



Mapping the threats of oil spills from HFO's to Arctic coastal and marine ecosystems

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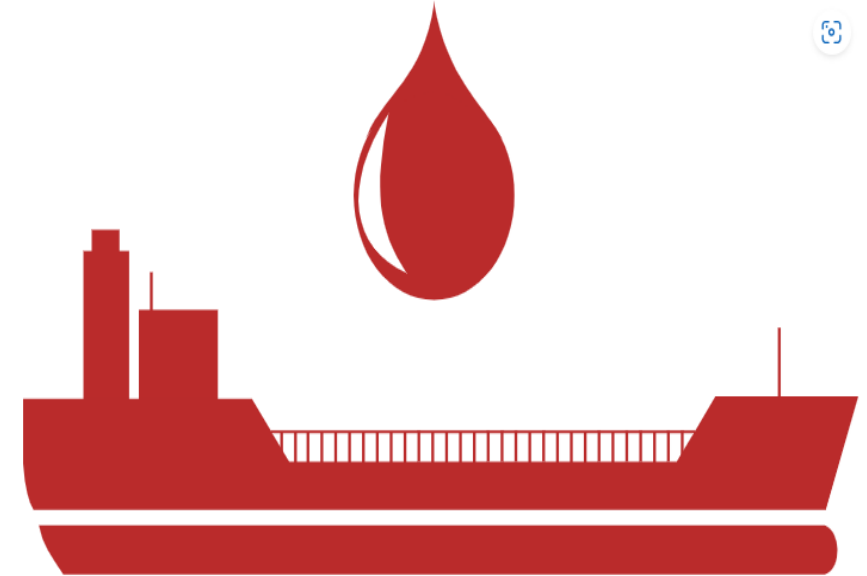
June 25, 2024

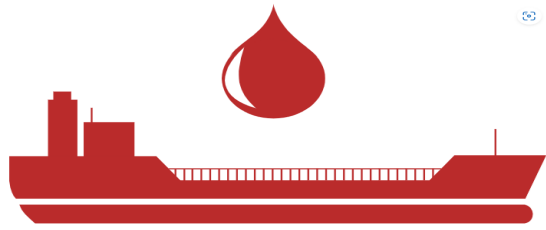
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Heavy Fuel Oil in Arctic Marine Environments



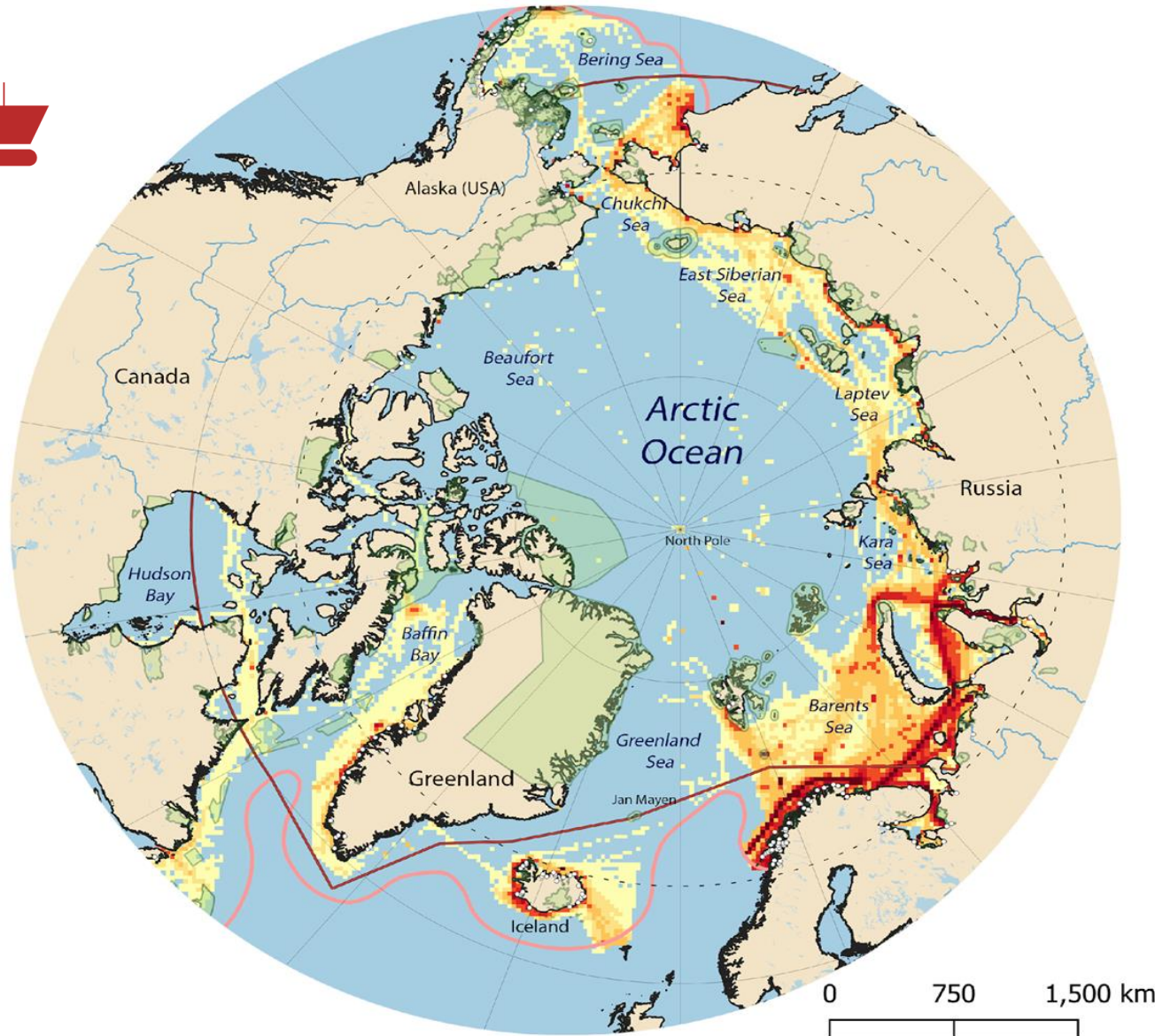
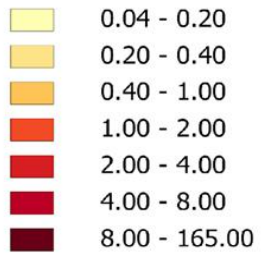
- Persist, does not dissipate
- Sinks and coats the ground
- Emulsifies on water surface
- Mixes with ice or goes beneath ice
- Floats to shorelines, contaminates coastal areas





- Port Infrastructure
- - - Arctic Circle
- Polar Code Area Boundary
- Protected Areas
- ArcNet Domain

Shipping Amount



Traffic density of vessels using residual marine fuel in 2021-2023

- Bulk carriers
- Passenger ships
- LNG tankers
- Oil tankers
- General cargo ships
- Chemical tankers
- Container ships

The Kara Strait – Pechora Sea Area

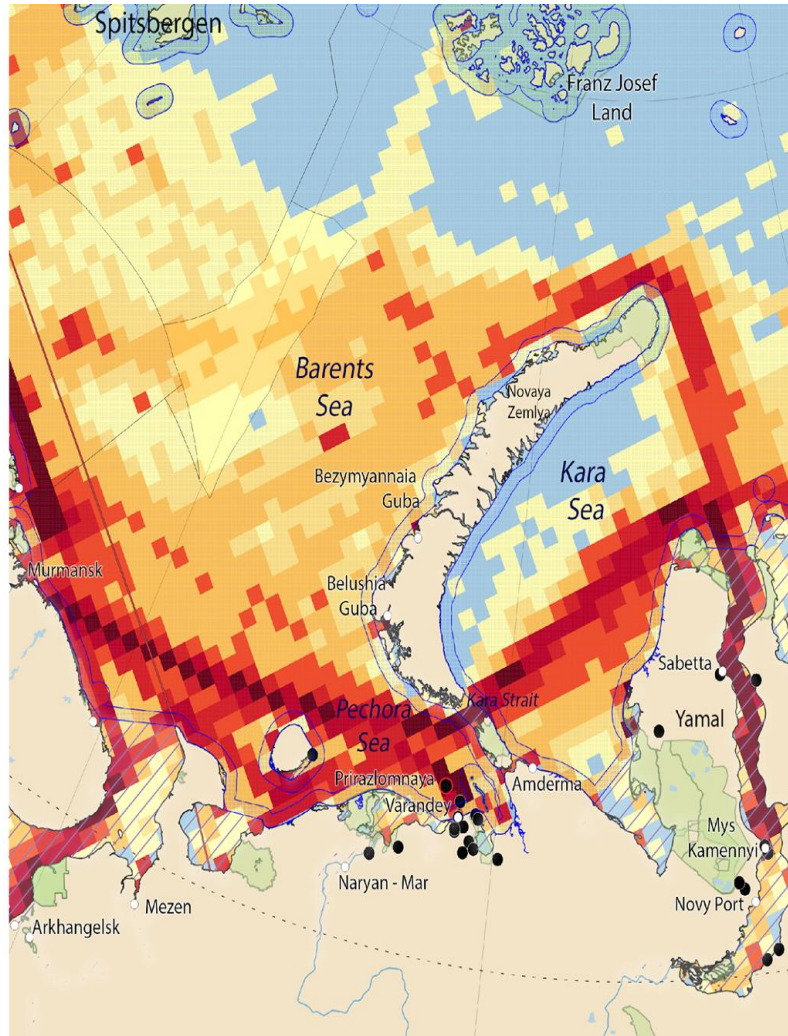


- Oil Terminals and Production Sites
- Prirazlomnaya Oil Platform
- Coastal Communities and Port Facilities
- - - Arctic Circle
- - - Polar Code Area Boundary
- Protected Areas
- /// Internal Waters
- Territorial Seas
- Exclusive Economic Zone

Shipping Amount

- 0.04 - 0.20
- 0.20 - 0.40
- 0.40 - 1.00
- 1.00 - 2.00
- 2.00 - 4.00
- 4.00 - 8.00
- 8.00 - 165.00

0 100 200 km

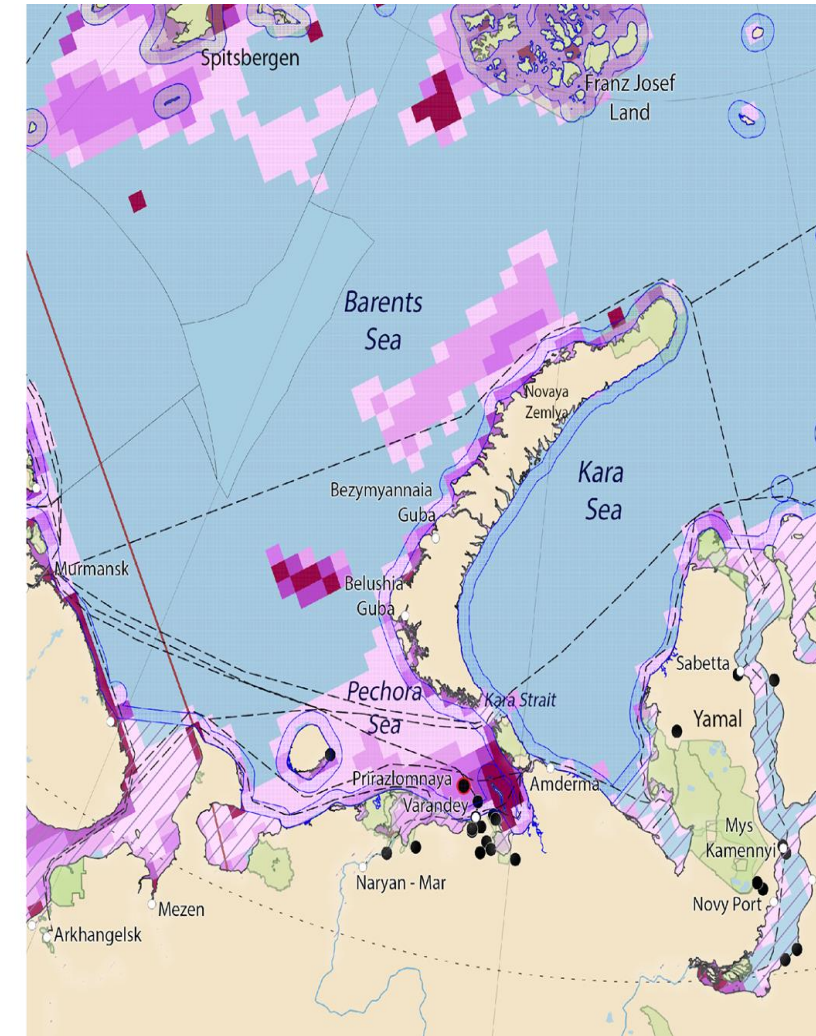


- Oil Terminals and Production Sites
- Prirazlomnaya Oil Platform
- Coastal Communities and Port Facilities
- - - Shipping routes
- - - Arctic Circle
- - - Polar Code Area Boundary
- Protected Areas
- /// Internal Waters
- Territorial Seas
- Exclusive Economic Zone

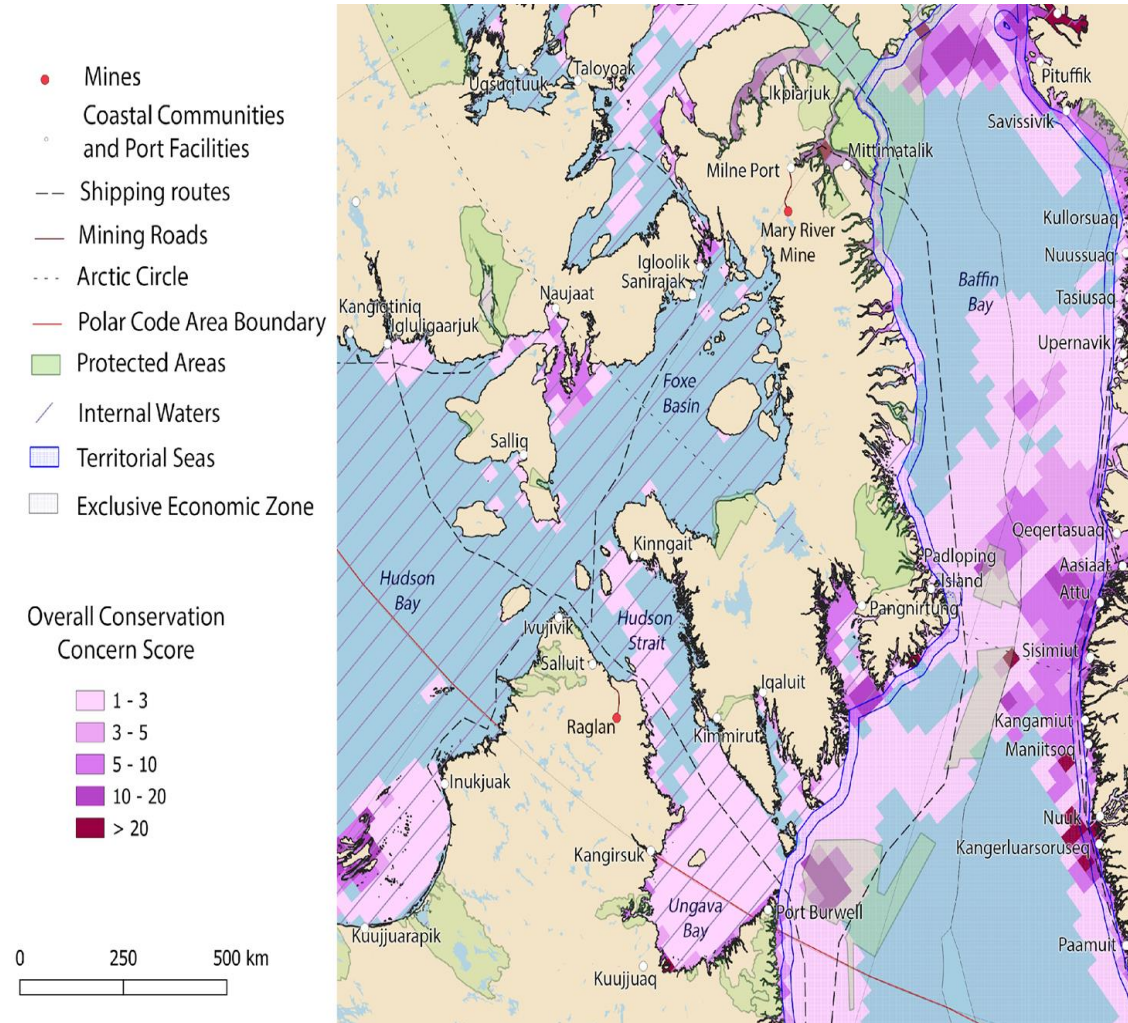
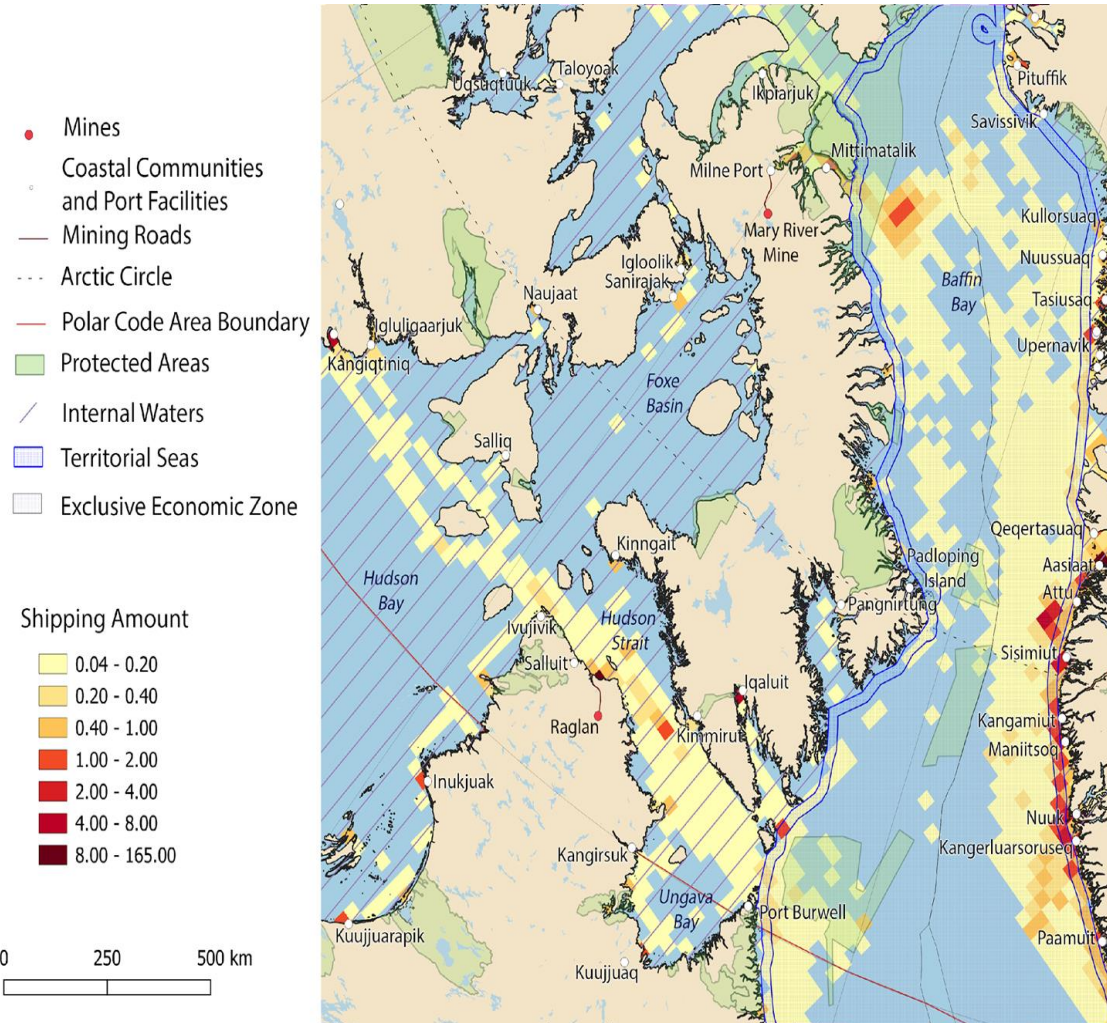
Overall Conservation Concern Score

- 1 - 3
- 3 - 5
- 5 - 10
- 10 - 20
- > 20

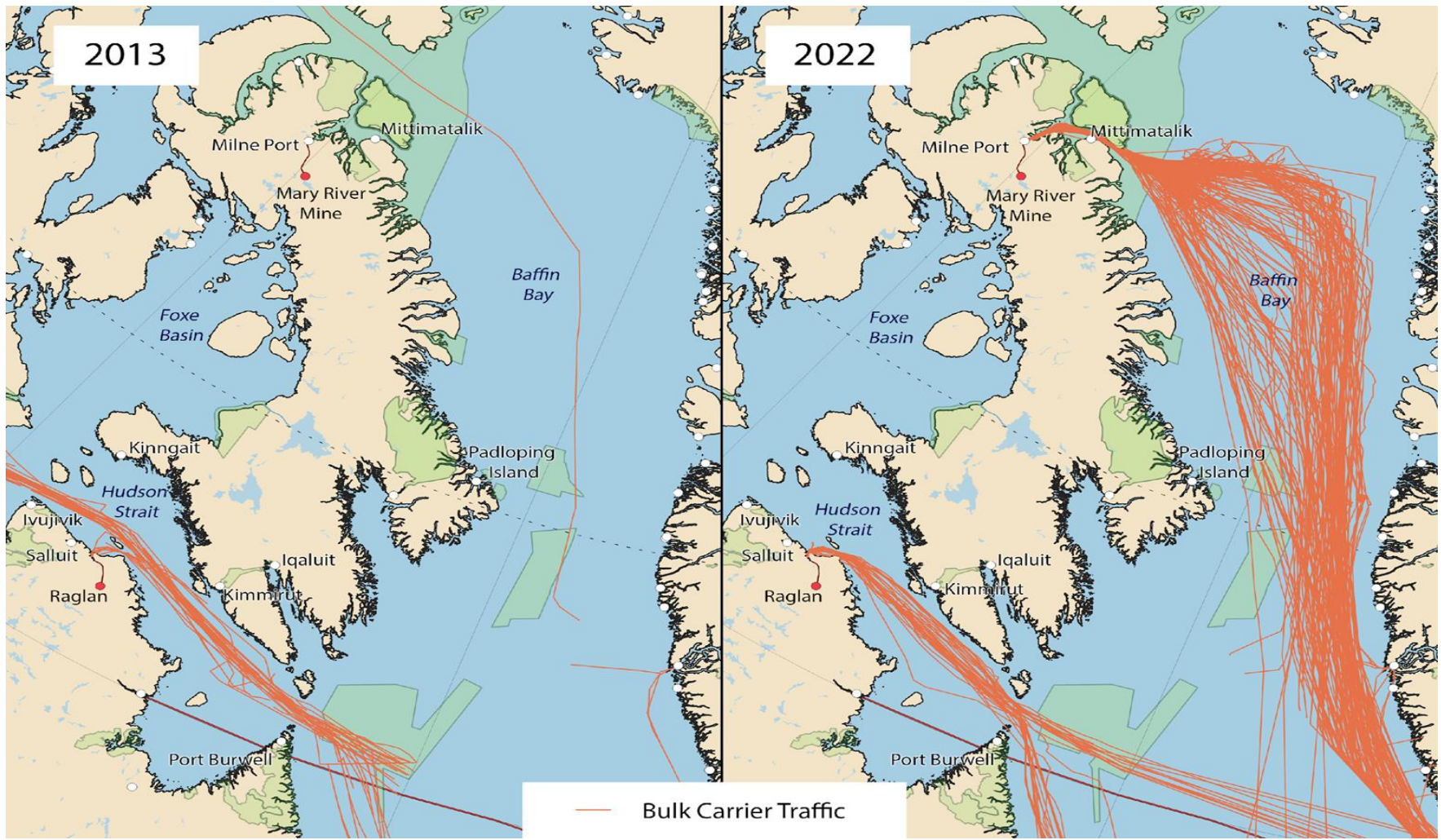
0 100 200 km



The Davis Strait, Baffin Bay and Hudson Strait Area



Changes in Bulk Carrier Traffic , 2013 and 2023



Fully implement the HFO Ban (no waivers to domestic vessels by Arctic coastal states, no exemptions because of design/ fuel tank)

- Switch to cleaner fuels/ alternative propulsion; establish more Emission Control Areas (ECAs)
- **Area-based conservation measures:** keeping vessels away from marine sensitive areas and harvesting sites of animals (areas to avoid, speed reduction, re-routing, special pilotage regimes to reduce impact on biodiversity)
- Mandating oil and gas tankers, LNG tankers, bulk carriers and cargo vessels operating in the Arctic to meet the ice strengthening requirements of the Polar Code





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Thank you!

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