



19th Conference of the IHO Hydrographic Commission on Antarctica

National Report (AUSTRALIA)

Agenda item 07.2A



HCA-19, Venice, Italy (hybrid), 16-18 April 2024



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Australia's Antarctic Capabilities

International
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RV Investigator

RV Investigator is an advanced ocean research vessel, supporting Australia's atmospheric, oceanographic, biological and geoscience research from the tropical north to the Antarctic ice-edge.

10,000 nautical miles
operational range

Can accommodate 40
scientists in addition to
ships crew

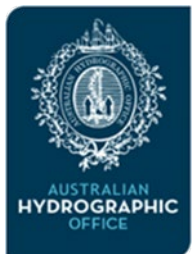
Advanced weather radar

Hydrographic survey

On board laboratories



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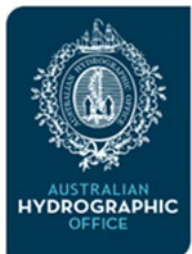
RSV Nuyina

The icebreaker, RSV *Nuyina*, is the main lifeline to Australia's Antarctic and sub-Antarctic research stations and the central platform of our Antarctic and Southern Ocean scientific research

16,000 nautical miles range
Ice breaking 1.65m at 3 knots
Drop keels with hydrographic and oceanographic equipment
Deployable barges and tenders for research activities



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HydroScheme Industry Partnership Program

The HIPP 2 Deeds were finalised in 2023.

The Deeds now incorporate two zones for hydrographic survey in Antarctica; Zone 4 and Zone 5 enabling the future employment of HIPP 2 Deed participants in these areas.



HIPP
HydroScheme Industry Partnership Program

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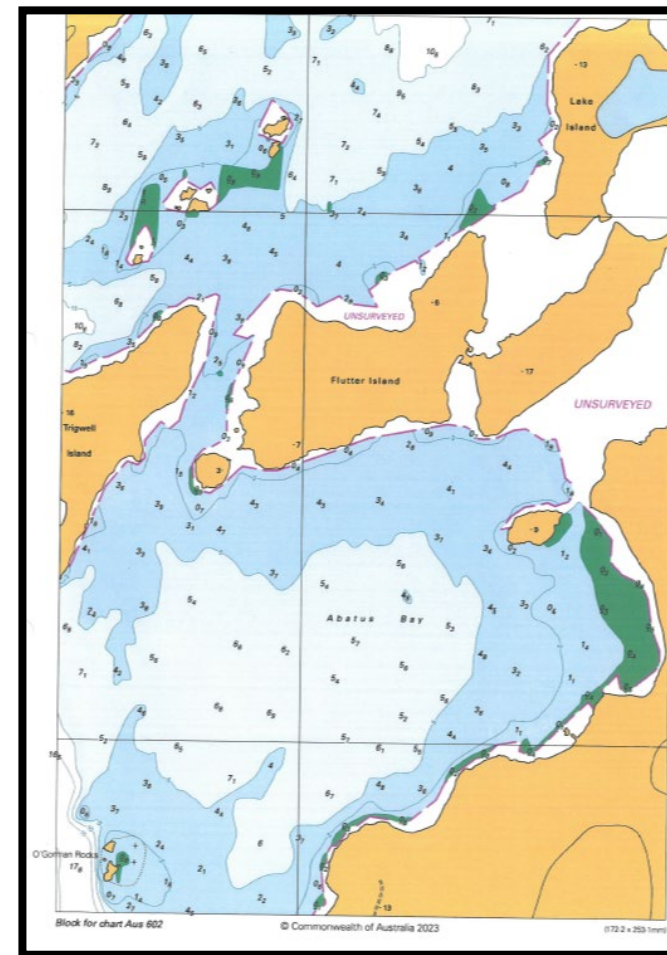
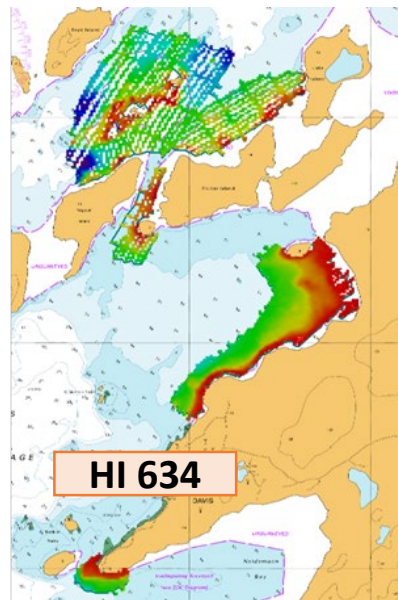
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Charting progress in Antarctica since HCA-18

Davis Station

Paper – AUS602 - Approaches to Davis Anchorage.

Updated for survey HI 634 - Operation Southern Discovery.



Block for Aus602
Published Nov 2023

International Hydrographic Organization





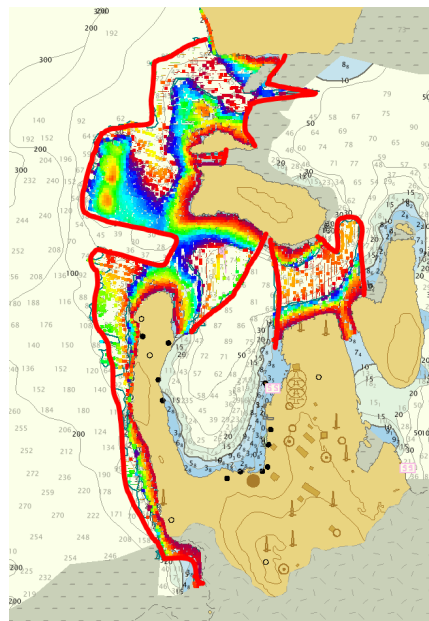
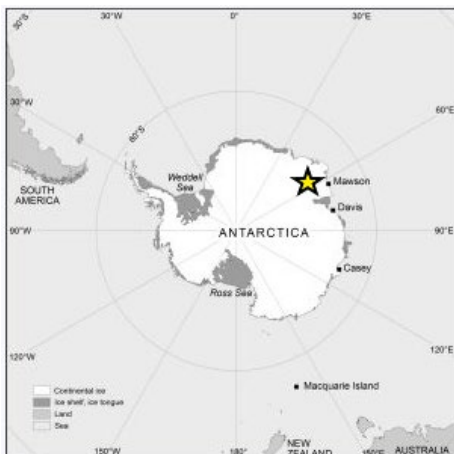
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Charting progress in Antarctica since HCA-18

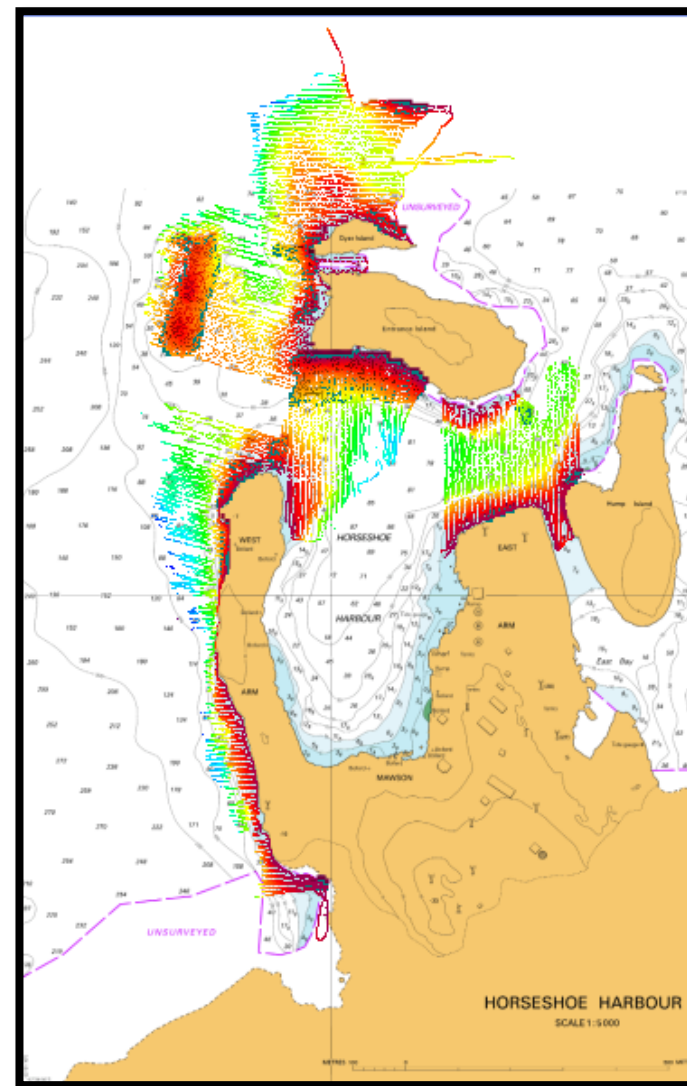
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Mawson Station

AUS600 - Updated for survey HI 607 and other changes to ENC AU468062.



HI 607



AUS 600

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Macquarie Island

ENC's Updated for survey CSIRO 2020 Vo6.

AU455158 – Southern Ocean – Macquarie Island

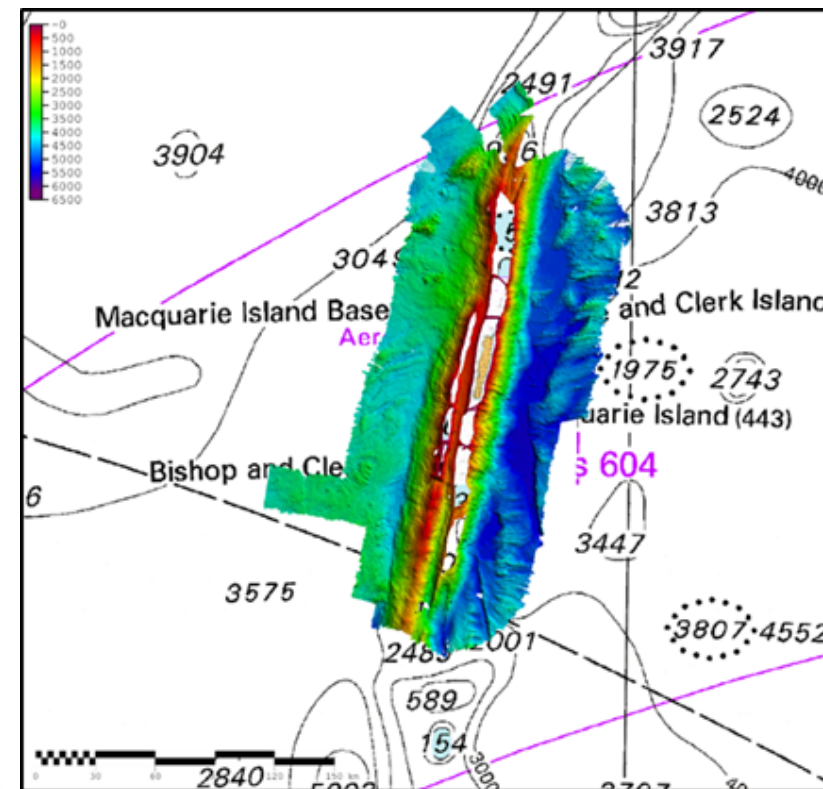
AU355159 – Southern Ocean – Macquarie Trough

AU356158 – Southern Ocean – Bishop & Clark Islands

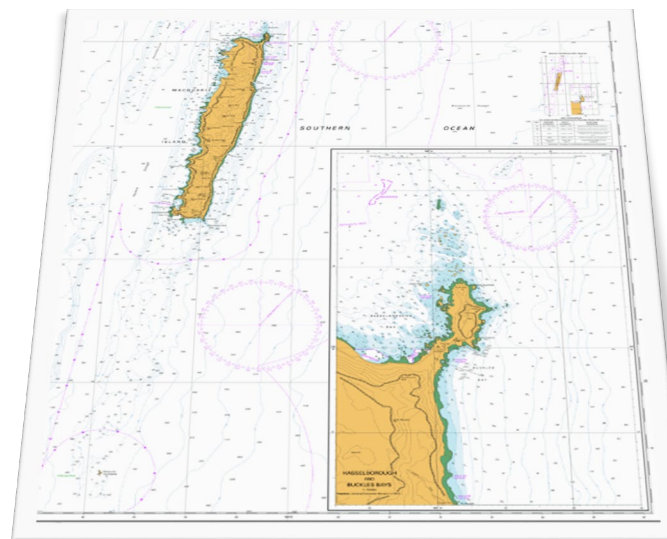
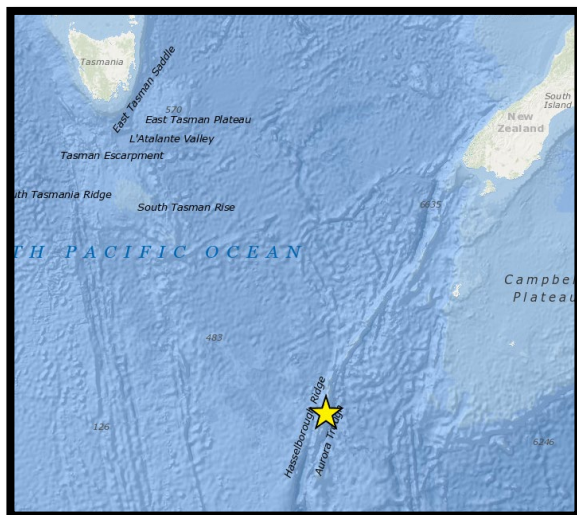
AU356159 – Southern Ocean – SE Approach to Macquarie Island

AU160150 – South East Approaches

Aus604 – Macquarie Island and Approaches.



CSIRO Macquarie Ridge – 2020_Vo6



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Working with Our Partners

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The Australian Hydrographic Office works with a number of partners

Australian Antarctic Division (AAD) co-ordinates Australia's Antarctic Program across government and over 150 institutions. AAD is a part of the Department of Climate Change, Energy, Environment and Water (DCCEEW)

Geoscience Australia (GA) is the government Agency that provides geospatial data, knowledge and services for Australia. It supports positioning, exploration and digital earth initiatives.

Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science research agency.





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Survey progress in Antarctica since HCA-18

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Australian Government
Department of Agriculture,
Water and the Environment
Australian Antarctic Division



Mawson

Using the ice breaker, RSV Nuyina, an area of 719 square kilometres was mapped off Mawson research station, during the March 2024 station resupply by the Australian Antarctic Program.

Depths mapped were between 20 and more than 550 metres.

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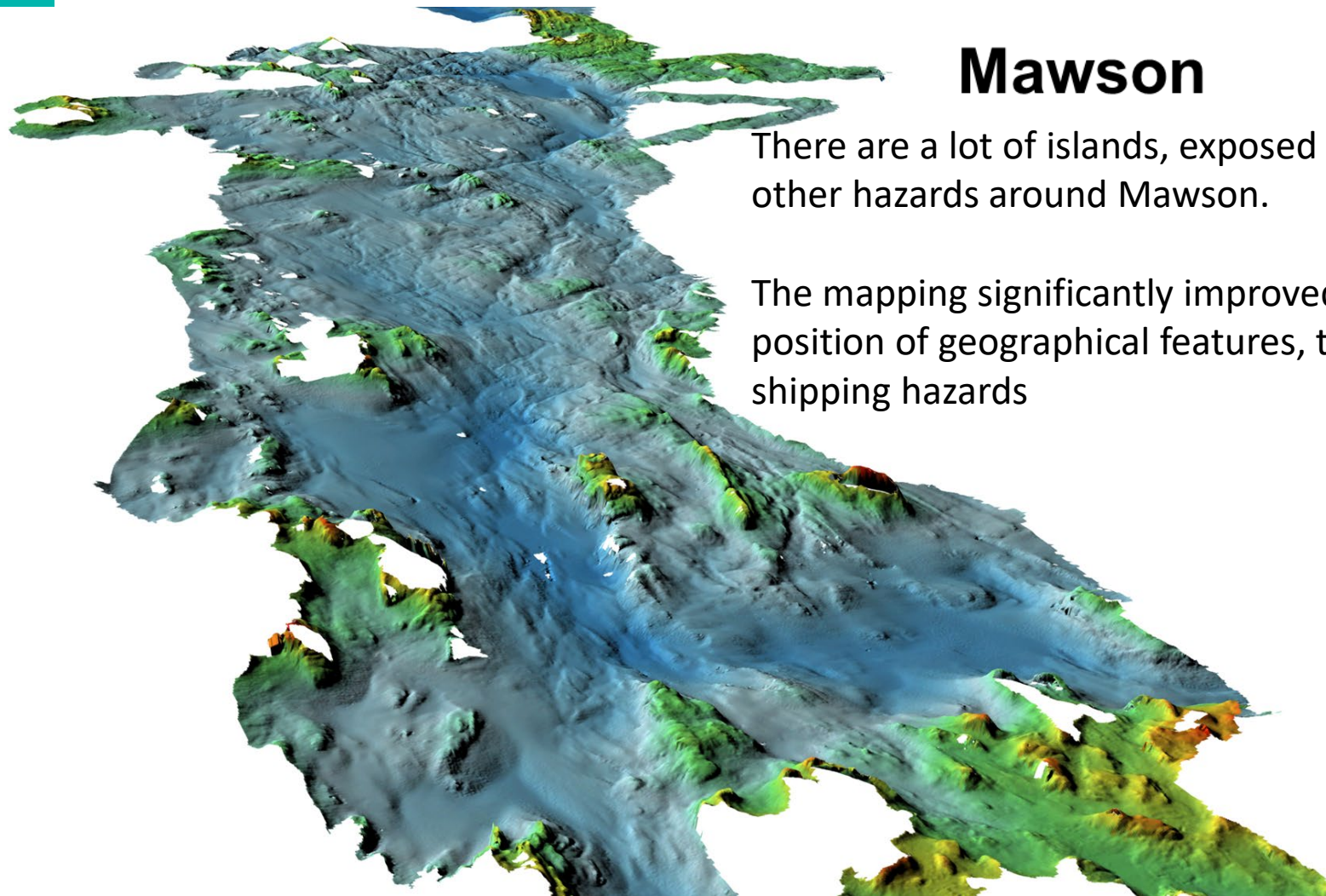
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Mawson

There are a lot of islands, exposed rocks, seamounts, knolls and other hazards around Mawson.

The mapping significantly improved the accuracy of the position of geographical features, their identity, and included shipping hazards



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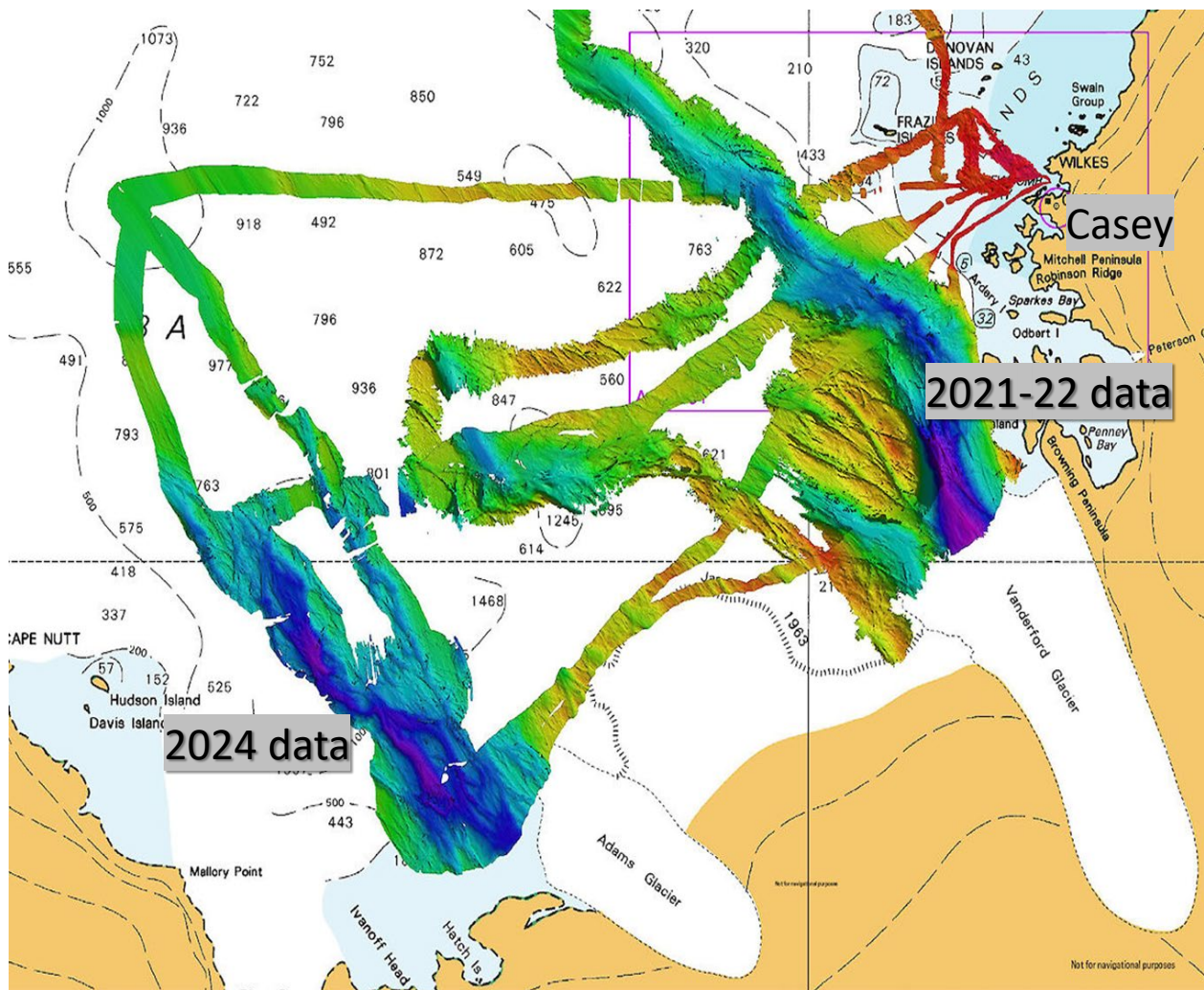
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Adams Glacier

Acousticians mapped from RSV *Nuyina* a canyon in front of Adams Glacier January 2024, while the Vanderford Canyon was mapped in 2021-22.

Blue and purple colours indicate deep water.

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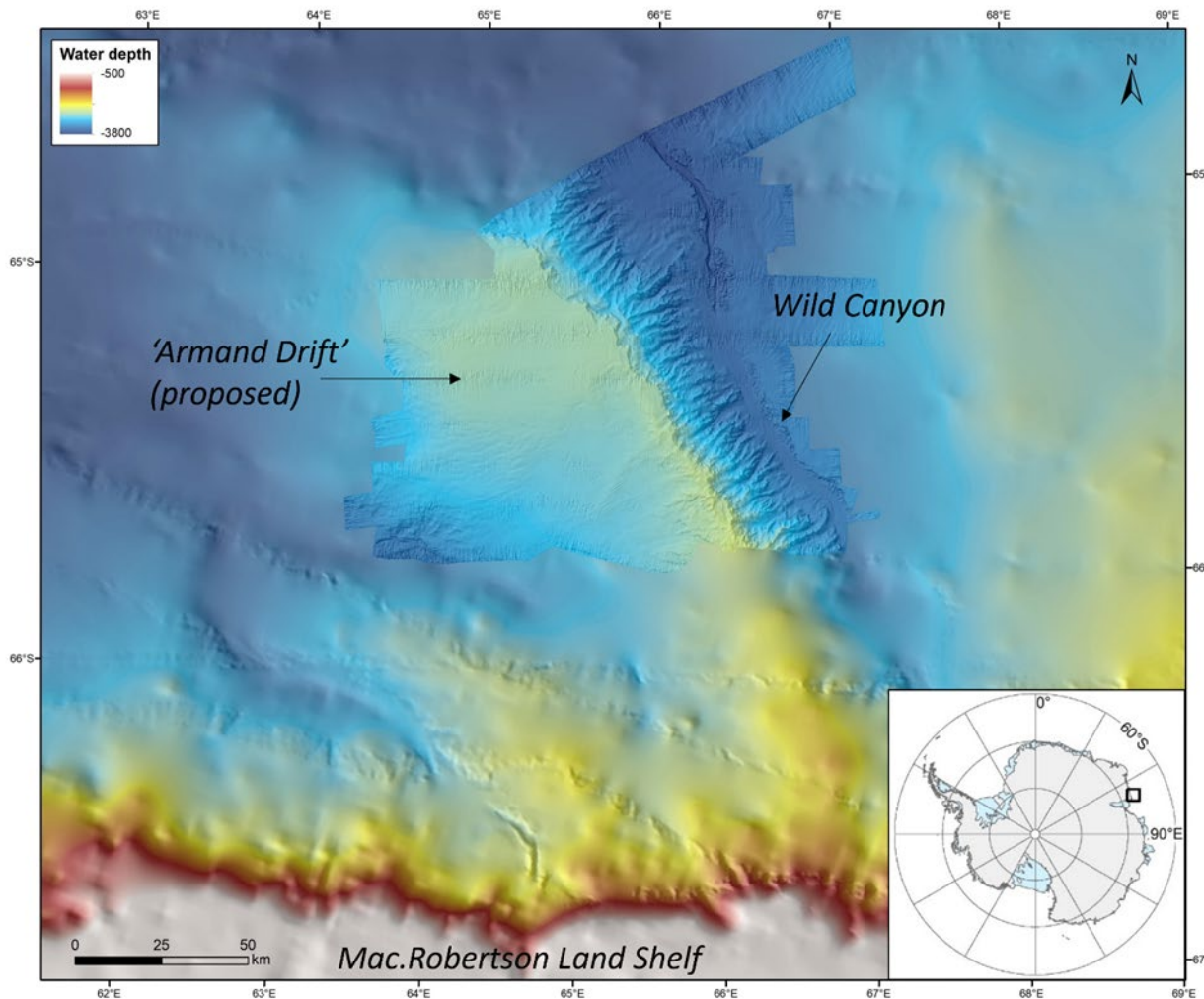
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Geoscience Australia



CSIRO – Geoscience Australia CANYONS Voyage

RV Investigator IN2023_V01

Antarctic Bottom Water production in the past: Records from marine sediments, Cape Darnley, East Antarctica

- 25 January 2023 – 2 March 2023
- 14,300 km² mapped
- 128 m grid resolution
- Voyage cut short due to on-board medical emergency

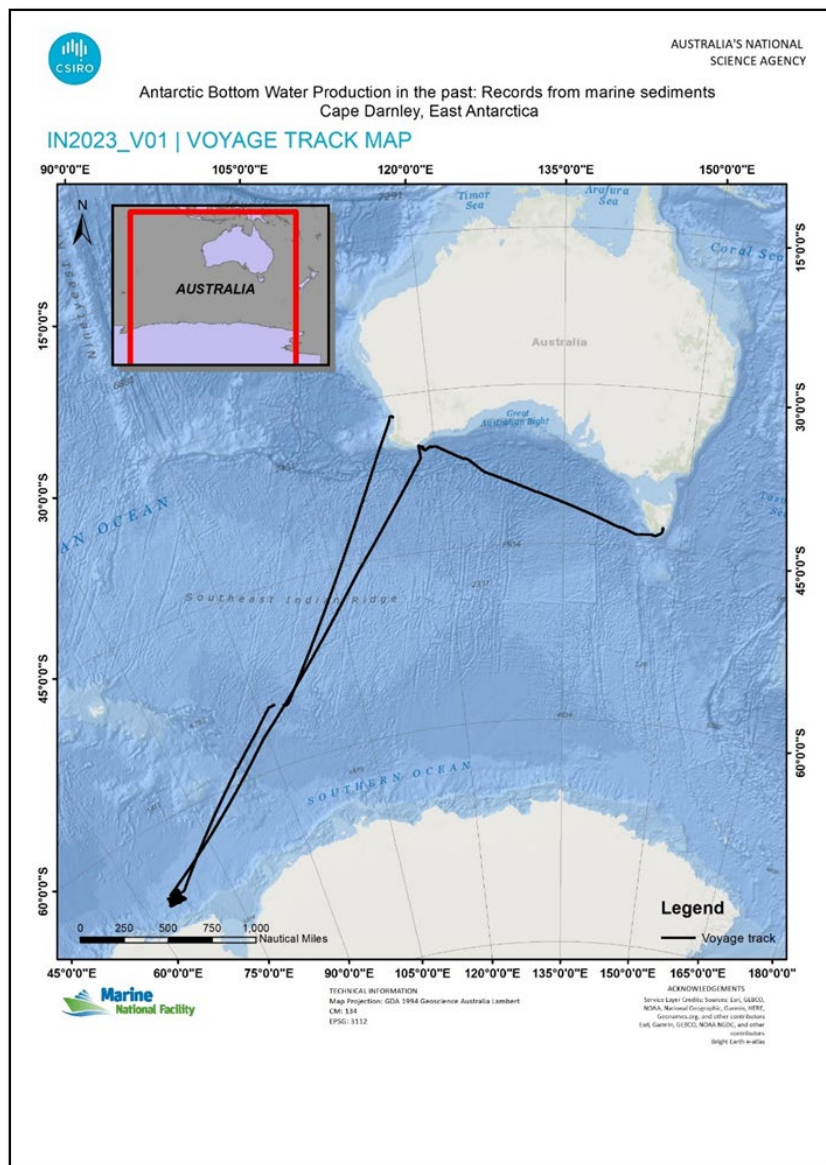
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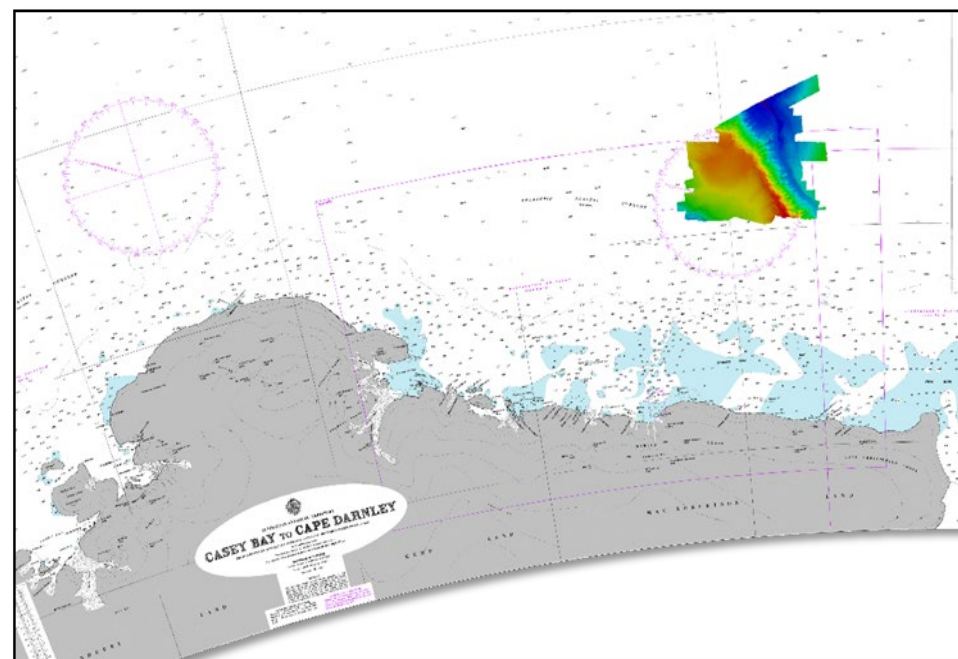
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Cape Darnley East Antarctica



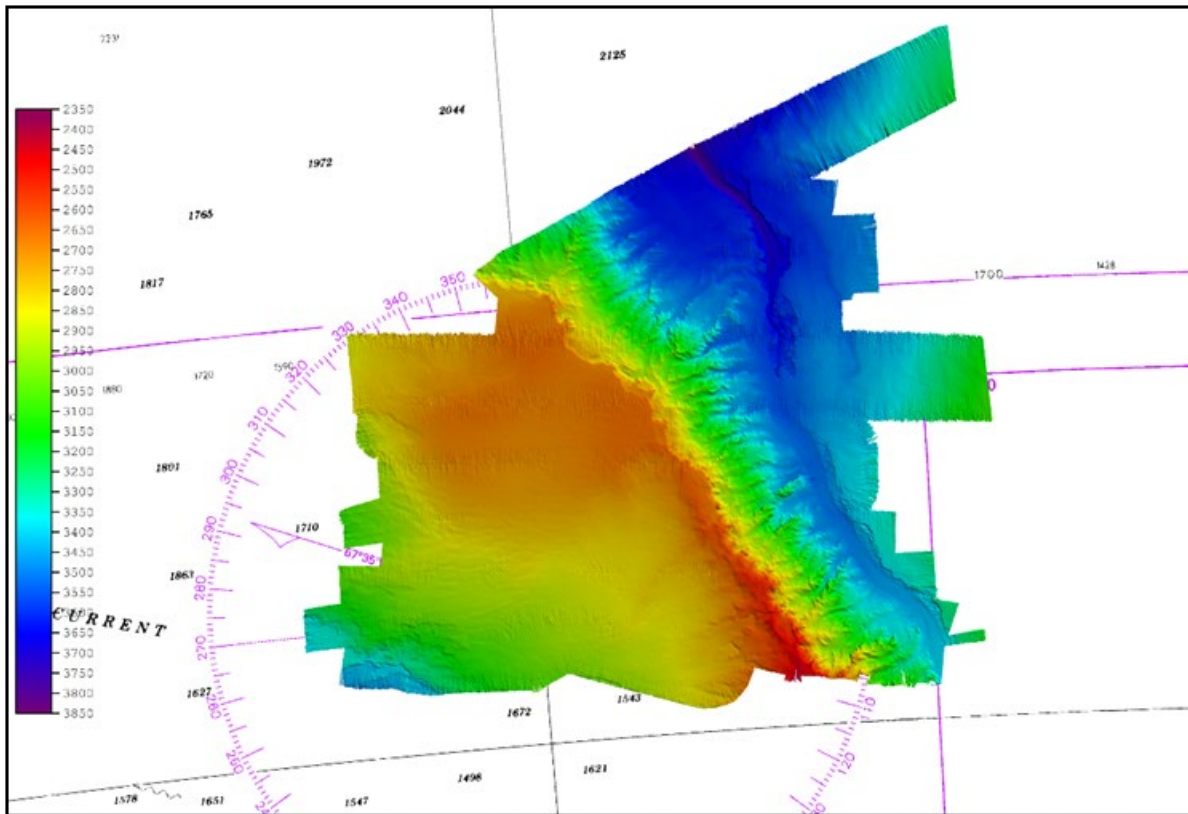
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Cape Darnley East Antarctica

**Survey IN2023_V01
Feb 2023**

Cape Darnley, East Antarctica

- Using RV *Investigator*
- 7 days survey operations on site
- Kongsberg EM122
- AUS402, AUS449 will be updated
- Cape Darnley study area mapped: 13,857 km², 1490 line km
- Depth Coverage: 2370 to 3850 m

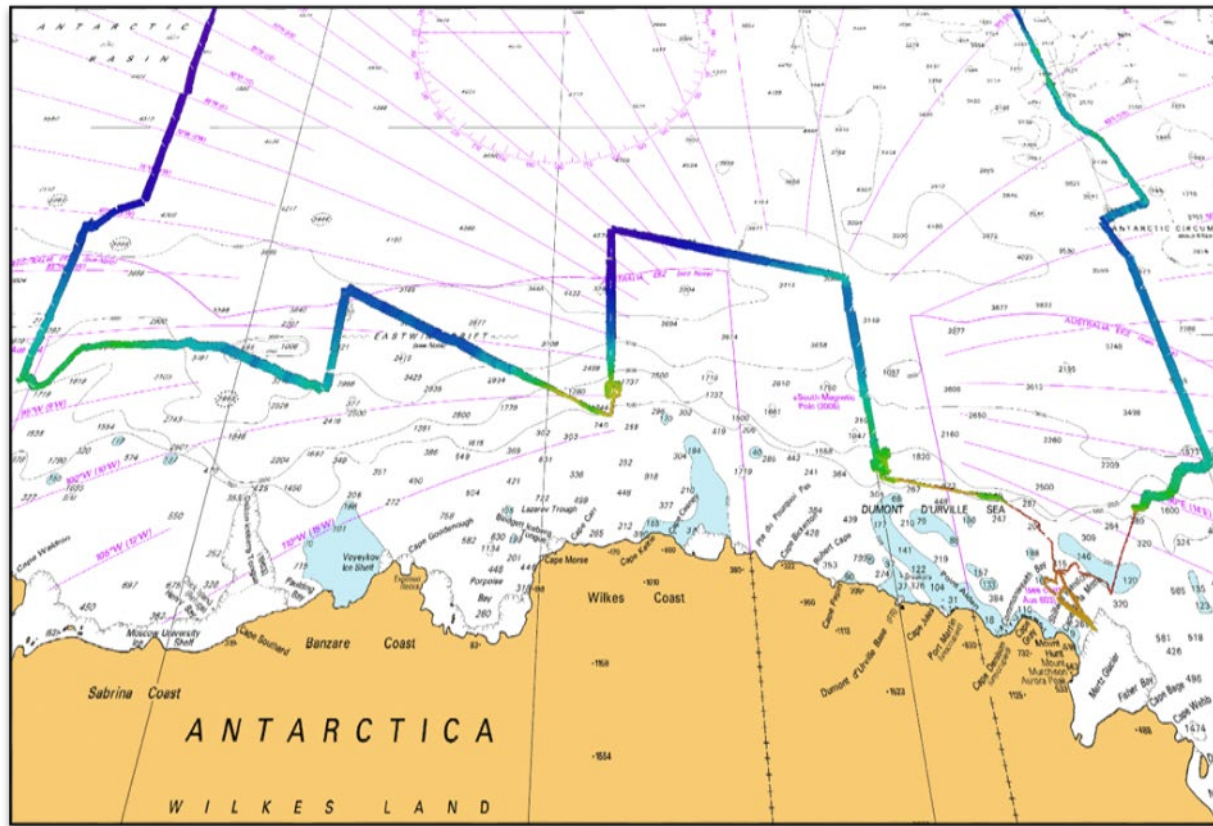
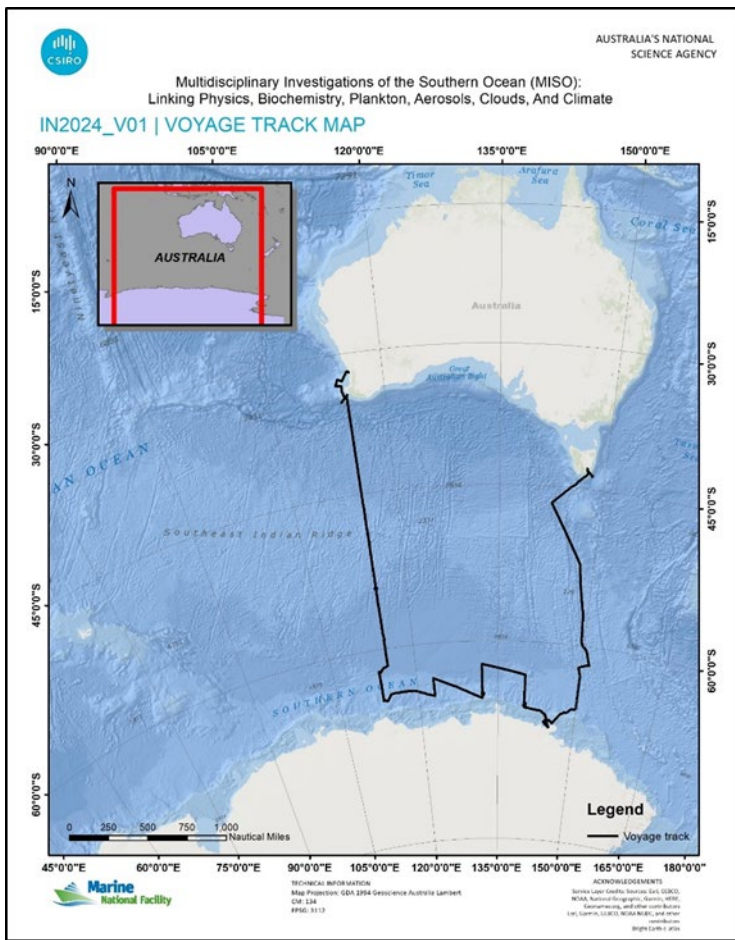
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Survey IN2024_V01

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Survey IN2024_V01 Jan-Mar 2024

- Using RV *Investigator*
- Survey conducted by the Marine Research Facility
- Primary voyage objective: Physical, biogeochemical and atmospheric sampling
- Kongsberg EM122 collected along voyage route
- AUS4074, AUS454 products will be updated

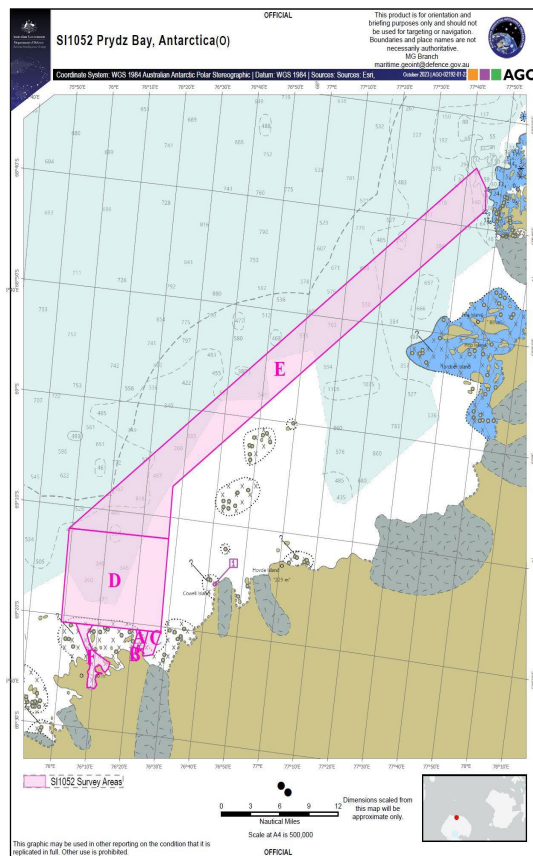
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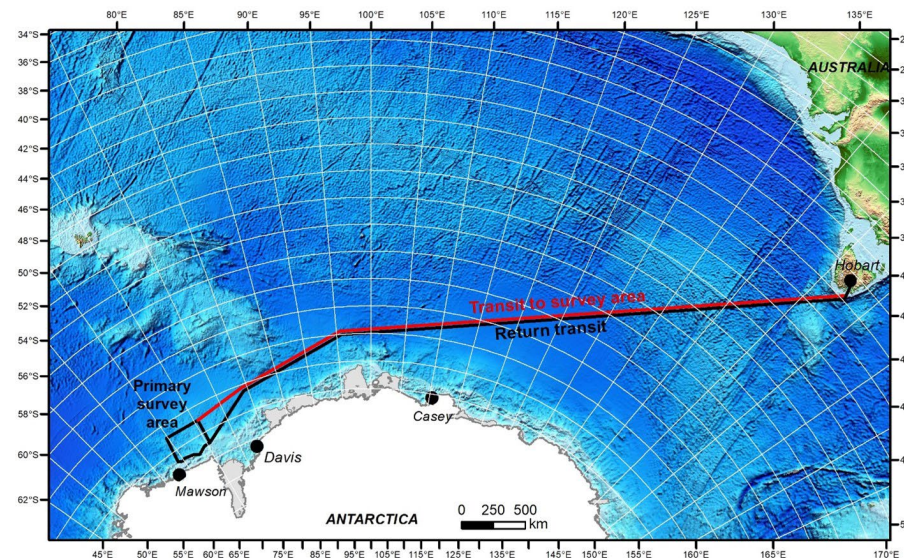
Planned Survey Activities for 2024-2025

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Planning is underway for the Antarctic season 24/25

A geodetic network was established in Mar 24 IVO Larsemann Hills to support future planned survey operations in the area.



Proposed RV Investigator Antarctic Voyage

Antarctic Bottom Water production in the past: Records from marine sediments, Cape Darnley, East Antarctica

- 15 days multibeam data acquisition proposed
- Mapping undertaken along the upper and mid-continental slope in outlined 'primary survey area.'
- Water depths mapped range from 400-3500m.

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IHO Planned Charting Activities for 2025

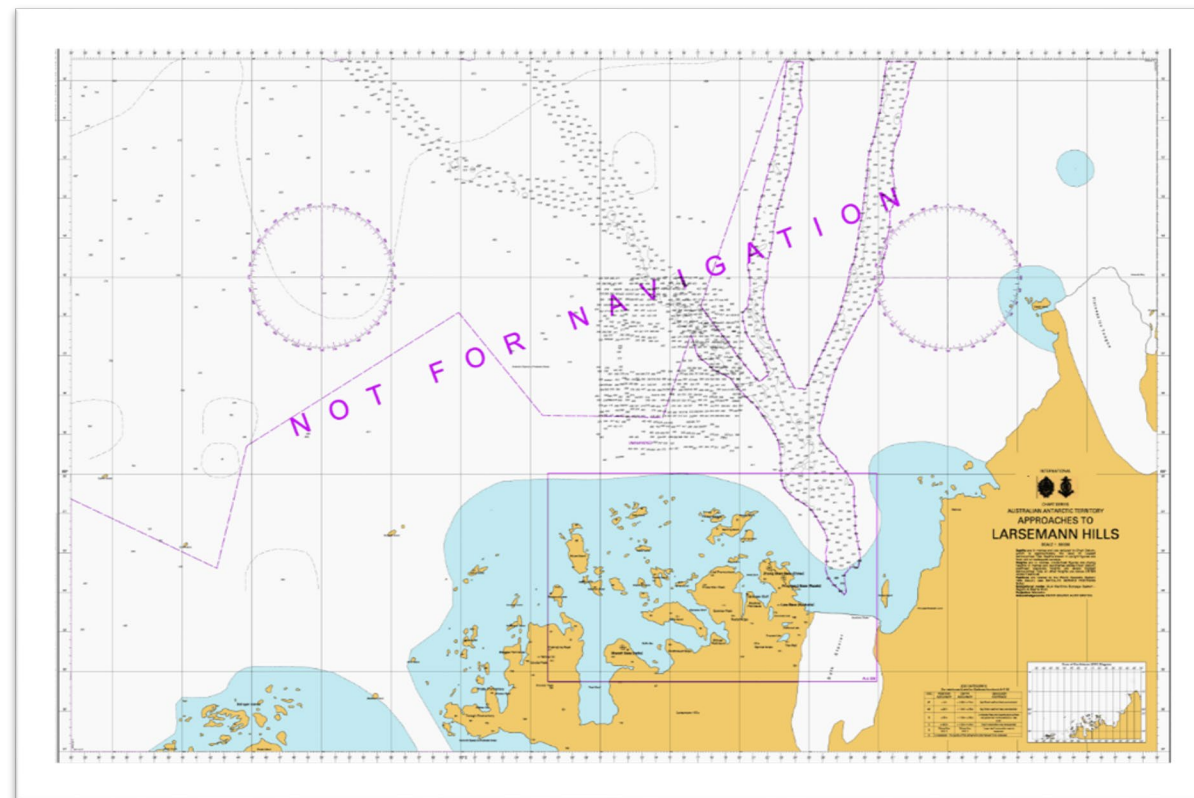
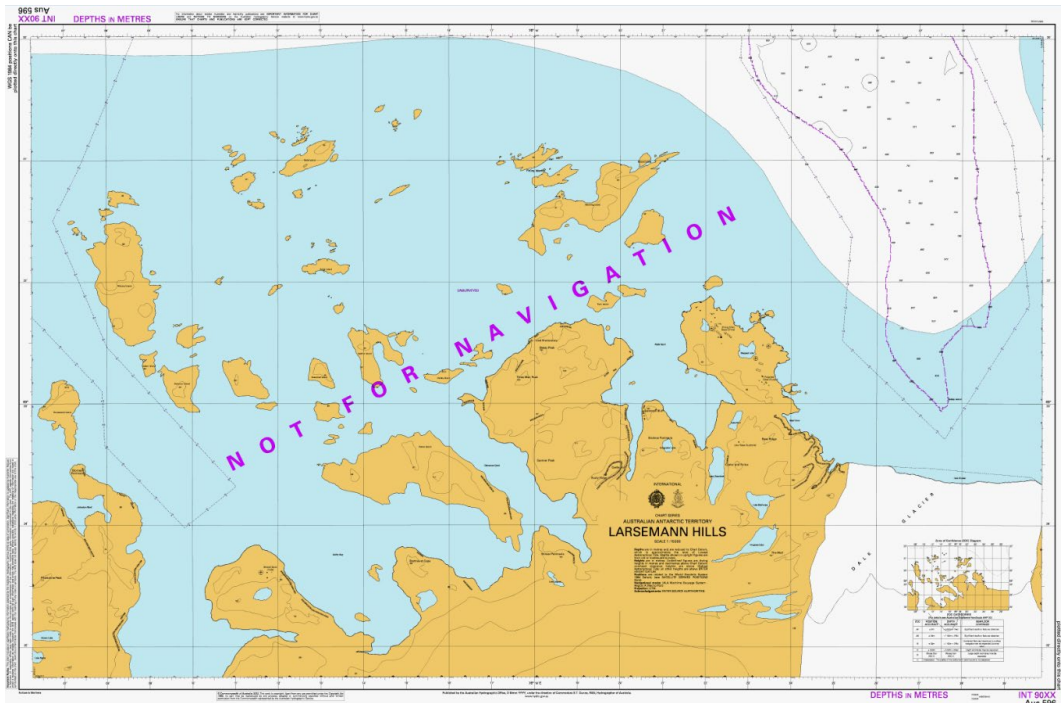
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Proposed NEW CHART

Aus596

Larsemann Hills

Scale : 1: 15, 000.



Proposed NEW CHART

Aus595 (INT9034)

Approaches to Larsemann Hills

Scale : 1:50, 000

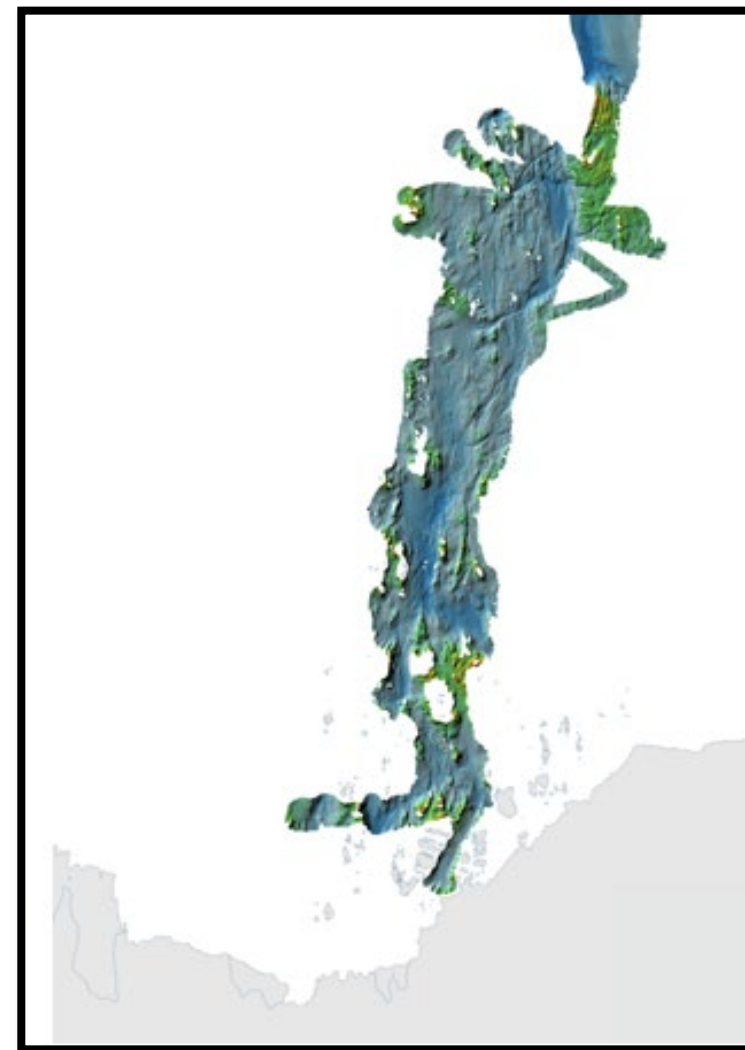
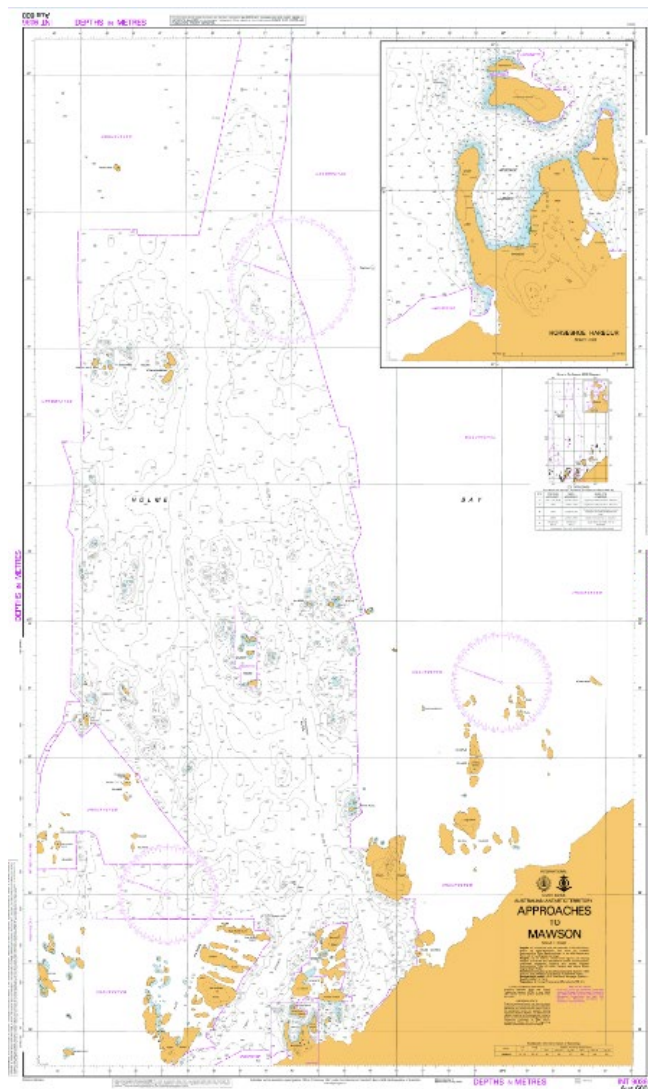


IHO Planned Charting Activities for 2024-2025

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Proposed New Edition
Aus600
Approaches to Mawson
Scale : 1:25, 000.

Update for March 2024
Survey conducted by
RSV Nuyina and will
significantly improve the
quality of this chart.



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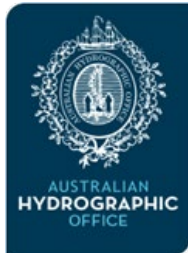


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Other matters of relevance to HCA, particular issues that may require HCA consideration and/or may need to be reported to A-3 (3-year IHO Work Programme, IHO Strategic Plan,...)

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- Note the report



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