



Damar
Dirección General Marítima
Autoridad Marítima Colombiana

**THE FIRST SCIENTIFIC
COLOMBIAN
EXPEDITION IN ANTARTIDA
2014-2015**

WORLD HYDROGRAPHY DAY 2015

“Our seas and waterways - yet to be fully charted and explored”



AIM SCIENTIFIC

The Gerlache Strait has interesting oceanographic and morphological characteristics due to their connection with the Straits of Bransfield and Drake, as well as their relationship with the Antarctic Circumpolar Current (ACC), which is considered very important because it carries intermediate and deep waters between Atlantic, Indian and Pacific sea; in addition, it contributes to the deep circulation in all ocean basins planet.

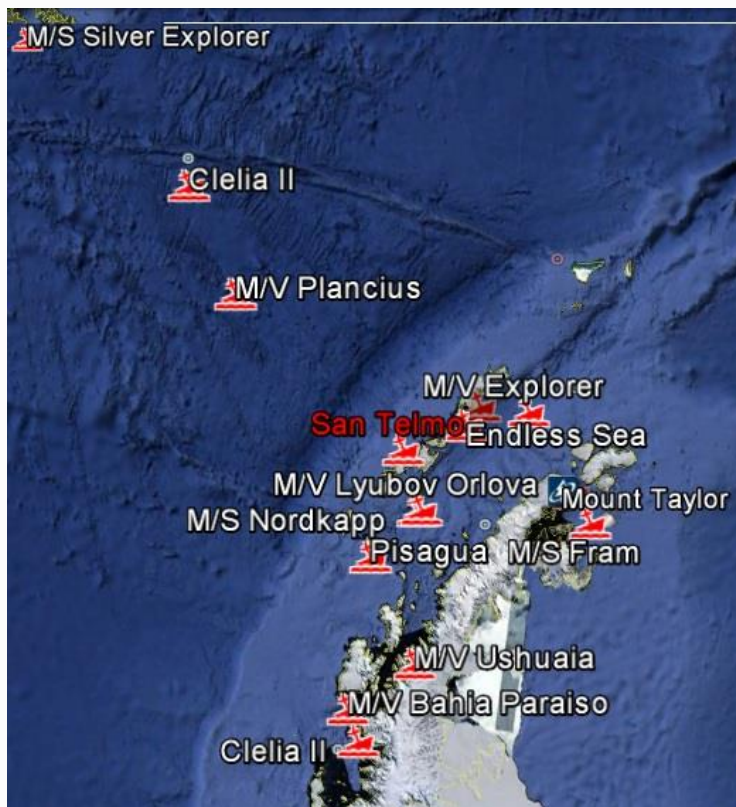
Gerlache Strait is unsurveyed in comparison with other areas.

IMPACT ON MARITIME SAFETY

There are 17 tourists places approximately that receive more than 10,000 visitors each year in Antarctica, 11 are in the Strait, i.e. 71% of tourists (226,000); Strait tourism industry in small boats mobilized a total of 69,500 tourists (IAATO, 2013).

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M/V Bahía Paraíso – 28/01/1989
Argentina Navy Ship.
Sunk after running aground



M/V Explorer – 23/11/2007
Collision with an iceberg



Clelia II – 26/12/2010
Slammed by a rogue wave



Akademik Shokalskiy – 20/12/2013



Korean Researchers lost
08/12/2003



Microtsunamis.

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PARTICIPANTS



| INSTITUTES | QUANTITY |
|------------------------------------------------------------------|----------|
| COLOMBIAN NAVY RESEARCHERS | 11 |
| OTHER INSTITUTES RESEARCHERS | 7 |
| FOREING RESEARCHERS (Chile) | 1 |
| TOTAL SHIPPED RESEARCHERS | 19 |
| DOMESTIC INSTITUTES | 16 |
| INTERNATIONAL INSTITUCIONES (Chile: 2; Mexico:2; Puerto Rico) | 5 |
| DOMESTIC RESEARCH | 9 |
| INTERNATIONAL RESEARCH | 2 |

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Installation equipment on boat DEFENDER



Survey speed 7 knots

Personal 3 Hydrographers

Equipment : Echosounder single beam;
GPS – RTK 8517; PC



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Installation equipment on ARC 20 de Julio (vessel OPV made in Colombia)



DGPS RTK



PC - DGPS RTK



Bridge screen control



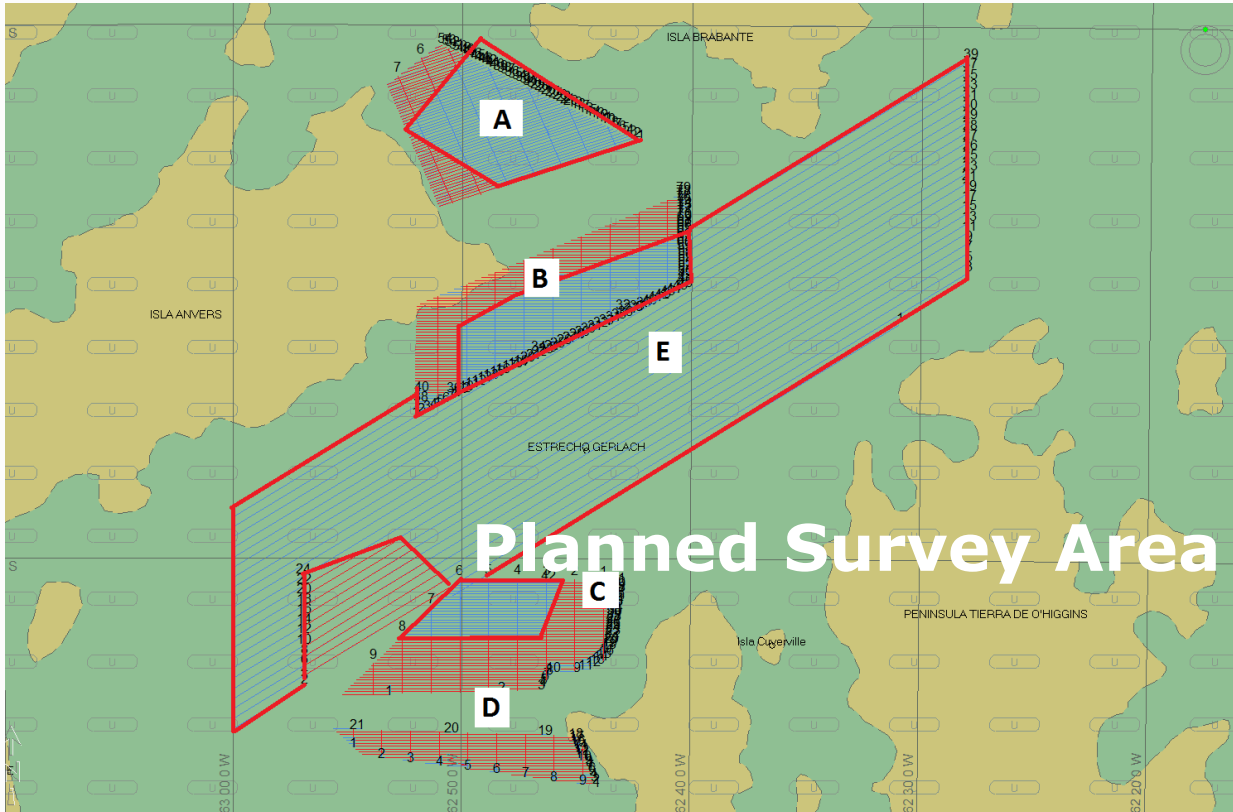
GPT - MRU



Transducer 18 - 200 Khz

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PURPOSE

Contributions with hydrographic data (90% of Antártida is uncharted).

Data for Chart INT 9103
Markmann Bay to Andvord Bay.

International cooperation
CO-CH (IHO aim).

TASK

| | |
|------------|----------------------|
| DIMAR-CIOH | SURVEY |
| SHOA | EDIT CHART INT 9103. |

Direct contributor to safe navigation (IMO & IHO).

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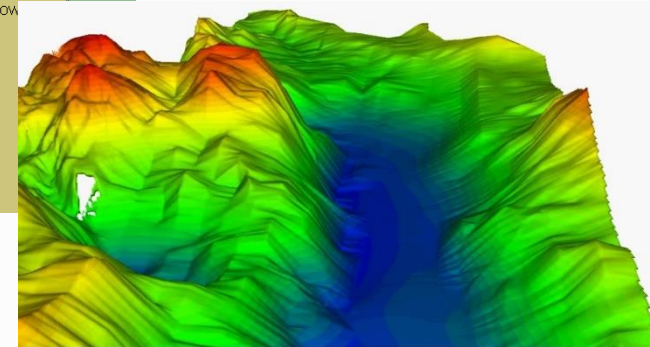


Planned survey

Surveyed Area

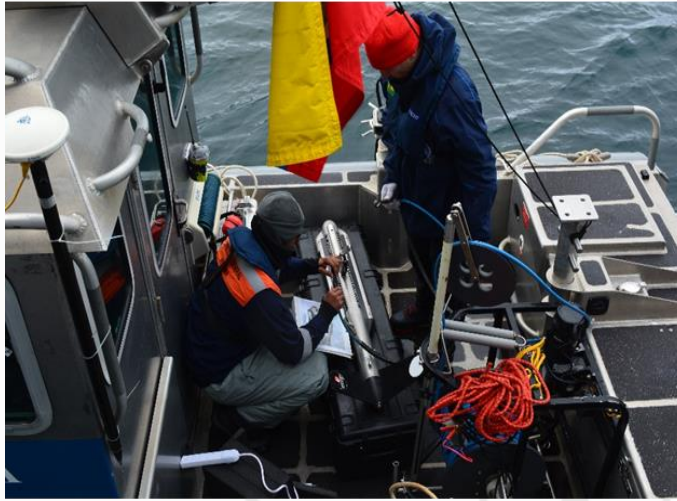
389 Lines
1000.83 MNL surveyed
26.276.275,2 m2.
Order 1b y 2
Depth 4.35 to 837 metres
17 Survey days

More definition in 3D for
undersea features



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Activity 2:

Geophysical monitor in small bays.

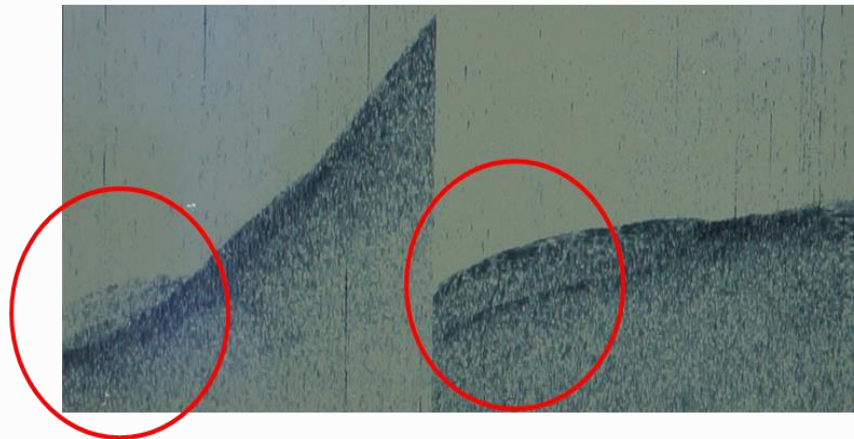
goal:

Subbottom profile.

Scientif aim:

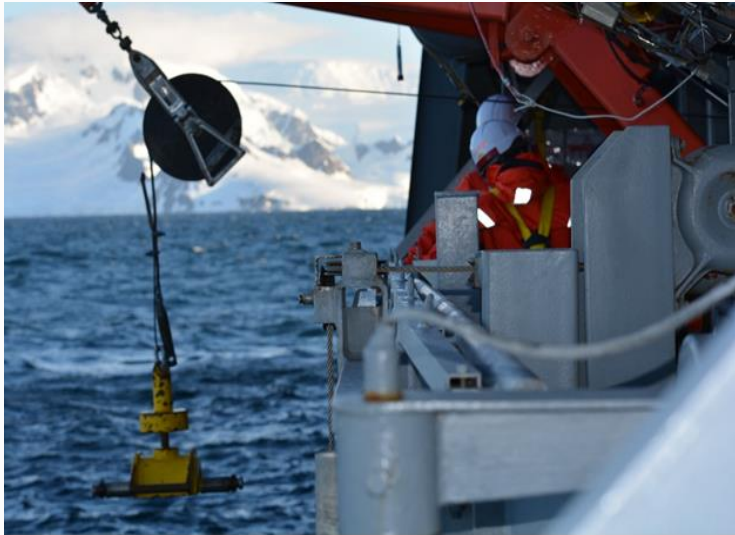
Try to Understand the evolution of transitional glacial marine in terms of climate & oceanographic changes that it influences in its sedimentation

International Cooperation CIOH/DIMAR – U. A. Bello (Chile)



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Activity 3:

Get bottom sediment samples to determine: Heavy metals, hydrocarbons, organic matter, organisms.

Scientific goal:

Survey Area

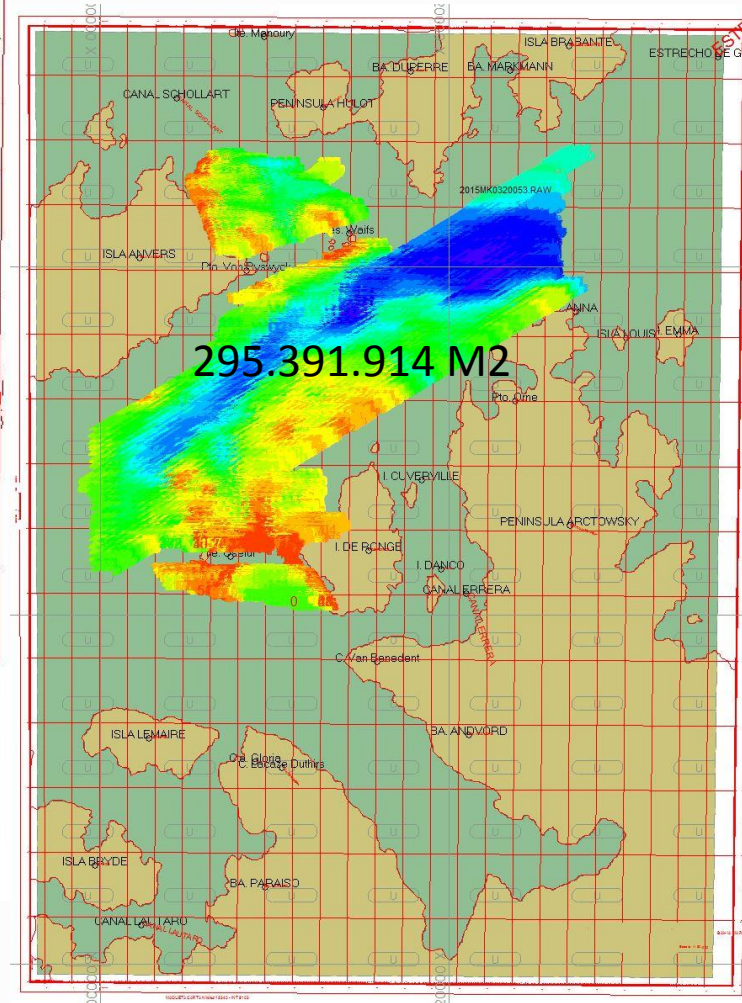
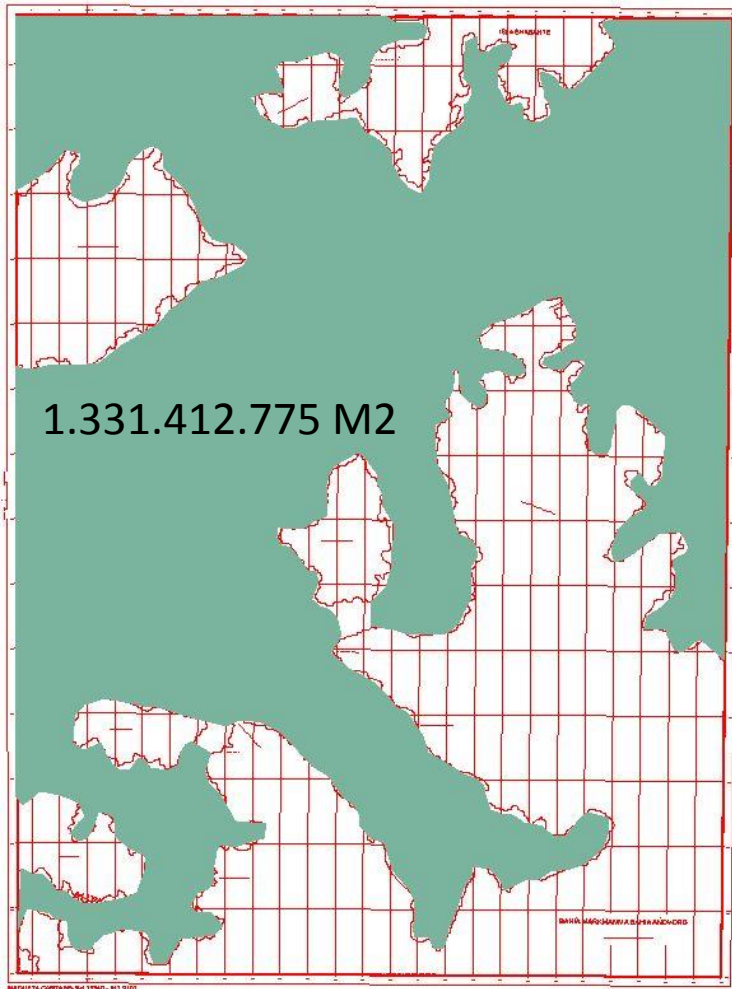
Determine the composition and environmental quality of the seabed.

Contributions to Antarctic environmental health committee Antarctica



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The
22.18% of
INT 9103
is
surveyed,
explored
and
charted,
now

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Colombia will continue with this expedition every two years, perhaps

Colombia will work in team with others MS IHO and institutes for the hydrography and oceanography development, always



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