



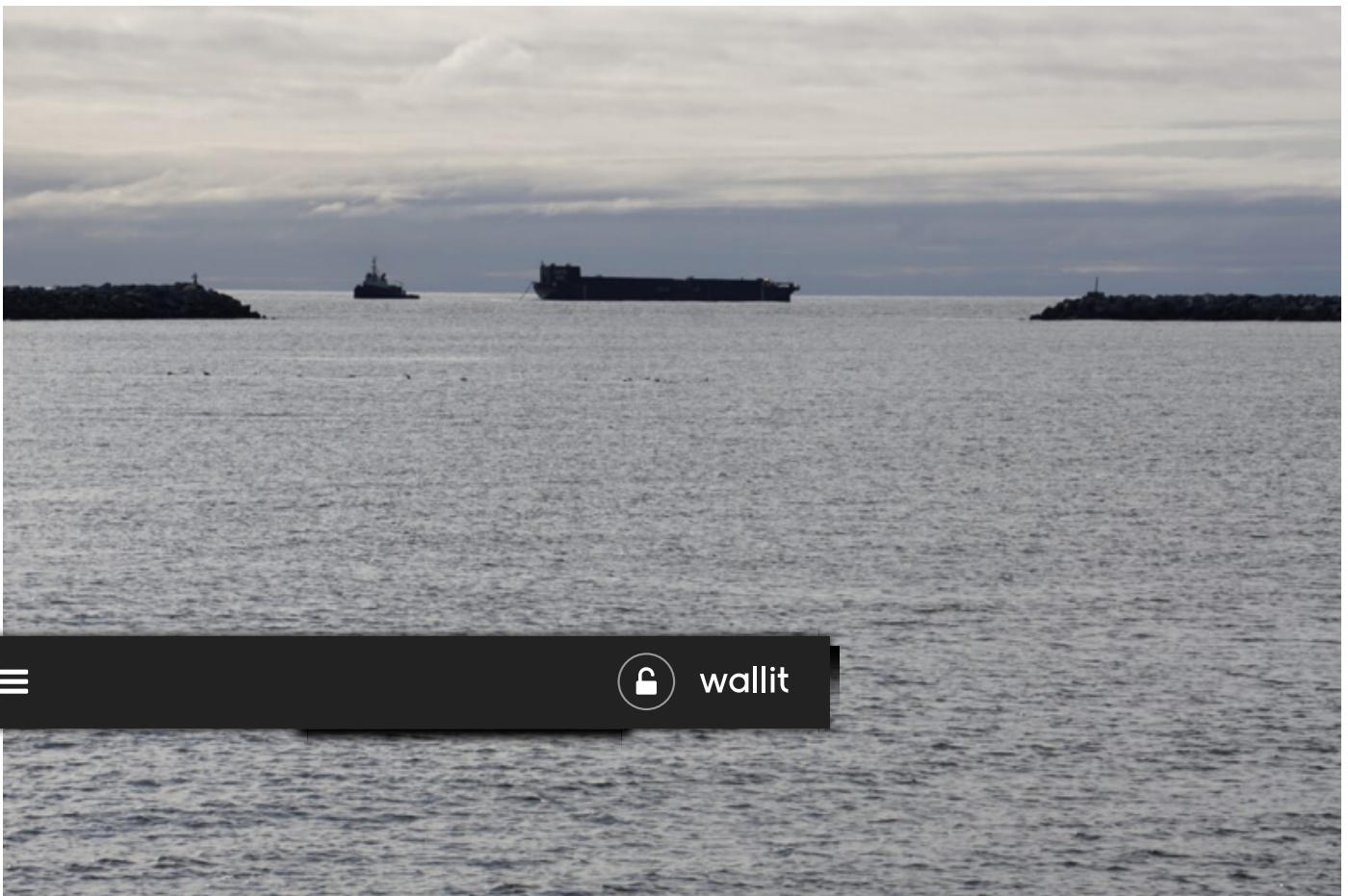
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Security Shipping

# Red Sea disruptions could be avoided in future by Arctic shipping, which may trouble ecosystems

By **Kemal Akbayirli, GOKCAY BALCI** - February 1, 2024

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*A cargo ship and tug pass by the entrance to the Port of Nome on Sept. 29, 2020. Planned port expansion, which got a \$250 million allocation through the Infrastructure Investment and Jobs Act, would extend and rearrange the causeway on the right and the breakwater on the left to create a much larger protected area that could accommodate deeper-draft vessels traveling in and out of the Arctic. (Photo by Yereth*

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Attacks by Yemeni [Houthi rebels](#) on merchant ships in the Red Sea have hit world trade. Between November and December 2023, the number of containers travelling through the Red Sea each day [fell by 60%](#) as ships moving goods between Asia and Europe diverted their routes around the Cape of Good Hope at the southern tip of Africa.

This route results in at least [ten days more](#) sailing time, so has caused freight [prices to surge](#) and has triggered costly [delays to production](#). The region has become a bottleneck for the global economy before. The Suez canal, a waterway that connects the Mediterranean Sea to the Red Sea, was blocked for six days in 2021 after a container ship called the Ever Given ran aground, disrupting [billions of dollars](#) worth of trade.

The cape route has been used each time passage through Suez has been disrupted. But there is an alternative sea passage between Asia and Europe – the [Northern Sea](#) route.

This route, which runs from the Barents Sea near Russia's border with Norway, to the Bering Strait between Siberia and Alaska, may be a better option and will soon become available if [global warming continues](#) at the predicted rate. Nevertheless, it currently faces many challenges.

## An alternative for world trade?

[Research](#) estimates that summer sea ice around the Siberian coast will be melted completely by 2035. Even if ice cover is not completely removed, the thickness of the sea ice – one of the initial barriers to Arctic shipping – has [significantly reduced](#) over the past four decades from 3.64 metres to 1.89 metres. Arctic navigation is thus expected to be viable by the [beginning of the next decade](#).

For shipments between Shanghai and Rotterdam, the Northern Sea route reduces the

distance that ships will need to travel by around [3,000 nautical miles](#) compared to Suez and [6,200 miles](#) compared to the cape route. This would [reduce](#) the amount of time it takes to sail between eastern Asia and northern Europe to 18 days (it currently takes 32 days via Suez).

Arctic navigation is also performed at very slow speeds – [under 18 knots](#) (roughly 21mph). So, depending on sailing speed and the type of fuel used, a cargo ship that passes through the Northern Sea route could use [40% less fuel](#) and generate up to 80% fewer emissions than if it used the Suez route.

## But is it viable?

Despite its advantages, Arctic navigation is highly seasonal, restricted to the months between [July and November](#). Navigating ships through the Northern Sea route also requires an escort behind a nuclear-powered icebreaker ship. But the number of icebreakers is limited. Just [five](#) operated on the Northern Sea route in 2021, rising to [nine](#) by 2030.

The Northern Sea route also suffers capacity issues. So-called “mega-vessels” that have a capacity of around 20,000 containers are deployed for trade between Asia and Europe. However, the Northern Sea route is not able to accommodate mega-vessels due to the imposition of restrictions based on the depth of sea ice.

Nowadays, only vessels with a roughly [5,000 container carrying capacity](#) can easily navigate through the North Sea route during the summer.

## Fragile Arctic ecosystems

Cargo ships that pass through the Northern Sea route would potentially generate [fewer carbon emissions](#) than ships that travel through Suez. But this alternative route is subject to other environmental challenges.

Arctic ecosystems take a long time to recover from disturbances like oil spills. Accidents in these sensitive regions may thus cause unimaginable marine pollution.

In 1989, for example, the [Exxon Valdez](#) oil tanker ran aground in Prince William Sound, Alaska, spilling more than [250,000 barrels](#) of oil into the sea. The oil spill [killed](#) billions of salmon and more than 300,000 animals from a variety of fish and bird species.

More than 25 years since the spill, four of these species ([killer whales](#), [Kittlitz’s murrelets](#), [marbled murrelets](#) and [pigeon guillemots](#)) have not been re-encountered

in the region.

Many cargo ships also carry ballast water to maintain stability during various stages of their operation. Ballast water is taken on or discharged throughout the ship's journey. This practice could potentially result in the [migration of invasive species](#) to the unique Arctic ecosystem.

## Routes are changing

Despite these challenges, Arctic shipping traffic is increasing. Between 2013 and 2017, the volume of cargo traffic on the Northern Sea route [rose](#) from 2.8 million tons to 10.7 million tons.

In 2023, this had grown to [36.2 million tons](#). And it shows no signs of slowing down. In 2024, Russia's icebreaker fleet expects to conduct [1,747 escorts](#) (up from [1,218](#) in 2023).

The Northern Sea route is currently not able to accommodate the vessel traffic and amount of cargo that passes through the Suez Canal. But it could be a viable alternative in the future depending on how fast progress is made on tackling global warming and developing a regulatory framework for navigating the Arctic region.


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