



**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](http://www.astd.is).



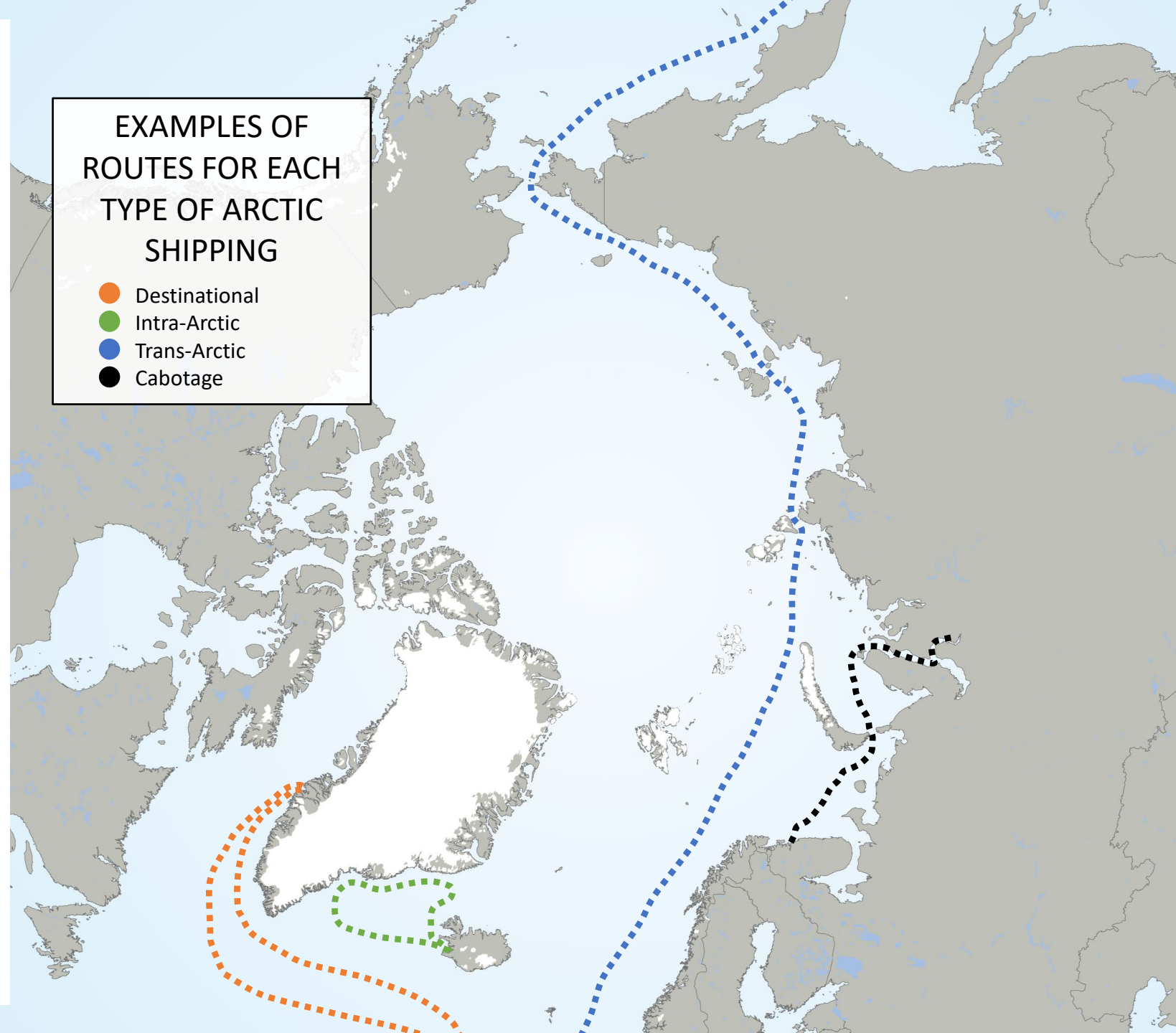
# ARCTIC SHIPPING

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

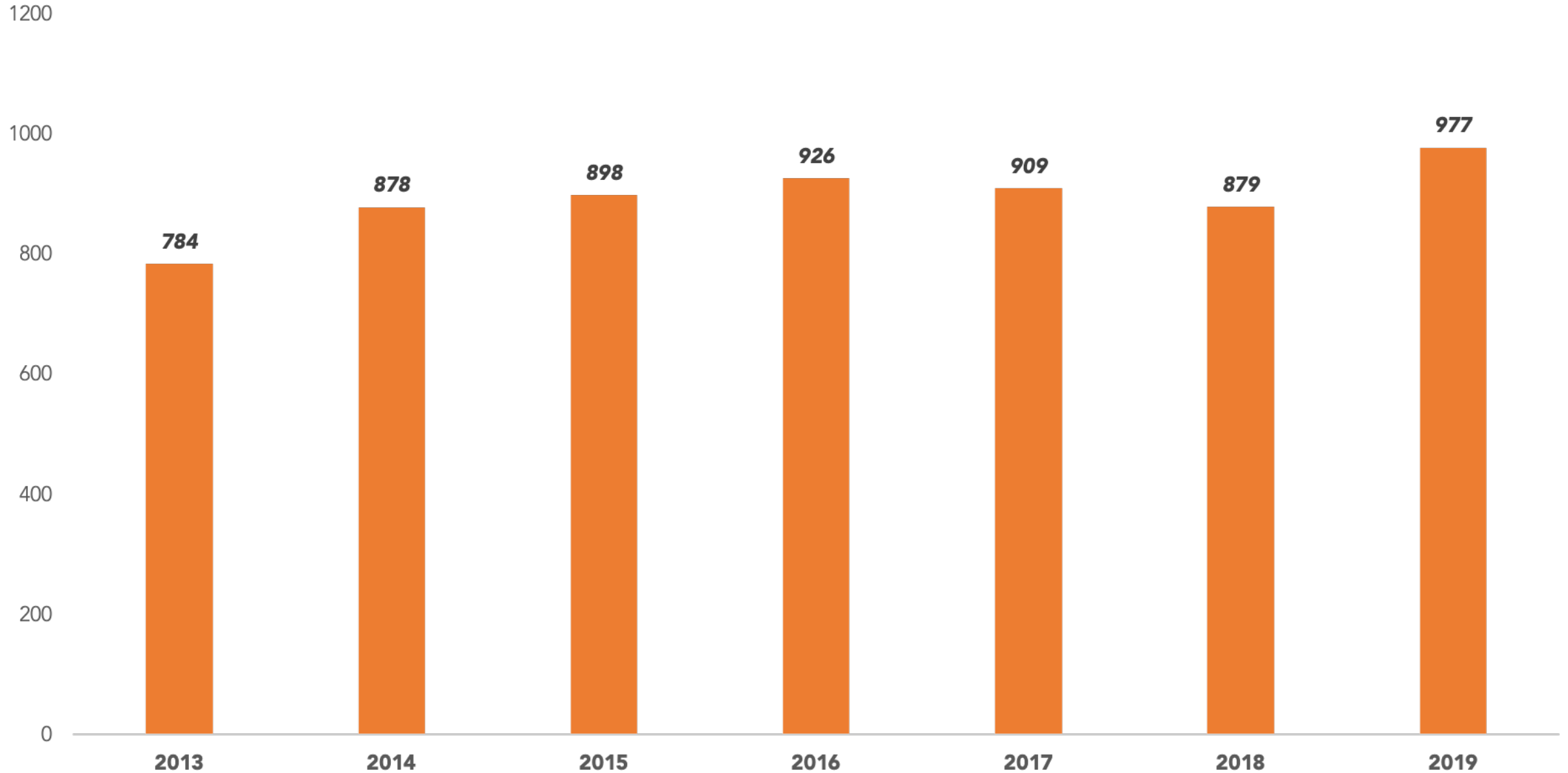


**There are many ways to measure the  
volume of shipping in a given  
geographic area.**

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

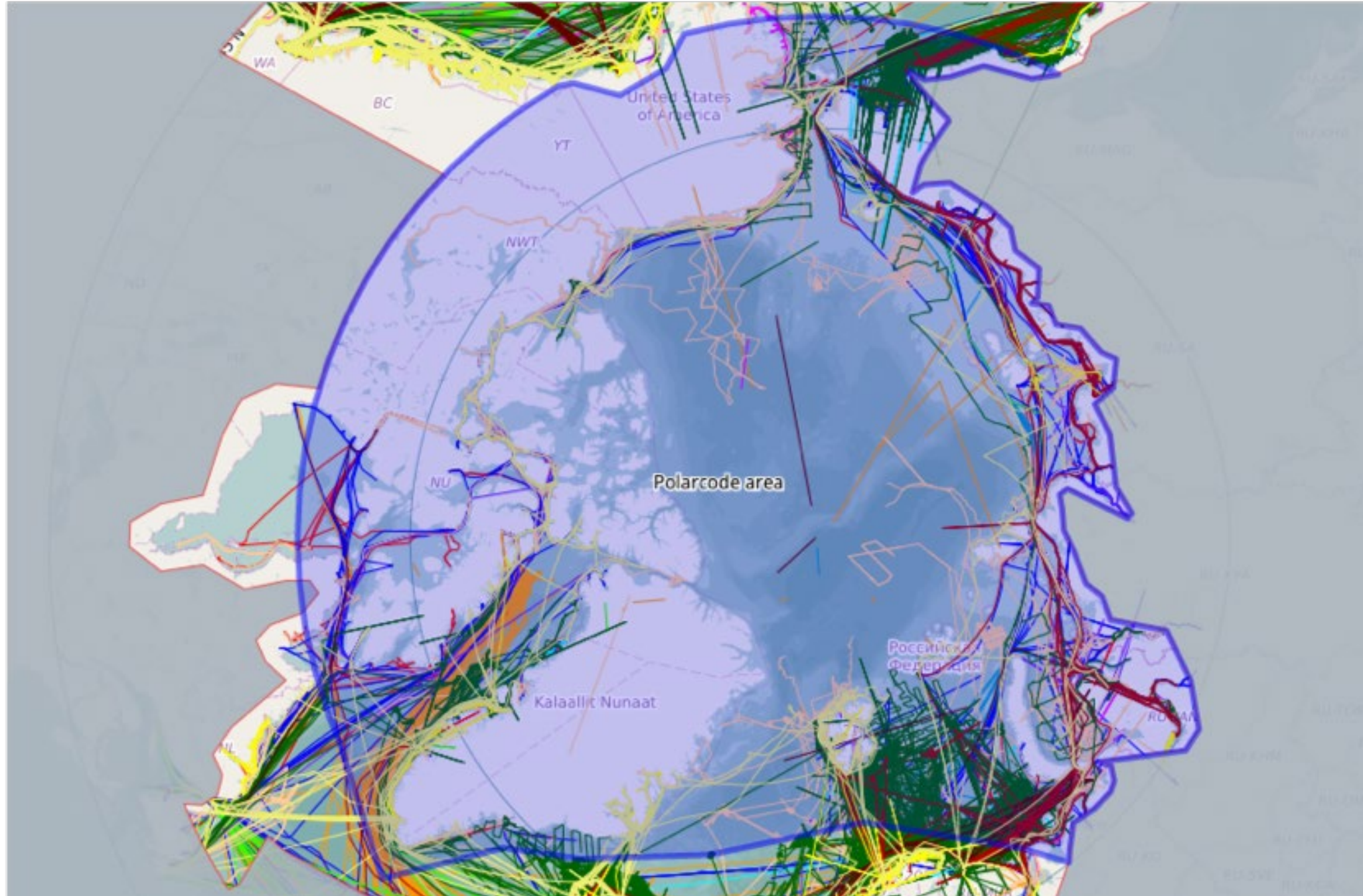
This method counts each ship only once even if it enters the geographic area multiple times.

## *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%**

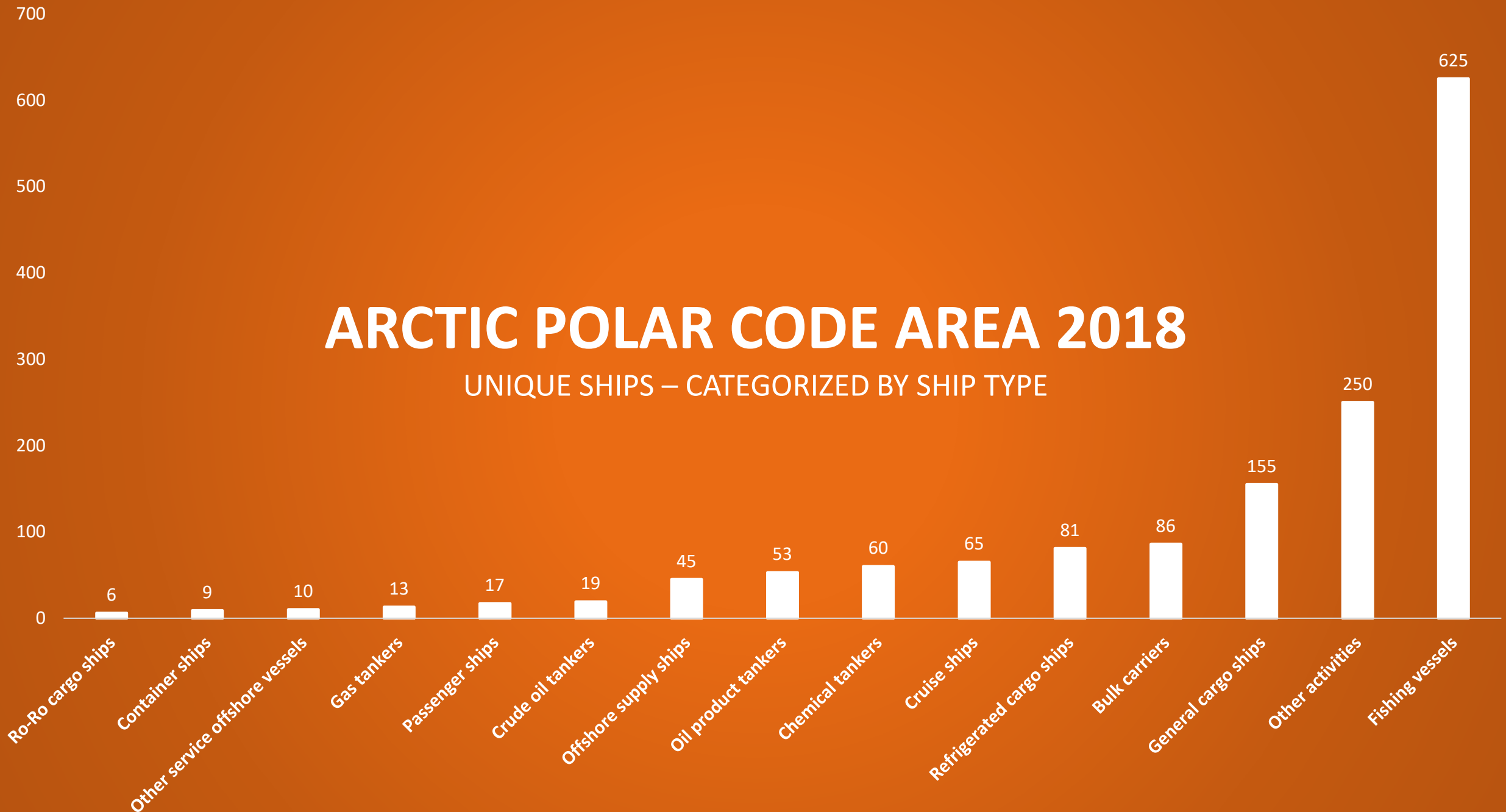
were fishing vessels





# ARCTIC POLAR CODE AREA 2018

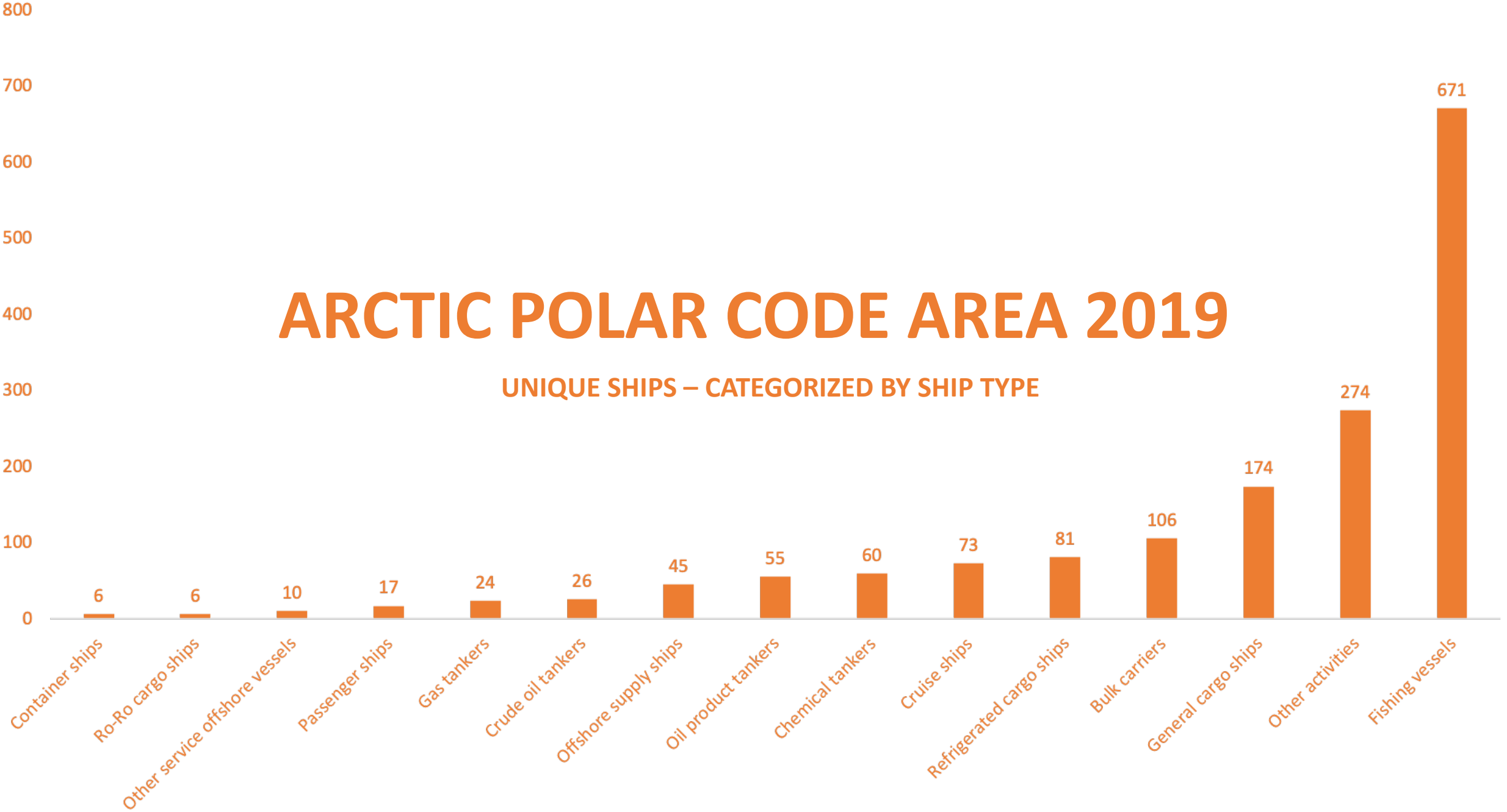
UNIQUE SHIPS – CATEGORIZED BY SHIP TYPE



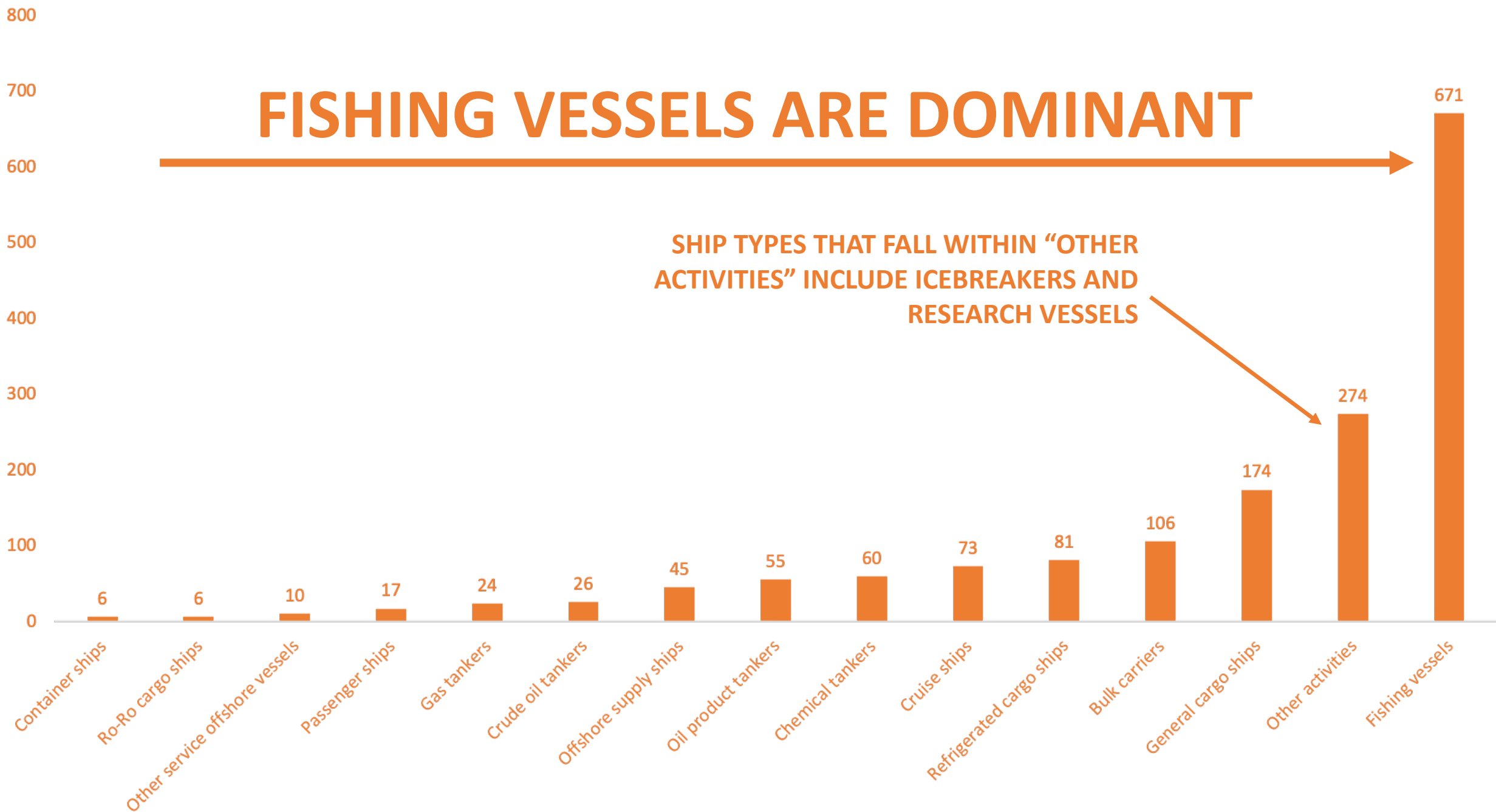


# ARCTIC POLAR CODE AREA 2019

UNIQUE SHIPS – CATEGORIZED BY SHIP TYPE



# FISHING VESSELS ARE DOMINANT





# 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.*

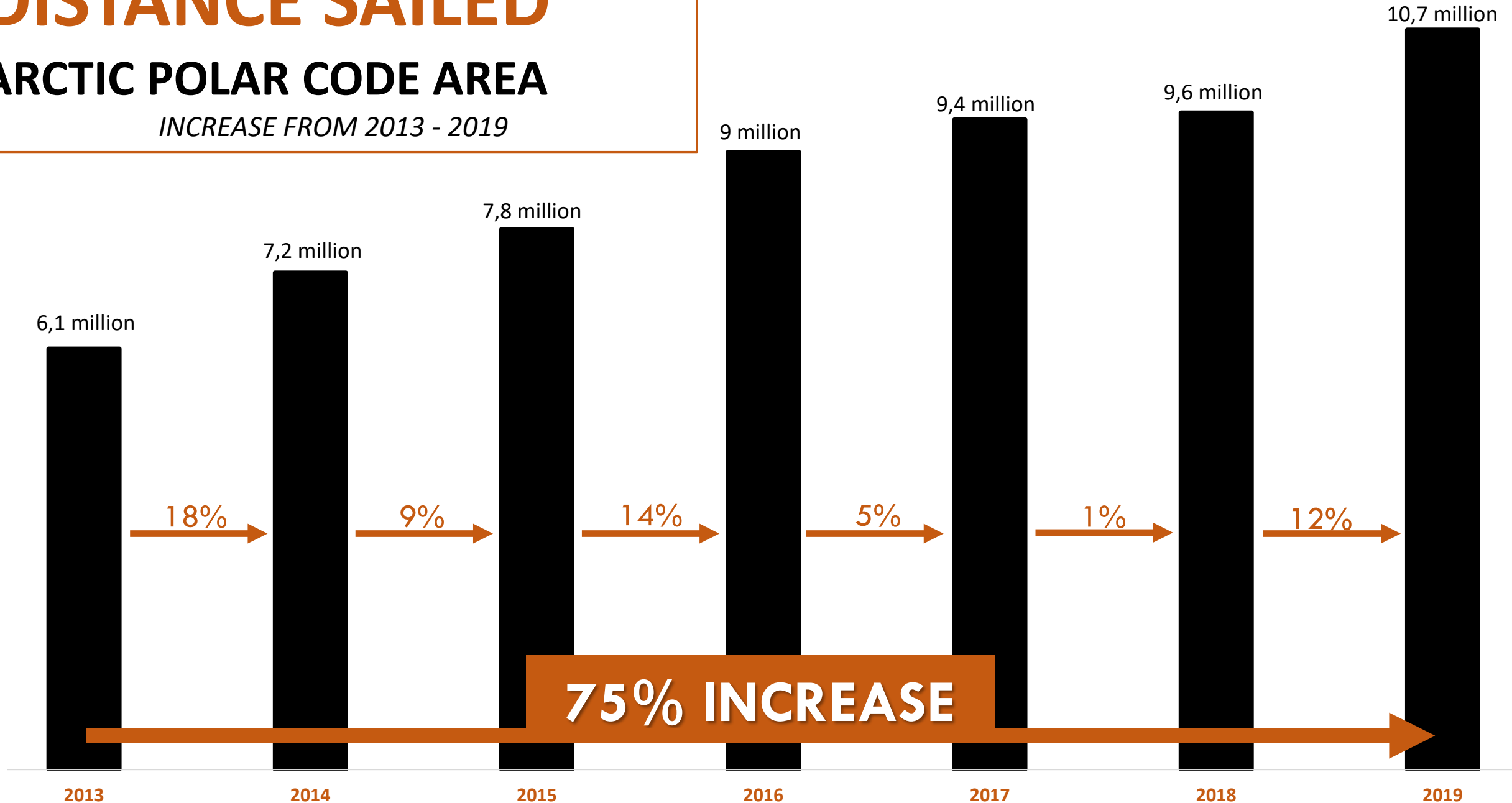
**75%**

*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

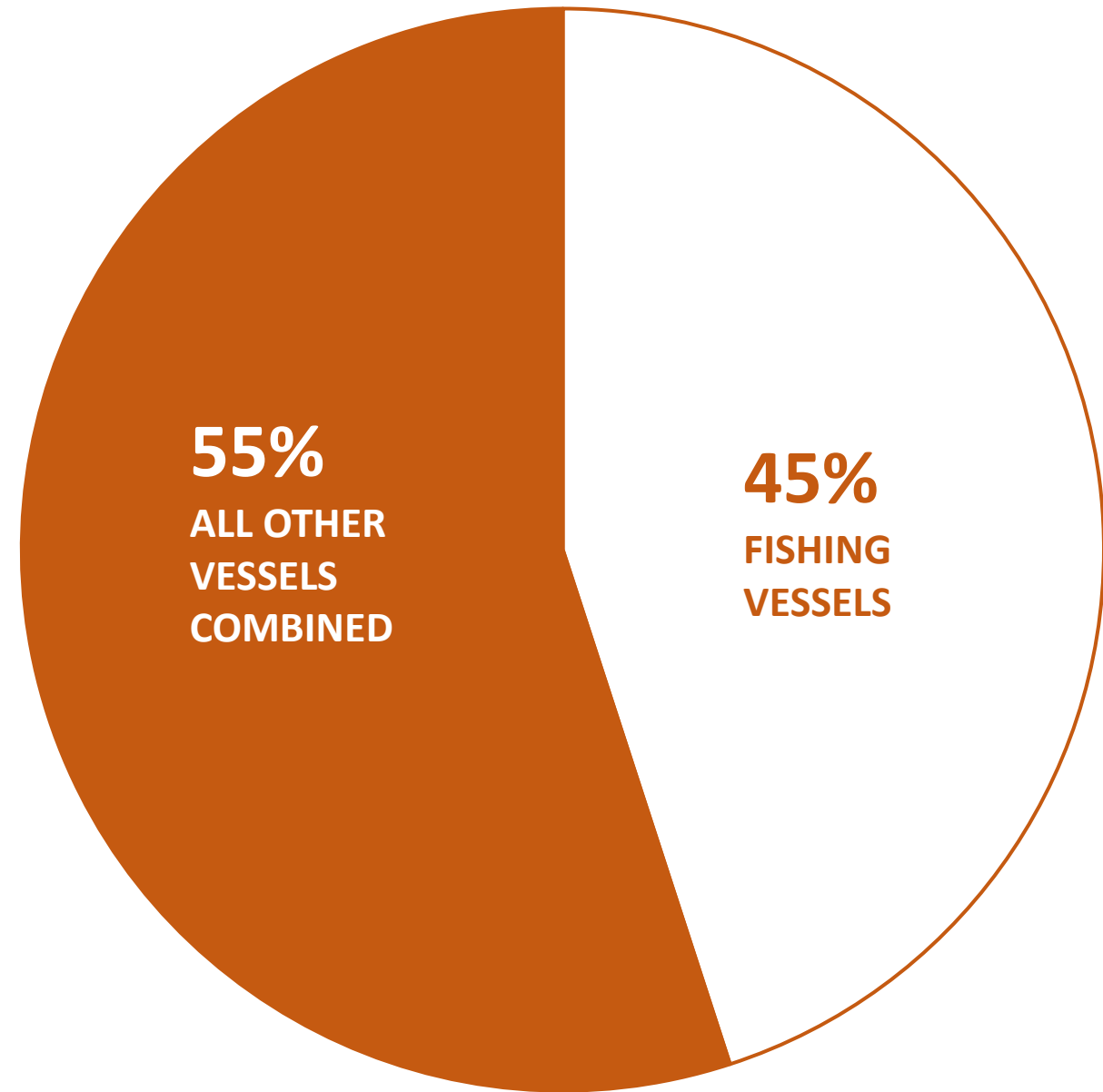
*INCREASE FROM 2013 - 2019*



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

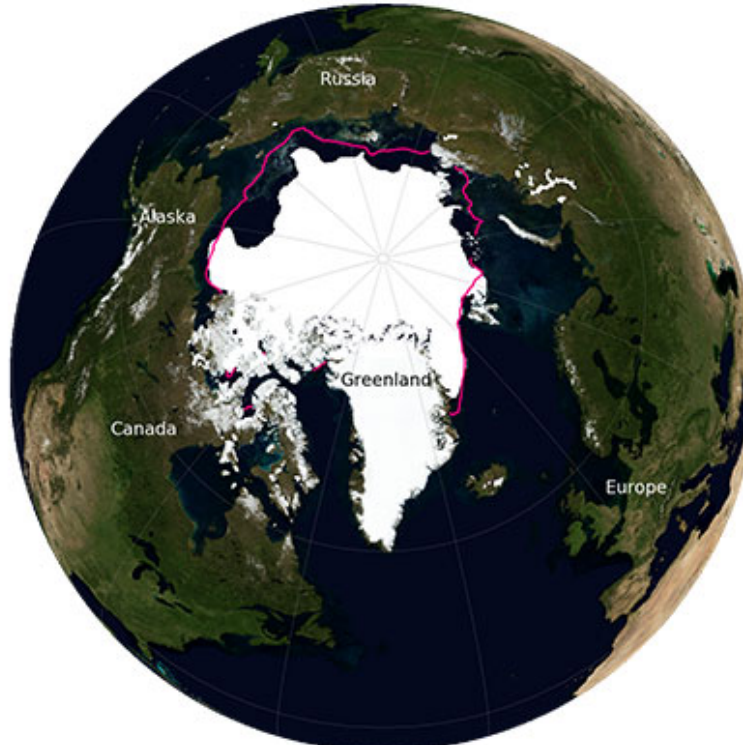
# DEMINISHING SEA ICE

MEDIAN ICE EDGE 1981-2010



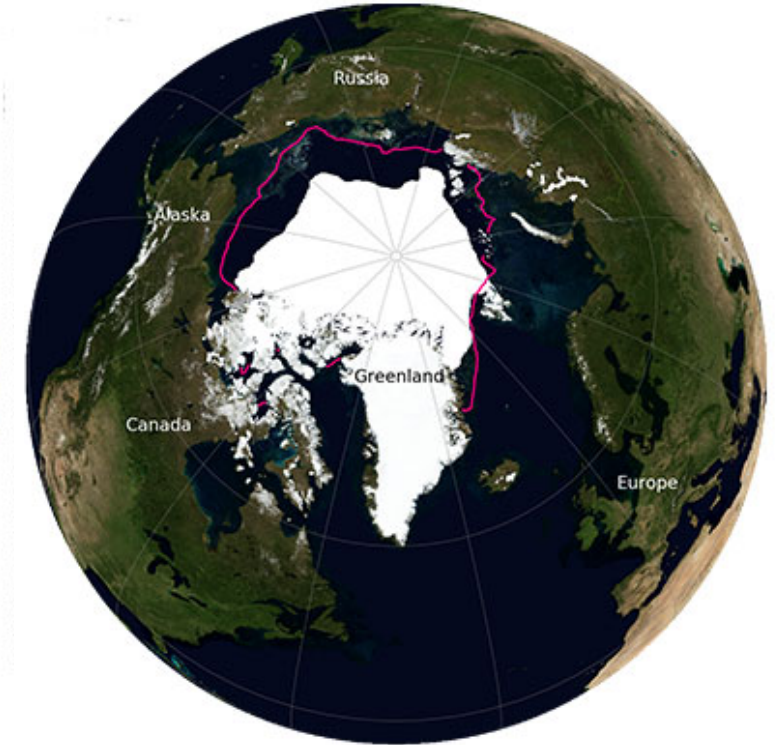
1999

6,1 million sq km



2009

5,3 million sq km



2019

4,3 million sq km

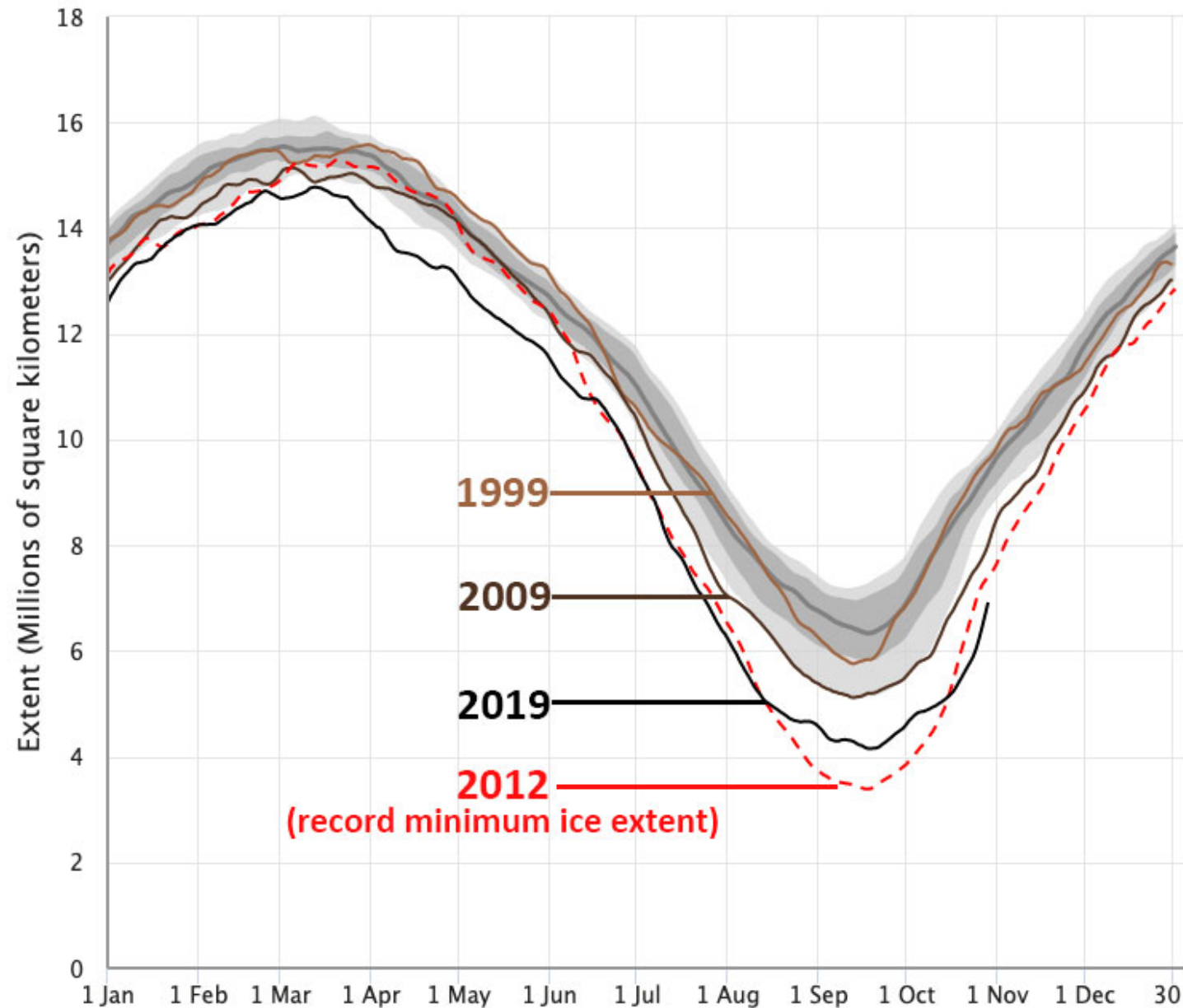
The images show the month of September each year. Images from the National and Snow Ice Data Center.

# 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

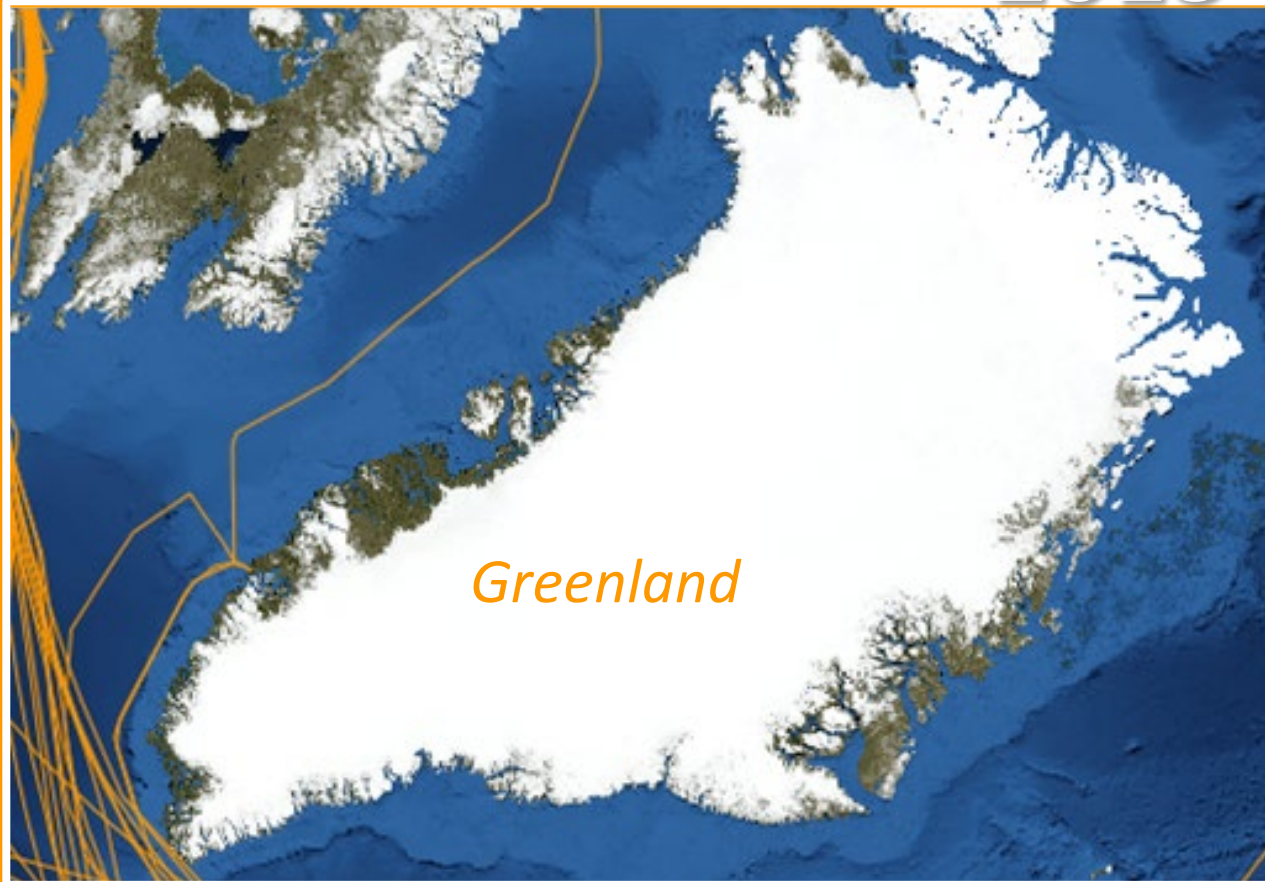
to and from the  
Mary River Mine

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

2013


2019

*Greenland*



# 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.*

[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.](#)

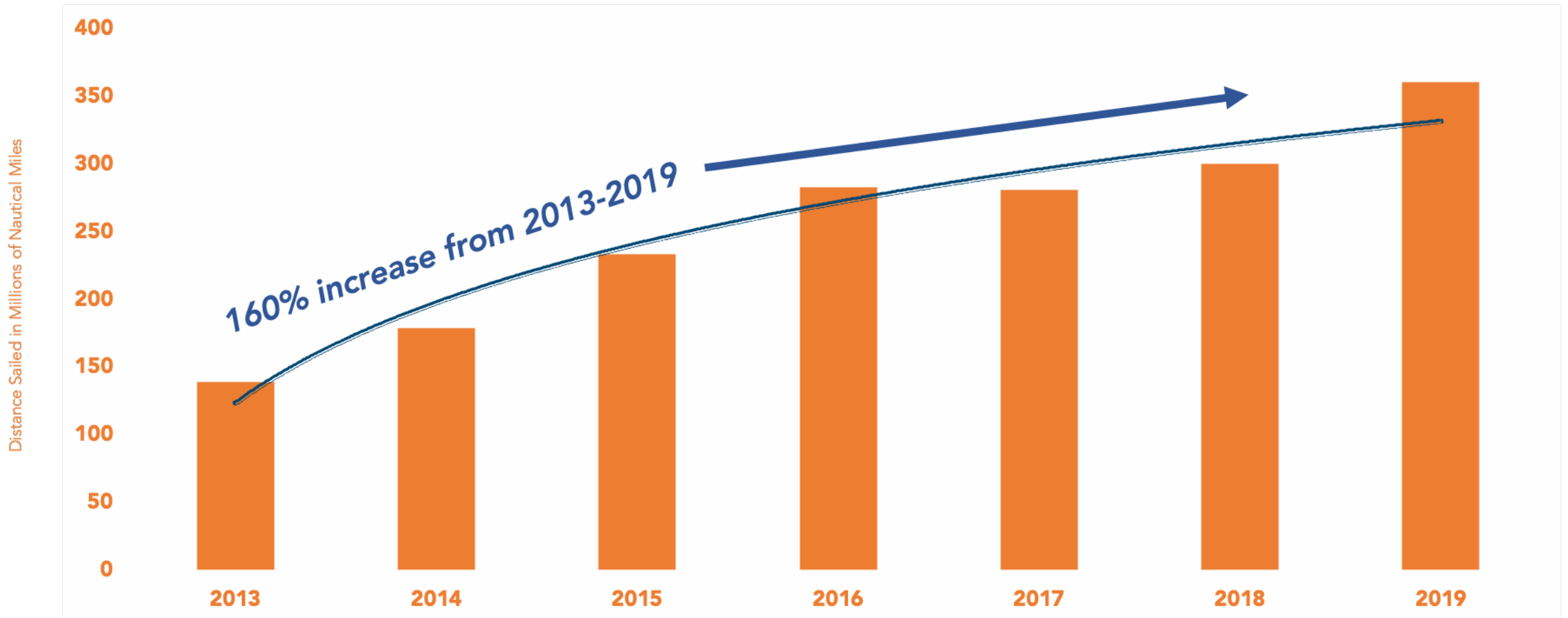


# BULK CARRIERS

## 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](http://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**



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](#)