

ARCTIC COUNCIL SAO MEETING
16-18 MARCH, REYKJAVIK ICELAND
MEETING CODE: SAOIS203_2021_RVK-VIRTUAL1

DOCUMENT TITLE

The Increase in Arctic Shipping 2013-2019

AGENDA ITEM NUMBER

N/A

SUBMITTED BY

PAME (2 March 2021)

DOCUMENT FILENAME

SAOIS203_2021_RVK-Virtual1-InfoDoc_PAME_Increase-Arctic-Shipping-2013-2019-Status-Report

NUMBER OF PAGES, NOT INCLUDING THIS COVER SHEET

25





PAME
Protection of the Arctic Marine Environment

THE INCREASE IN ARCTIC SHIPPING

2013-2019

ARCTIC SHIPPING STATUS REPORT (ASSR) #1

March 31, 2020



THIS REPORT EXPLORES CURRENT SHIPPING IN THE ARCTIC

But, where is the Arctic?

Neither PAME nor the Arctic Council have established a single use definition of the Arctic

This report will use the area defined by the Polar Code.

This report uses the geographic definition of the Arctic contained in the International Code for Ships Operating in Polar Waters (Polar Code) - The Polar Code area.

The Polar Code defines Arctic waters as the area in the figure.

Most larger ships that operate in this area must comply with the Polar Code.



Arctic Ship Traffic Data

All data in this report is from PAME's Arctic Ship Traffic Data (ASTD) System.

PAME's Arctic Ship Traffic Data (ASTD) project has been developed in response to a growing need to collect and distribute accurate, reliable, and up-to-date information on shipping activities in the Arctic. The ASTD System was launched in February 2019.

www.astd.is.



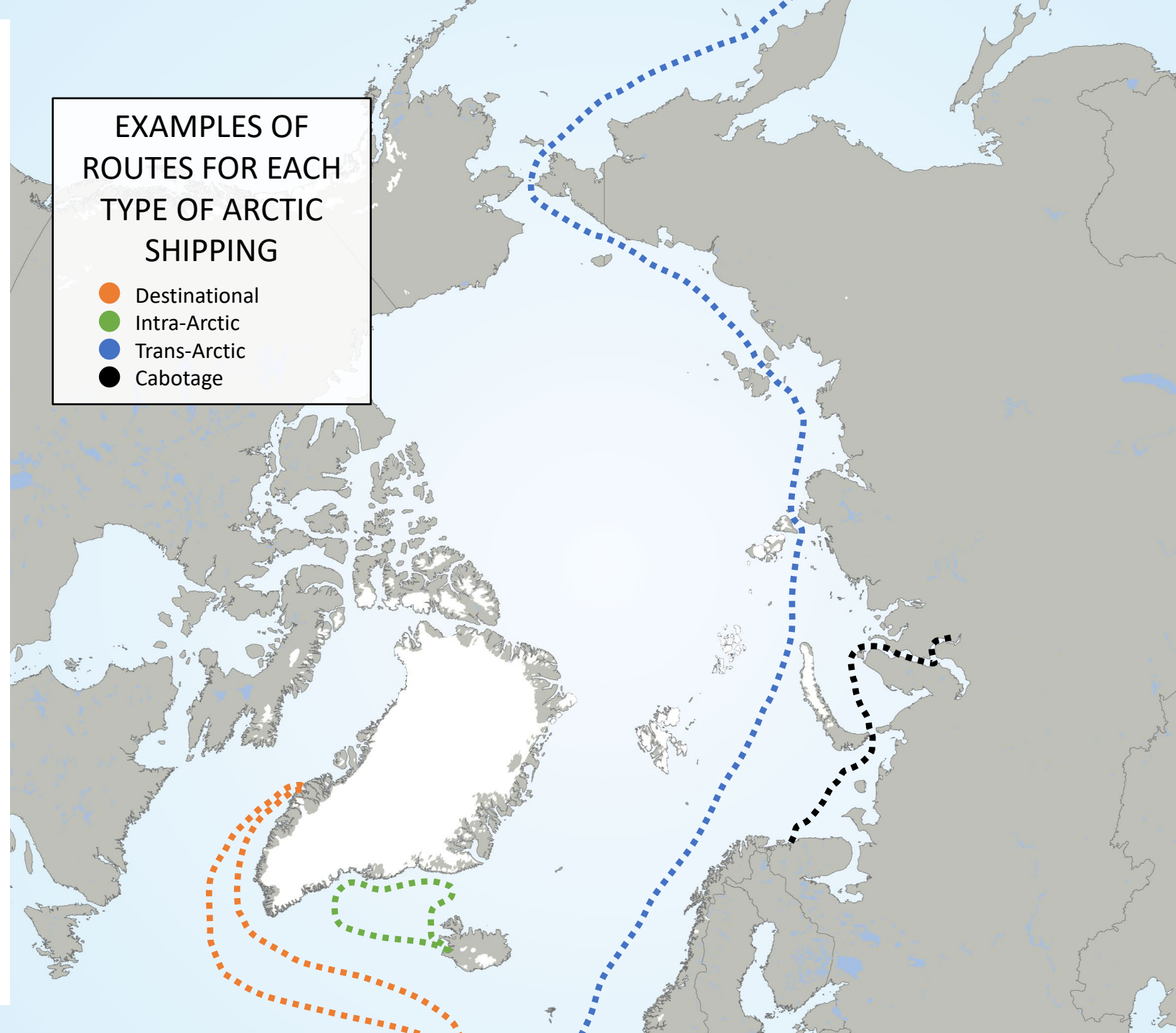
ARCTIC SHIPPING

PAME's 2009 Arctic Marine Shipping Assessment (AMSA) Report identified four types of Arctic Shipping:

- Destinational transport, where a ship sails to the Arctic, performs some activity in the Arctic, and sails south.
- Intra-Arctic transport, a voyage or marine activity that stays within the general Arctic region and links two or more Arctic States.
- Trans-Arctic transport or navigation, voyages which are taken across the Arctic Ocean from Pacific to Atlantic Oceans or vice versa.
- Cabotage, to conduct trade or engage in marine transport in coastal waters between ports within an Arctic State.

PAME: AMSA 2009 Report. Page 12.

Arctic shipping refers to all shipping activities within the area in question, unless otherwise stated.



The Polar Code covers the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the inhospitable waters of the Arctic.

POLAR Code

INTERNATIONAL CODE
FOR SHIPS OPERATING IN POLAR WATERS

2016 EDITION

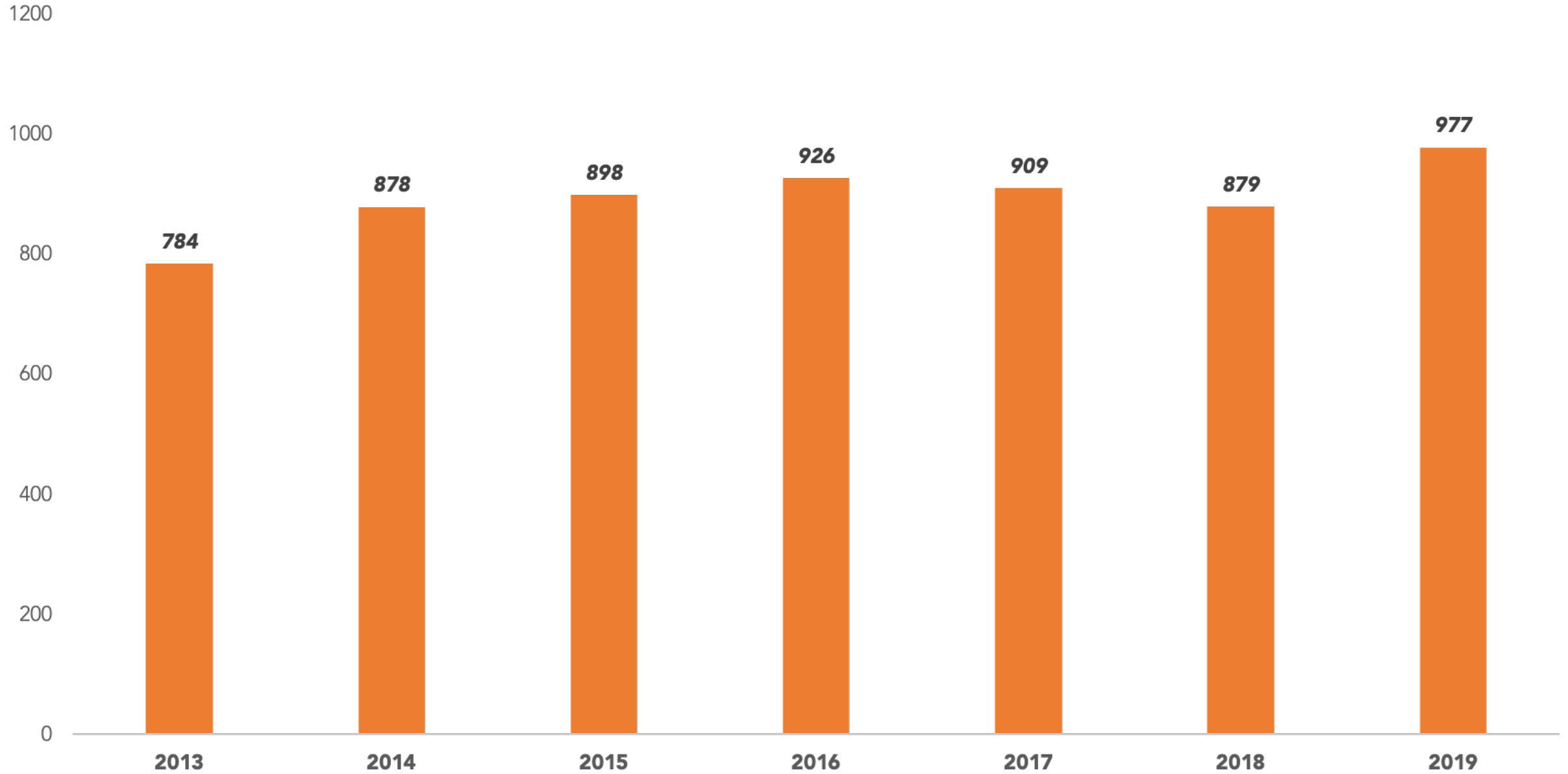


There are many ways to measure the volume of shipping in a given geographic area.

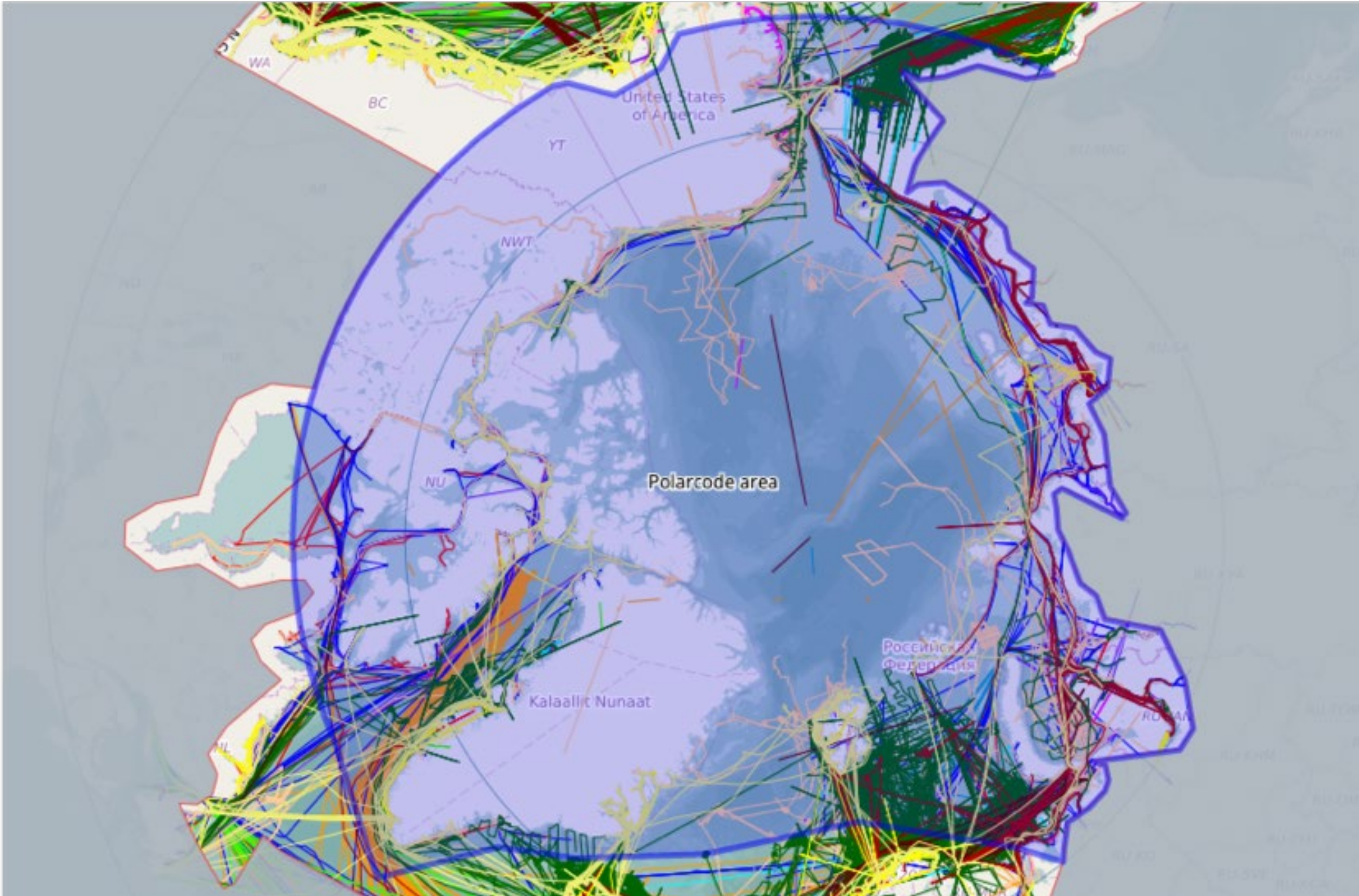
One way is to count the number of unique ships in a specific area.

This method counts each ship only once even if it enters the geographic area multiple times.

Number of unique ships entering the Polar Code area in September



Number of unique ships entering the IMO Arctic Polar Code area in September in each year from 2013-2019. Statistics from ASTD.



Ship tracks of all ships of all ship types in September 2019.

Shipping in the Arctic has increased in recent years.



Unique ships entering the Polar Code area 2013 and 2019.

A majority of these vessels are fishing vessels

In 2019 of all ships that entered the Polar Code area

41%

were fishing vessels



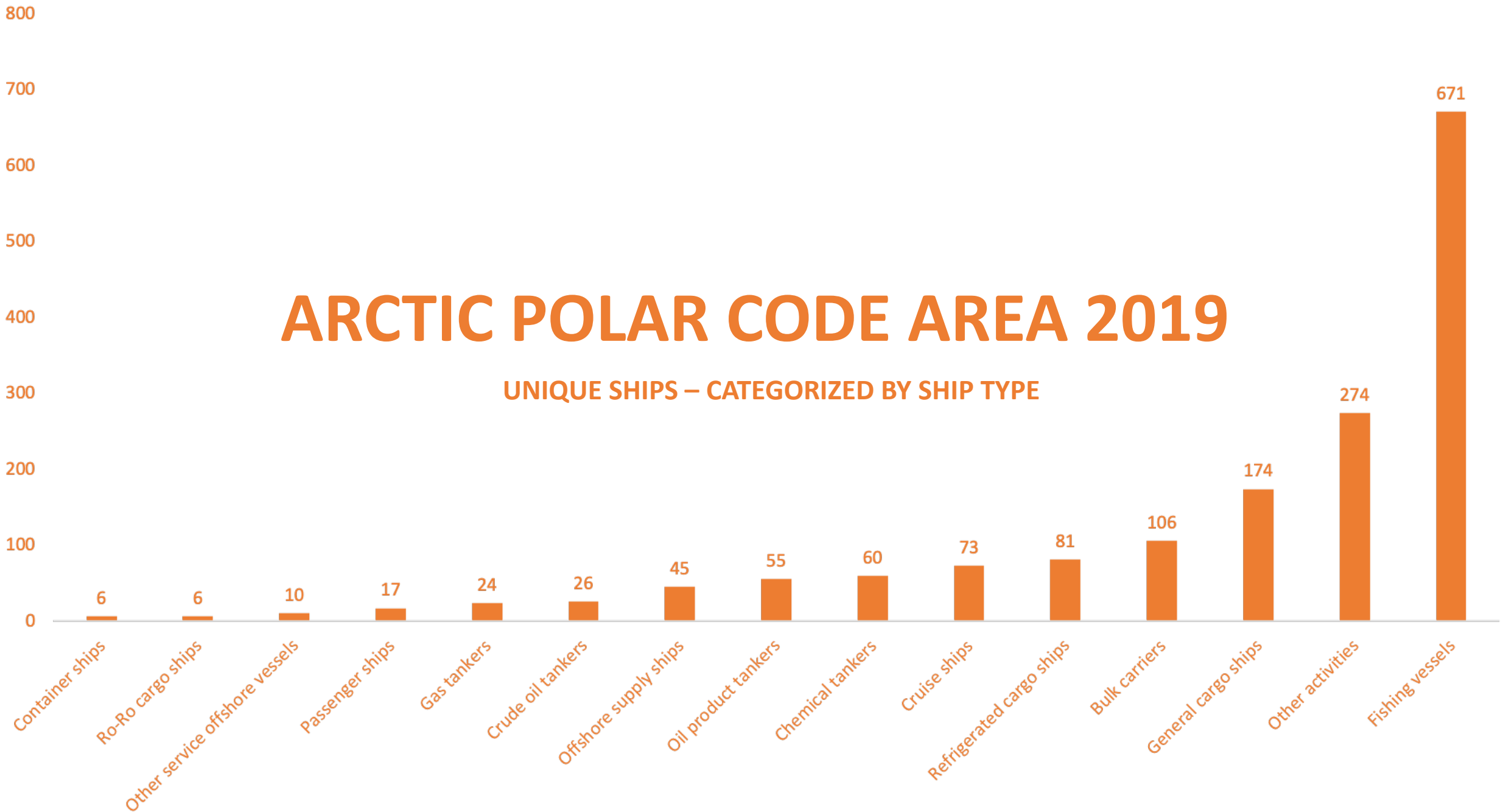
ARCTIC POLAR CODE AREA 2018

UNIQUE SHIPS – CATEGORIZED BY SHIP TYPE

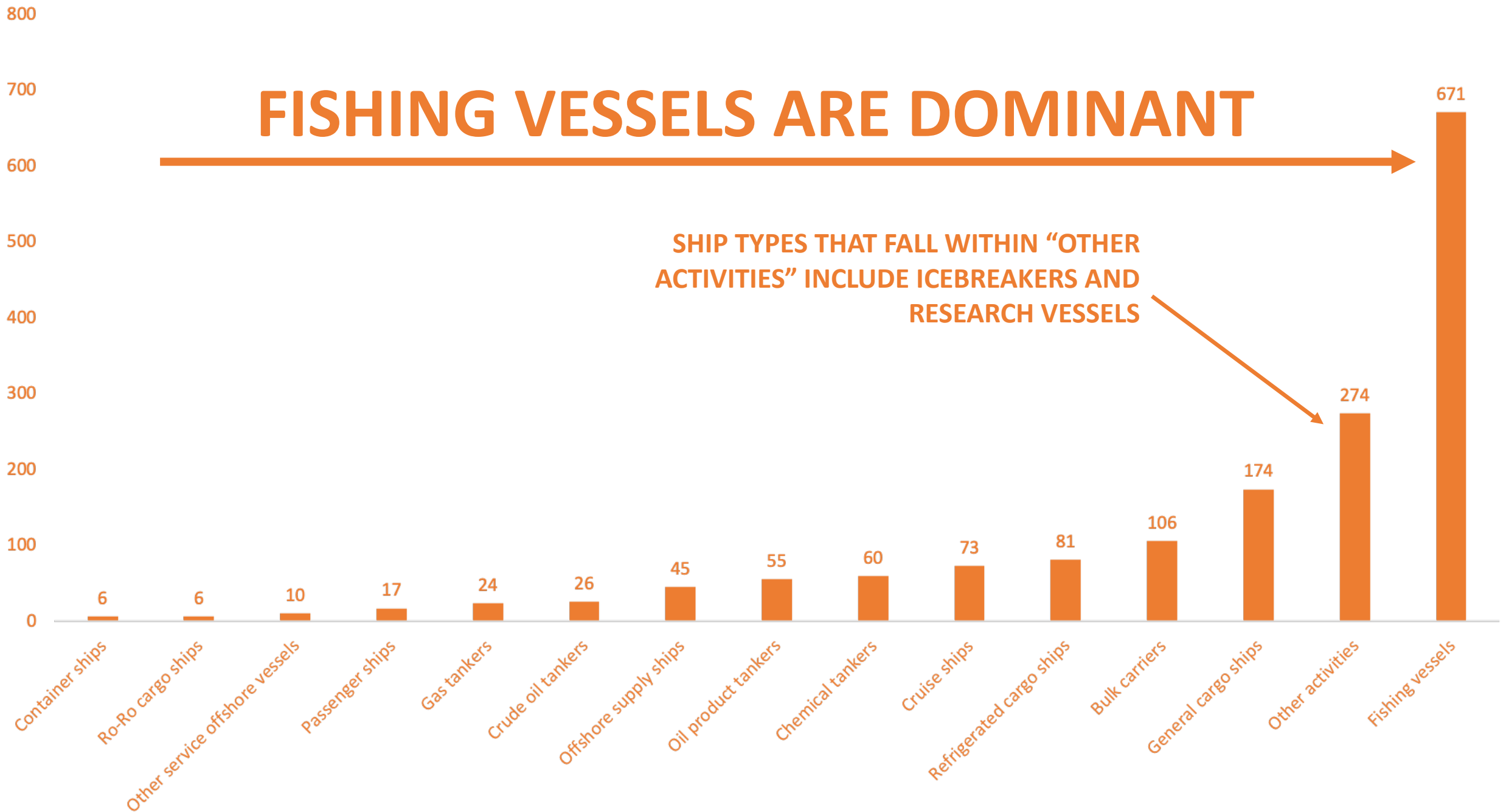


ARCTIC POLAR CODE AREA 2019

UNIQUE SHIPS – CATEGORIZED BY SHIP TYPE



FISHING VESSELS ARE DOMINANT



SHIP TYPES THAT FALL WITHIN "OTHER ACTIVITIES" INCLUDE ICEBREAKERS AND RESEARCH VESSELS

ANOTHER WAY TO MEASURE THE INCREASE IN ARCTIC SHIPPING IS "DISTANCE SAILED"

Distance sailed is the aggregated nautical miles vessels traveled in a certain period of time in a certain area.

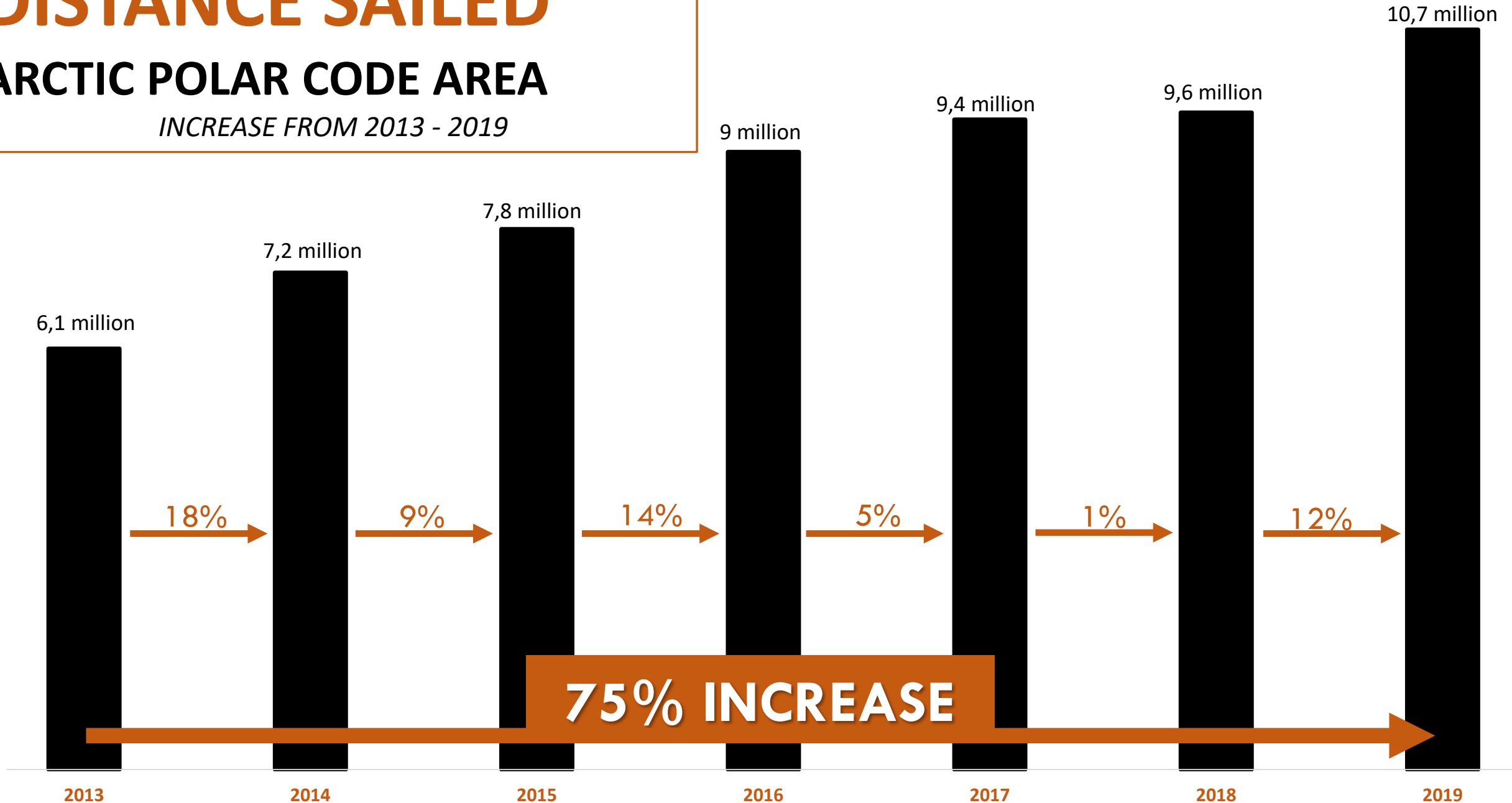
75%

The total distance sailed by all vessels increased by 75% in the Arctic Polar Code area from 2013 to 2019.

DISTANCE SAILED

ARCTIC POLAR CODE AREA

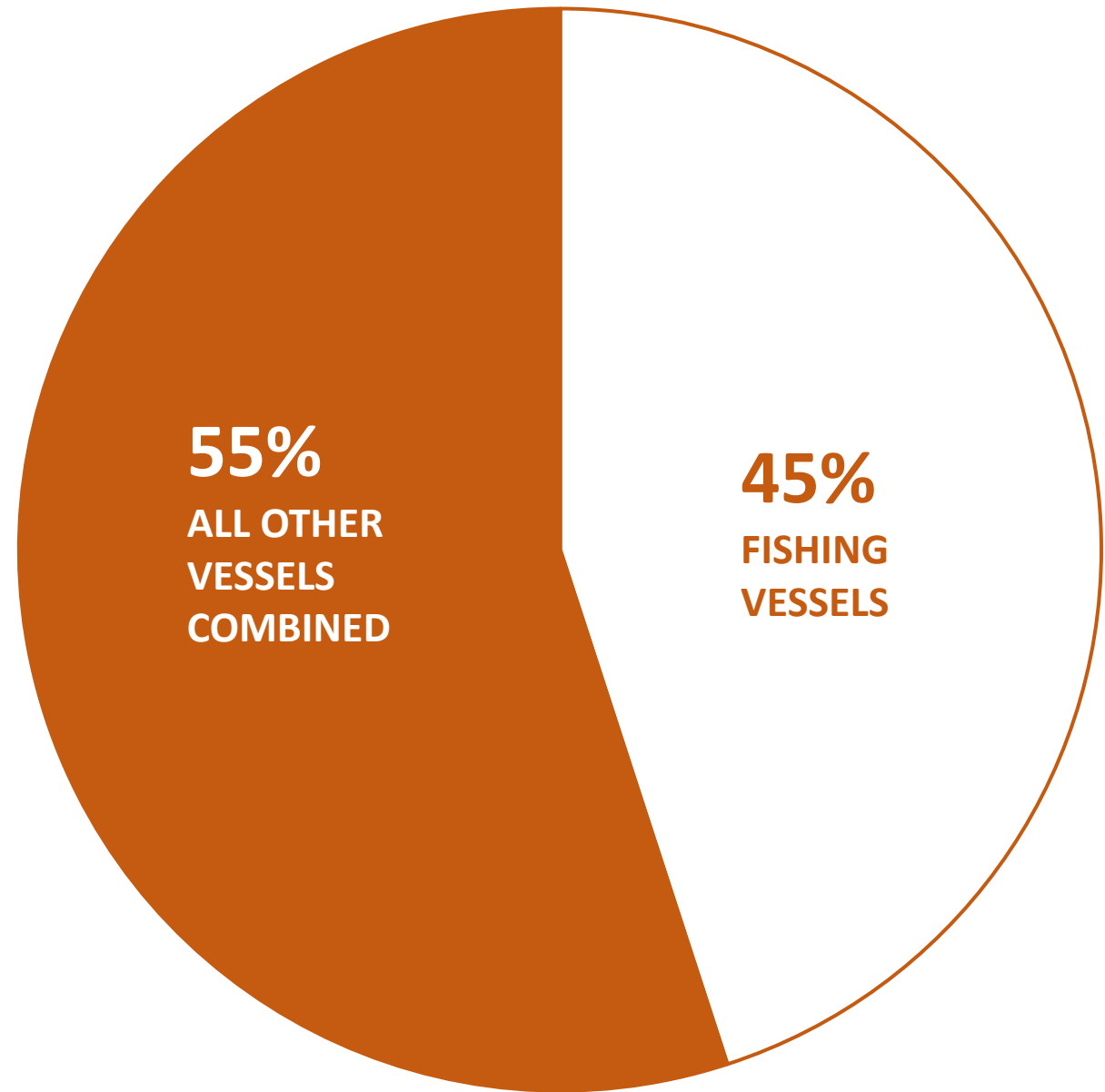
INCREASE FROM 2013 - 2019



The total **2013** distance sailed by all vessels was approximately *6.51 million* nautical miles.

In **2019**, the total aggregated distance sailed had risen to over *10,7 million* nautical miles.

As with unique ships - fishing vessels are dominant.



**SAILED DISTANCE - ARCTIC POLAR
CODE AREA 2019**

THE INCREASE IN SHIPPING COINCIDES WITH **DEMINISHING SEA ICE** IN THE ARCTIC

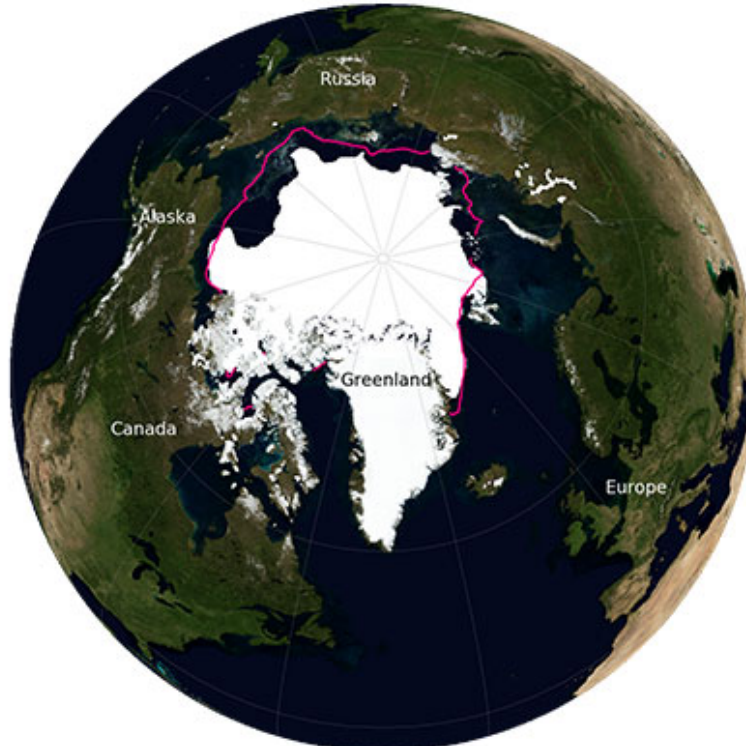
DEMINISHING SEA ICE

MEDIAN ICE EDGE 1981-2010



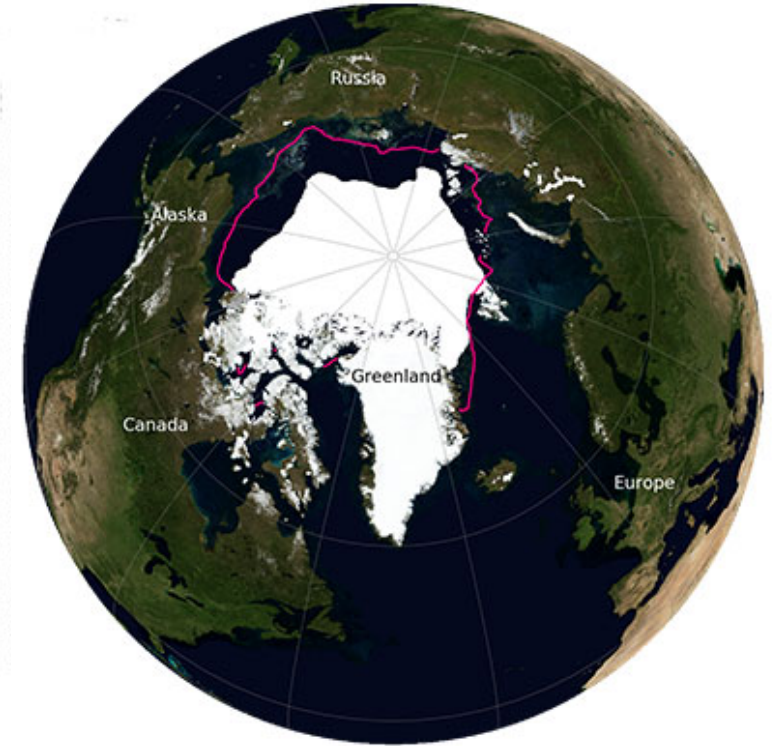
1999

6,1 million sq km



2009

5,3 million sq km



2019

4,3 million sq km

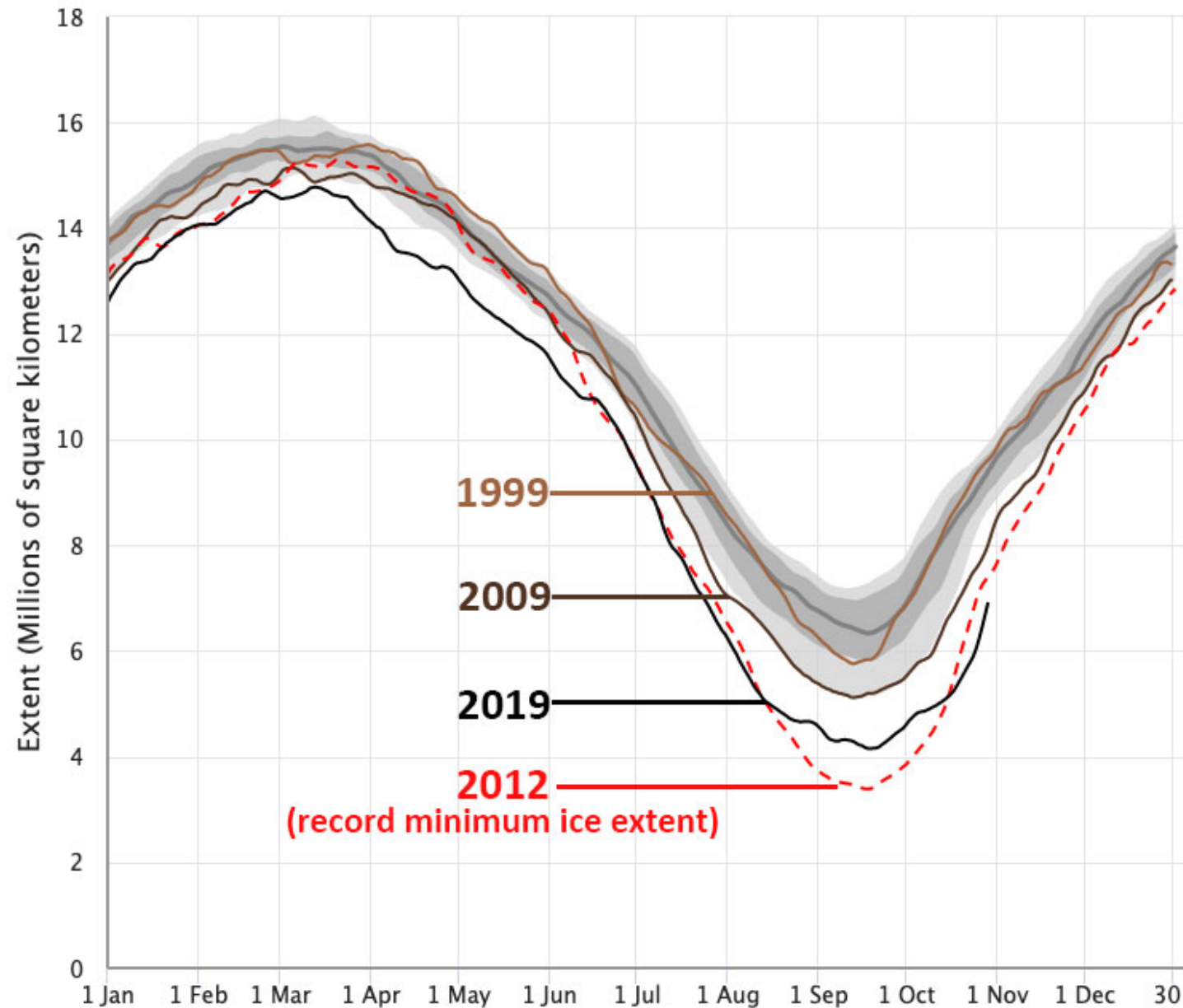
The images show the month of September each year. Images from the National and Snow Ice Data Center.

ARCTIC SEA ICE EXTENT

(Area of ocean with at least 15% sea ice)

This graph from the U.S. National Snow And Ice Data Center (NSIDC) shows the Arctic sea ice extent in September.

The graph shows that over the last 10 years, average Arctic sea ice extent is decreasing.



U.S. National Snow And Ice Data Center (NSIDC)

NATURAL RESOURCE EXTRACTION IS ONE ACTIVITY CONTRIBUTING TO AN INCREASE IN ARCTIC SHIPPING

*The following example shows an area within the
Arctic Polar Code Area - experiencing increased
activity from iron ore extraction.*

BULK CARRIER

TRAFFIC

to and from the
Mary River Mine

*Bulk carriers transport cargoes in large quantities, like
food grains, ores, coal, and cement.*

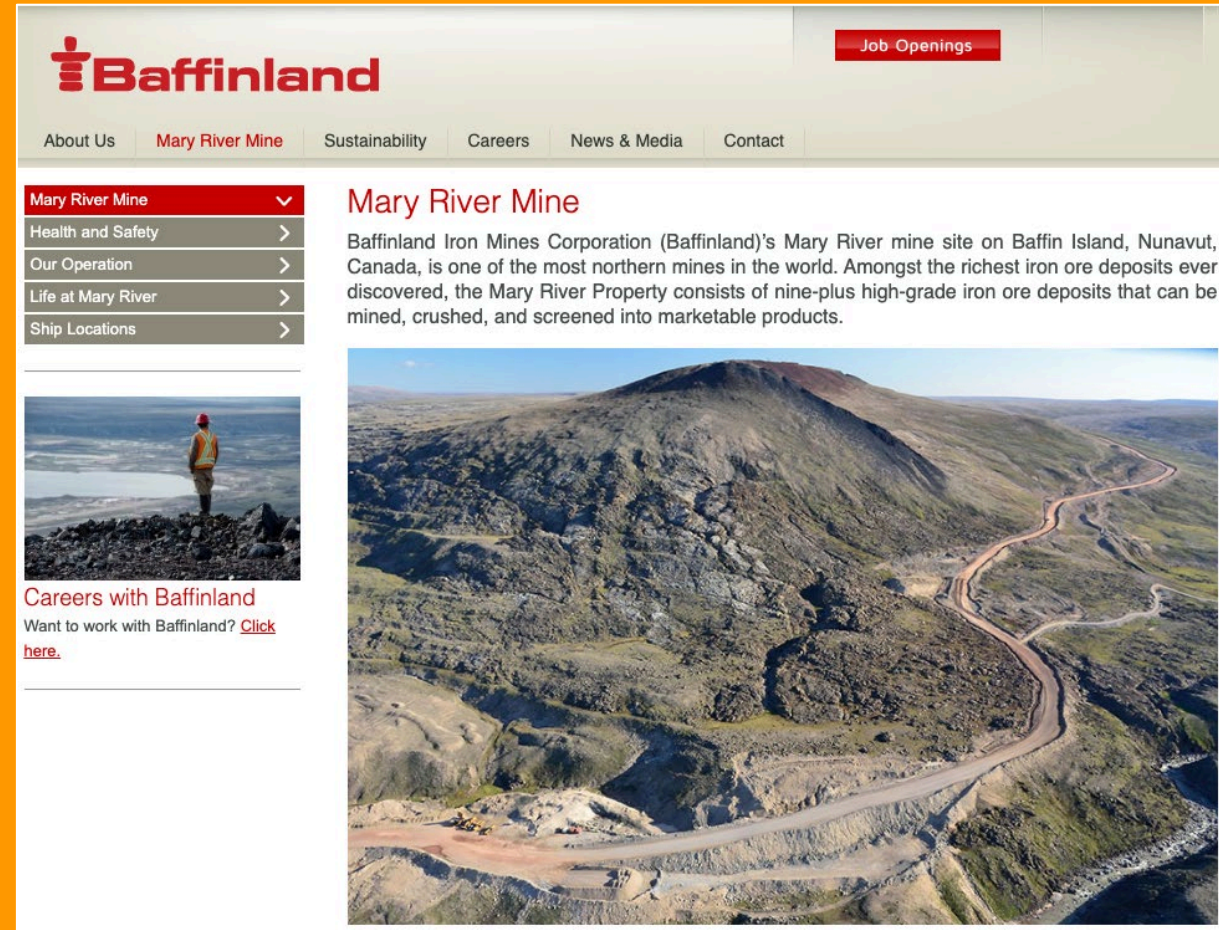
2013

2019



BULK CARRIER TRAFFIC IN 2013 IN THE POLAR CODE AREA WAS VERY LOW. BY 2019, IT HAD INCREASED SUBSTANTIALLY.

In 2014, one of the most northern mines in the world opened. It is among the richest iron ore deposits ever discovered. The Mary River Project involves the seasonal shipping of 3,5 million tonnes of iron ore during open water season.



The screenshot shows the Baffinland website's navigation menu with 'Mary River Mine' selected. A dropdown menu lists 'Health and Safety', 'Our Operation', 'Life at Mary River', and 'Ship Locations'. The main content area features a 'Mary River Mine' section with a descriptive paragraph and a large aerial photograph of the mine site. A 'Careers with Baffinland' sidebar is also visible.

Baffinland Job Openings

About Us **Mary River Mine** Sustainability Careers News & Media Contact

Mary River Mine ▾

- Health and Safety >
- Our Operation >
- Life at Mary River >
- Ship Locations >

Mary River Mine

Baffinland Iron Mines Corporation (Baffinland)'s Mary River mine site on Baffin Island, Nunavut, Canada, is one of the most northern mines in the world. Amongst the richest iron ore deposits ever discovered, the Mary River Property consists of nine-plus high-grade iron ore deposits that can be mined, crushed, and screened into marketable products.

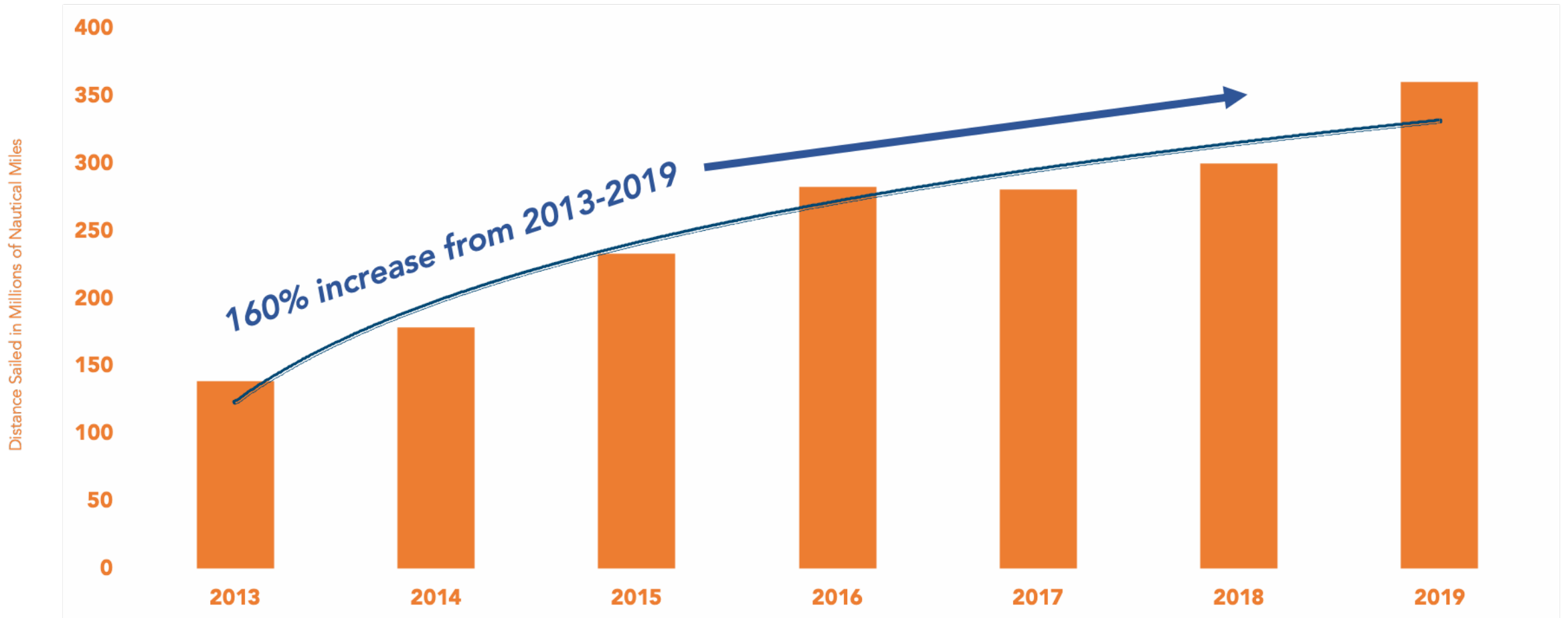
Careers with Baffinland
Want to work with Baffinland? [Click here.](#)

BULK CARRIERS

IN THE ARCTIC POLAR CODE AREA

2013-2019

The distance sailed by **bulk carriers** in the Arctic Polar Code area has risen **160%** between 2013 and 2019.



ALL OTHER VESSEL TYPES SHOW A SIMILAR UPWARD TREND

**PAME WILL CONTINUE TO
MONITOR TRENDS WITH
ASTD**

**THE DATA CAN SUPPORT THE
DEVELOPMENT OF
RECOMMENDATIONS**

**TO ENHANCE ARCTIC
MARINE SAFETY AND
SUPPORT PROTECTION OF
PEOPLE AND THE
ENVIRONMENT**



ABOUT THIS REPORT

This is the first report generated by PAME's Arctic Ship Status Report (ASSR) Project. The goal of the ASSR Project is to use PAME's Arctic Ship Traffic Data (ASTD) System to highlight topical issues related to shipping in the Arctic. Launched in 2019, the ASTD System is PAME's database for Arctic shipping activities.

More on www.astd.is.

All use of this report is allowed. Please cite PAME – Arctic Shipping Status Report #1 and provide a link to this report.

The project gratefully acknowledges funding from the Nordic Council of Ministers.



**Nordic
Co-operation**

PAME
Protection of the Arctic Marine Environment

Sources:

- [ASTD – Arctic Ship Traffic Data](#)
- [IMO: Shipping in polar waters](#)
- [National Snow and Ice Data Center \(NSIDC\) – Sea Ice](#)
- [Baffinland: Mary River Mine](#)