



AKER ARCTIC TECHNOLOGY

Trends in Antarctic shipping

2025-01-21

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Aker Arctic
The Ice Technology Partner

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Aker Arctic



Company Profile

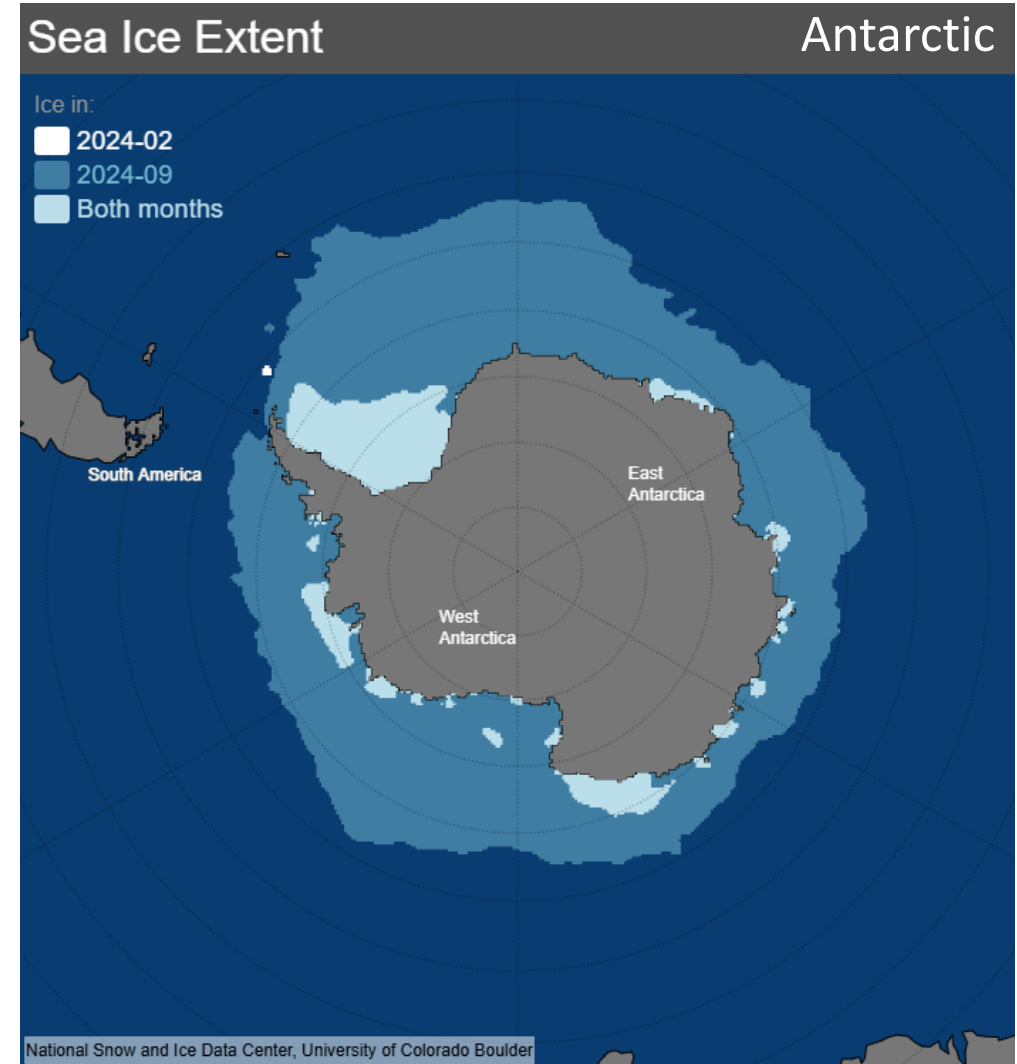
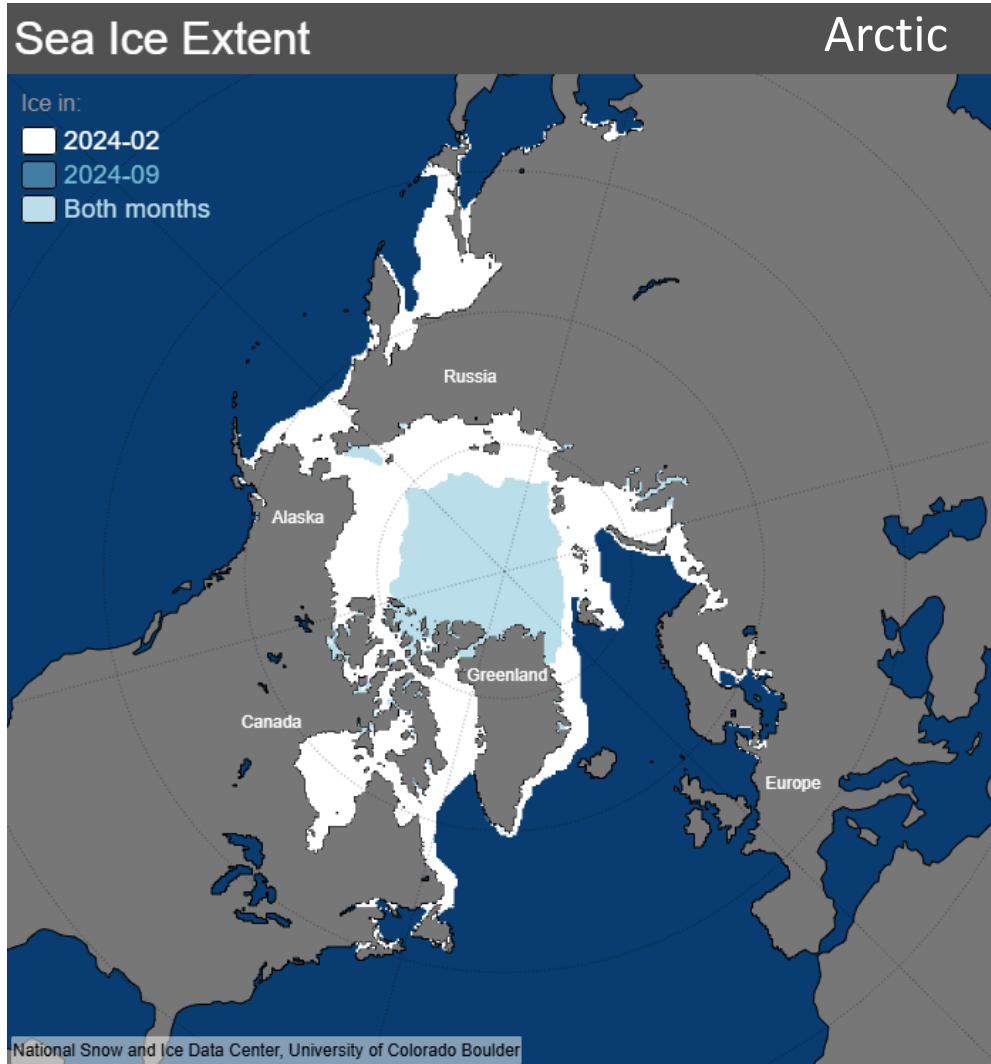
Aker Arctic specializes in development, design, engineering, consulting and testing services for ice-going vessels, icebreakers, offshore marine structures and marine transport solutions



The Antarctic Regulatory Regime

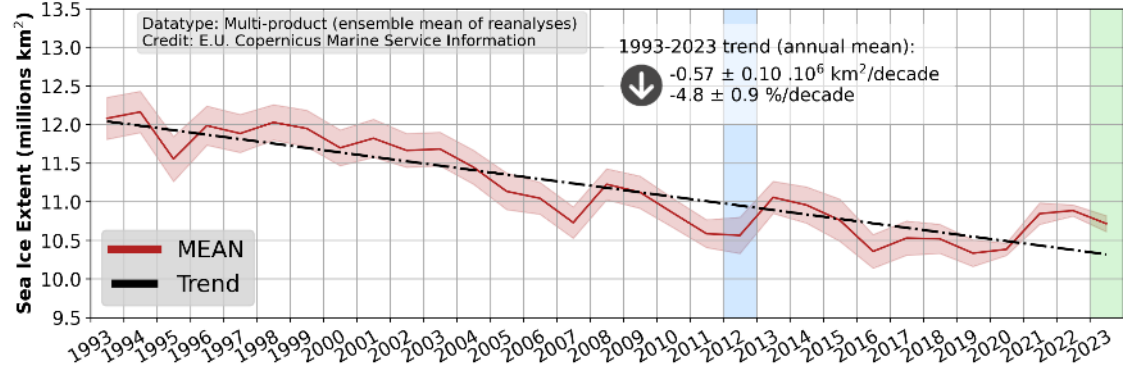
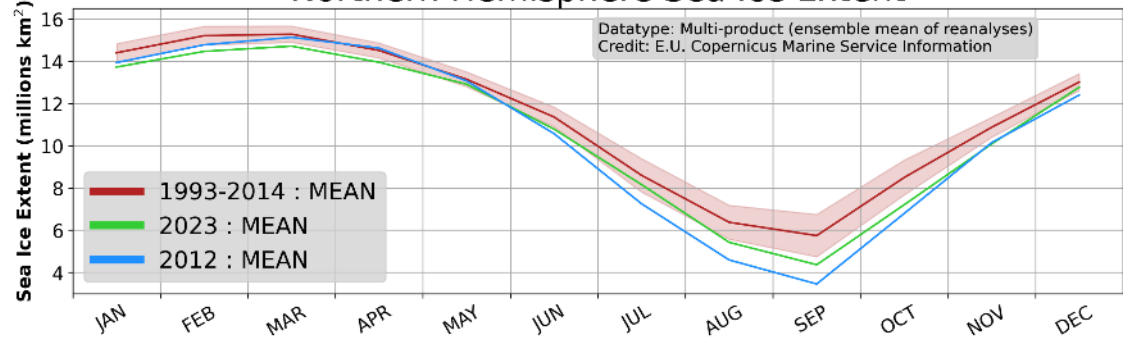
- **ATS - Antarctic Treaty System** provides international rules for the governance of the Antarctic, including matters related to shipping
 - Antarctic Treaty of 1959, and its Protocol on Environmental Protection in entered into force in 1991
 - Convention for the Conservation of Antarctic Seals (CCAS);
 - Convention on Conservation of Antarctic Marine Living Resources (CCAMLR)
- The Antarctic Treaty Consultative Meeting (ATCM) meets annually to maintain and develop regulations and guidelines for the management of the Antarctic Treaty Area.
- Provisions in the ATS apply to commercial shipping activities, in particular the content of the Protocol on Environmental Protection (however the majority of the requirements, for example within Annex IV of the Protocol, are now incorporated into the Polar Code)
 - All ships operating South of 60 must still comply with applicable IMO regulations, such as SOLAS and MARPOL. In particular the Antarctic has been designated as a “Special Area” under Annex I (oil) and Annex V (garbage) of MARPOL has additional requirements for ships operating in Antarctic waters, specifically
 - Ban on the carriage and use of Heavy Fuel Oil in Antarctic Waters (regulation 43, of MARPOL Annex I)
 - Requirements concerning limitations for sewage discharge inside special areas (now incorporated into the Polar Code)
- There are no established coastal states – in a practical sense the ATS requirements could be treated as equivalent to coastal state requirements

Ice conditions – Arctic vs. Antarctic



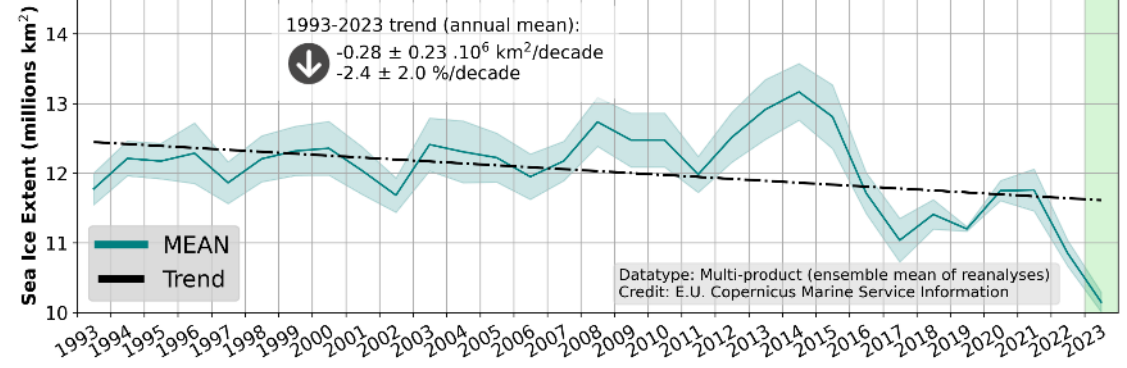
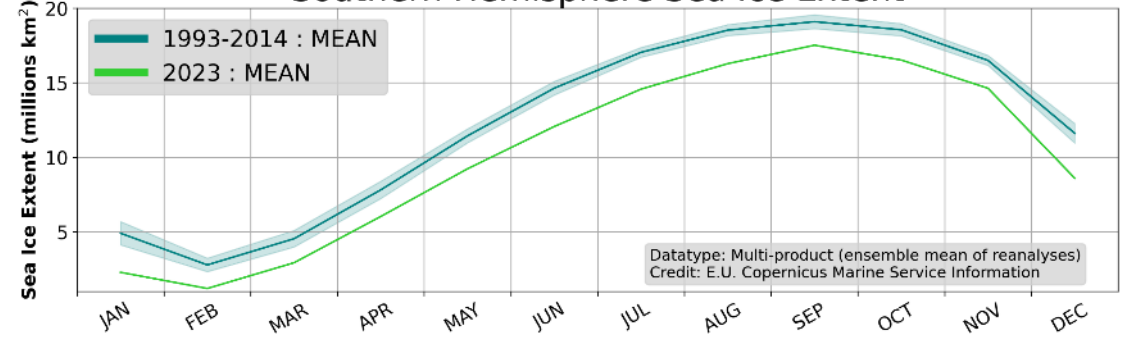
Ice conditions – Arctic vs. Antarctic

Northern Hemisphere Sea Ice Extent



a) Mean seasonal cycle for 1993-2014, 2012 and 2023
 b) Interannual annual anomalies of Northern Hemisphere sea ice extent expressed in millions of km². Time series are based on the multi-model ensemble mean of global reanalysis, e.g. the GREP data product GLOBAL_MULTIYEAR_PHY_ENS_001_031. Ensemble mean together with its spread (light shaded) are given. Details on the GREP product are given in the corresponding PUM for this OMI. The change of sea ice extent over the period 1993-2023 is expressed as trend in millions of square meters per decade, and in % per decade and linear trend is superimposed (dot-dashed line).

Southern Hemisphere Sea Ice Extent



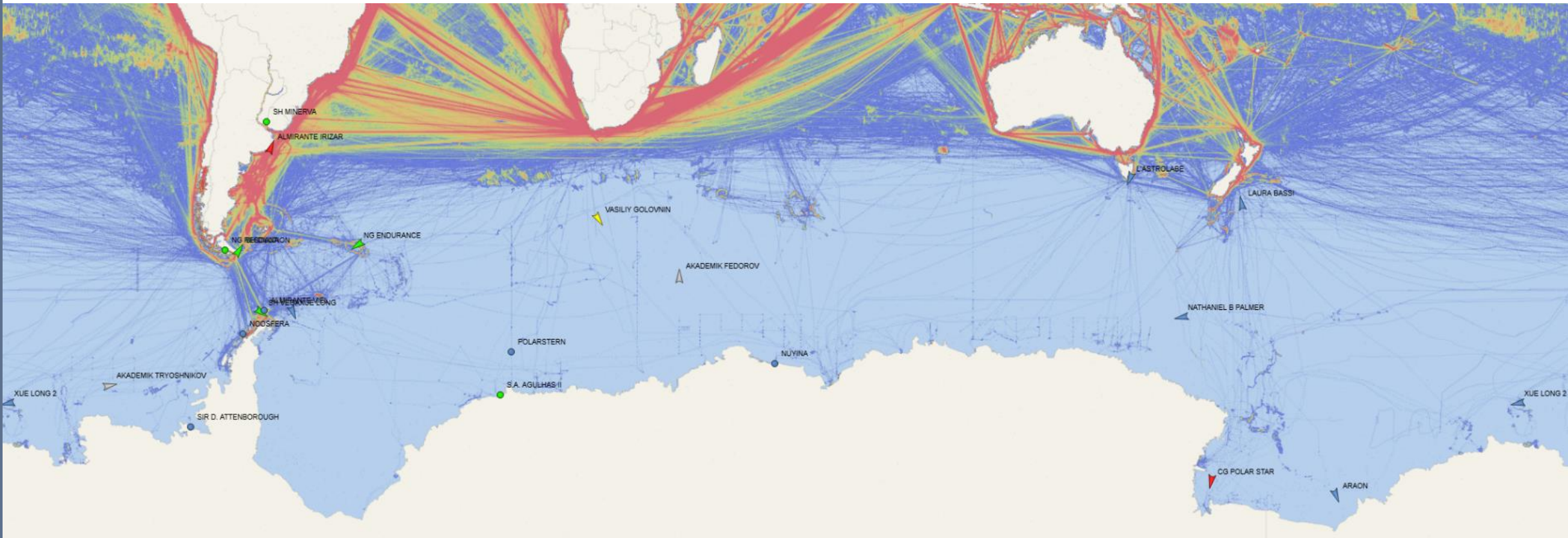
a) Mean seasonal cycle for 1993-2014 and 2023
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Antarctic Shipping - Overview

- ▶ • Shipping activity in the Antarctic can be divided into 3 distinct categories
 - Government icebreakers and re-supply ships
 - Fishing Vessels
 - Cruise ships
 - Large ships
 - Expedition-type ships



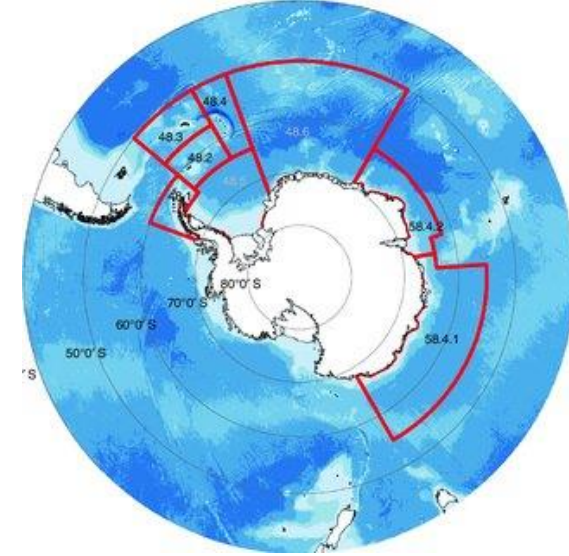
Antarctic shipping intensity



VesselFinder, 20.1.2025 (selected icebreaking and ice-going vessels, all ships traffic density)

Antarctic Fishing Fleet

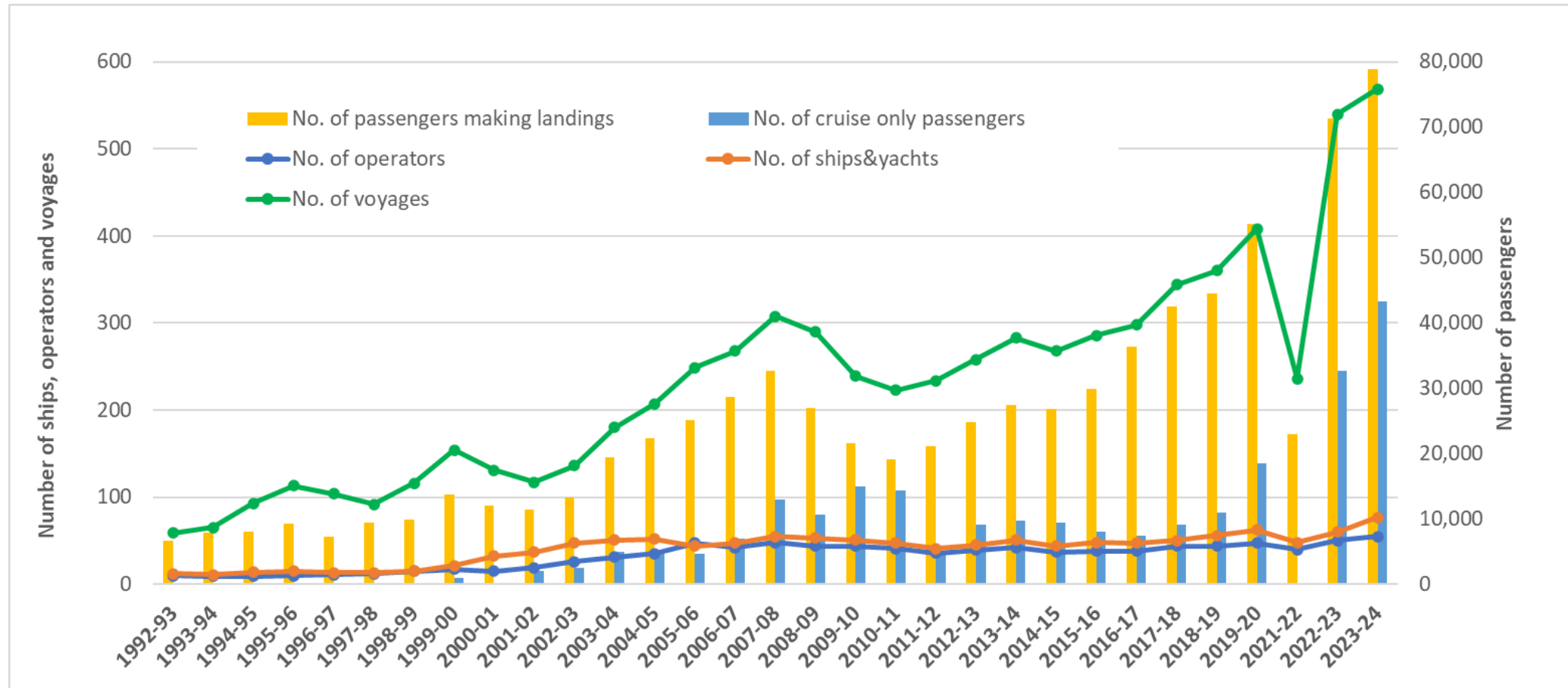
- Notifications for vessels to fish in the various subareas in 2023 was 75 (CCAMLR data)
- Size of ships in the fleet vary – 1,500 GT to 13,000 GT
- Probably about 0.5m GT of fleet
- Doesn't capture illegal fishing



Subarea/Division	Number of Vessels	Target Species
Subarea 48.1	3	Krill
Subarea 48.2	3	Krill
Subarea 48.3	3	Krill
Division 58.4.1	7	Toothfish
Division 58.4.2	3	Toothfish
Subarea 88.1	26	Toothfish
Subarea 88.2	27	Toothfish
Subarea 48.6	3	Toothfish

2023 season, about 1.43m GT
9 Large Ships, 56 “expedition” type, 19 Yachts,

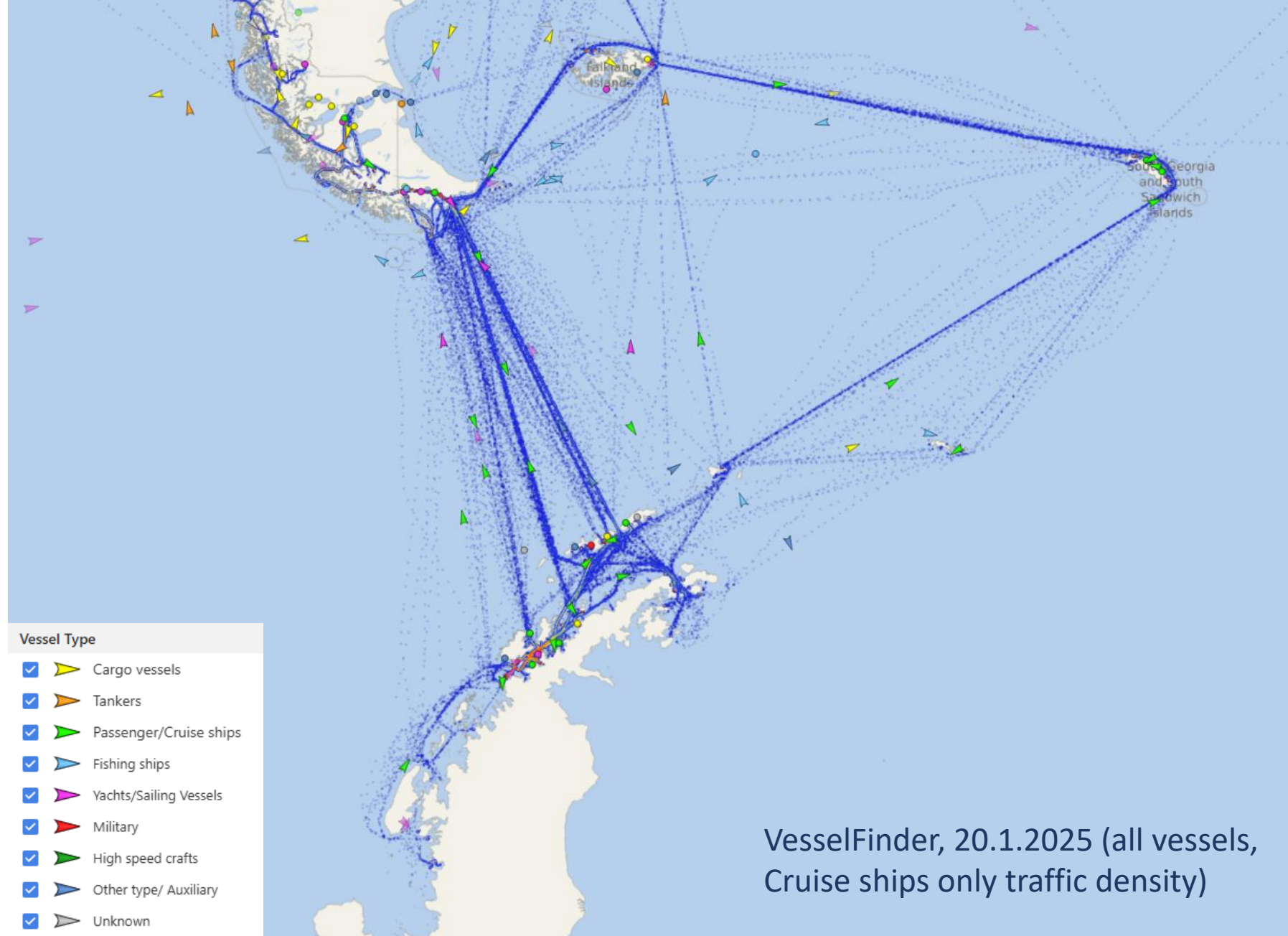
Cruise Ships (IAATO data)



Statistics of seaborne Antarctic tourism in the past 32 years (based on IAATO post visit reports, including yachts and cruise only, excluding 2020-21)

Antarctic Peninsula

- Majority of cruise vessel activities are here
- Majority of national Antarctic bases are here



COMNAP Stations

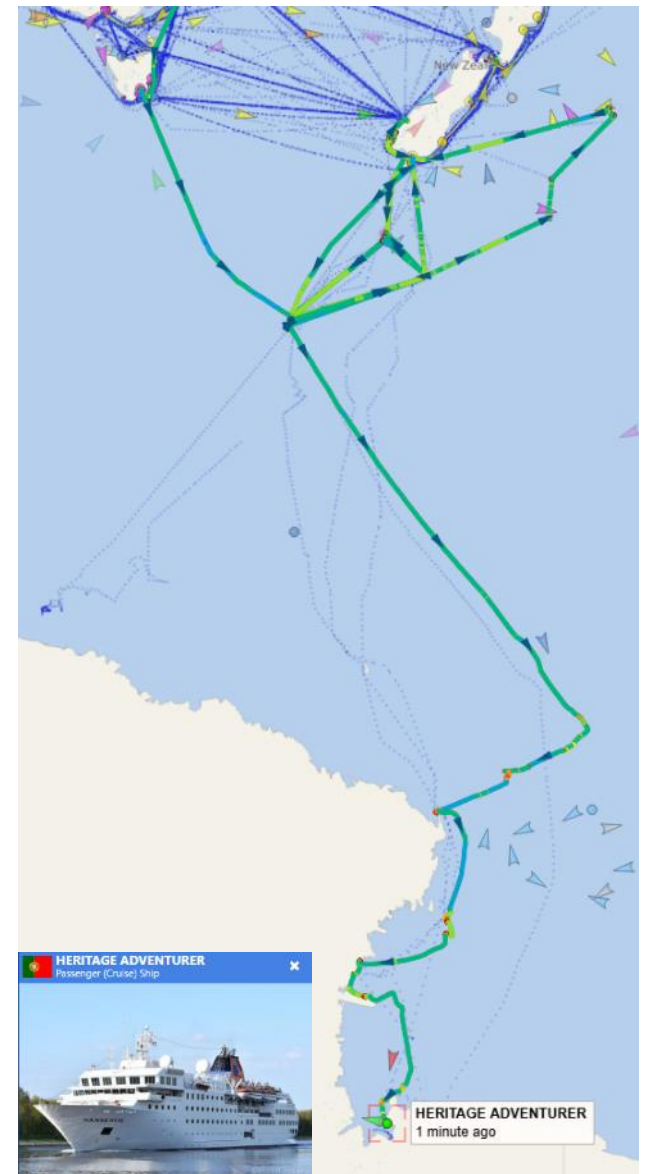
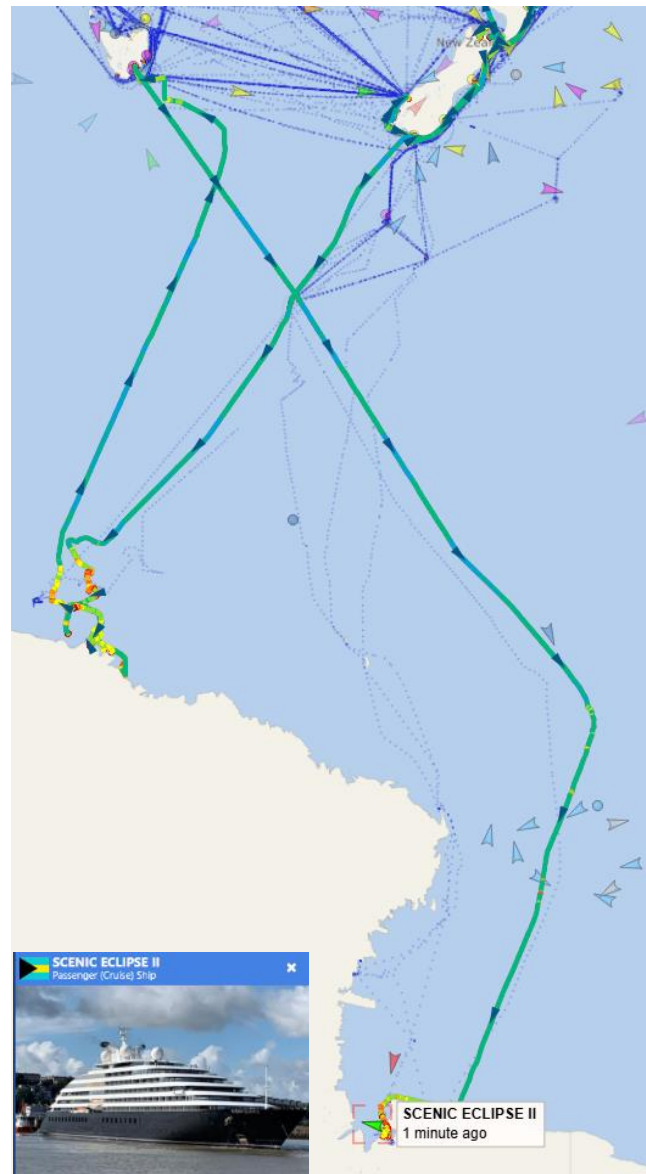
- COMNAP's Members are the government National Antarctic Programs of 33 countries
- Most national Antarctic programs have bases on the continent
- These require resupply
 - By air
 - By sea
- Re-supply vessels often have research capabilities
- 55 vessels in service on the COMNAP list
- Icebreakers to cargo ships
- Perhaps <0.5m GT total



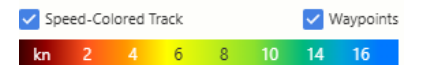


Ross Sea

VesselFinder, 20.1.2025 (all vessels, Cruise ships only traffic density)



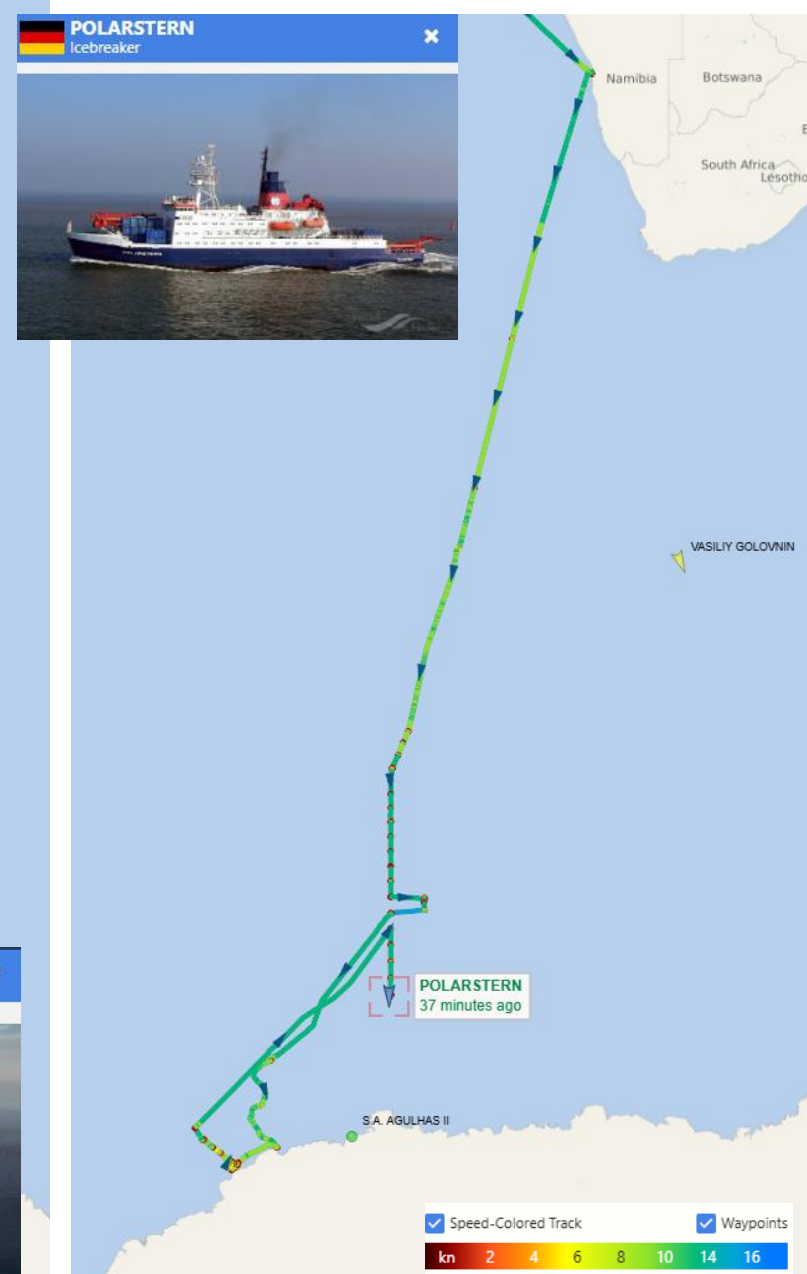
(tracks of 2 cruise vessels)

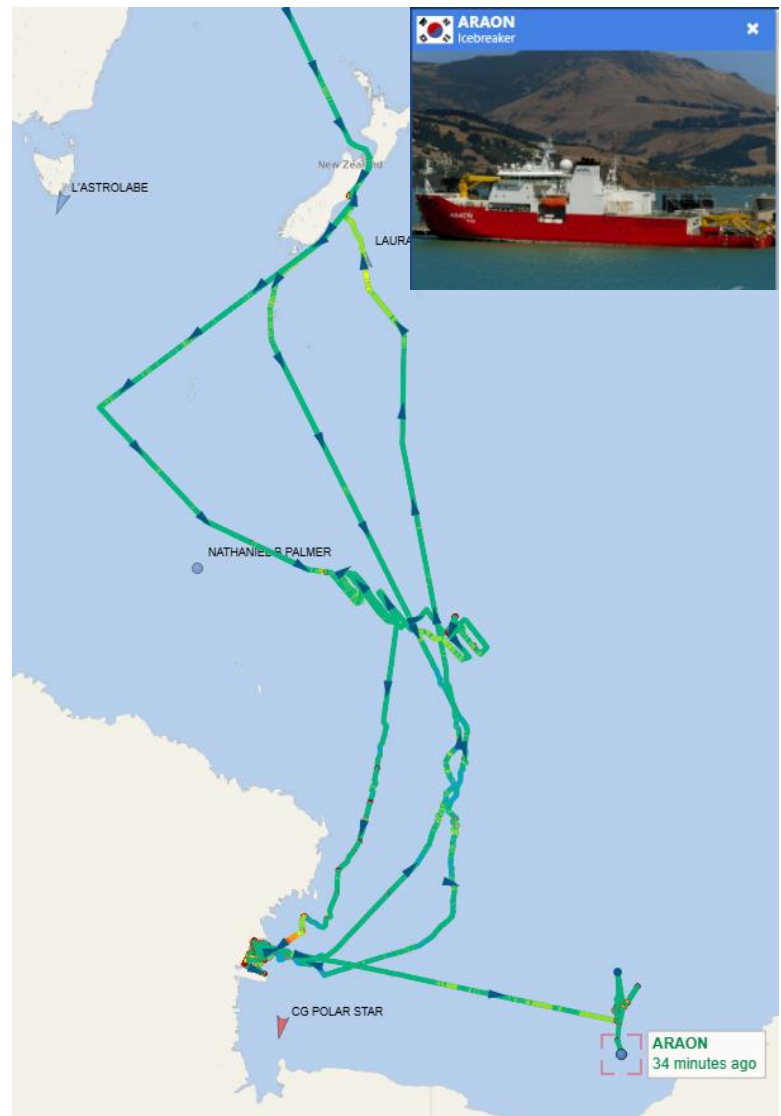
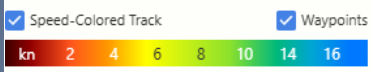
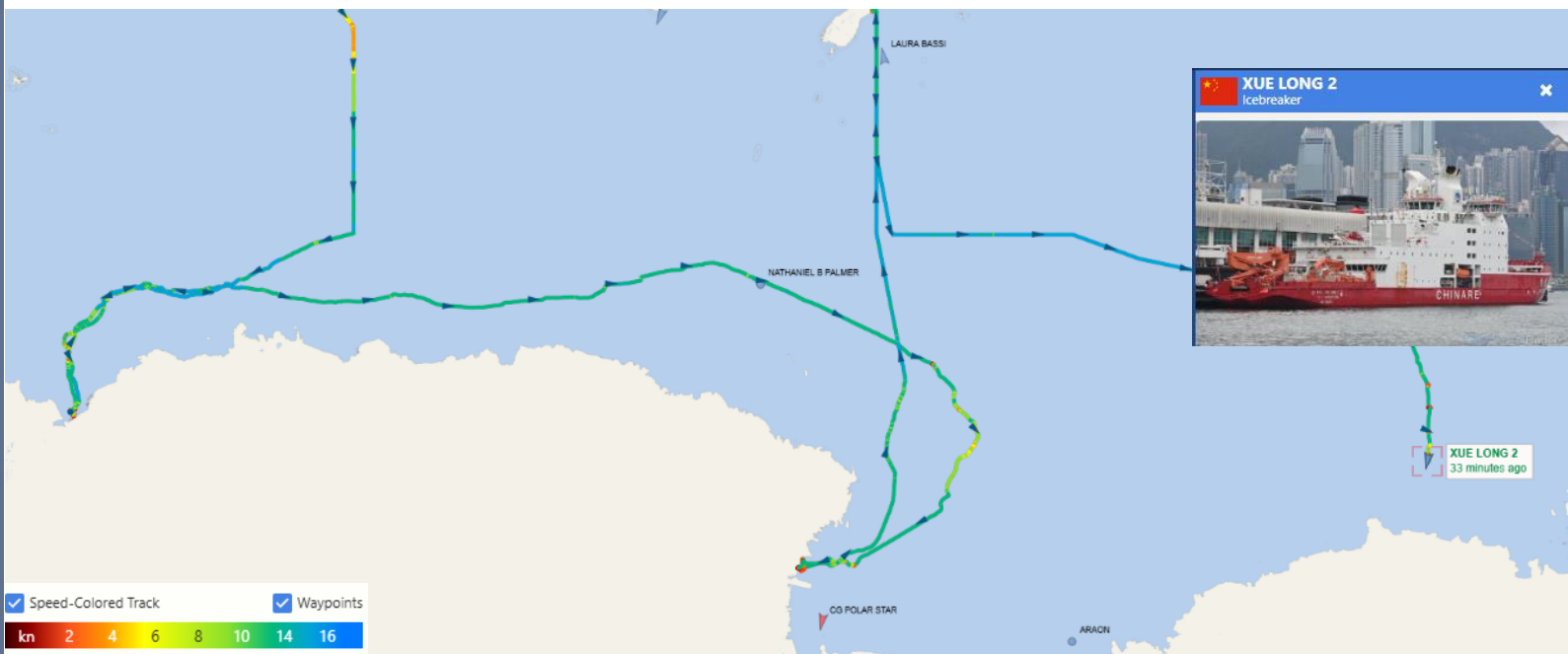


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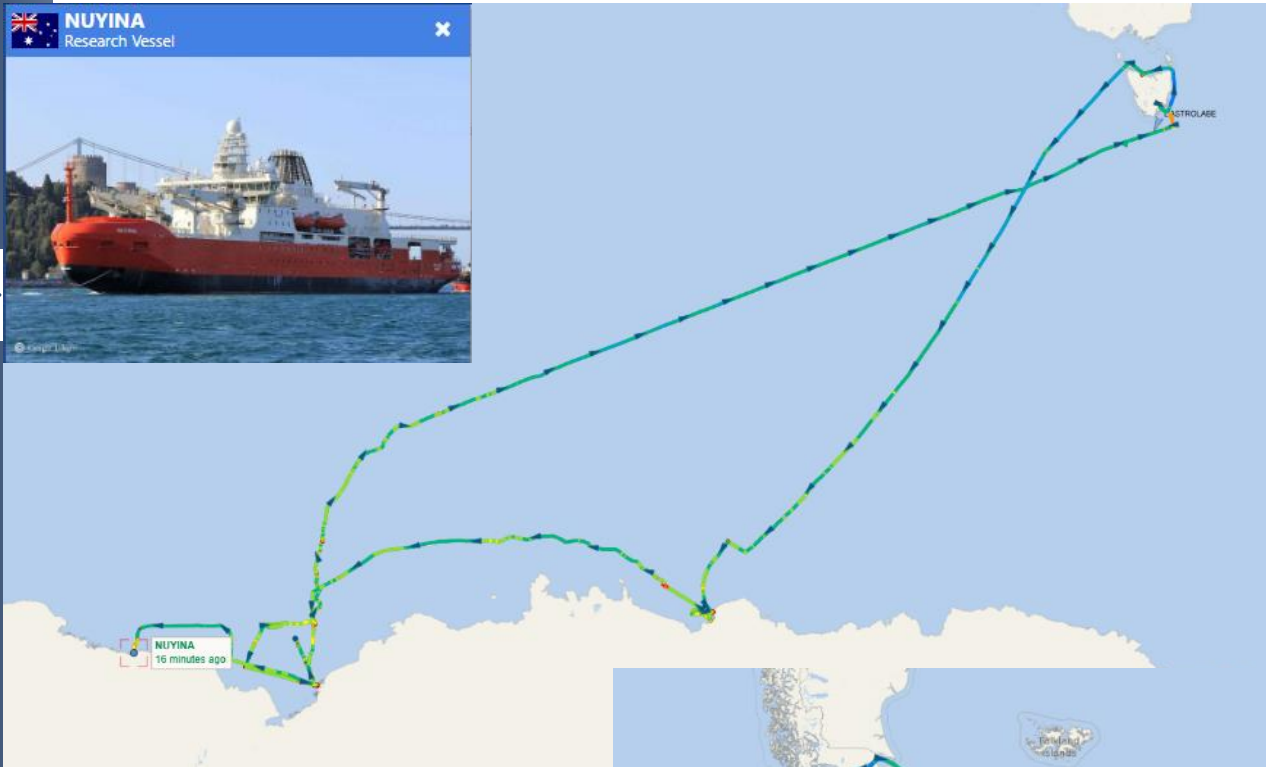
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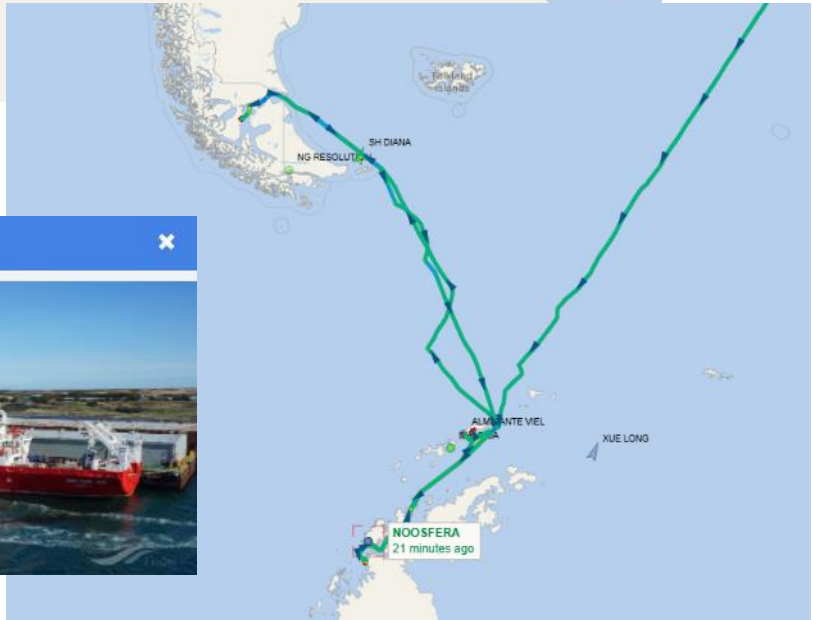
NUYINA
Research Vessel



NUYINA
16 minutes ago



NOOSFERA
Research Vessel



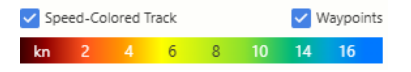
NOOSFERA
21 minutes ago



S.A. AGULHAS II
Research Vessel



S.A. AGULHAS II
30 minutes ago



Number Crunching

- This numbers are illustrative only
- **Please don't quote directly!**
- They are compiled to give a “feel” for the volume of Antarctic Shipping

NUMBER CRUNCHING

<250 ships operating in the Antarctic
2.5m GT equivalent of ships

0.75 days it takes the Panama Canal to handle the same equivalent GT

Recent News

- Canada sends first AOPS (AOPV) to the Antarctic
- HMCS Margaret Brooke left Halifax, NS on 12 January
- After various stops along the coast of South America NRC scientists will join the vessel in Punta Arenas for a 2 week tour south
- “The scientists will be doing some core sampling (of the ocean floor), some oceanography and some marine geology” ... Commodore Jacob French, Commander of the Canadian Atlantic Fleet.
- **New Chilean Icebreaker completes Ice Trials**
- Captain Juan Pablo Enríquez, commander of the ship, explained that the manoeuvres were carried out in the Gulf of Erebus and Terror, where the performance of the vessel was "fantastic."

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Views



Canada Makes First Naval Deployment to Antarctica



NATIONAL

Icebreaker "Almirante Viel" completes historic first ice test in Chilean Antarctica



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JANUARY 19, 2025 - 10:02 HRS.

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