



19<sup>th</sup> Conference  
of the IHO Hydrographic Commission on Antarctica  
**National Report by Italy (IIM)**

**Agenda item 07.2Ak**



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# Surveys and charting progress in Antarctica before HCA-18 (May 2022)

International  
Hydrographic  
Organization

Previously survey in Antarctica with Italian National Program (PNRA):

Till 2013 and R/V Italice;

- Singlebeam survey
- Last survey 01/2016

From 2021

- Multibeam survey
- 2 day/year



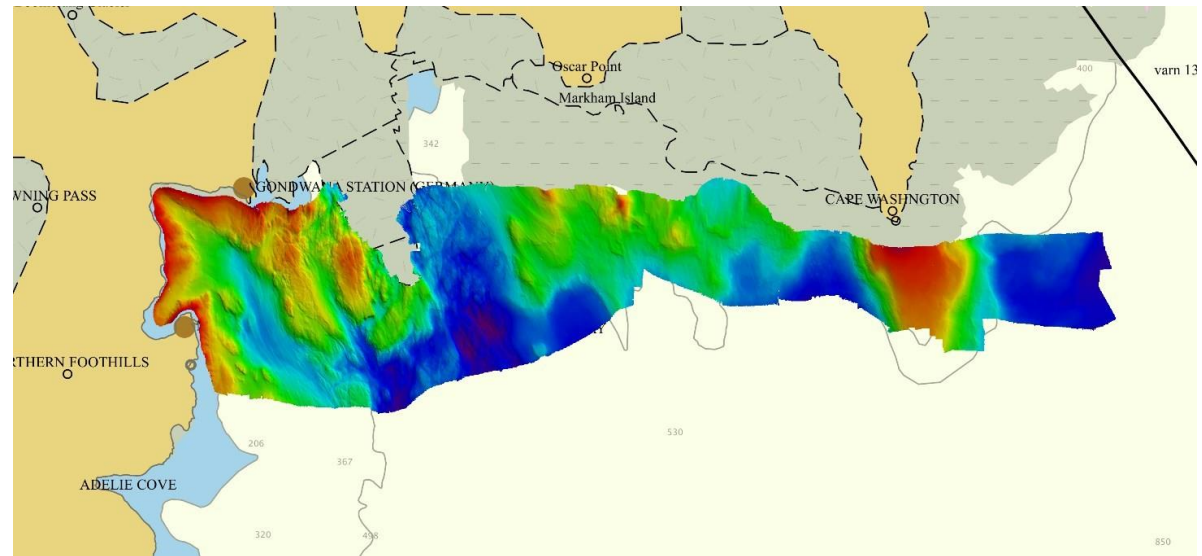
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# Surveys and charting progress in Antarctica since HCA-18 (May 2022)

International  
Hydrographic  
Organization

Survey in January 2023 in Ross Sea with RV Laura Bassi

- Kongsberg EM 304 MBES
- 8 days survey operation;
- ENC IT400881 and IT200885;
- Surveyed all the ice free area;
- Survey from 30m to 735m;
- Tidal data from a tidal gauge installed near the Mario Zucchelli Station by PNRA DC.





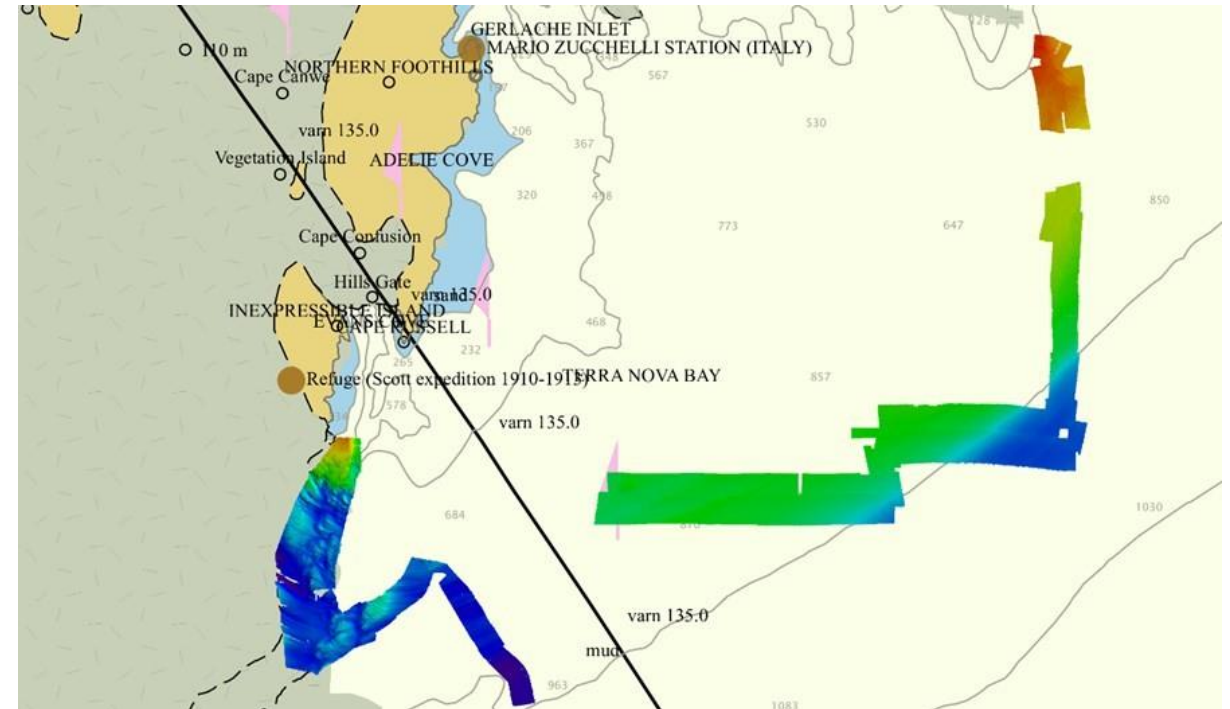
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# Surveys and charting progress in Antarctica since HCA-18 (May 2022)

International  
Hydrographic  
Organization

Survey in January 2024 in Ross Sea with RV Laura Bassi

- Kongsberg EM 304 MBES
- 4 days survey operation;
- ENC IT 300884 and IT 200885;
- Surveyed all the ice free area;
- Survey from 25m to 1600m;
- Tidal data from a tidal gauge installed near the Mario Zucchelli Station by PNRA DC.



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



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# Surveys and charting progress in Antarctica since HCA-18 (May 2022)

International  
Hydrographic  
Organization

## Italian Polar research and Logistic Icebreaker *Laura Bassi*

- 80 m long, 17 m large, PC5 Class A icebreaker;
- National Institute of Oceanography and Applied Geophysics & National Program for Research in Antarctica;
- accommodation for 50 scientific;
- Multibeam full ocean depth e shallow water;
- Sub Bottom Profiler ADCP;
- No deployable ES.



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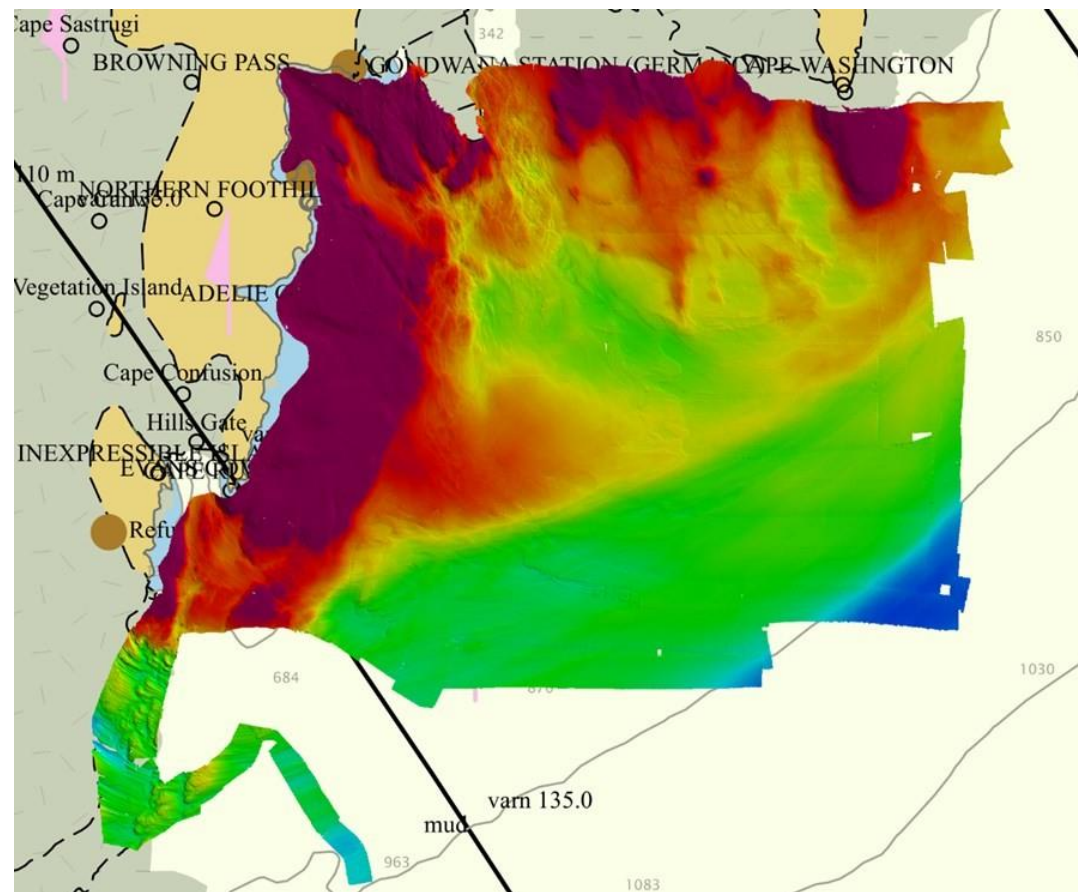


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# Surveys and charting progress in Antarctica since HCA-18 (May 2022)

International Hydrographic Organization

- No new chart;
- Data collect for updating/new chat IT400881;
- Data will be sent to PNRA for Update of the INSPIRE DB;



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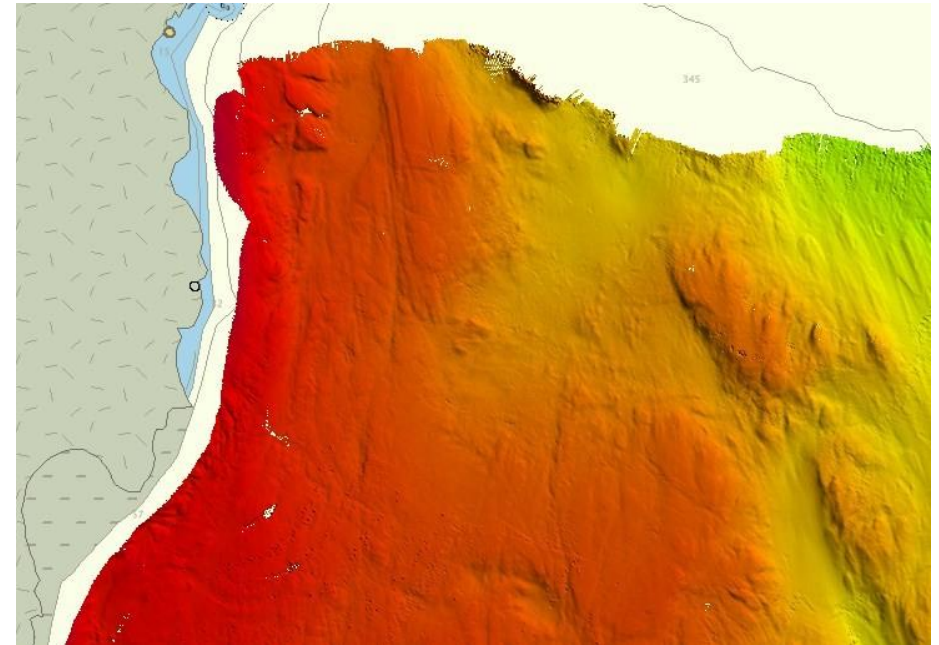
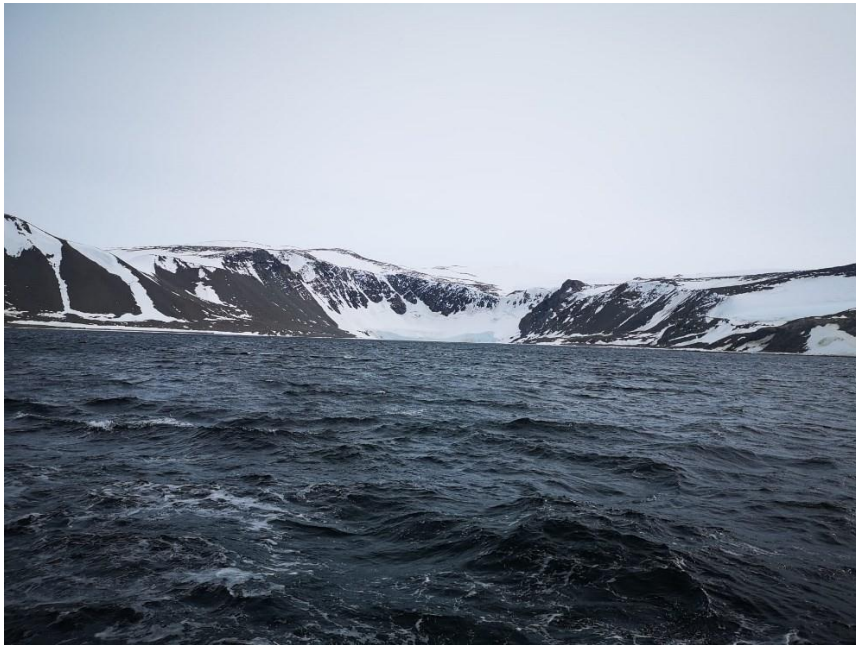


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# Relations with Other Organizations

International  
Hydrographic  
Organization

- Cooperation and coordination with PNRA, CNR, OGS;
- Tide level received from the CNR;
- Cooperation in Transiti Project for the GEBCO update.



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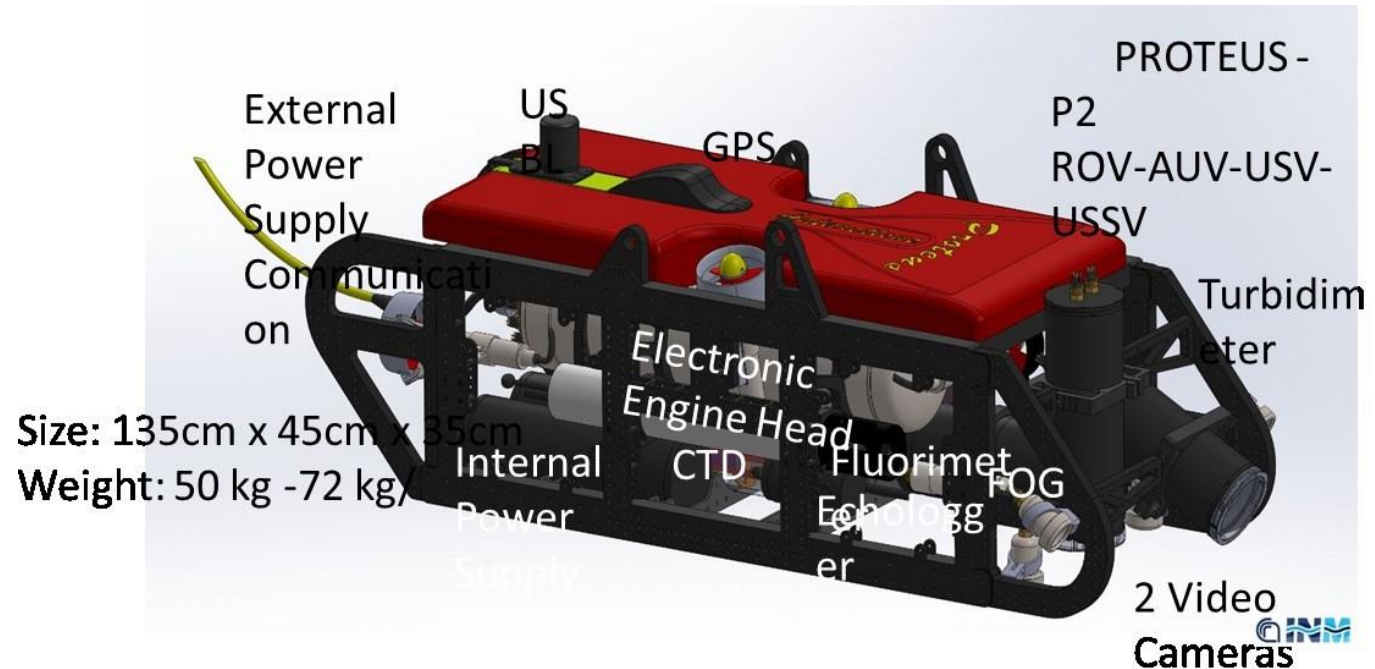
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# Relations with Other Organizations

International  
Hydrographic  
Organization

## PNRA project RESTORE (Robotic-based invESTigation and mOnitoring Ross sEa)

- **PROTEUS** is an innovative UMV developed by the Marine Robotics research group of CNR-INM which is particularly suitable, with its reduced size and weight, modularity, reconfigurability, and open hardware and software architectures, to operate in extreme environments as the polar ones.



P.I. Gabriele Bruzzone (CNR-INM)



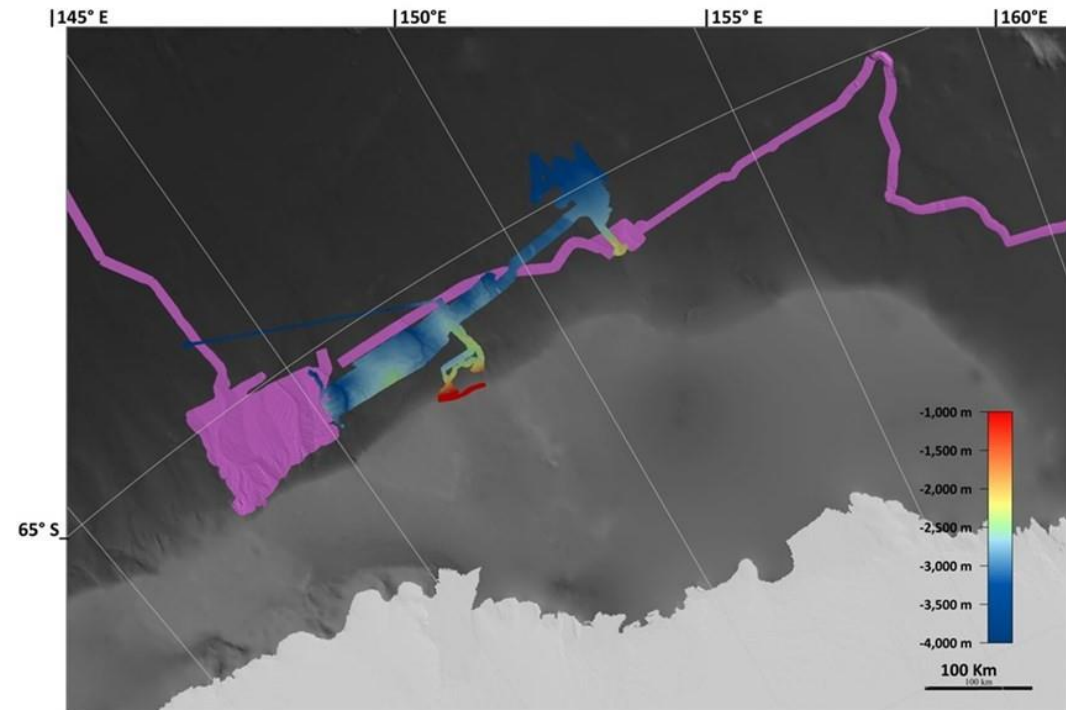


# IHO Relations with Other Organizations

International  
Hydrographic  
Organization

PNRA project COLLAPSE (Cook glacier-Ocean system, sea Level and Antarctic Past Stability)

- Multibeam;
- Sub - bottom and ADCP survey offshore Cook Ice shelf and Ninnis Glacier (ca. 10,350 km<sup>2</sup> on the continental slope-rise)



P.I. Laura De Santis (OGS)



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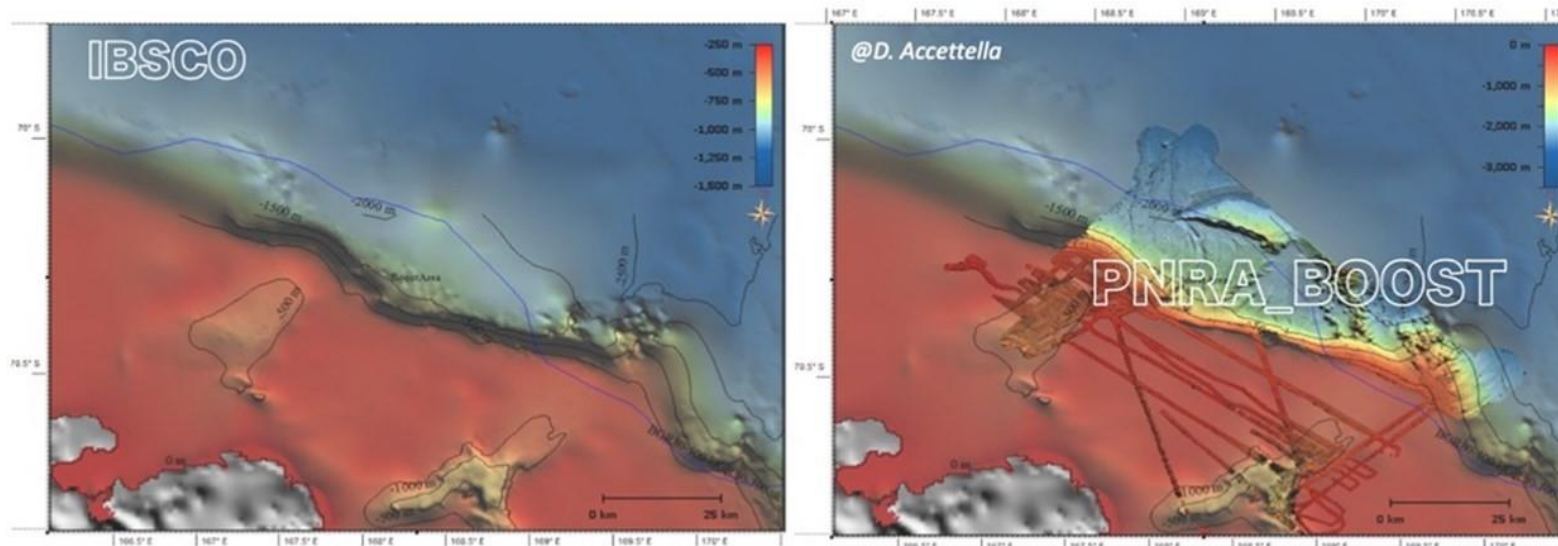
# Relations with Other Organizations

International  
Hydrographic  
Organization

PNRA project BOOST (Bridging Onshore-Offshore STructures at the Pacific Coast of North Victoria Land - Antarctica: an integrated approach)

- Offshore North Victoria Land (Pennell Coast – ca. 3,500 km<sup>2</sup> crossing the continental shelf and the ice grounding - zone)

## IBCSO vs BOOST



P.I. Laura Crispini  
(University of Genova)



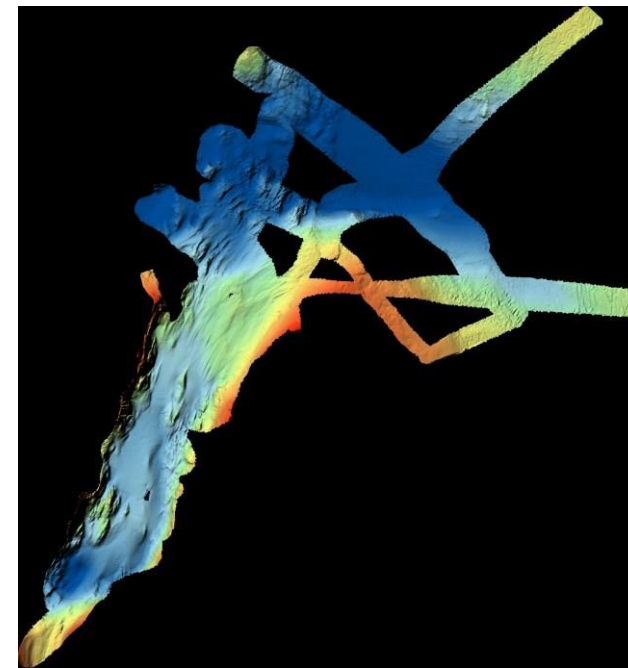
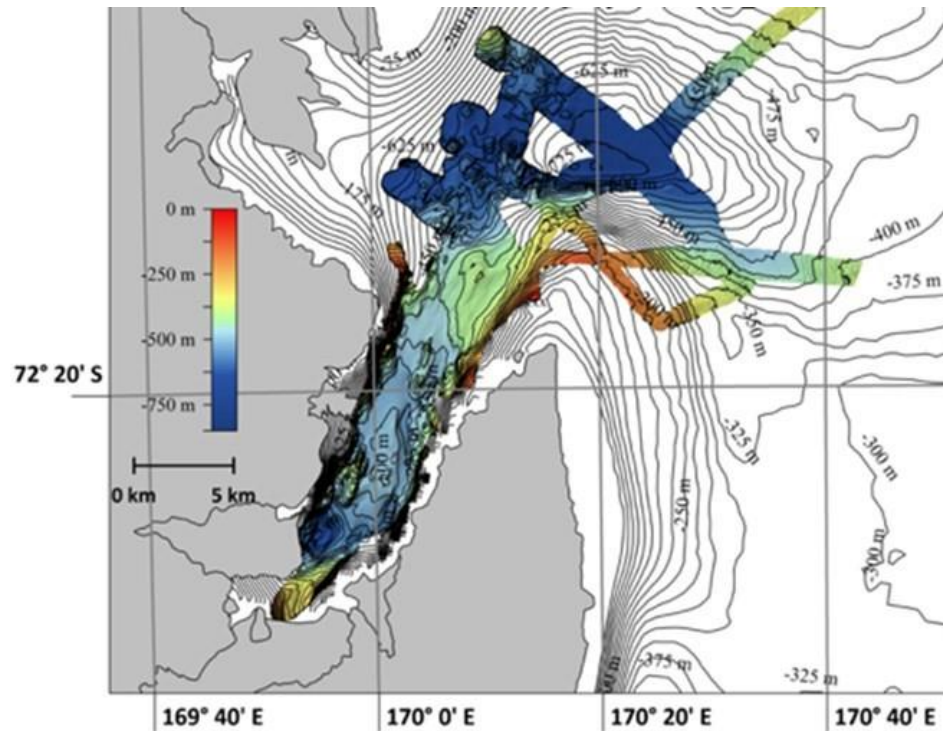
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# Relations with Other Organizations

International  
Hydrographic  
Organization

PNRA project LASAGNE (Laminated sediments in the magnificent Edisto Inlet Victoria Land - Antarctica)

- What processes control their deposition and preservation?



P.I. Leonardo Langone (CNR)



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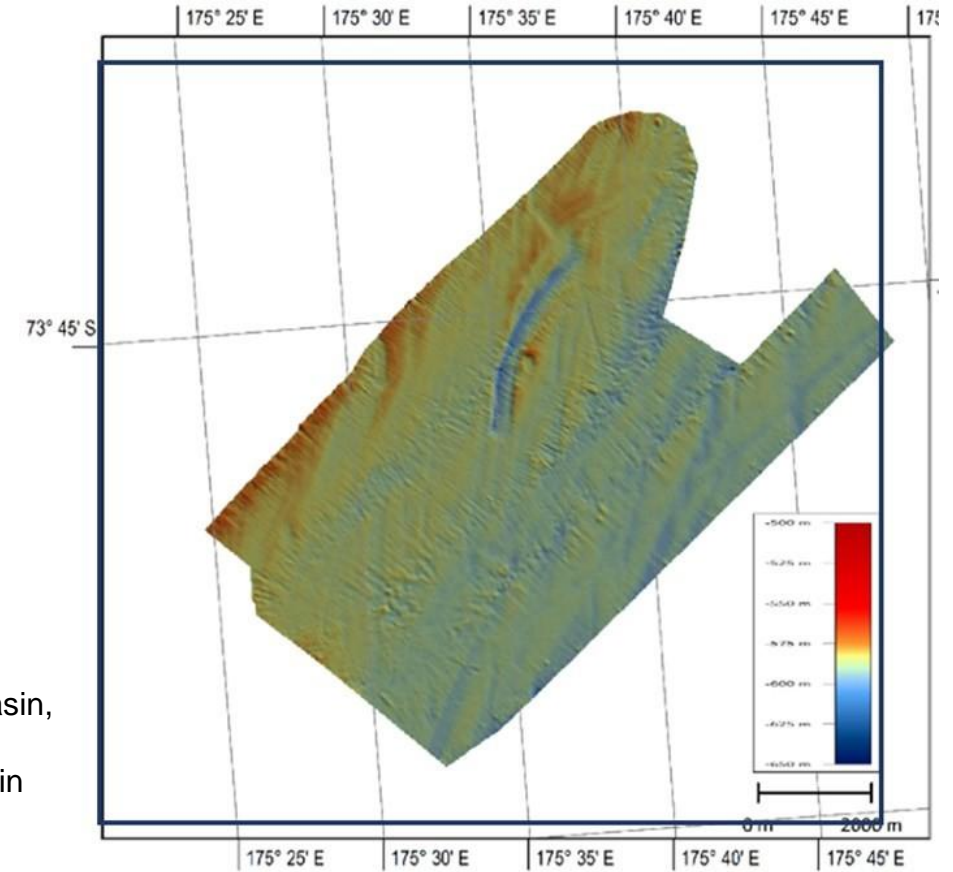
# Relations with Other Organizations

International  
Hydrographic  
Organization

## PNRA project GRETA (CoolinG overR thE VicToria Land)

- Resolving the Ross Sea response to continental climate change during the last two millennia

Joides Basin,  
80 km<sup>2</sup>,  
Shelf Basin



P.I. Tommaso Tesi (CNR)



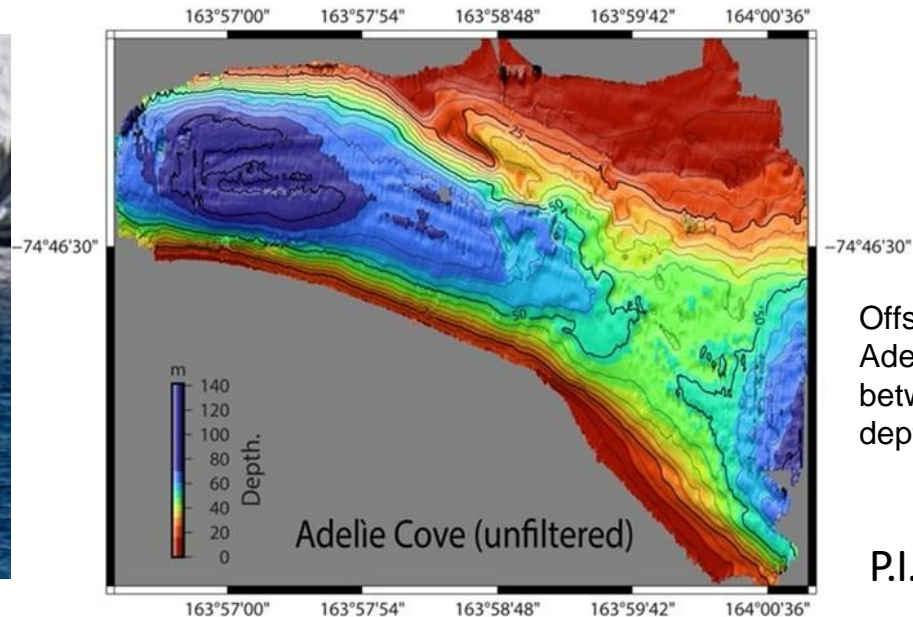


# IHO Relations with Other Organizations

International  
Hydrographic  
Organization

PNRA project DISGELI (Drone-based acquisition and modelling of morpho-stratigraphic data along the Terra Nova Bay - Victoria Land – Antarctica coastline)

- Data collected in using a Klein Hydrochart 3500 multibeam echosounder mounted on an Autonomous Surface Vehicle of the SWAP class



Offshore Italian Base MZS,  
Adelie Cove and Thetis Bay;  
between 1 and 150 meters of water  
depth

P.I. Luca Gasperini (CNR)



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# Relations with Other Organizations

International  
Hydrographic  
Organization

Hydrographic data received from other organizations:

- Waiting for OGS and CNR survey data.

Hydrographic data provided to other primary charting authorities and/or GEBCO:

- IIM hydrographic data (soundings, DTM) will be shared with The PNRA (Italian National Research Antarctic Program) and available under open data licences.



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# Planned Activities for 2024-2025

International  
Hydrographic  
Organization

- Shallow water survey near Mario Zucchelli Station with a deployable system
- Tethys Bay survey in cooperation with CNR (Disgeli Project)
- Large scale Survey in cooperation with OGS (ISOBATA Project) for the GEBCO update



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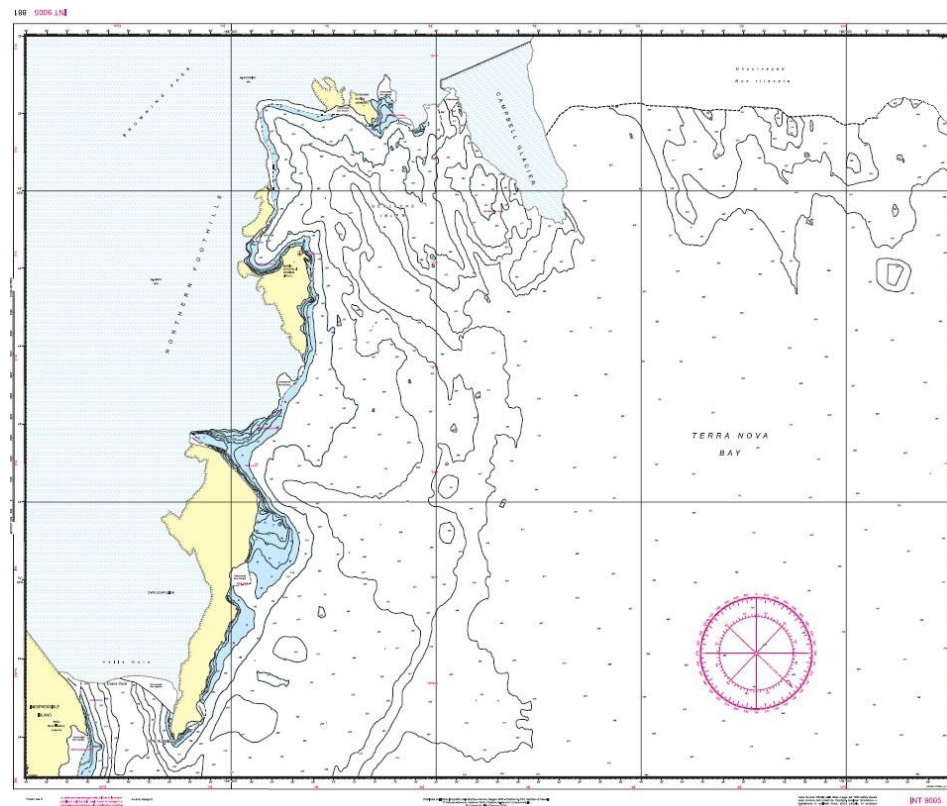


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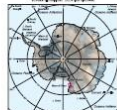
# Planned Activities for 2024-2025

International  
Hydrographic  
Organization

- New Edition ENC IT400881  
(Cape Russell to Campbell Glacier  
Tongue)
- First S-101 ENC



CARTOGRAFIA SERIE  
INTERNAZIONALE  
DA CAPO RUSSELL  
A CAMPBELL GLACIER TONGUE





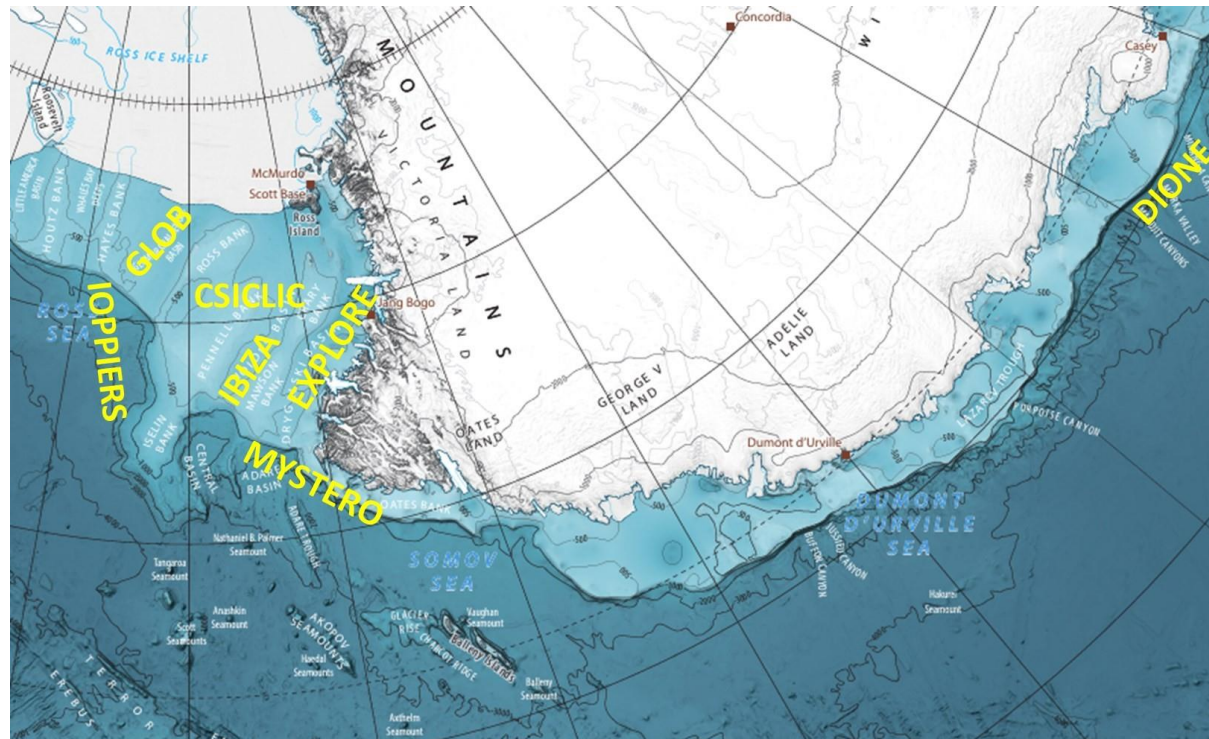


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# Planned Activities for 2024-2025

International  
Hydrographic  
Organization

- Seven projects to be implemented on board Laura Bassi (in the austral summers 2024-25 and/or 2025-26) are just being approved by PNRA



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International  
Hydrographic  
Organization

# Thank you!

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