

An icebreaker making a path for a cargo ship near a port on the Alexandra Land island near Nagurskoye, Russia, Monday, May 17, 2021.
Credit: AP Photo/Alexander Zemlianichenko



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Arctic Shipping: Trends, Challenges, and Ways Forward

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The Arctic is continuing to warm three to four times faster than the global average and the sea ice extent is declining precipitously during all months of the year. Due to these trends, shipping activity in the region has expanded significantly over the past two decades. This brings new challenges to maritime safety, sensitive ecosystems, and local people.

Recent Shipping Trends

According to the Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group, shipping activity in the Arctic region grew by 25% from 2013 to 2019, and continues to

grow. A major driver has been traffic in the Russian Arctic. The number of goods transported on the Northern Sea Route (NSR) over the last six years rose from 5.4 million tons to 33 million tons in 2020.¹ While transit shipping in the NSR remains modest (around one million tons), transportation of resources extracted in the Russian Arctic accounts for the bulk of shipping in the NSR and its further growth.² The sanctions imposed on Russia in the wake of the war in Ukraine, as well as the withdrawal of many foreign companies, will obviously delay the Russian Arctic projects from coming into operation. On the other hand, Russia will most likely expand resource exports to Asian markets to compensate for the losses in Europe, including through the Arctic.

In the U.S. Arctic, vessel traffic remains moderate and is not expected to grow significantly, although future development of resources in Alaska and the Canadian territories is a viable scenario. Shipping through the Northwest Passage would be limited due to much harsher ice conditions compared to the NSR.

Challenges and Risks

Growing shipping poses multiple threats to maritime safety, local ecosystems, and communities. First, ships operating in polar waters face various unique risks: severe weather conditions; low temperatures; remoteness; insufficient search and rescue capabilities, communication systems, and other navigational aids; and limited navigation charts. Despite the receding Arctic ice, the northern seas and drifting ice can damage ships even in the summer season, as evidenced by numerous recent incidents.³

For this reason, Arctic navigation requires special knowledge, skills, and experience from the crew, as well as higher standards for ship design and construction. Therefore, the growing number of ships coming from non-Arctic regions due to increased accessibility of the polar waters can result in serious threats to maritime safety. In particular, many newcomers enter the Arctic under “flags of convenience,” some of which have less control over their ships in terms of compliance with high technical requirements and crew-related standards.

The increase in vessel traffic endangers the sensitive Arctic marine environment. Among the most significant shipping-related environmental threats is an oil spill. An oil spill in ice-covered waters can be catastrophic and much more challenging to contain and clean up, compared to ice-free areas, due to the lack of appropriate technologies. Threats to marine species and birds include: air, water,

1 Northern Sea Route traffic increased in 2020 by 4.7% (2021). Port News, <https://portnews.ru/news/307245/>

2 Cargo traffic on the Northern Sea Route in 2020 reached 31 million tons (2021). Port News, <https://portnews.ru/news/307245/>

3 A. Staalesen (2021). A critical situation might be in the making on the Northern Sea Route. *The Barents Observer*. <https://thebarentsobserver.com/en/arctic/2021/11/critical-situation-might-be-making-northern-sea-route>

and noise pollution; disturbances leading to behavioral changes in marine mammals; spread of invasive species through ship ballast water; ship strikes with marine mammals; and plastic waste from ships. Since many Arctic residents and Indigenous peoples rely on subsistence hunting, fishing, and gathering, local communities are also affected by increasing shipping.

Ways to Address the Challenges

Interested states have made efforts to address shipping-related hazards in the Arctic. The adoption of the Polar Code by the International Maritime Organization (IMO) introduced minimum safety requirements and standards related to the protection of the marine environment. Other major milestones in international regulation of polar shipping include the ban on heavy fuel oil in the Arctic and ongoing IMO negotiations on underwater noise pollution. However, these instruments are not ideal and leave many gaps in the Arctic shipping governance. There is also a question of implementing the IMO-based instruments: e.g., the Polar Code leaves much to the discretion of the flag states in terms of defining the exact scope and substance of safety standards, exacerbating the problem of “flags of convenience.”

This has prompted the stakeholders – states, local communities, shipping companies – to find ways to address remaining problems. **Potential remedies that are being discussed:**

- Enhanced exercise of coastal and port states’ jurisdiction and Port State Control involving countries from non-Arctic regions – ships engaged in Arctic shipping often call in ports outside of the Arctic before entering into the region
- Establishment of capacity-building and training programs for port authorities and seafarers
- Training of local people with regard to oil spill response, search, and rescue
- Enhanced integration and implementation by cruise tour operators of best practices related to navigation in Arctic waters
- Enhanced information sharing between countries on weather, ice conditions, and charting
- Establishment of IMO-based management tools in especially sensitive marine subregions – Particularly Sensitive Sea Areas, Areas To Be Avoided, speed restrictions, ship reporting and routing systems, etc.

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