



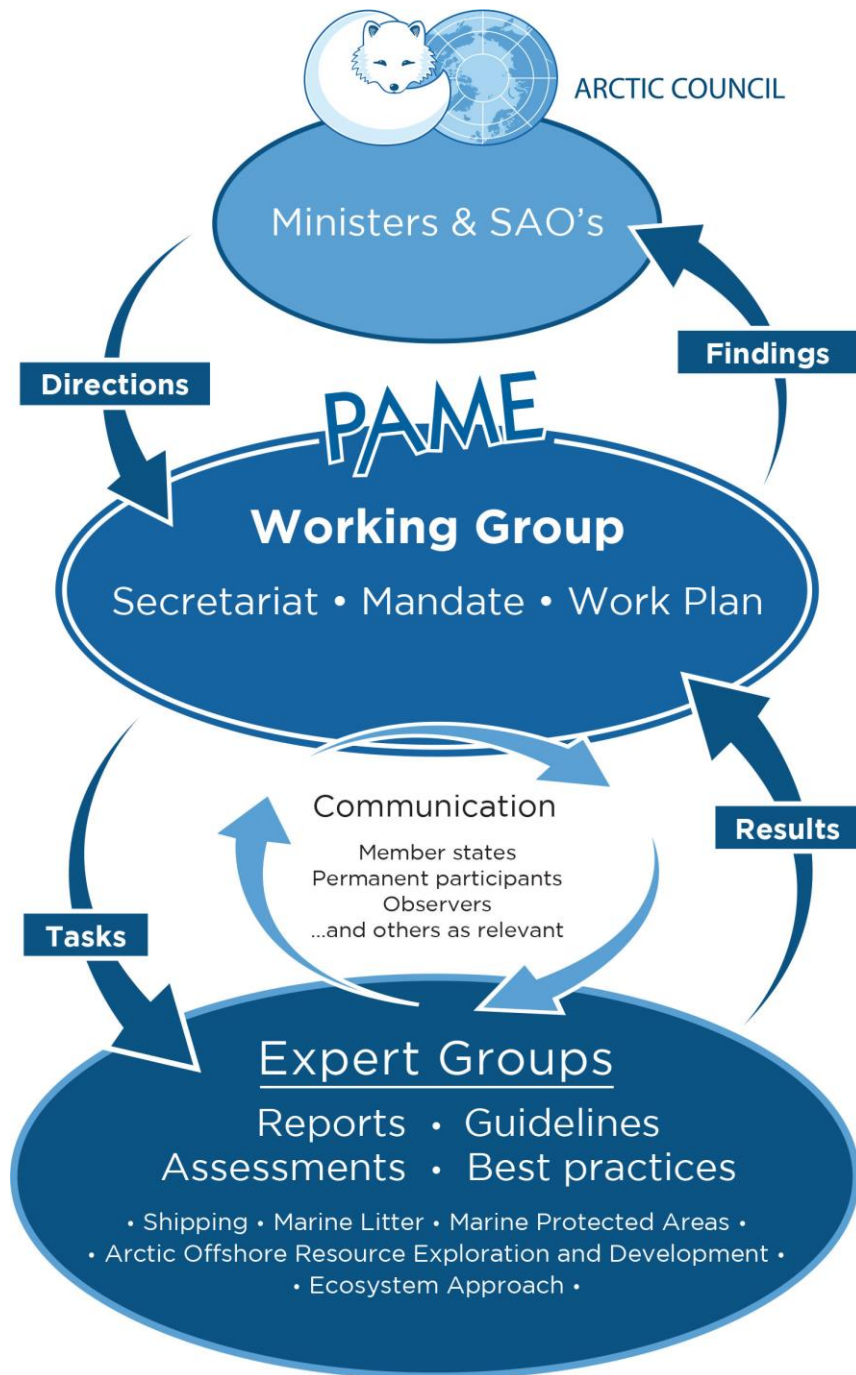
Arctic Ship Traffic Data

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Project Manager

ARHC VIRTUAL SCIENCE FORUM

11 AUGUST 2020



PAME

- First established in 1993 (Arctic Environmental Protection Strategy) – Arctic Council Working Group since 1996.
- **Focal point of Arctic Council's policy-related initiatives for the conservation and sustainable use of the Arctic marine environment.**
- Has a Chair, a Secretariat based in Iceland and six expert groups

Main Themes of PAME's Work

ARCTIC
MARINE
POLLUTION



ECOSYSTEM
APPROACH



ARCTIC MARINE SHIPPING



RESOURCE
EXPLORATION &
DEVELOPMENT



MARINE PROTECTED AREAS



FRAMEWORK
DOCUMENTS



PAME and ARHC

- MoU between PAME and ARHC approved
- PAME and ARHC *“both recognize that improving hydrographic surveys and charts in the Arctic is crucial to enhancing marine safety and protecting the environment from the effects of shipping.”*
- Purpose:
 - to foster greater communication between the ARHC and PAME, and;
 - To enhance coordination on strategies to improve hydrographic data in the Arctic.

Arctic Shipping Best Practice Information Forum

- **Established** in response to IMO's Polar Code
 - Entering into force on January 1st 2017
- **Aim:** To raise awareness of the Polar Code's provisions amongst all those involved in or potentially affected by Arctic marine operations and to facilitate the exchange of information and best practices between the Forum participants.
- Forum annual meetings
- Publicly accessible **web-portal** has been published – www.arcticshippingforum.is



Forum Participants

- Open to Arctic States, Permanent Participants and Arctic Council Observers, as well as *“any widely-recognized professional organization dedicated to improving safe and environmentally sound marine operations in the Arctic as demonstrated by expertise and experience in Arctic shipping and/or related issues.”*
- Over 50 participants so far – including ARHC
 - Participation in meetings
 - Links to web-portal forthcoming!

FORUM: PARTICIPANTS

This page lists Participants of the Arctic Shipping Best Practice Information Forum. According to the Forum's Terms of Reference, the "Arctic States intend Forum participation to be open to Arctic States, Permanent Participants and Arctic Council Observers as well as any widely-recognized professional organizations dedicated to improving safe and environmentally sound marine operations in the Arctic as demonstrated by expertise and experience in Arctic shipping and/or related issues...."

To apply for participant status, please contact PAME (pame@pame.is).

PARTICIPANTS

Please click the boxes for information on each participant

Alaska Maritime Prevention & Response Network (Alaska Network)

American Bureau of Shipping (ABS)

Arctic Coast Guard Forum (ACGF)

Arctic Economic Council (AEC)

Arctic Regional Hydrographic Commission (ARHC)

Website: <https://iho.int/en/arctic-rhc>

See also: <https://iho.int>



Association of Arctic Expedition Cruise Operators (AECO)

Bonn Agreement

British Antarctic Survey

Bureau Veritas

Chamber of Marine Commerce (Canadian Shipowners Association)

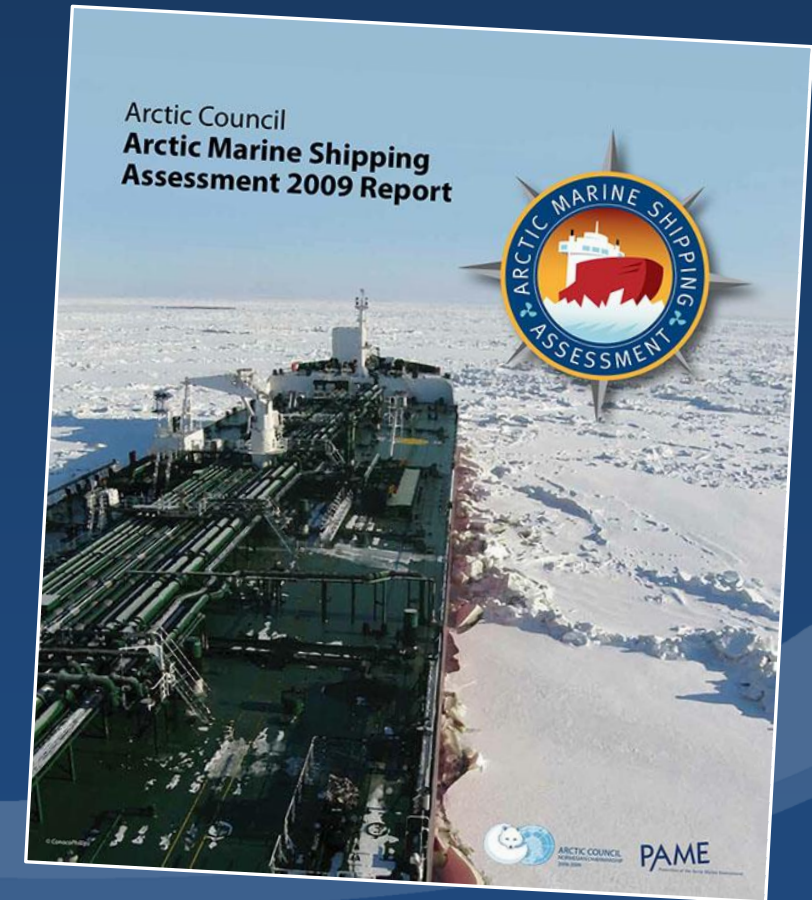
Chamber of Shipping of America

Cruise Lines International Association (CLIA)



AMSA 2009 Report

- Comprehensive assessment of current and future marine activity
- Contains recommendations which have helped shape PAME's work last 10 years
- Attempt to collect data on Arctic shipping
 - Data collected *very* basic
- Need for data update
 - Sustainable data collection crucial



Arctic Ship Traffic Data (ASTD)

Purpose:

Collect historical information about shipping activity in the Arctic from the Arctic States to use for trend analysis and related purposes under the auspices of the Arctic Council.

Outcome:

User-friendly maritime traffic analyses of Arctic shipping data that benefits the Arctic Council, its working groups and subsidiary bodies.

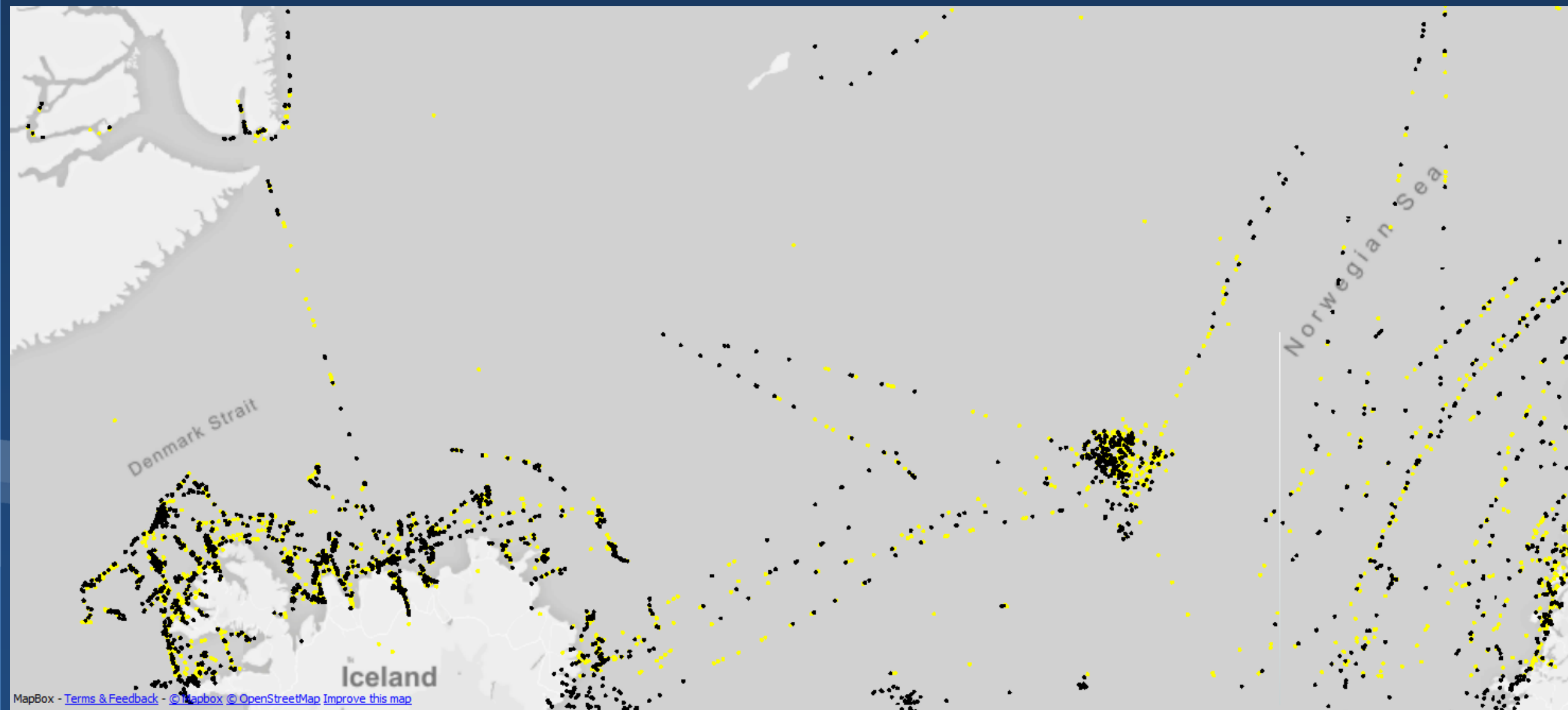


Data

- Data comes from Norway and USA
 - Over 20 satellites and 50 base-stations



High data quality and accuracy



Access to the ASTD System

Free access

Arctic State
Approved
Government
Agencies and
Ministries

Arctic
Council
Permanent
Participants

Arctic
Council
Working
Groups and
Task Forces

Fee for access

Professional Institutions
that have a
demonstrated public
commitment related to
the protection,
conservation, and
sustainable use of the
Arctic marine
environment.

Arctic
Council
Observer
States

Arctic Council
Observer
Organizations

USE OF ASTD DATA

ASTD

FOR PAME PROJECTS

Black Carbon emissions from shipping activity in the Arctic and technology developments for their reduction

PAME Outreach and Communication

Update/status report on current offshore oil and gas activities by Arctic States

Arctic Shipping Status Reports

Regional Action Plan on Marine Litter

Arctic Marine Tourism: Development in the Arctic and enabling real change

Arctic Shipping Best Practice Information Forum

Underwater Noise in the Arctic – Understanding Impacts and Defining Management Solutions

MAGAZINE

SEPTEMBER 2019 ISSUE

THE ARCTIC IS HEATING UP

North of the Arctic Circle, our planet is covered by an implacable frozen mass—a sea, as it turns out—that humans have long struggled to explore, understand, and ultimately subdue. From our pursuit of the Arctic's unique animals to our attempts to sail its icy passages to our obsessive quest to reach its desolate pole, we have found the Arctic irresistible and unyielding. Until now. Scientists say that by the middle of this century, rising temperatures could strip away the Arctic's fortress-like ice each summer, unlocking resources and shipping lanes while increasing political tensions, affecting people and animals, and potentially speeding up climate change. We sent writers and photographers to document how this enigmatic region is changing, who and what will feel the impact, and why it matters.



The melting Arctic is now open for business

 EXPLORE



A thawing Arctic is heating up a new Cold War

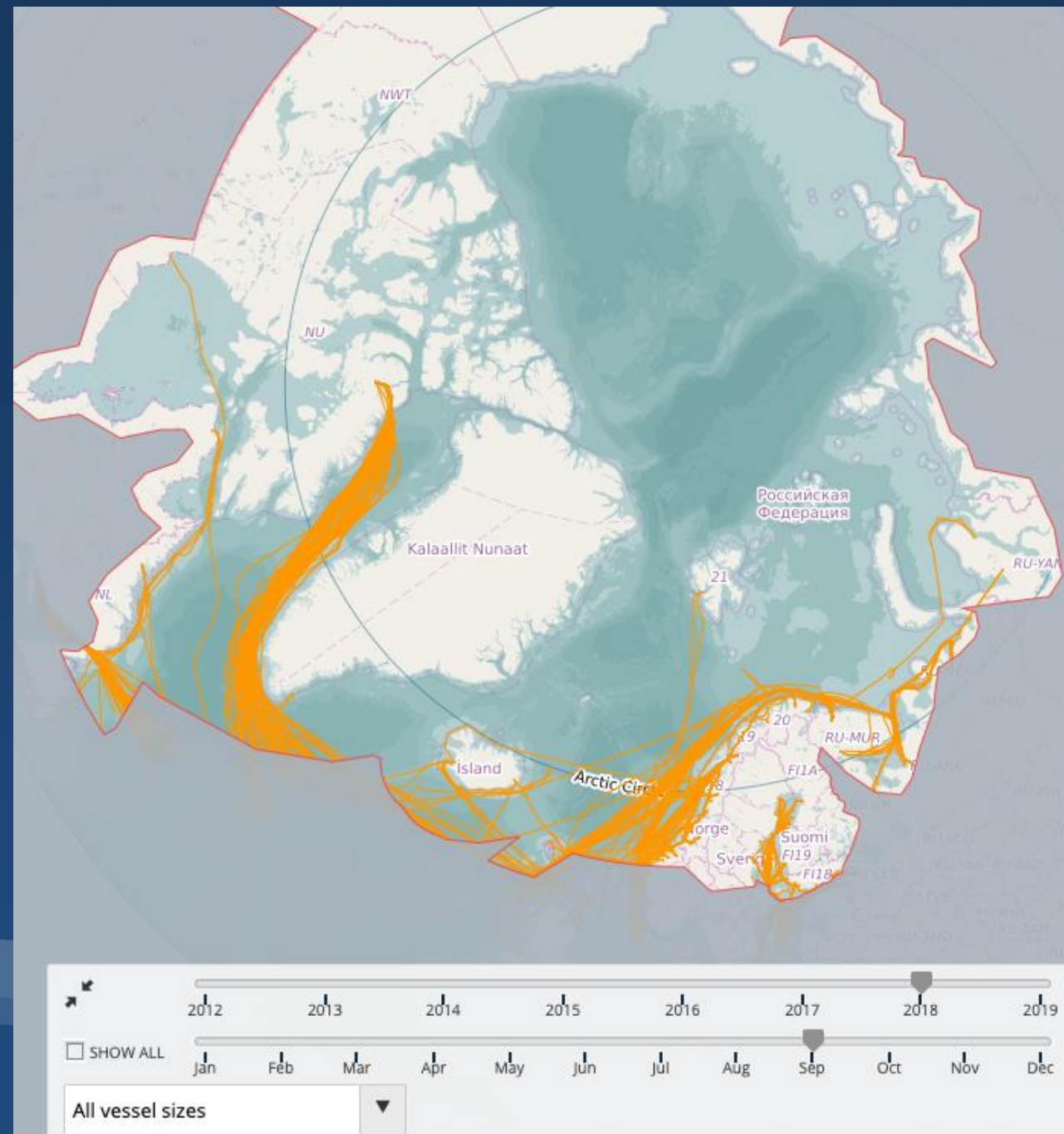
 READ



See which nations are claiming parts of the melting Arctic

 EXPLORE

Bulk carriers transport materials from northern mines, such as zinc from Alaska's Red Dog mine and iron ore from Canada's Mary River Mine. Currently only accessible in summer, the ports serving these mines could be more active for longer periods as sea ice declines.



ARCTIC SHIPPING STATUS REPORTS



PAME
Protection of the Arctic Marine Environment

THE INCREASE IN ARCTIC SHIPPING 2013- 2019

ARCTIC SHIPPING STATUS REPORT (ASSR) #1

The International Code for Ships Operating in Polar Waters (the Polar Code) defines the Arctic as the area in the figure.

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

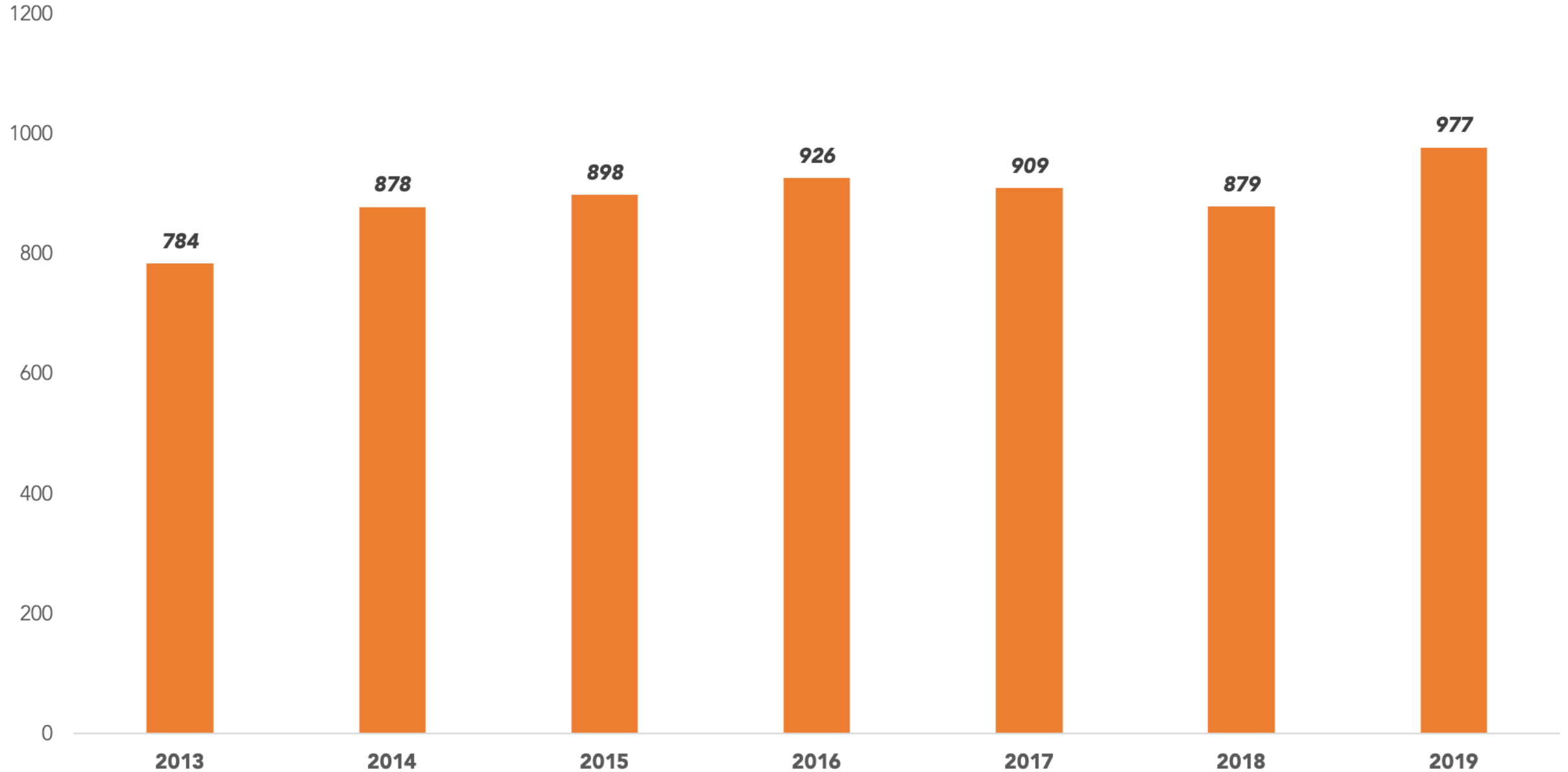


**There are many ways to measure the
volume of shipping in a given
geographic area.**

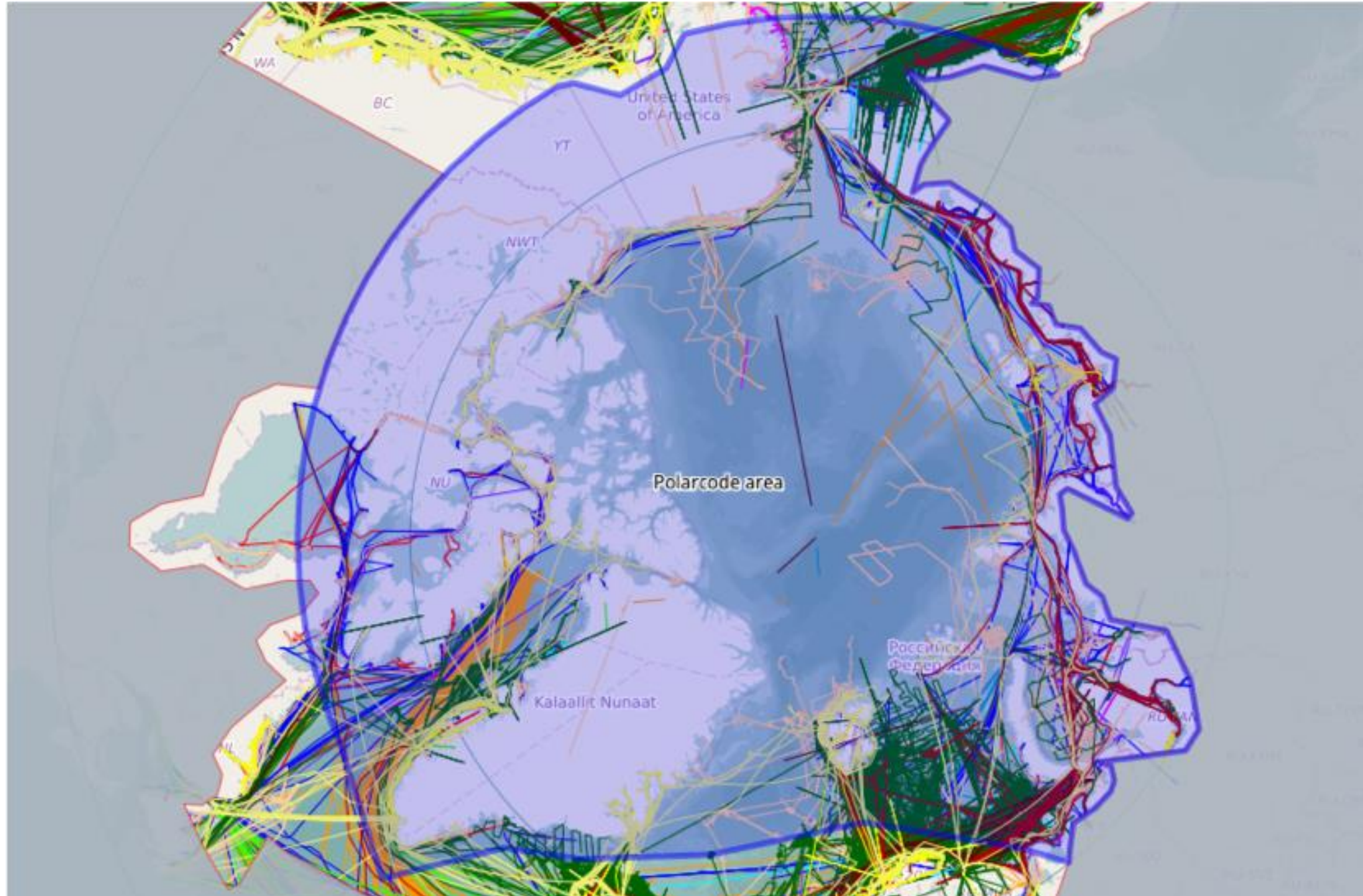
**One way is to count the
number of unique ships
in a specific area.**

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

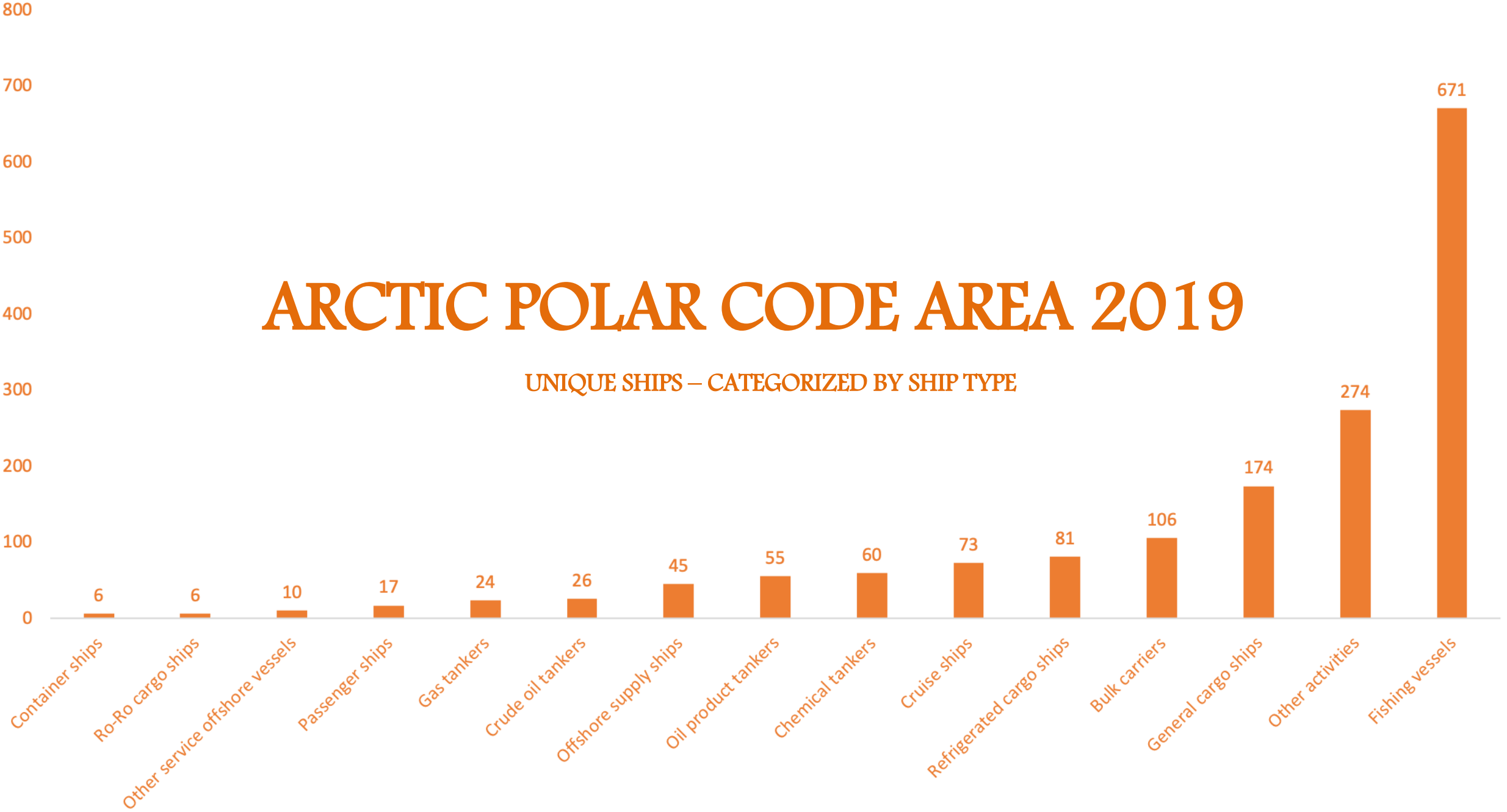
41%

were fishing vessels

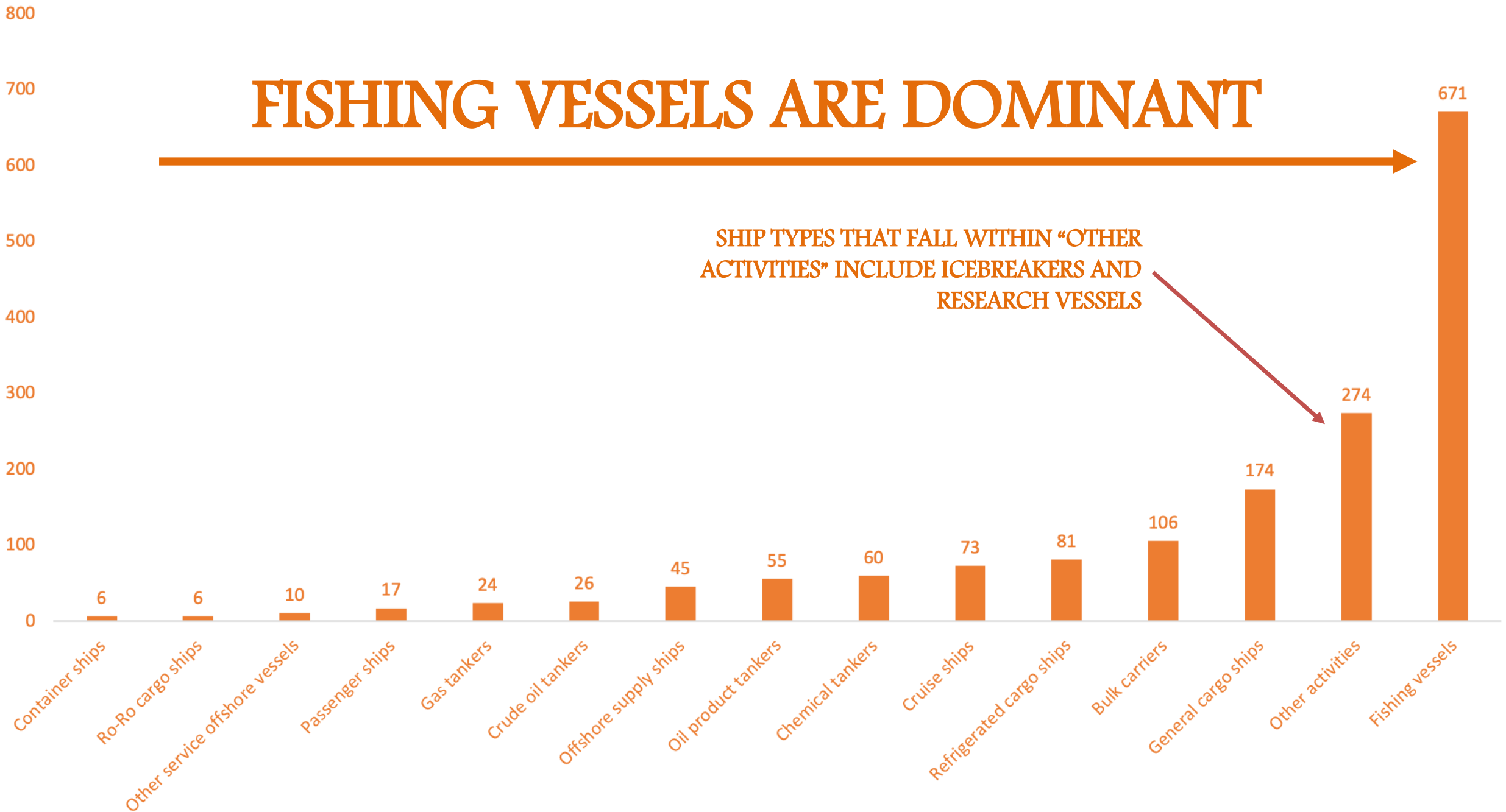


ARCTIC POLAR CODE AREA 2019

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.

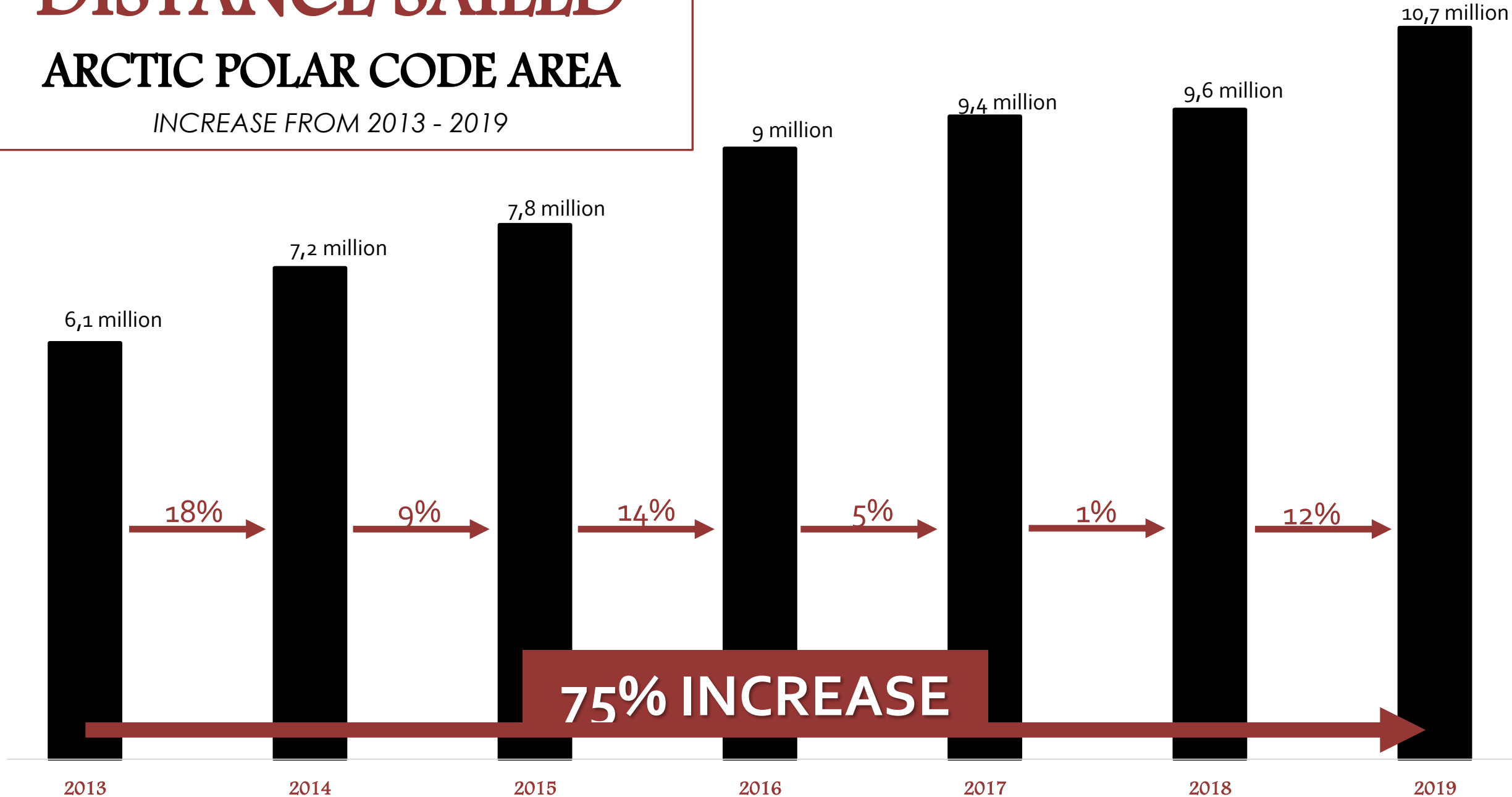
75%

*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

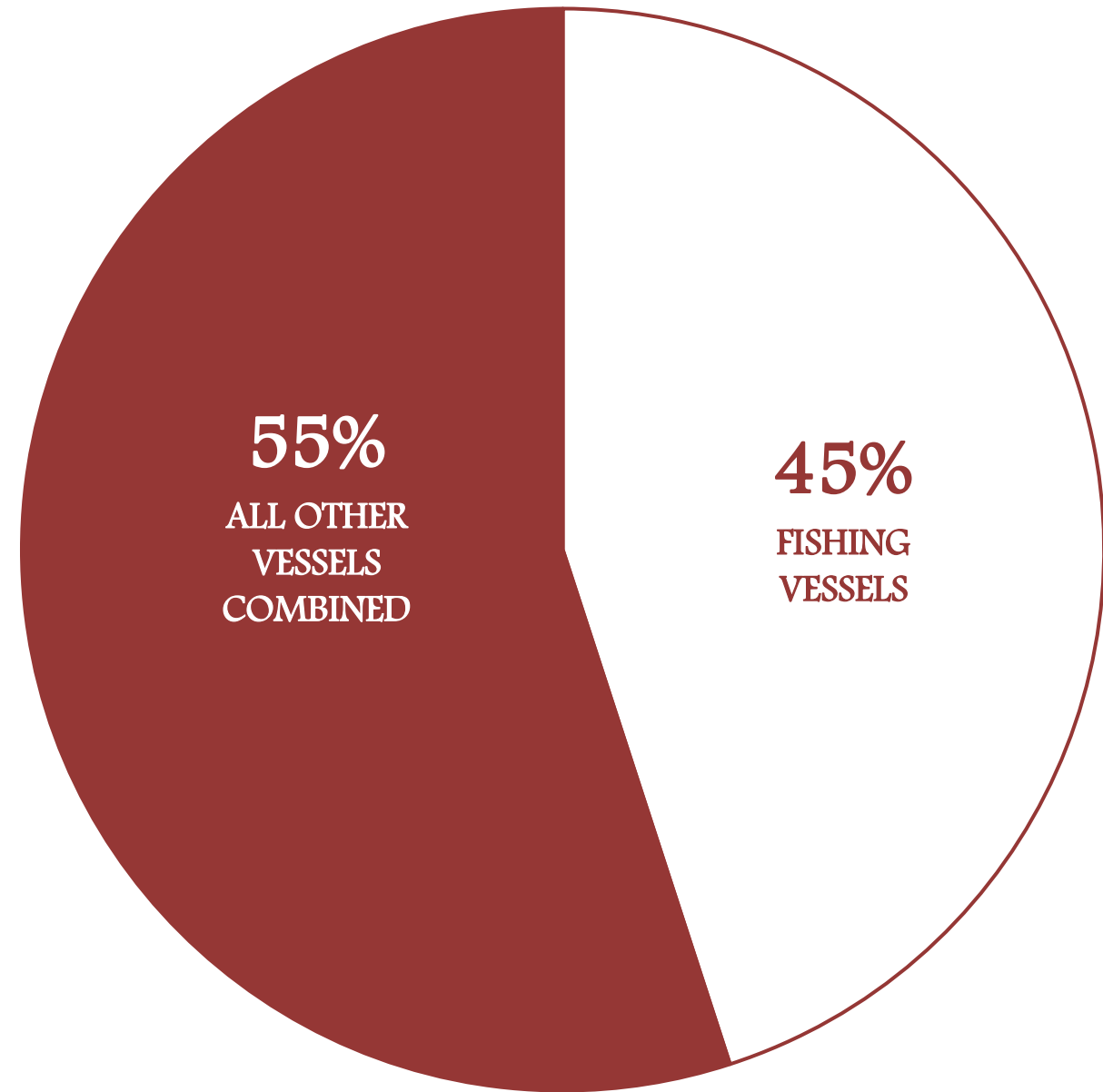
INCREASE FROM 2013 - 2019



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 *9.5 million* nautical miles.

As with unique ships - fishing vessels are dominant.



SAILED DISTANCE – ARCTIC POLAR CODE
AREA 2019

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.

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Ship Locations >



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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.

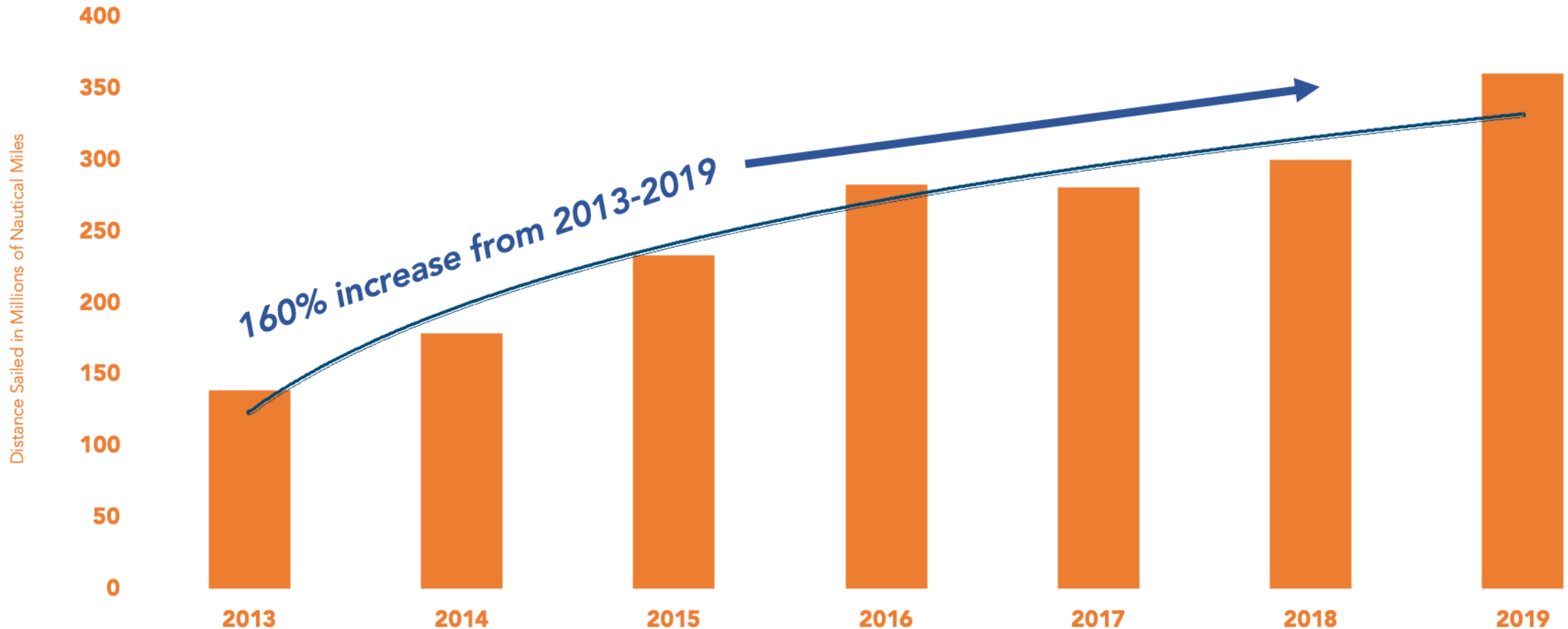


BULK CARRIERS

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.



Thank you

www.astd.is

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