

Arctic Winter College 2021

Policy Briefs #2 Marine and Maritime Issues 2

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THE ARCTIC INSTITUTE
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Arctic Winter College 2021

Marine and Maritime Issues 2

Foreword

Through a partnership with the National Science Foundation-funded Migration in Harmony Research Coordination Network and the Ecologic Institute, The Arctic Institute is publishing a series of briefs on Arctic migrations and mobilities written by Fellows of the 2021 Arctic Winter College. The Arctic Winter College brought together 60 emerging leaders and experts from across the world for 10 weeks in a free series of web-based seminars, the videos of which can be viewed on YouTube here. The program builds a lasting, policy-oriented network of Arctic professionals to strengthen communication between peoples and nations, scientific disciplines, policy areas, and across the science-policy interface to improve collaborations, research, and decision-making in the Arctic. Weekly webinars focused on the theme “Arctic on the Move.” Urbanization, globalization, and the impacts of climate change are activating the simultaneous migrations of species, ecosystems, settlements, and cultures across Arctic coastlines in new and unpredictable ways. Each of these intersecting mobilities challenge the quality of life, sustainable development, and environmental health of the circumpolar north. Participants engaged with Arctic researchers, traditional knowledge holders, and practitioners in a variety of fields related to movement to deepen their understanding of a rapidly changing region and its global connections.



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Arctic Winter College 2021

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REGULATING ANTHROPOGENIC UNDERWATER NOISE POLLUTION IN BAFFIN BAY

Regulating Anthropogenic Underwater Noise Pollution In Baffin Bay

Anna Margarete Pluschke

SUMMARY¹

- Anthropogenic underwater noise is a threat to marine life
- It is not yet sufficiently regulated
- Once it is tackled, the effect is immediate with little repercussions

Anthropogenic underwater noise constitutes a considerable negative impact on marine life, especially mammals. Baffin Bay is located within the Arctic Ocean and connected to the Northwest Passage (NWP) in the north. Even though the NWP is not likely to become a major new shipping route in the coming years, underwater noise pollution from ships might significantly increase anyway² thanks to progressive sea ice melting and subsequent longer ice-free periods, which allow for more tourism and cruises with bigger ships.³ The aim of this briefer is to provide an overview of the issue of anthropogenic underwater noise from ships in this region and briefly discuss possible solutions.

THE ISSUE: INSUFFICIENT REGULATION

Bowhead whales, belugas, and narwhales, which spend the entirety of their lives in Arctic waters, form permanent populations in the region.⁴ Other animals living in Arctic waters besides fish include killer and humpback whales, walrus, and seals.⁵ Those migratory marine mammals join the endemic mammals during the ice-free season in the Arctic – increasingly due to ocean warming.⁶ Anthropogenic noise hinders the communication of animals and can cause disabilities such as complete hearing loss and expulsion of an animal from its natural habitat.⁷ Most anthropogenic underwater noise stems from shipping activities.⁸ The noise originating from commercial ships mostly derives from the cavitation at the propeller, from water flowing

¹ This briefer is based on the author's master's thesis "Protecting the marine environment from the impact of shipping between Western Greenland and North-Eastern Canada – An evaluation of current protection regimes in light of increased shipping in the Northwest Passage" submitted in 2020 at the University of Oslo and supervised by Professor Erik Røsæg.

² PAME, "Underwater Noise in the Arctic: A State of Knowledge Report,"

<https://www.pame.is/Index.php/Document-Library/Pame-Reports-New/Pame-Ministerial-Deliverables/2019-11th-Arctic-Council-Ministerial-Meeting-Rovaniemi-Finland/421-Underwater-Noise-Report/File>, May 2019, 7.

³ Vard Marine Inc., "Canadian Arctic Greywater Report: Estimates, Forecasts, and Treatment Technologies," May 29, 2018, http://d2akrl9rvxl3z3.cloudfront.net/downloads/ward_360_000_01_dfr_rev2_29_05_2018.pdf, 4.2.

⁴ PAME, "Canadian Eastern Arctic - West Greenland LME," 2016,

https://www.pame.is/images/03_Projects/EA/LMEs/Factsheets/16_Baffin_Bay_revised.pdf, 3.

⁵ Ibid., 3 et seq.

⁶ William D. Halliday, Matthew K. Pine and Stephen J. Insley, "Underwater noise and Arctic marine mammals: review and policy recommendations," *Environmental Reviews* 28, no. 4 (December 4, 2020): 438–448, 441.

⁷ Mirjam Müller and Stefanie Werner, "Dauerlärm Und Kein Entrinnen - Schallbelastung in Der Unterwasserwelt," *Politische Ökologie* 145, no. 2 (May 27, 2016): 64–71, 66.

⁸ German Environment Agency, "Underwater Noise - a Man-Made Problem," Umweltbundesamt, February 29, 2016, <https://www.umweltbundesamt.de/en/underwater-noise#underwater-noise-a-man-made-problem>.

around the hull and the machinery at large.⁹ Icebreaker ships create additional noise. To secure a healthy marine life, a reduction of underwater noise is desirable. This can practically be achieved through lower speed limits, amendments to existing shipping routes,¹⁰ and changes to the propeller, engine, and hull.¹¹

INTERNATIONAL AND DOMESTIC LAWS AND APPROACHES

Baffin Bay is governed by international, Canadian, Greenlandic, and Danish law.¹² Internationally, the IMO provides non-mandatory guidelines to mitigate noise pollution from ships through technical and structural advice given in the shipbuilding and operating phases.¹³ An international treaty, however, is not yet in place.¹⁴ Accordingly, there are no explicit provisions in the UNCLOS or the Polar Code that address underwater noise pollution. An indirect provision in the Polar Code Part I-A is not designed to reduce underwater noise but rather a more general provision on the avoidance of marine mammals. It obliges the master to take into account “current information and measures to be taken when marine mammals are encountered relating to known areas with densities of marine mammals, including seasonal migration areas” when determining the route.¹⁵ Avoidance is likely to mitigate the impact of underwater noise to some extent, even though it cannot be guaranteed that re-routing is always possible. Moreover, certain invertebrates which are also impacted by noise, e.g. in their navigation and communication, are not protected by the provision.¹⁶ That is why noise reduction of the ship’s machinery, propeller, and hull appears to be an effective measure to combat underwater noise. This, however, has not yet been regulated. In 2018, the nineteenth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea took place, during which the delegations presented and discussed knowledge and ideas on anthropogenic underwater noise. Internationally, there is growing awareness for the issue, but the discussions have not yet led to an agreement on a legally binding framework.

Within the scope of the IMO’s Marine Environment Protection Committee (MEPC), Canada encouraged other member states in 2018 to address anthropogenic underwater noise from ships in future discussions.¹⁷ On a national basis, Canada is ahead of other countries in dealing with underwater noise pollution. Recently, Transport Canada launched a five-year program called Quiet Vessel Initiative with a budget of 26 million CAD aimed at reducing underwater noise from ships.¹⁸ The program includes collaboration with Indigenous communities and is funding research as well as furthering the development of technologies for ships that reduce

⁹ John A. Hildebrand, “Anthropogenic and Natural Sources of Ambient Noise in the Ocean,” *Marine Ecology Progress Series* 395 (December 3, 2009): 5–20, 9.

¹⁰ WWF, “Underwater Noise from Arctic Shipping - Impacts, Regulations and Recommendations,” http://awsassets.wwf.ca/downloads/170412___underwaternoise.duetoshipping.pdf?_ga=1.31906808.735604524.1468957492,2017,5.

¹¹ S.V. Vakili, A.I. Ölcer, and F. Baldini, “The Development of a Policy Framework to Mitigate Underwater Noise Pollution from Commercial Vessels,” *Marine Policy* 118 (April 29, 2020), 3.

¹² Greenland is part of the realm of the Kingdom of Denmark and only governs 3nm from its baseline. Denmark governs the waters from 3nm up to 200nm.

¹³ IMO, “Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life (MEPC.1/Circ.833),” April 7, 2014, <https://cetsound.noaa.gov/Assets/cetsound/documents/MEPC.1-Circ%20883%20Noise%20Guidelines%20April%202014.pdf>.

¹⁴ Yoshifumi Tanaka, *The International Law of the Sea*, Third Edition (Cambridge University Press, 2019), 372.

¹⁵ IMO, “Annex International Code for Ships Operating in Polar Waters (Polar Code), Resolution MSC.385(94)”, November 21, 2014, <http://www.imo.org/en/MediaCentre/HotTopics/polar/Documents/POLAR%20CODE%20TEXT%20AS%20ADOPTED.pdf>, Part I-A chapter 11 11.3.6.

¹⁶ German Environment Agency, “Underwater Noise - a Man-Made Problem.”

¹⁷ IMO, “Reducing Underwater Noise Utilizing Ship Design and Operational Measures MEPC 72/16/5,” 2018.

¹⁸ Transport Canada, “Quiet Vessel Initiative,” Canada.ca, 2020, <https://tc.canada.ca/en/programs/quiet-vessel-initiative>.

noise levels.¹⁹ In contrast, Denmark is not yet engaged in any legally binding noise pollution prevention program. In the Danish Marine Strategy II, published in 2019, it is stated that noise pollution levels to better the environmental status have not yet been set, thus no prediction can be made on how long it will take to achieve a “good environmental status.”²⁰ Currently, Greenland is not engaged in an initiative to reduce underwater noise from shipping in their maritime zone either.

The lack of sufficient regulation internationally and domestically, even with Canada having started to act on the matter, provokes an urgent need for action. The non-regulation of underwater noise pollution constitutes an evidential legal gap in the international and domestic protection regimes for the Arctic environment. However, the issue is beginning to be addressed in the work and discussions of the Arctic Council.

THE WORK OF THE ARCTIC COUNCIL

The Arctic Council, established in 1996, is the main regional inter-governmental forum in the Arctic supporting cooperation on environmental protection and sustainable development among the Arctic States, Arctic Indigenous peoples, and other Arctic inhabitants.²¹ Even though the Arctic Council has no legislative power, it strengthens regional cooperation through the activities of its working groups to inform environmental protection regimes. The outcome of the Arctic Council’s work is limited to guidelines and recommendations based on their assessment reports.²²

It was in 2009 that the Arctic Council first mentioned underwater noise pollution from shipping in the Protection of the Arctic Marine Environment Working Group (PAME) and recognized its harmful effects upon life in the Arctic.²³ In May 2019, the working group published a report on underwater noise in the Arctic.²⁴ The main purpose of the report was to obtain substantial knowledge on underwater noise in Arctic waters, including its sources and impacts on marine life.²⁵ The report concluded that studies show negative reactions of narwhales and belugas to ship noise from ice breakers in particular.²⁶ It is noteworthy that the entire report only covers endemic and not migratory species leaving the knowledge report limited rather than encompassing. In February 2021, the PAME working group published another report based on a study conducted between 2013-2019 on modelling underwater noise. This study determined Baffin Bay as an area with frequent shipping and a high amount of mammals.²⁷

¹⁹ Transport Canada, “Government of Canada collaborates with Indigenous communities to address underwater vessel noise along the Trans Mountain shipping route,” Canada.ca, September 2020, <https://www.canada.ca/en/transport-canada/news/2020/09/government-of-canada-announces-25-million-for-indigenous-communities-to-address-underwater-vessel-noise-along-the-trans-mountain-shipping-route.html>; This project is based along the Trans Mountain shipping route in Western Canada.

²⁰ Ministry of Environment and Food of Denmark, “Danish Marine Strategy II - Focus on a Clean and Healthy Marine Environment,” 2019, https://mfvm.dk/fileadmin/user_upload/MFVM/Natur/Havstrategi/Danish_Marine_Strategy_II_UK.pdf, 33.

²¹ The Arctic Council, “About,” Arctic Council, accessed October 12, 2020, <https://arctic-council.org/en/about/>.

²² Andrea Charron, “Canada and the Arctic Council,” *International Journal (Toronto)* 67, no. 3 (July 1, 2012): 765–83, 770.

²³ The Arctic Council, “Arctic Marine Shipping Assessment 2009 Report,” https://Pame.Is/Images/03_Projects/AMSA/AMSA_2009_report/AMSA_2009_Report_2nd_print.Pdf, April 2009, 145.

²⁴ PAME, “Underwater Noise in the Arctic: A State of Knowledge Report.”

²⁵ *Ibid.*, 5.

²⁶ *Ibid.*, 38.

²⁷ PAME, “Underwater Noise Pollution from Shipping in the Arctic,” https://oaarchive.arctic-council.org/bitstream/handle/11374/2564/SAOIS203_2021_RVK_Virtual1-InfoDoc_PAME-Underwater-Noise-Arctic-Impacts-Management-Solutions-Final-Phase-1-Report.pdf?sequence=1&isAllowed=y, February 2021, 8.

POLICY IMPLICATIONS AND CONCLUSION

In order to draft legally binding rules in the future, a consensus baseline is needed to achieve a broad agreement. The work within the Arctic Council contributes to international discussion to a solution on this matter. But the question remains why underwater noise pollution from ships has not been tackled yet. One of the biggest issues hindering a solution is still an overall lack of knowledge regarding anthropogenic underwater noise. Although this is, thanks to the Arctic Council, changing.

Progress in establishing legally binding regulations depends first and foremost on the establishment of international conventions. Only after the establishment of such conventions, the Polar Code and in turn domestic legislation are likely to address the pollutant. Possible options could be a separate international treaty covering noise as a pollutant or the implementation of noise as a pollutant into existing international law, as for example as additional Annexes to the MARPOL. Another concrete solution and tool to mitigate the effects of underwater noise pollution on marine life is the establishment of marine protected areas (MPAs) in domestic jurisdictions as well as areas beyond national jurisdiction. PAME established guidance on establishing MPAs under domestic jurisdiction in 2015.²⁸ Regarding the latter, this could be achieved by establishing an UNCLOS instrument which is already under vibrant discussion. A positive outlook is the immediate impact once a solution is found. Thankfully anthropogenic underwater noise is not a pollutant leaving long lasting repercussions.

²⁸ PAME, “Framework for a Pan-Arctic Network of Marine Protected Areas,” <https://www.cbd.int/doc/c/5cf7/7362/9f192304f1f6fc14bdf6ed5e/ebsaem-2017-01-norway-submission6-en.pdf>, April 2015.

INCREASING ARCTIC SHIPPING AND POLAR CODE

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SUMMARY

The Arctic is becoming more popular for maritime activities due to the diminishing sea ice due to global warming. The Arctic's future is uncertain, but it is considered that the ice cap will continue to melt. The future of the area can present significant challenges and opportunities in the maritime domain. The changes in sea ice extent and ship traffic in the last few years show a possible increase in the future. The purpose of this brief is to present the latest trends in Arctic maritime activities and make recommendations for the development of the International Code of Safety for Ships Operating in Polar Waters (Polar Code).

Keywords: Arctic, Maritime Activities, Maritime Safety, Polar Code

INTRODUCTION

The Arctic sea ice extent can vary considerably, and according to the long-term prediction by scientists forecast, the ice-free Arctic Ocean for some seasons before mid-century is likely (Cavaliere and Parkinson 2012; Stroeve et al. 2014). As a result, local shipping and transit shipping activities are expected to grow in the Arctic region (Council 2009; Hansen et al. 2016; “Northern Sea Route Information Office” 2019). The diminishing of sea ice opens up new transportation routes and significantly increases maritime activities such as fishing and tourism. The number of ships and sailed distance has been on the rise (PAME 2020). The primary advantage of maritime transportation over the Arctic is the cost reduction of the voyage (Gross 2018; Smith and Stephenson 2013). Moreover, a significant increase has been observed in large and small passenger ships, private yachts, fishing vessels, and research vessels (Silber and Adams 2019; Hughes and Convey 2020) (Erazo n.d.; Council 2009). For instance, the trends to visit these remote areas by passenger ships to seek out unique ecosystems and species have been facilitated by tourists (Palma et al., 2019). These commercial opportunities attract the interest of both states and companies. However, navigation through the ice-covered remote waters is risky (Ghosh and Rubly 2015; Kum and Sahin 2015). The lack of infrastructure and accurate charting and the harshness of the environment make maritime operations significantly more difficult.

International Maritime Organization (IMO) is the organization to deal with maritime affairs where states should develop and update suitable standards and regulations in the maritime field. In the early 1990s, the IMO started working on a code for regulating ship construction, equipping, and operations in polar waters. In 2002, for the first time, the recommendatory “Guidelines for Ships Operating in Arctic Ice-covered Waters” approved (Jensen 2007). In 2009, the IMO made a significant change to the Guidelines revising them to include ships operating in the Antarctic and changing the nature of the rules to address the more general region ‘polar waters’ rather than ice-covered waters (“The Developing International Maritime Organization Polar Code - Arctic Yearbook” n.d.). Finally, the process of transforming the regulations from guidelines to binding legal requirements re-emerged on the IMO agenda, and the mandatory Polar Code came into force on January 1, 2017. However, one of the significant issues not regulated is that the Polar Code does not cover the non-SOLAS vessels.²⁹ Although the number of non-SOLAS vessel accidents increases, there is no binding regulation for non-SOLAS vessels in polar waters. In this brief, Arctic sea ice extent changes, Arctic maritime activities, and Polar Code are introduced, and in the policy implication section, some issues related to maritime safety are highlighted.

²⁹ non-SOLAS: International Convention for the *Safety of Life at Sea* (SOLAS) may *not* be applicable to all types of a *ship*.

STUDY AREA: ARCTIC

Sea Ice Extent (SIE)

Arctic sea ice annually reaches its maximum size in March and its minimum size in September. Therefore, the best way to understand sea ice extents' variation is to analyze the differences over these months. Arctic sea ice extents for the periods of September 2020 and March 2021 are shown in Figure 1 (a-b). On the other hand, the yellow line indicates 1981-2010 average sea ice extents. The difference between 1981-2010 average and the latest record is visible.

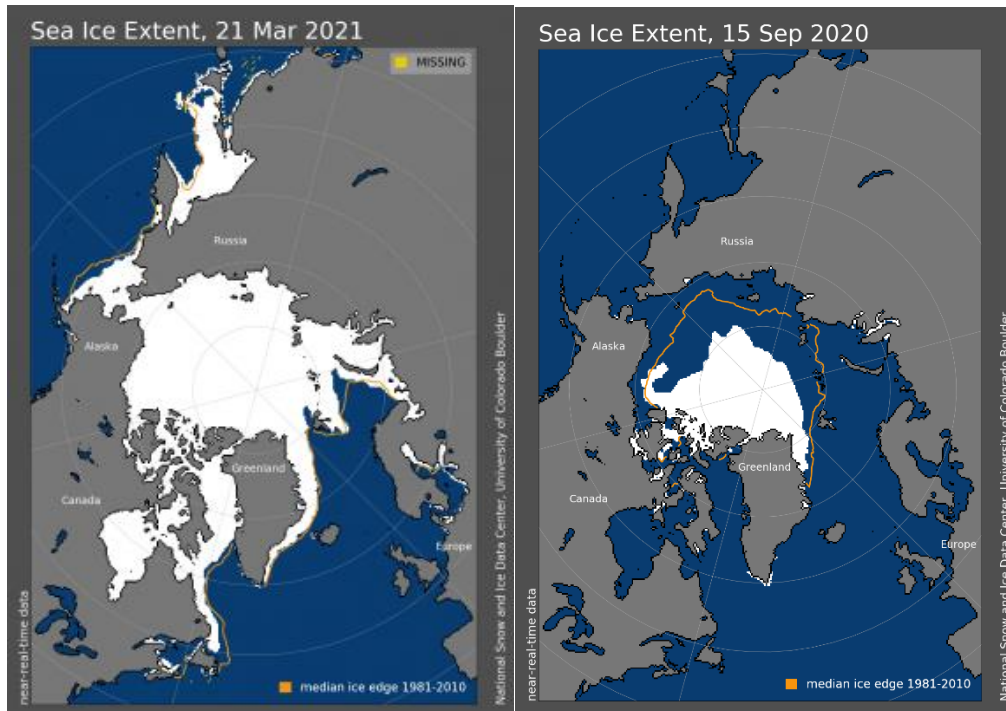


Figure 1 : (a) The Arctic SIE, 21 Mar 2021. (b) The Arctic SIE, 15 Sept 2020.

Source : Imagery from the NASA NSIDC DAAC, 2021

On March 21, 2021, Arctic sea ice reached its maximum extent, at 14.77 million square kilometers (km²), which is the seventh-lowest extent in the satellite record and 0,87 million km² below 1981 to 2010 average maximum records. On September 15, 2020, Arctic sea ice reached its minimum extent, at 0,35 million km² which is 2.51 million km² below 1981 to 2010 average minimum extent (NSIDC, 2021). Figure 2. indicates Arctic sea ice for all months: grey line shows 1981-2010 average, the red line shows record the minimum year 2012, dark green line 2020, and blue line 2021. Last year's values show downward trends in all months.

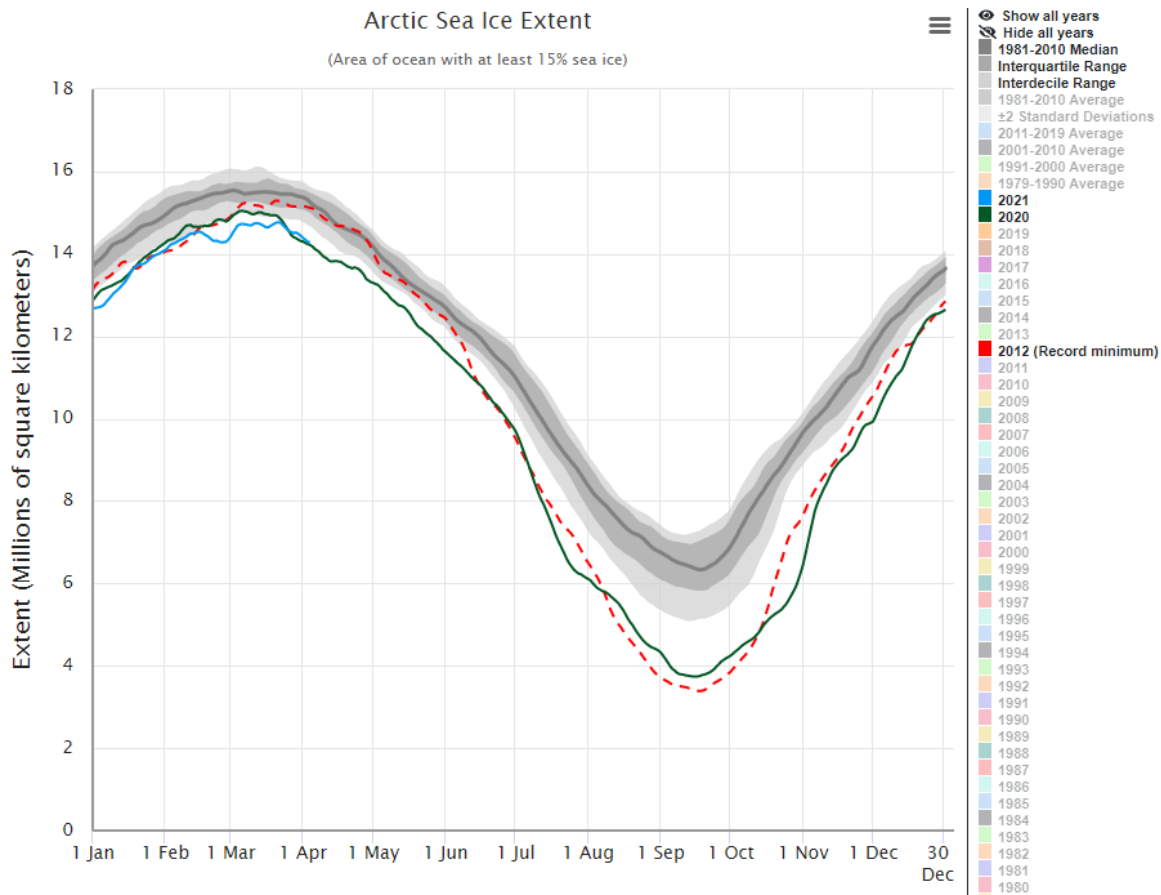


Figure 2 : Arctic Sea Ice Extent
Source : Imagery from the NASA NSIDC DAAC, 2021

Maritime Activities

As sea ice extent (SIE) diminishes, maritime activities increasing in the Arctic. Potential Arctic sea routes serve as a new passage for maritime transportation that provides financial and time savings due to the shorter distance between Asia and Europe voyages (Arctic Shipping, 2014). For instance, one of the existing Arctic routes is the Northern Sea Route (NSR) along the Russian coastline from the Kara Sea to the Pacific Ocean. The NSR will be an alternative transit route between Europe and Asia as Russia plans to develop NSR and aims to develop its capacity from 4 million to 80 million tons by 2025 (The Security Council of the Russian Federation 2015). The amount of cargo per year showed in Figure 3. The future of the NSR depends on the extent of the Arctic Sea ice and infrastructure development within the route. The NSR will become an available course for open water ships, and the probability of transit will increase by approximately 94–98% between 2040–2059 (“Issue 328” 2013).

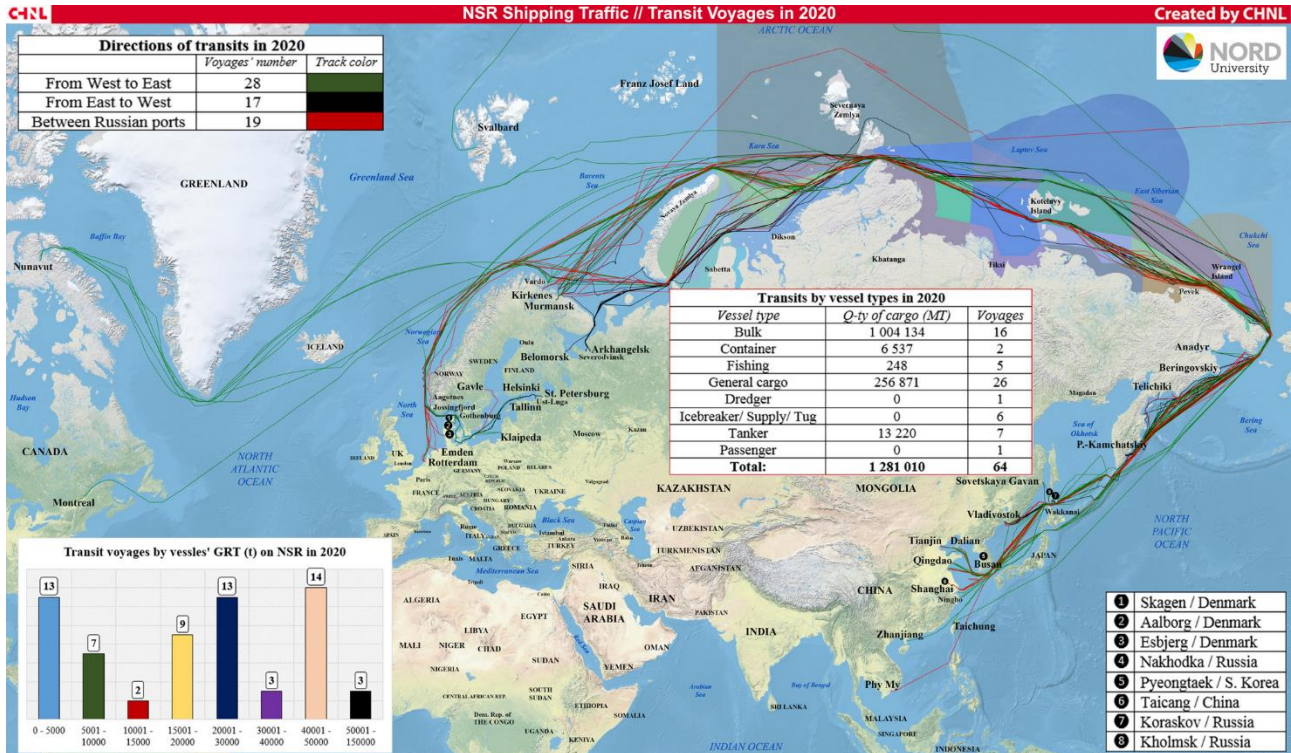


Figure 3 : NSR Shipping Traffic/ Transit Voyages in 2020
Source : CHNL, 2020

The statistics from the NSR show an increase in activity in 2020. The number of transit voyages and their cargo volume has increased compared to the previous years.

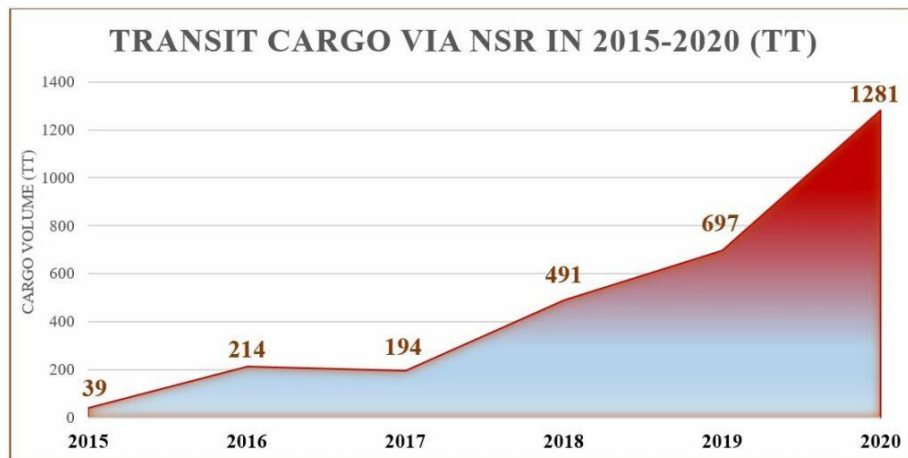


Figure 4 : Transit Cargo via NSR in 2015-2019
Source : CHNL, 2020

According to Center for High North Logistics CHNL data, in 2020, transit traffic began on July 20, and the last transit voyage ended on November 17 through NSR. In this period, 64 voyages were made, the total volume of transported cargo amounted to 1 281 010 tons. As seen in Figure 5, cargo flow and the number of vessels almost doubled from 2019 to 2020. It is stated that most of the ships passed the waters of the NSR without difficulties. On average, vessels that were in transit crossed the NSR in 8 days.

NSR Transit Cargo Flow 2019 vs 2020		
	2019	2020
Cargo Flow, t	697 277	1 281 010
Number of vessels	37	64
Dominant cargo, type / ton	Crude oil / 302 151 Iron ore / 150 172	Iron ore / 1 004 134

Figure 5 : Transit Cargo via NSR in 2015-2019

Source : CHNL, 2020

On the other hand, one of the working group of Arctic Council, Protection of the Arctic Marine Environment released a report in 2020 which present Arctic marine shipping data. This study provides information about the number of ships that sailed and entered the Arctic Ocean and limits with the area of Polar Code. According to this study, the volume of the ships is measured by two methods. First, each ship is counted only once, even if it enters the geographic area multiple times. The number of ships entered in the Arctic Polar Code area was 1298 in 2013, and it rose to 1628 in 2019. It means that just in six years it grew approximately 25%. The unique ship's number entered in the Arctic Polar Code area in 2019 is given in Figure 6. In 2019, 41% were fishing vessels among all types of ships that entered the Polar Code area. On the other hand, ships in the passenger/cruise vessel class made the most significant number of trips in the Greenland Sea, followed by the Barents and Norwegian Seas and the Arctic Ocean (“AECO | Association of Arctic Expedition Cruise Operators” n.d.).

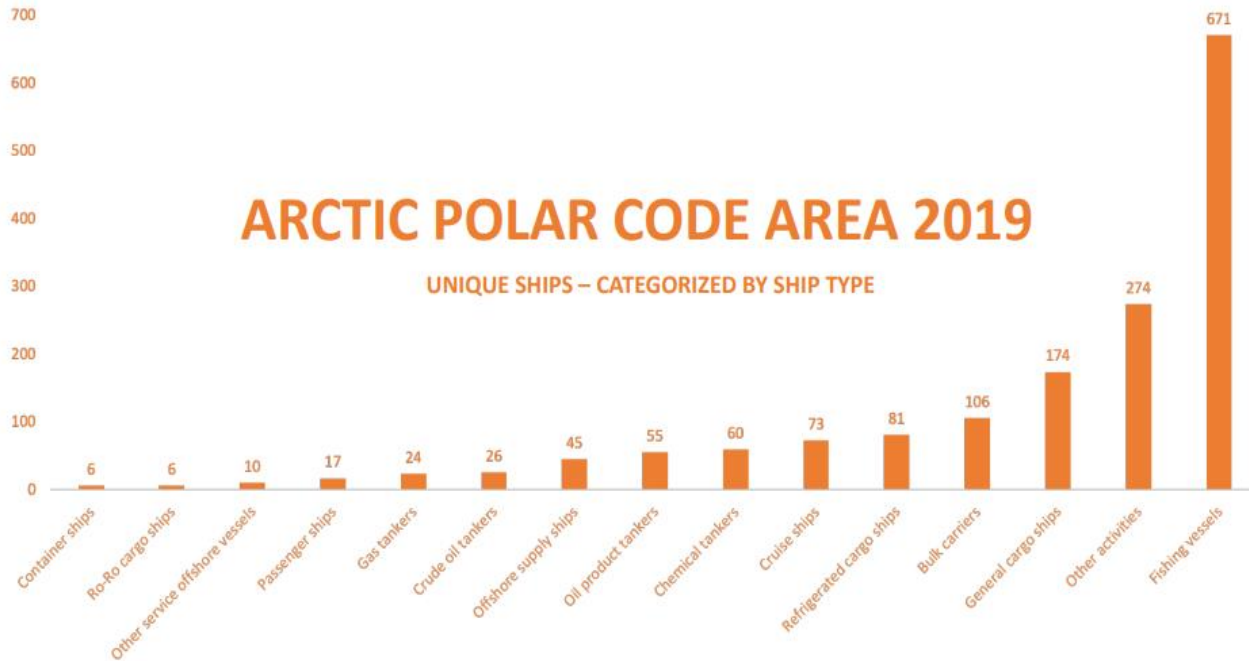


Figure 6 : Arctic Polar Code Area
Source : PAME, 2020

Secondly, distance sailed measured, which is the aggregated nautical miles(nm) vessels traveled in a certain period in a particular area. According to that, while the total 2013 distance sailed by all vessels was approximately 6.51 million nm, in 2019, it was risen to over 10,7 million nm. The total distance sailed by all vessels increased by 75% in the Arctic Polar Code area from 2013 to 2019. As with unique ships- fishing vessels are dominant. On the other hand, natural resource extraction is one activity contributing to an increase in Arctic shipping. Bulk carrier traffic by 2019, it had increased substantially, and the distance sailed by bulk carriers has risen 160% from 2013. Additionally, in Figure 7, for all types of vessels, the density map shows denser areas.

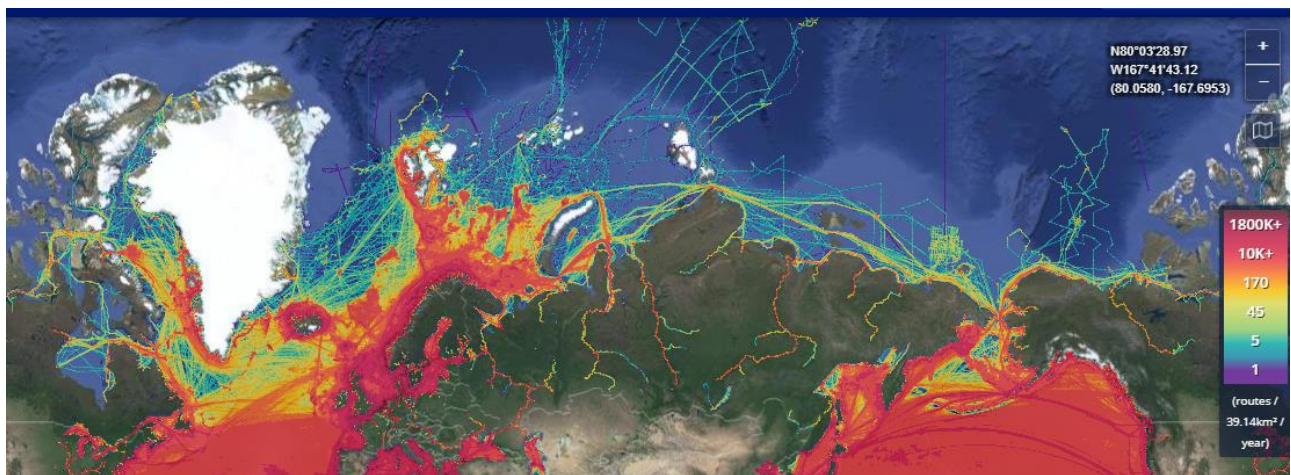


Figure 7 : Arctic Shipping Density Map, 2019
Source : MarineTraffic, 2020

Polar Code Implementations

The Polar Code is based on the previous International Maritime Organization (IMO) instruments; the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL); the 1974 International Convention on the Safety of Life at Sea (SOLAS); the 1978 International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW). Additionally, the International Association of Classification Societies (IASC) during 2006-08 developed and adopted a set of unified requirements for Polar Class ships. The Polar Code acknowledges that polar water operation may impose additional demands on ships, their systems, and operation beyond the existing requirements of the SOLAS. The Polar Code aims at mitigating the risks of harsh environments and weather conditions for safe operations and the prevention and control of maritime pollution from ships in the polar regions. It is structured into three parts: introduction, Part I (Ship Safety), and Part II (Pollution). The Polar Code defines Arctic waters as the area in Figure 8 and its implementations in force for vessels planning to sail through in this area.



Figure 8: Arctic Polar Code Area

Source : Polar Code, 2017

The Polar Code is mandatory for certain ships under the SOLAS and MARPOL Conventions. However, the Polar Code does not apply to fishing vessels, pleasure craft, and vessels below 500 gross tones (“Shipping in Polar Waters” n.d.).

POLICY IMPLICATIONS

The Arctic faces several challenges today with global climate change impacts and shipping activities, which raises risks regarding the safety of life at sea and environmental protection. Despite shipping volume is growing but still low, there are clear signs that the environmental problems are increasing, as the number of ship incidents. Recent accidents have shown several weaknesses in safety and environmental protection. If such issues are not addressed promptly, more disasters involving human lives and significant environmental damage will occur sooner or later. Thus, two main areas require urgent consideration regarding Arctic maritime safety, which are the Polar Code's improvement and emergency preparedness. As a recognized competent body, IMO has a vital role in strengthening regulations concerning safety and environmental issues. Through the development of IMO instruments, it will be possible to minimize accidents.

The Polar Code does not apply to all ships, such as pleasure yachts not engaged in trade, fishing vessels. Unfortunately, no restrictive or voluntary arrangements have yet been issued for non-SOLAS ships. The density of fishing vessels and yacht traffic is considerably increasing. Fishing vessels are not covered by the Polar Code, even though their presence in the Arctic will be growing since sea ice declines. So, the possibility of incidents

resulting from their increased navigation in the Arctic could significantly threaten the Arctic marine environment. Therefore, the second phase of the Polar Code or relevant regulations should be implemented without delay.

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COMPENSATION FOR TRANSBOUNDARY POLLUTION FROM SEABED OIL PRODUCTION IN THE ARCTIC OCEAN

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In terms of international law, States are obliged to exploit their own resources without interfering with the rights of the other States. However, even the existence of a number of agreements, relating to seabed oil production in the Arctic Ocean, is inadequate in compensating the loss suffered by the transboundary victims living along the coast of the Arctic Ocean. The purpose of this briefer is to review those laws and point out the ones that are to be considered when the time for adopting an Arctic regional compensatory regime is ripe.

Keywords: Arctic, oil, transboundary pollution, compensation

INTRODUCTION

The purpose of this research is to argue that presently, the Arctic regional regime on seabed oil production is inadequate in providing compensation of the transboundary victims. After elaborating on the international obligation to exploit one's own resources without interfering with the rights of the other States – the so-called duty to prevent – the study will focus on the existing agreements on compensation applicable to the Arctic. It will be argued that the existing state of Arctic relations is insufficient in providing adequate protection to the transboundary Arctic victims should a transboundary oil spill from seabed oil production occur.

DUTY TO PREVENT

Natural resources are important for sustaining one's economy. Exploiting them is not an issue as long as the activity does not inhibit the rights of the other States to enjoy the benefits of the activities carried out on their own territory. This is commonly known as the duty to prevent. In simplest terms, no derogation from it is tolerated.

Although seeming simple and of clear-cut nature, the duty to prevent is quite general and is subject to varying interpretations as regards the obligations of the States. Thus, it arouses certain concerns especially in areas where the activity negatively impacts the quality of air, transboundary waters (rivers and lakes shared by two or more States) or the sea. It is so because these resources cannot be contained, do not know borders and once polluted, the air and water flow in different directions dispersing the polluting substances from the source State to the other States.

To clarify the above situation, let us assume that you live in a block of flats with a noisy neighbour and there are conflicts as regards noise pollution during night hours. There is police to take care of him as well as courts where you could claim violation of rights. In other words, there is always an institution above yourselves that is in control of the law and order. And in case you are dissatisfied with your neighbour and think your rights are breached, you may always address them. However, in interstate disputes, the States in conflict have to submit themselves to the jurisdiction of a particular court. Otherwise, no court has powers to adjudicate.

The activities of the States are controlled by a combination of several families of laws. In the perspective of the duty to prevent, those are the more general and particular agreements as well as the unwritten customary laws. However, lacking an initiative to search for justice, regardless of the availability of international laws, loss may

lie where it falls. An example of this would be the 1986 Chernobyl nuclear power plant blast where the affected States bore the consequences for the pollution themselves.³⁰ In more murky situations, where the consequences of the pollution are more distant in time or that they are only one of the elements composing the 'combustion triangle',³¹ the State of origin might be unwilling to cater for the consequences it has been alleged to have caused.³²

Regardless of this drawback of international law, the easiest way to avoid a potential environmental conflict engaging several States is to set out in clear-cut terms their rights and obligations through an international agreement. And the more States subscribe to its terms, the greater the number of protected transboundary victims. On the other hand, the greater the number of States, the more difficult the acceptance of a particular treaty text— it is either quite general allowing for broad interpretation and wide acceptance or narrowly worded making only a small number of States subscribe.³³ To summarise, an industry, whose consequences are more prominent within a region, is better regulated on a regional rather than global basis, therefore requiring only a small number of parties for an agreement to enter in force. This is the prevailing opinion in seabed oil production.³⁴

COMPENSATION FOR TRANSBOUNDARY POLLUTION FROM SEABED OIL PRODUCTION IN THE ARCTIC OCEAN

The duty to prevent may be split into two stages – those obligations that are associated with the conduct of the polluting activity before it starts and the ones that are triggered should pollution occur. The latter are associated with intervention, compensation and restoration of the environment. In the perspective of seabed oil production, there is only one global treaty that adds to the obligation of the States to intervene in seabed oil production pollution prevention irrespective of whether they are the State source of the pollution – the OPRC Convention.³⁵ Unfortunately, the only claimable compensation is the expenses incurred during the intervention and clean up but has no provisions on compensating the losses of the transboundary victims. They are either dealt with under national law, additional multilateral agreements or not at all. Moreover, the OPRC Convention expresses preference for cooperating when introducing additional agreements on compensation. And as has already been discussed, unless the State of origin and victim States have a prior agreement on compensation, loss may stay with the victims. In other words, lacking a prior agreement, transboundary victims would most probably remain uncompensated.

The focus of this briefer is not considering how each Arctic Ocean littoral State – Canada, Greenland, Iceland, Norway, Russia and USA – discharges its obligations following the transboundary pollution under national law, but to review the particular bilateral and multilateral agreements they are part of. In the Arctic Ocean domain,

³⁰ Alfred Rest 'Need for an International Court for the Environment: Underdeveloped Legal Protection for the Individual in Transnational Litigation.' (1994) 24(4) *Env'tl Pol'y & L* 173

³¹ To clarify the situation in the discussion, the example of combustion is used. In order it to appear, three elements must be present simultaneously – oxygen, heat and fuel. With only one or two present, no combustion will happen

³² Henry Tim 'A Thai oil firm, Indonesian Seaweed Farmers and Australian Regulators. What Happened after the Montara Oil Spill?' (14.02.2017) *Mongabay* available <https://news.mongabay.com/2017/02/a-thai-oil-firm-indonesian-seaweed-farmers-and-australian-regulators-what-happened-after-the-montara-oil-spill/> (20.09.2020)

³³ UNGA A/CN.4/L.682 – International Law Commission "Fragmentation OF International Law: Difficulties Arising from the Diversification and Expansion OF International Law - Report of the Study Group of the International Law Commission' (58th Session) (1 May-9 June and 3 July-11 August 2006, Geneva) at paras 205-10 available <https://legal.un.org> (06.12.2020)

³⁴ International Maritime Organization LEG 104/14/1 – 'Any Other Business: Liability and Compensation Issues Connected with Transboundary Pollution Damage from Offshore Oil Exploration and Exploitation Activities – Guidance for Bilateral/Regional Arrangements or Agreements on Liability and Compensation Issues Connected with Transboundary Oil Pollution Damage Resulting from Offshore Exploration and Exploitation Activities – Submitted by the International Marine Contractors Association (IMCA)' (24.01.2017) para 3

³⁵ International *Convention* on Oil Pollution Preparedness, Response and Co-operation, 1990

there is only one regional law on pollution prevention from seabed oil activity– the MOSPA.³⁶ It is worded similarly as the OPRC Convention and does not go beyond its text as regards compensation.³⁷ An additional factor to note is that although Greenland has sovereign rights over its natural resources, its foreign affairs are still dependent on Denmark.³⁸

ARCTIC AGREEMENTS

The Arctic Ocean littoral States agreements³⁹ aimed at compensation following a transboundary pollution incident from seabed oil production are predominantly modelled on the OPRC Convention/MOSPA. Thus, the main part of them differentiates between assisting States and States needing assistance and the provisions on compensation deal with the expenses incurred during intervention and not with holding the State of origin bear the consequences of carrying out its hazardous activities. However, they also relate to the actual polluter where it is involved in mitigating the consequences of the pollution. On the other hand, some of the agreements refer to the polluting and polluted States. Nonetheless, the common feature of all agreements is the obligation of the Arctic States to assist each other in mitigating the consequences of the actual or potential transboundary pollution.

The Arctic agreements elaborate to a different degree on the obligations of their parties. Some of them are explicit in compensating injuries to emergency teams or equipment during intervention and clean up operations – either excluding⁴⁰ or including⁴¹ them. In addition, third party claims against the personnel of the assisting State for accidental harm caused while carrying out duties in the territory of the requesting State may also be compensated by the State needing assistance.⁴² On the other hand, one bilateral agreement makes not the State of origin accountable for the intervention expenses but the actual polluter.⁴³ However, if the polluter is unknown/ outside those two States, each State bears its clean up costs.

³⁶ Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the *Arctic*, 2013

³⁷ Kontar Yekaterina 'Fostering US-Russia Cooperation in the Arctic Through Disaster Diplomacy Efforts' in Sellheim Nikolas *et al* (eds) *Arctic Triumph: Northern Innovation and Persistence* (2019) Springer 181, 188

³⁸ Government of Greenland 'Politics in Greenland' available <https://naalakkersuisut.gl/en/About-government-of-greenland/About-Greenland/Politics-in-Greenland> (access 27.05.2019); Act on Greenland Self-Government (Act 473/12.06.2009)

³⁹ Convention for the Protection of the Marine Environment of the North-East Atlantic, 1992; Agreement between Denmark, Finland, Iceland, Norway and Sweden about Cooperation Concerning Pollution Control of the Sea after Contamination by Oil or other Harmful Substances, 1993; Agreement between Denmark, Finland, Iceland, Norway and Sweden about Cooperation Concerning Pollution Control of the Sea after Contamination by Oil or other Harmful Substances, 1993; Agreement on Cooperation within the Field of Emergency Prevention, Preparedness and Response, 2008 (Finland, Norway, Russia and Sweden); Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, 2013; Agreement between Denmark, Finland, Iceland, Norway and Sweden about Cooperation Concerning Pollution Control of the Sea after Contamination by Oil or other Harmful Substances, 1993; The US and the Soviet Union Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situations Agreement, 1989; Agreement between the Government of the Russian Federation and the Government of the Kingdom of Norway for Oil Spill Combatment in the Barents Sea, 1994; Agreement on Cooperation within the Field of Emergency Prevention, Preparedness and Response, 2008; Agreement Between the Government of Canada and the Government of the Russian Federation Concerning Environmental Cooperation, 1993; Agreement between the Governments of the Russian Federation and the Kingdom of Denmark on Cooperation in the Area of the Protection of the Environment, 1993; Agreement on Environmental Cooperation among Canada, Mexico and USA, 2018

⁴⁰ Agreement on Cooperation within the Field of Emergency Prevention, Preparedness and Response, 2008

⁴¹ Agreement between Denmark, Finland, Iceland, Norway and Sweden about Cooperation Concerning Pollution Control of the Sea after Contamination by Oil or other Harmful Substances, 1993

⁴² Agreement on Cooperation within the Field of Emergency Prevention, Preparedness and Response, 2008

⁴³ Canada–United States Joint Marine Pollution Contingency Plan, 2017

Another set of Arctic multilateral agreements takes a broader approach on the issues of compensation.⁴⁴ In one of them – the Nordic Convention –⁴⁵ the only Arctic Ocean littoral States are Norway and Denmark/Greenland. The compensation cap of the damage and its consequences on the transboundary victims is determined by the most beneficial national compensatory law between that of the polluted State or the polluting State. Moreover, this agreement is specific in establishing that it applies to pollution from seabed oil production.

Unlike the Nordic Convention, the Helsinki Treaty⁴⁶ with Iceland, Norway and Greenland aboard encourages harmonisation of their environmental laws. It is of general nature and also enforces equal treatment of the nationals of the State of origin and the victim States following a pollution incident. Thus, it may be argued that Iceland is also bound by the conditions set in the Nordic Convention. But in any case, such conclusion is subject to speculation.

The third arrangement deserving attention is the Canadian-Danish/ Greenlandic Agreement⁴⁷ which, in addition to the compensation for intervention and clean up expenses, makes Canada and Denmark ensure *adequate* compensation for the damage caused by the seabed activities carried in their zones of responsibility. Unfortunately, adequacy depends on the national laws of the two countries. And while in Canada pollution compensation is up to a certain amount, in Greenland it is unlimited.

There is an additional set of Canadian-US agreements, the trilateral 2018 Canadian-Mexican-US Agreement on Environmental Cooperation⁴⁸ and the Agreement between Canada, USA and Mexico,⁴⁹ which also provides for the equal treatment of the victims of the three States subject to the laws of the polluting State. Unfortunately, none of the Arctic agreements has taken into consideration that when marine pollution occurs, it may travel great distances and would probably affect the environment of States that have no agreement in force, for instance between Canada and Norway or between Russia and Iceland. Thus, a compensatory agreement embracing all Arctic Ocean littoral States is important. And this is regardless of the fact that the Arctic is still not open for extensive seabed oil production. However, it is better that a regulatory regime exists before actual transboundary pollution happens.

CONCLUSION

The availability of provisions on compensating the transboundary victims from pollution resulting from seabed oil production in the Arctic are restricted only to the Nordic Convention parties together with Iceland, the Canadian-Danish/ Greenlandic Agreement and the Canadian-Mexican-US Agreements. However, the issue with them is that they do not grant rights to claimants who have been harmed in a State not party to them. That is, the issue of transboundary harm has been dealt in a very restricted manner. And in order to prevent situations in which loss lies where it falls, it is good that the Arctic Ocean littoral States agree on particular terms in order to protect their subjects. Moreover, if such an agreement contained an ‘agreement to agree’ provisions, it is important that it should contain deadlines for their enforcement. Otherwise, even though there would be particular obligations, they would continue in eternity without consequences for non-compliance. And a good starting point would be the industry specific Nordic Convention and the Canadian-Danish/ Greenlandic Agreement.

⁴⁴ Nordic Environmental Protection Convention, 1974; Treaty of Cooperation between Denmark, Finland, Iceland, Norway and Sweden, 1962

⁴⁵ Nordic Environmental Protection Convention, 1974

⁴⁶ Treaty of Cooperation between Denmark, Finland, Iceland, Norway and Sweden, 1962

⁴⁷ Agreement Between the Government of the Kingdom of Denmark and the Government of Canada for Cooperation Relating to the Marine Environment, 1983

⁴⁸ Agreement on Environmental Cooperation among Canada, Mexico and USA, 2018

⁴⁹ Agreement between Canada, the United States of America, and the United Mexican States, 2018 as amended by Protocol of Amendment to the Agreement Between the United States of America, the United Mexican States, and Canada, 2019



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