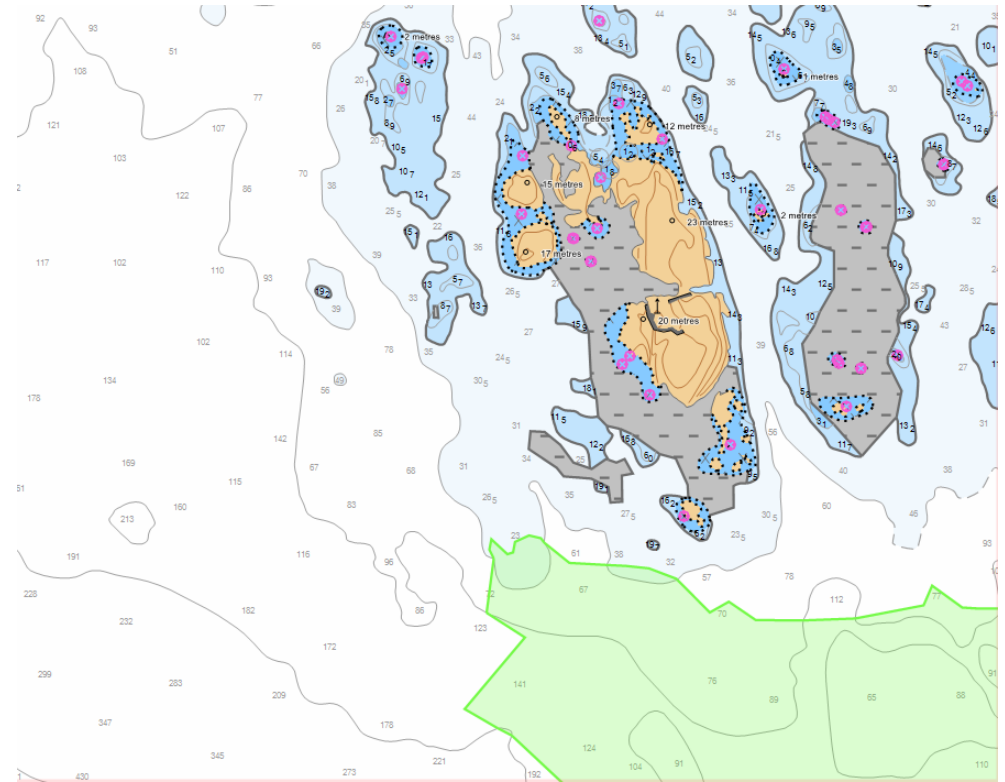
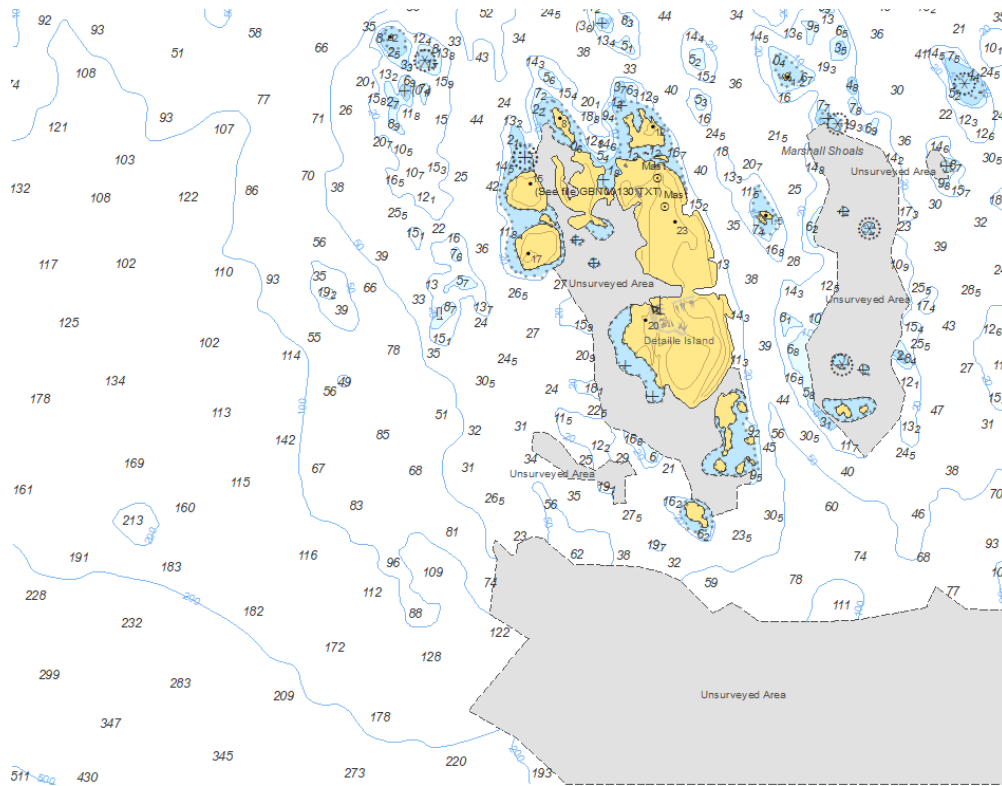
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENCs Produced (including significant updates for surveys)

International Hydrographic Organization

Updated 1st January 2024: GB53463C

To include 2022 MBES ZoC B survey in previously unsurveyed area affecting Branch Corridor 'W'



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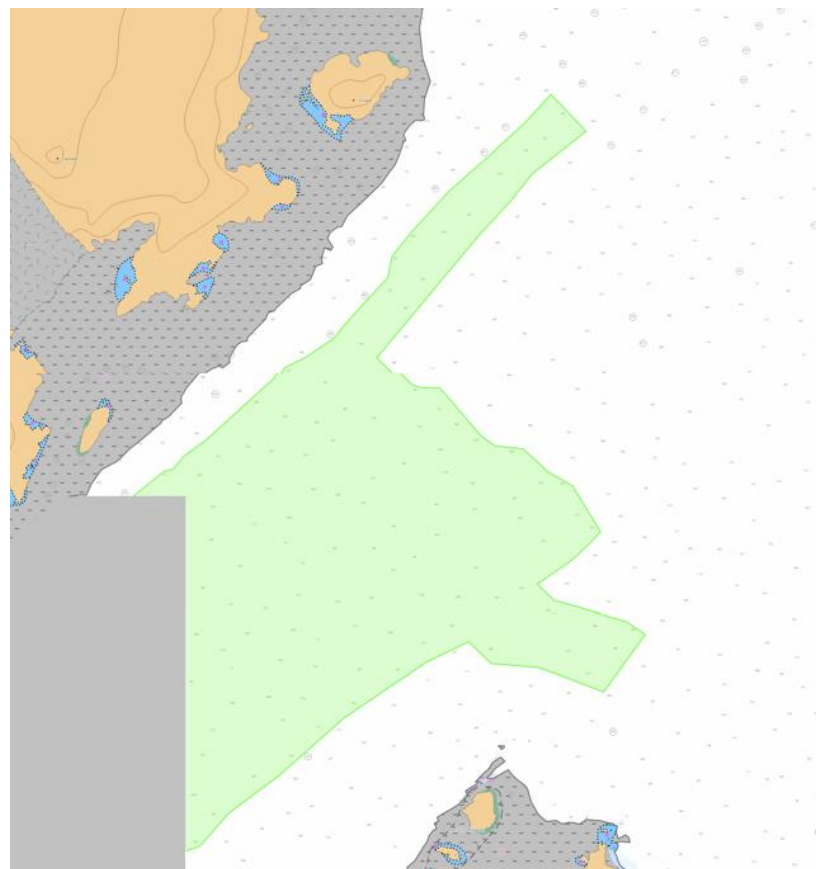
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENC<sub>s</sub> Produced (including significant updates for surveys)

International  
Hydrographic  
Organization

Updated 1<sup>st</sup> January 2024: GB403207

To include 2017 MBES ZoC B affecting MSR '04' replacing 2006-11 MBES passage surveys.



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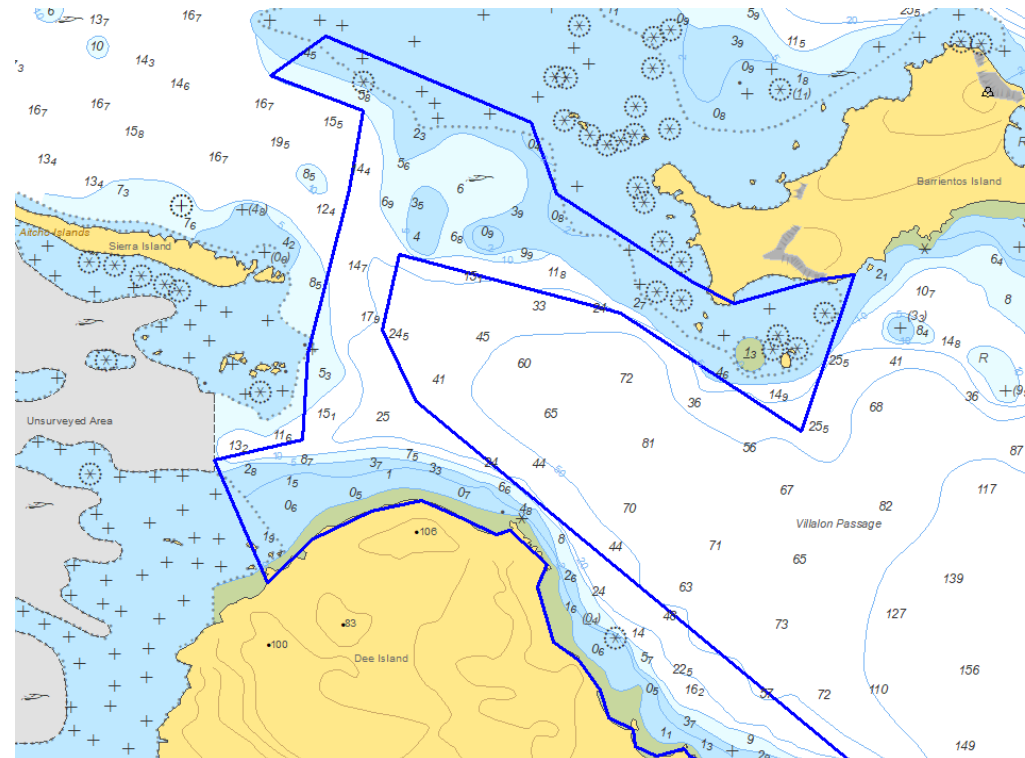
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENC<sub>s</sub> Produced (including significant updates for surveys)

International  
Hydrographic  
Organization

Updated 26<sup>th</sup> January 2024: GB43463A

Updated to improve consistency between EC & UK products on publication of larger scale INT 9129 (see HCA 17 ICCWG Report, INT Charts Without ENC<sub>s</sub>)



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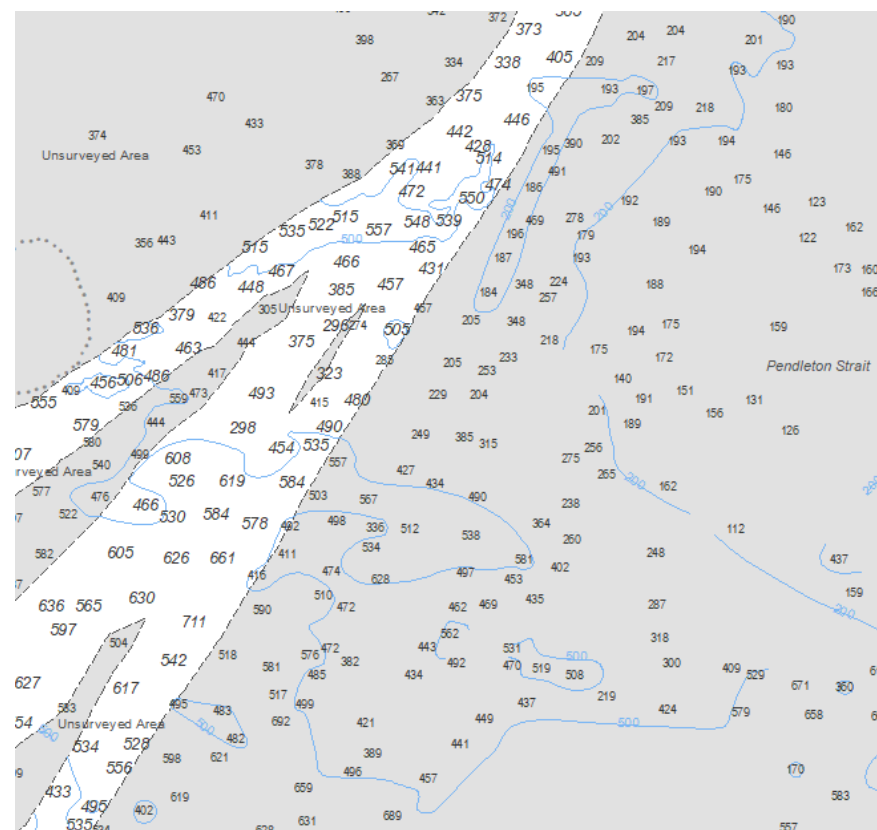
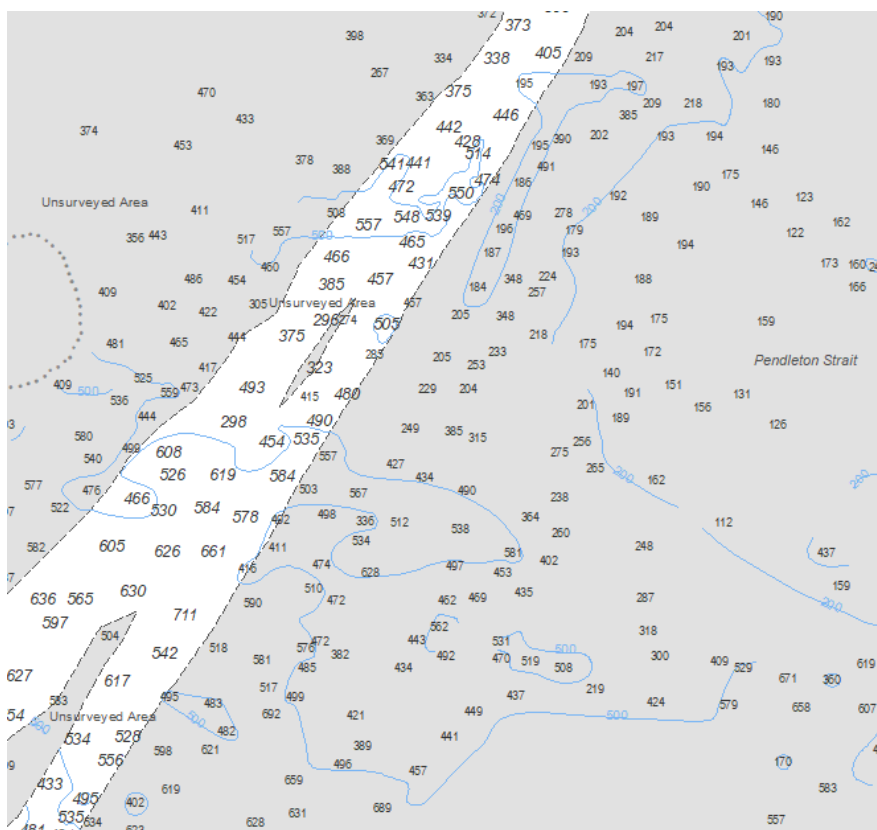
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENC's Produced (including significant updates for surveys)

International Hydrographic Organization

Updated 12<sup>th</sup> January 2024: GB400450

To include 2013 MBES ZoC B affecting MSR '14' in previously unsurveyed area.



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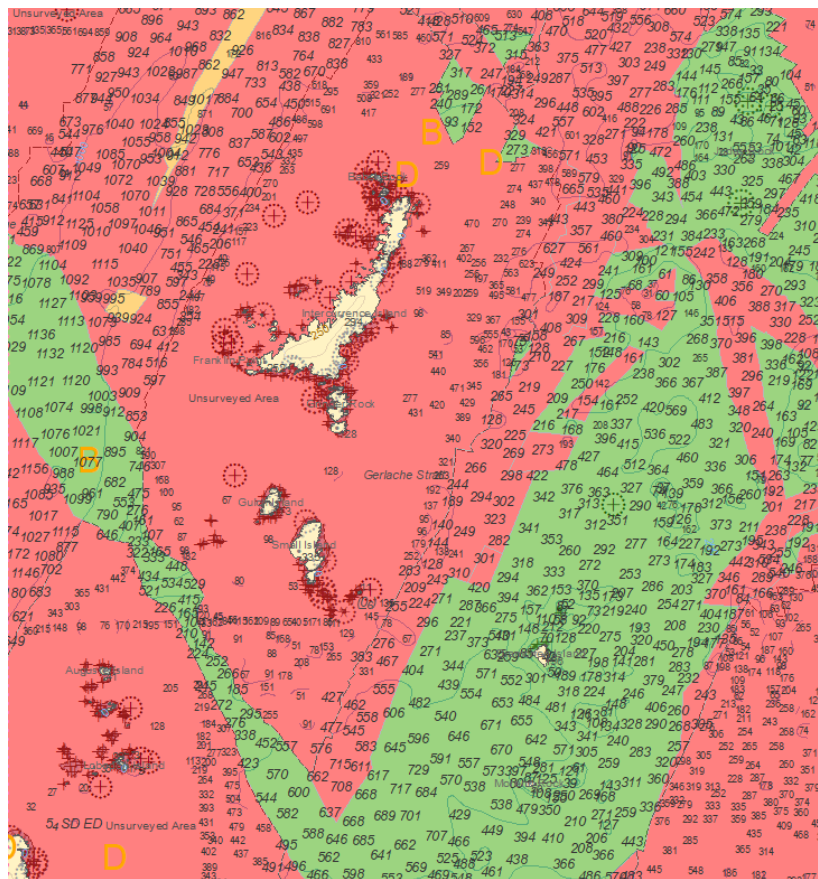


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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENC's Produced (including significant updates for surveys)

Updated 9<sup>th</sup> March 2023: GB403206

Improvements to CATZoC to improve user situational awareness/decision making.



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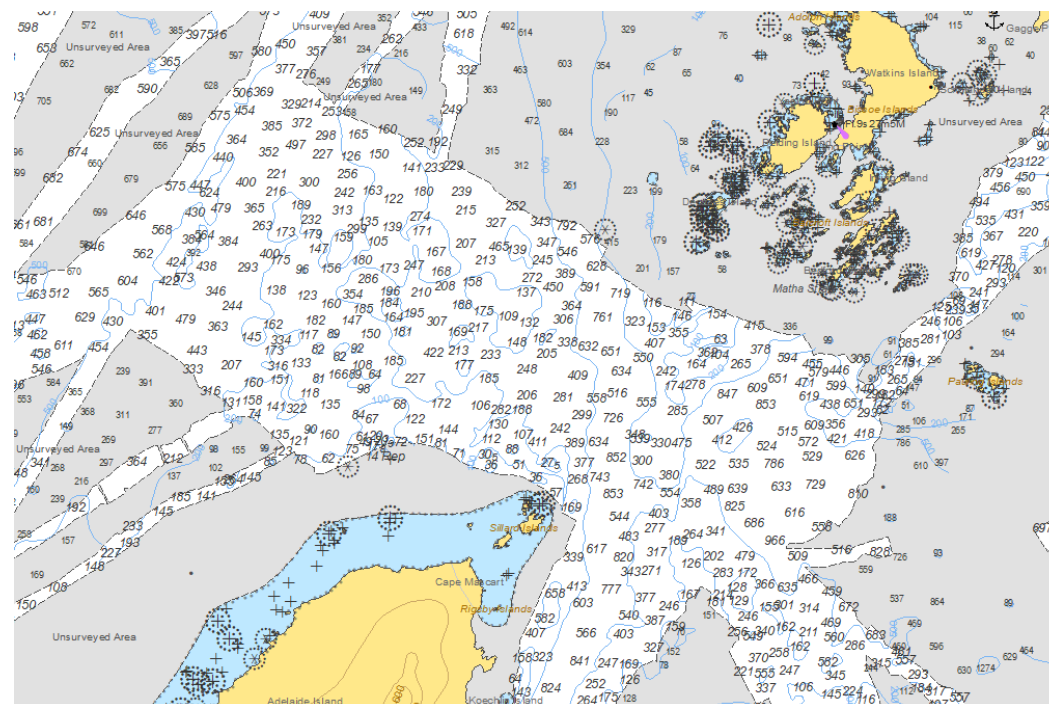
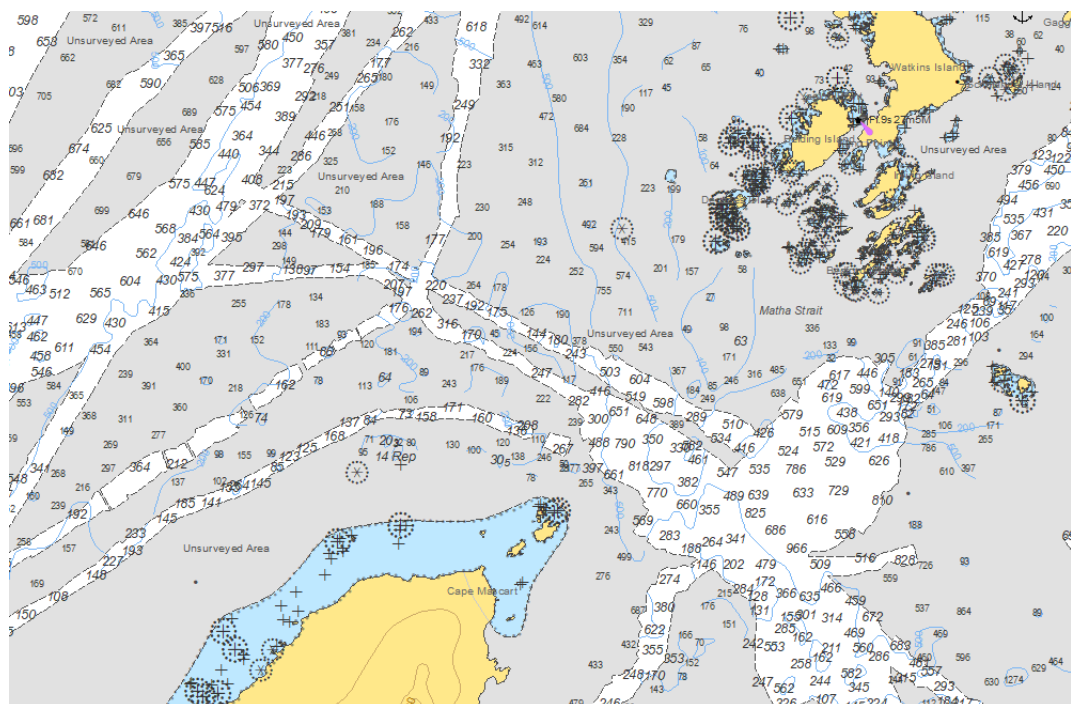


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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENCs Produced (including significant updates for surveys)

Updated 12<sup>th</sup> January 2024: GB302975

To include 2021 MBES ZoC B providing 100% coverage of MSR 'V'.



HCA-19, Venice, Italy (hybrid), 15 – 18 April 2024



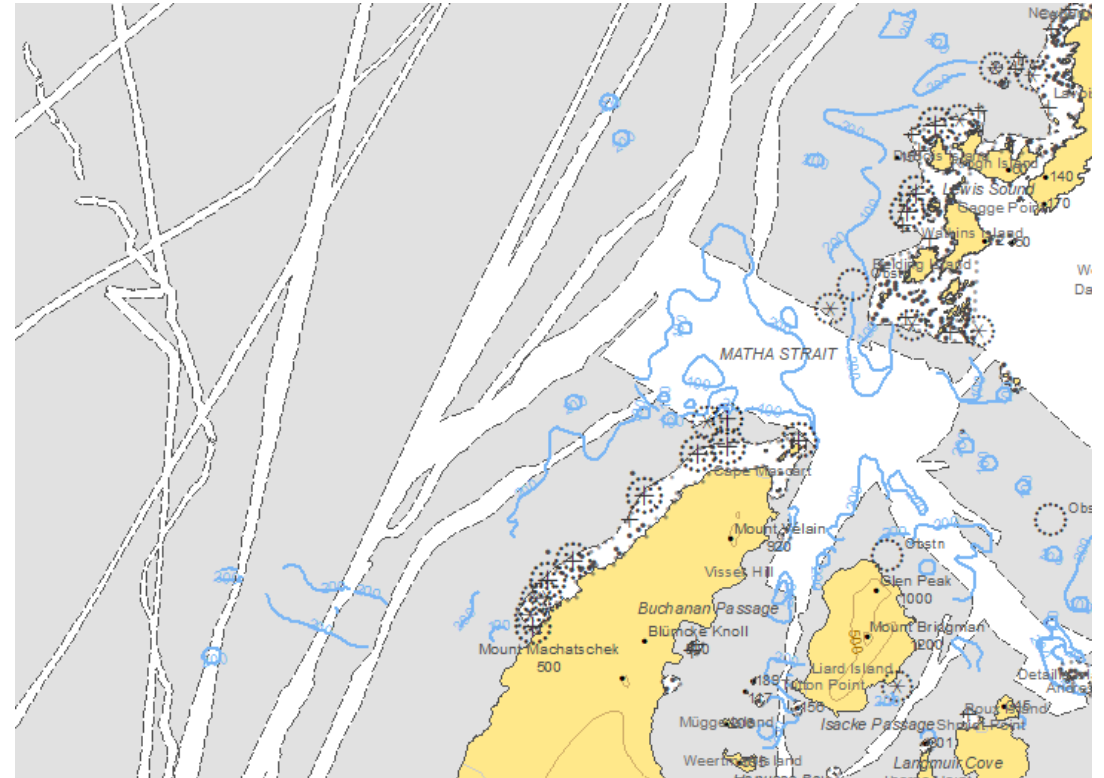
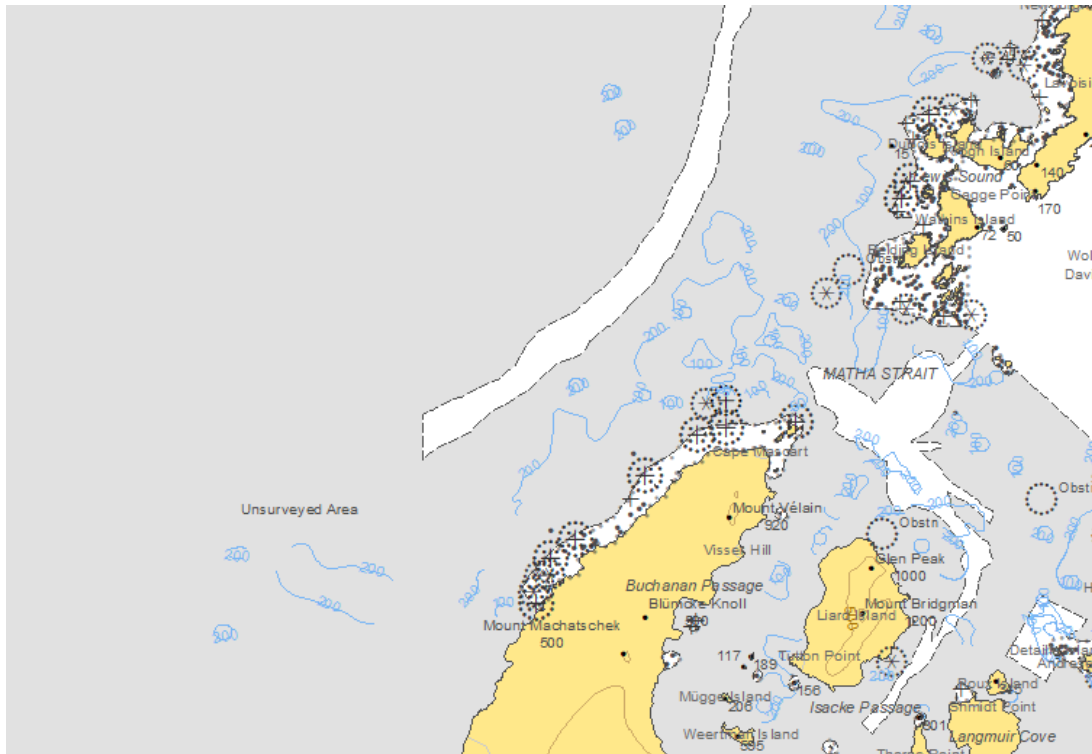
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENCs Produced (including significant updates for surveys)

International Hydrographic Organization

Updated 22<sup>nd</sup> January 2024: GB203572

To include 2021 MBES ZoC B providing 100% coverage of MSR 'V'.



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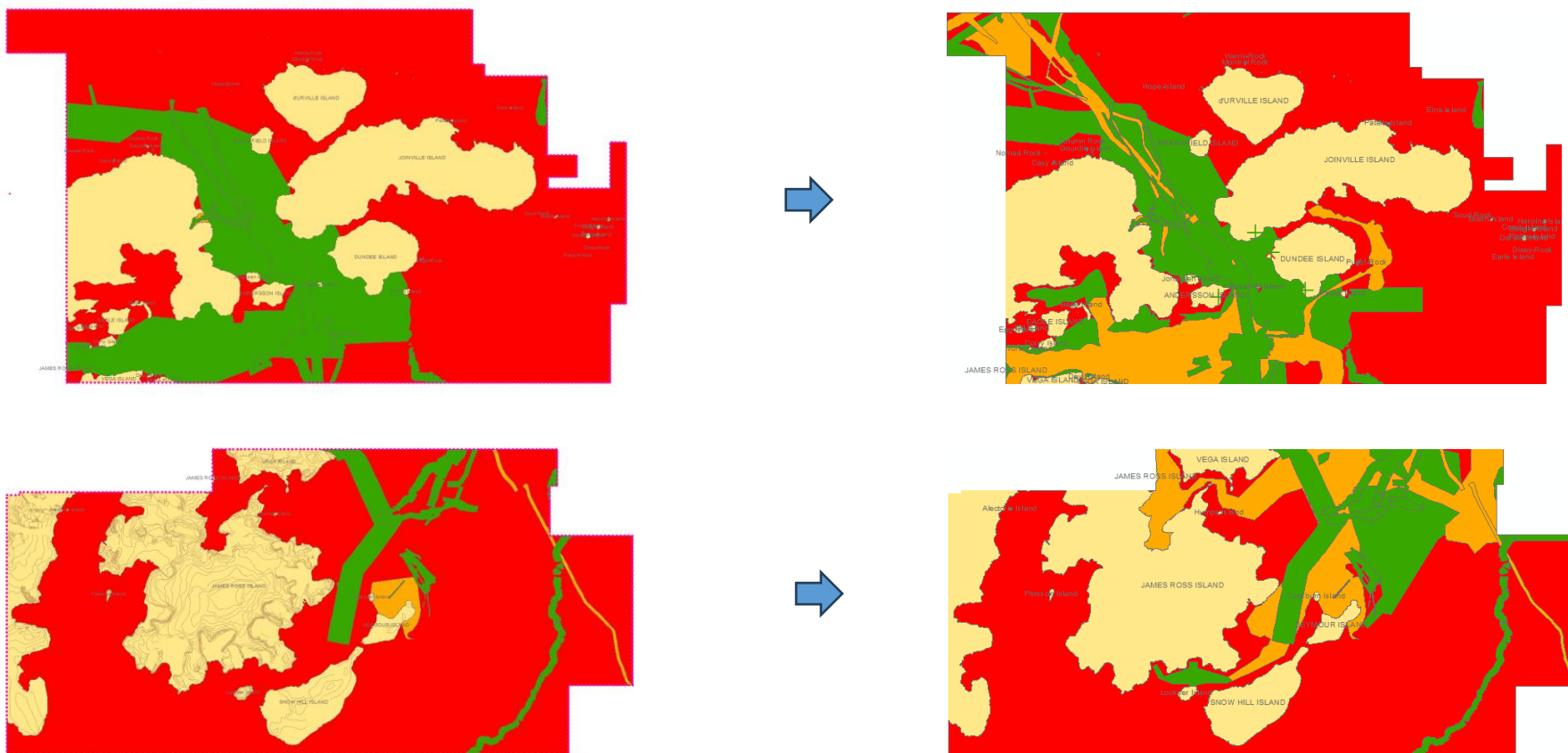
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# Surveys and Charting Progress in Antarctica since HCA-18 (May 2022) – ENCs Produced (including significant updates for surveys)

International Hydrographic Organization

Updated April 2024: GB372210 & GB372220

Updated CATZoC values and consistency to improve user decision making



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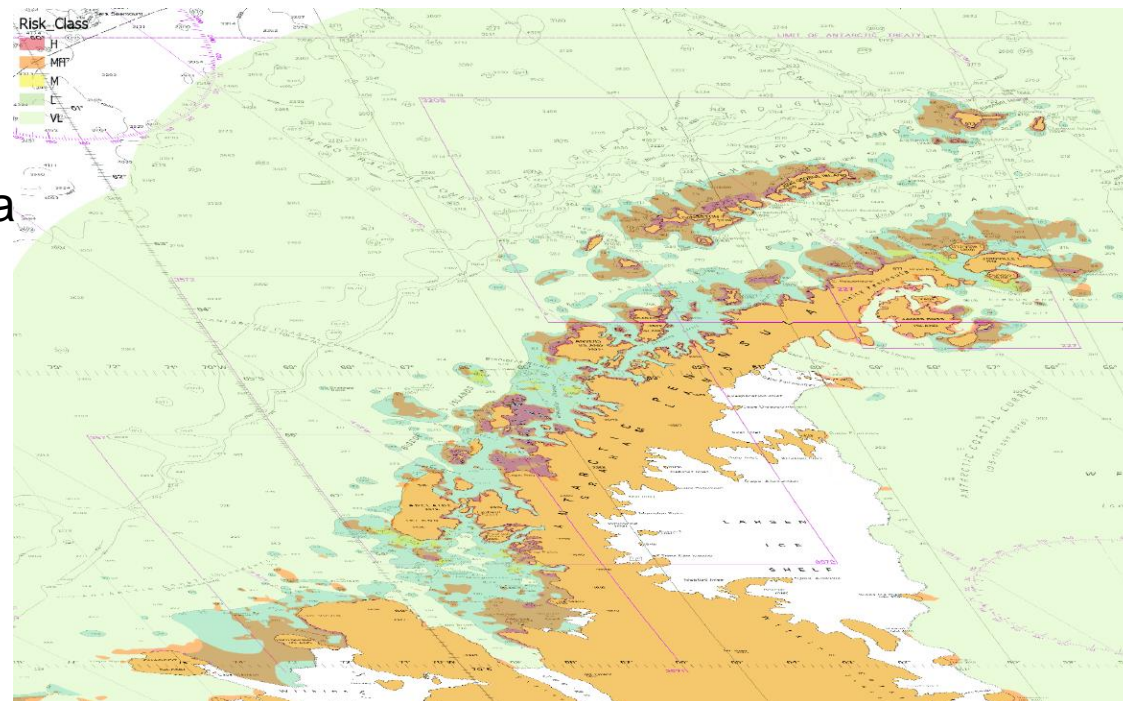
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# Risk Assessment Studies

International  
Hydrographic  
Organization

Continue to:

- Monitor survey priorities against traffic data
- Work with IAATO
- React to user feedback/requirements
- Understand the outputs of risk models



## ATCM Resolutions

**Impact of ATCM Resolutions (such as ATCM42, Resolution 6 (2019)\*) on surveys, data collection and sharing –**

- UK is complying with the spirit the recommendations on all fronts (see slide 30 for details of data shared)
- UKHO continues to work to improve and cross government and international survey collaboration.

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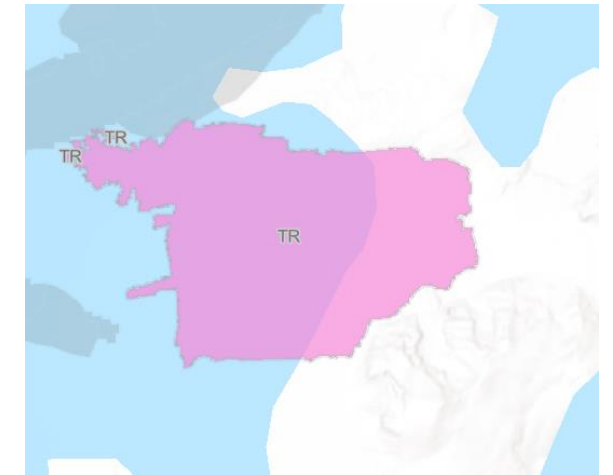
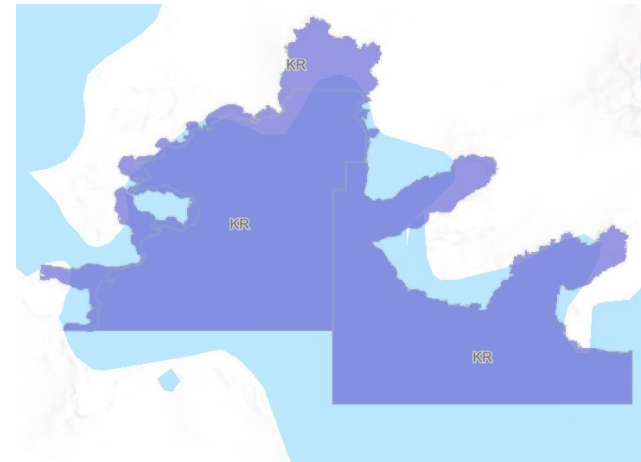
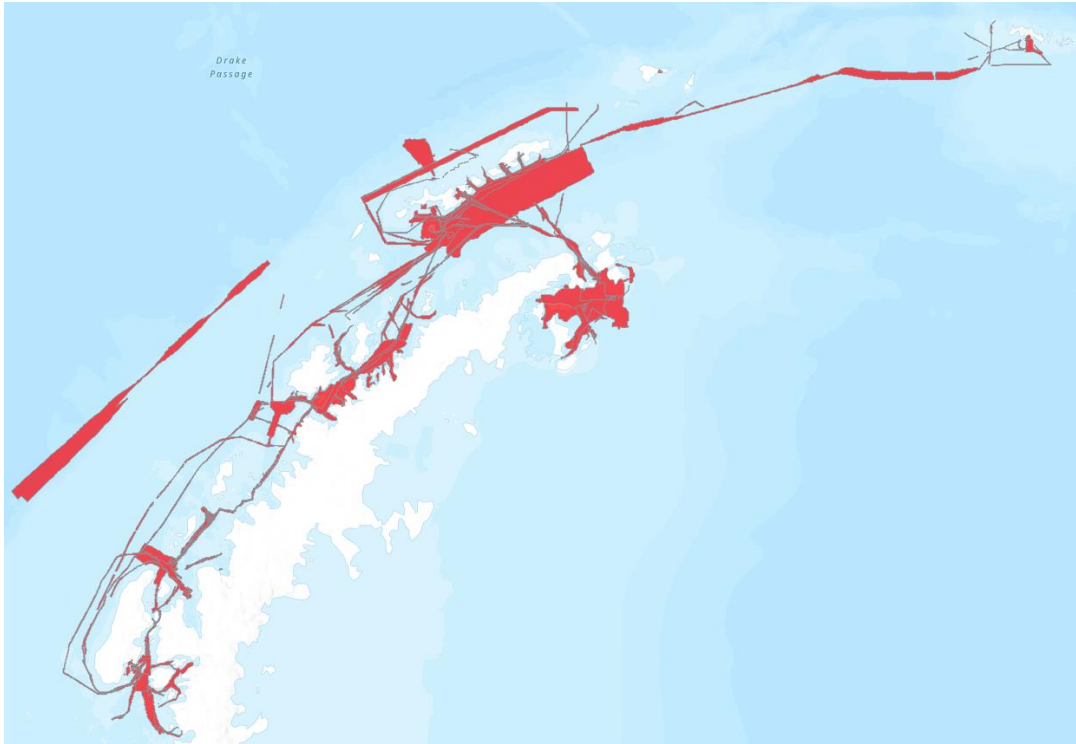




## HCA GIS was updated in February 2024 for the latest UK surveys.

The UK as HPWG Chair has facilitated the inclusion of survey metadata from the following member states:

- Brazil – March 2024
- Chile\* – May 2023
- RoK – September 2022
- Spain – January 2023
- Türkiye – Oct 2023



\*Deception Island

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# Relations with Other Organizations – Scientific and Polar Institutes

International  
Hydrographic  
Organization



Natural  
Environment  
Research Council

- British Antarctic Survey is the UK's focal point for Antarctic research and operations which employs around 500 personnel. Based in Cambridge it is part of the Natural Environment Research Council and has an annual budget of £50 million.
- UKHO working with BAS to improve standard of scientific data collection for charting purposes



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# Relations with Other Organizations – Scientific and Polar Institutes

International  
Hydrographic  
Organization

- As reported at HCA18 Season 2021-2022 marked the RRS Sir David Attenborough (SDA) Maiden Voyage.
- The SDA is fitted with Kongsberg EM122 and EM712 multibeam systems. Sea Acceptance tests were undertaken during summer 2022.
- Sea Acceptance tests of the EM2040 fitted on the Erebus workboat were undertaken during summer 2023.



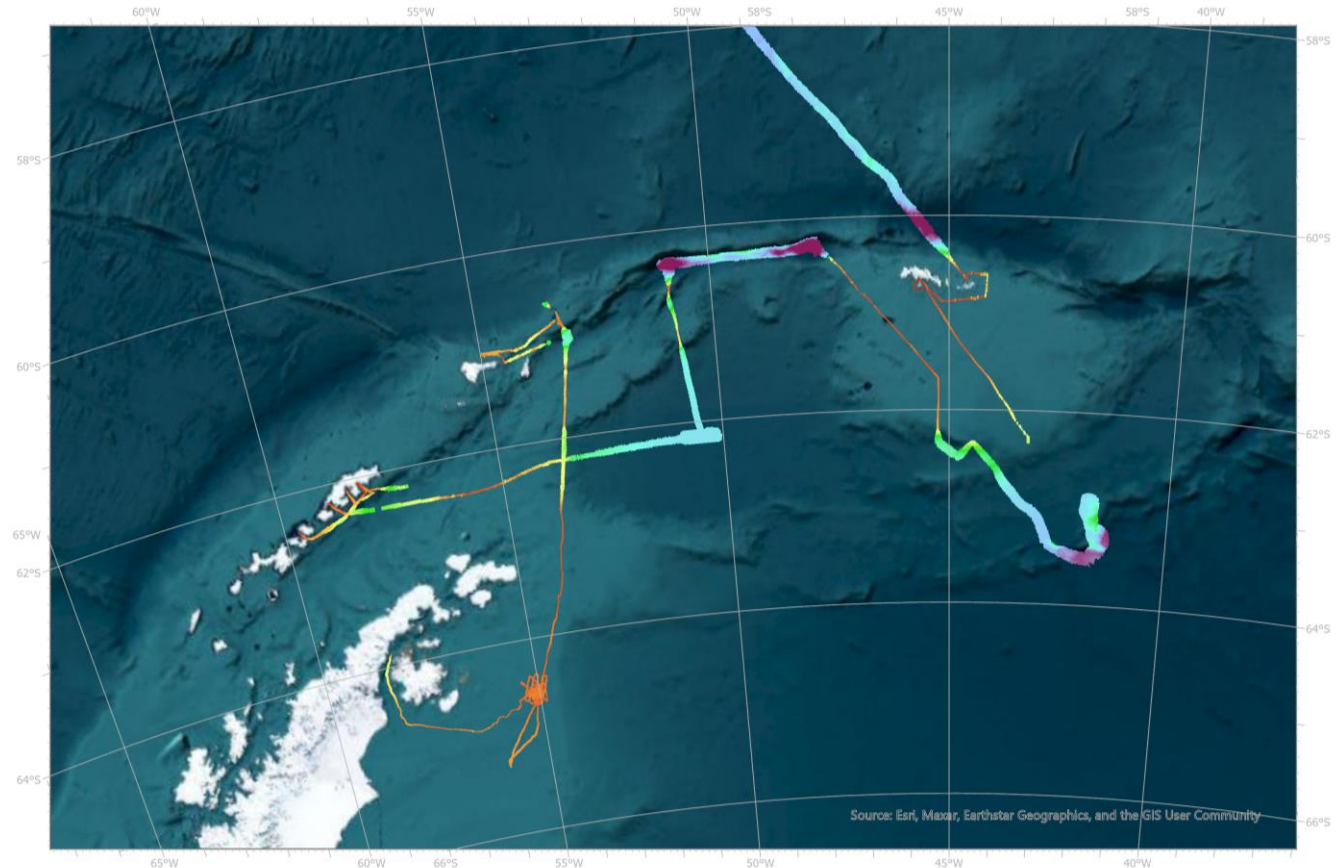


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# Relations with Other Organizations – Scientific and Polar Institutes

International  
Hydrographic  
Organization

- 2022-2023 Antarctic season marked the first multibeam survey in Antarctica with RRS Sir David Attenborough.
- Additional opportunistic data collected as part of the 2023-2024 Antarctic Season.



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# Relations with Other Organizations – Hydrographic Data Received from Other Organizations

International Hydrographic Organization

## Argentina

- INT 9120 repromat (Deception Island)

## Brazil

- 2022 Bransfield Strait Survey
- Survey metadata limits for coordination & HCA GIS

## British Antarctic Survey

- c50 scientific cruise datasets

## Chile

- 2022 Deception Island survey
- INT 9102 (Rada Covadonga y Accesos)

## Ecuador

- INT 9129 (Punta Fort William)

## Peru

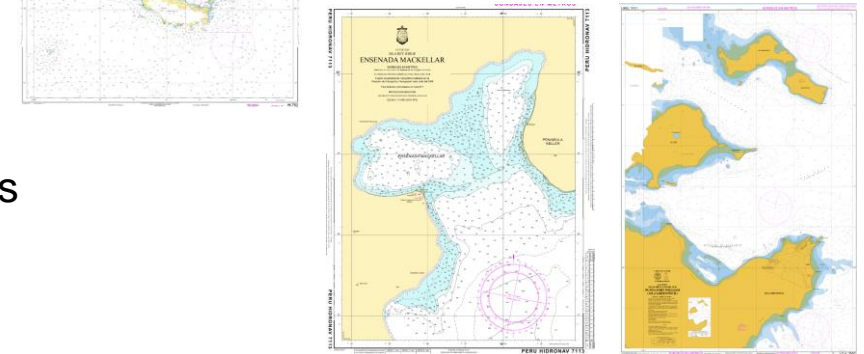
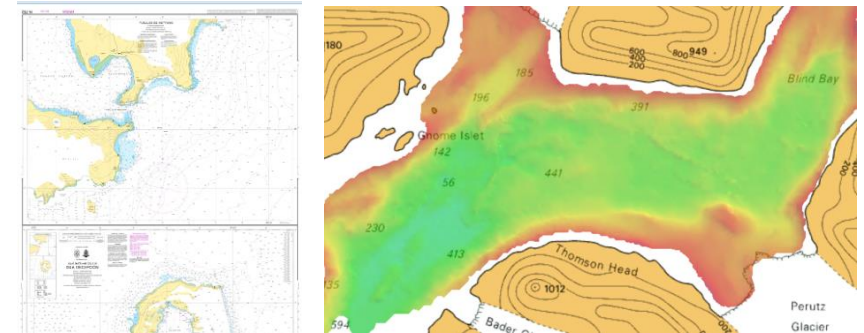
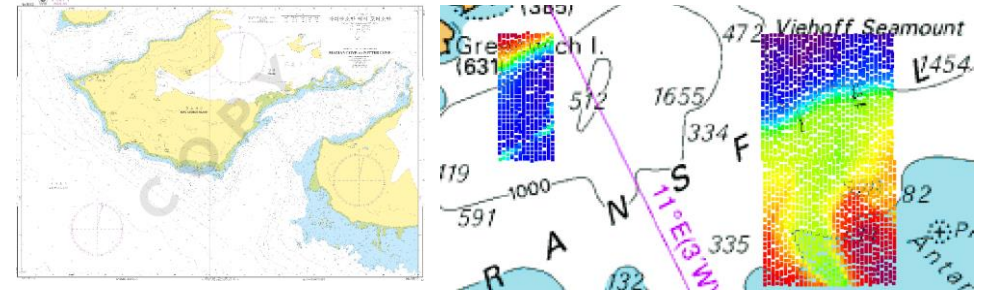
- National Chart 7113 (Ensenada Mackellar)

## RoK

- Survey metadata limits for coordination & HCA GIS, and national charts

## Spain

- INT 9121 repromat (Point Barnard to Camp Byres) & HCA GIS survey metadata (2012, 2016/17)





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# Relations with Other Organizations – Hydrographic Data Provided to Other Organizations

International  
Hydrographic  
Organization

The following Surveys have been shared since UK National Report HCA-18

## Brazil

- Penguin Island positioning ENC – INT 9126

## Chile

- 6 South Shetland Island datasets – INT 9122 & 9124
- 16 Deception Island datasets
- 1 Antarctic Sound dataset

## Ecuador

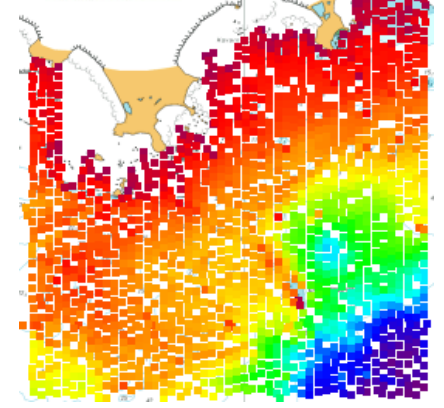
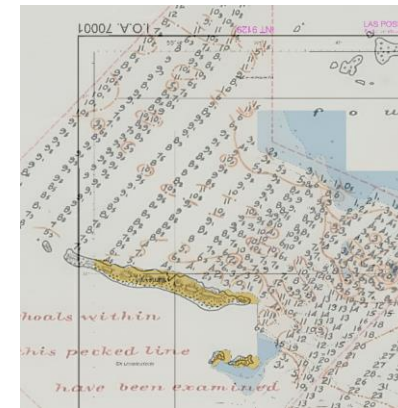
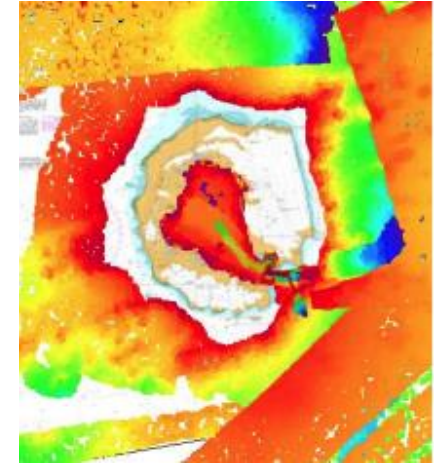
- 1 English Strait analogue survey – INT 9129
- 1 Coastline plot – INT 9129

## Spain

- 1 Elephant Point dataset – INT 9121
- 1 Coastline plot – INT 9137\*

## Türkiye

- 2 Charts – New INT chart



\*Supplied at HCA19



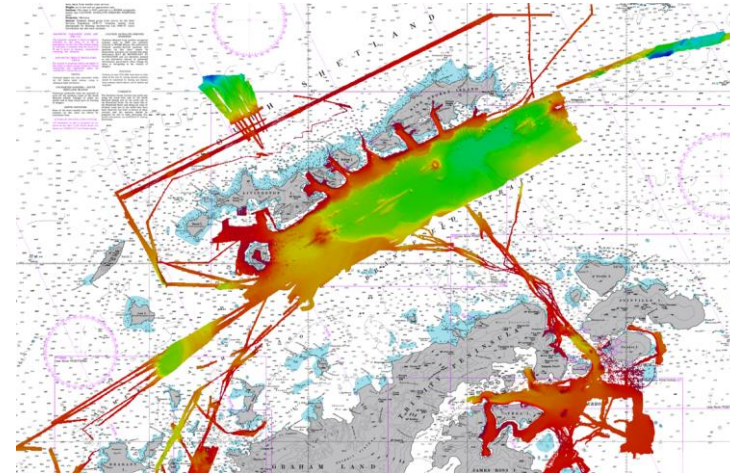
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# Relations with Other Organizations – Seabed 2030

International  
Hydrographic  
Organization

## GEBCO & SB2030

- As per our HCA18 National Report the UKHO established a partnership to provide gridded data to GEBCO, initially providing 46,486 Km<sup>2</sup> data to the Southern Ocean Regional Centre.



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# Planned Activities for 2024-2025

International  
Hydrographic  
Organization

## UK data collect priorities & coordination for 2024/25

- HMS Protector prioritisation will remain aligned with the HCA HPWG survey priorities agreed at HCA19. We will avoid duplication of data collect where MS have made their survey plans available.
- Opportunistic survey and passage data will continue to be gathered in areas of operation to support INT charting by both Ice Patrol and Scientific Vessels.
- UKHO will continue to work with British Antarctic Survey to maximise survey capabilities of RRS *Sir David Attenborough*





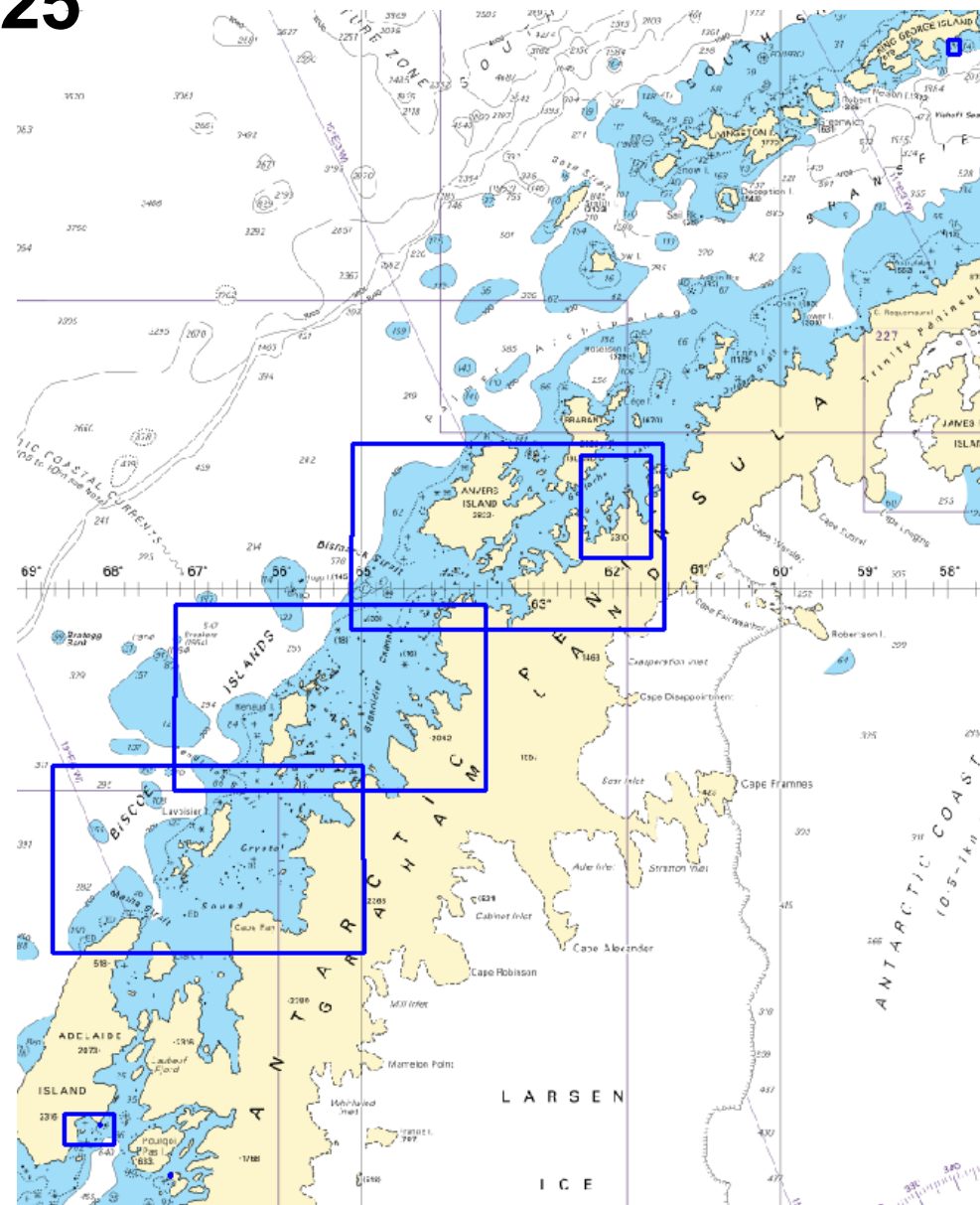
# IHO Planned Activities for 2024-2025

International  
Hydrographic  
Organization

## Potential New Charts & Editions

- INT 9109, Rothera including two new plans
  - Biscoe Wharf (Rothera)
  - Sally Cove (Horseshoe Island)\*
- INT 9112, Penguin Island
- INT 9117, English Strait & Melchior Islands
- INT 9160, Matha Strait
- INT 9166, Gerlache Strait
- Other charts/ENCs actions from HCA-19 ICCWG workshop

\*Subject to receipt of data from Türkiye



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# IHO Planned Activities for 2024-2025

International  
Hydrographic  
Organization

## Plans for a coordinated development of S-100 products and Electronic Navigational Data Services (ENDS) in the region\*

- **General**

- We are currently working with equipment manufacturers, solution providers, ports, and pilots to help us develop our services before S-100 ECDIS begins to roll out from January 2026.
- We aim to have initial S-100 end-user services in place 6 months ahead of the need to support its use in ECDIS.
- We expect the use of S-100 to gradually build from 2026 to 2029, from when all new ECDIS must be compatible with S-100.

- **Regional**

- The UK has produced 3 new gridded ENC's in readiness for S10X
- Medium and small scale new cells will be aligned to the UK grid scheme
- UK is reviewing content of ENC's in preparation for the grid scheme

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\*See WENDWG14 List of Decisions and Actions



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# Other matters of relevance to HCA, particular issues that may require HCA consideration and/or may need to be reported to IRCC

International  
Hydrographic  
Organization

## Climate Change

The current and future sustainability challenges faced by the maritime industry highlight a pressing need to reshape the way the sector operate. Some recent UKHO programmes/projects to deliver sustainable outcomes across the globe include:

- Carbon neutral surveys to assist marine conservation
- Innovating to support safe, secure and thriving oceans
- Developing regulations to support a sustainable blue economy

For further information on UKHO's Sustainability Roadmap please click [here](#)

The UK will participate in ATCM-46, Kochi, India

HCA-19, Venice, Italy (hybrid), 15 – 18 April 2024



IHO

**Other matters of relevance to HCA, particular issues that may require HCA consideration and/or may need to be reported to IRCC**

International  
Hydrographic  
Organization

- **Recommendations, Actions to be considered by HCA:**
  - Note the report
  - Note the visibility of UK data in the HCA GIS
  - Inform UK at HPWG Chair of survey plans