EXPLORING THE NORTHERN DIMENSION

Northern Dimension

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Accident information is needed to prevent emergencies in the Arctic waters

Increasing economic activity in the Russian Arctic has resulted in the growth of vessel traffic related to trade, exploration and research, marine tourism, and natural resource extraction activities. This has heightened the risk of maritime accidents. Navigation and rescue response are challenging in the High North due to its harsh weather and ice conditions, long distances, and vulnerable nature. Therefore, it is important to raise awareness about the potential risks in order to prevent accidents. Here, the analysis of previous accidents in the Arctic waters provides valuable lessons for the future. Such analysis requires summarizing, visualizing and openly sharing accident information. This is not yet the case for the Russian Arctic and therefore it would be valuable to develop public digital sources that contain such accident information.

- **Recommendation 1**: To develop an effective mechanism for the utilization of risk analysis and accident data to improve emergency preparedness and safety level in the Arctic waters.
- **Recommendation 2**: To introduce a digital platform for sharing information about maritime accidents happened in the Russian Arctic and emergency resources available. This platform could be linked to other relevant platforms already existing in Russia and other Arctic countries.
- **Recommendation 3**: To make sure that all actors involved contribute to the analysis and sharing of data related to accidents, and control the quality of the data as to their format and accuracy.

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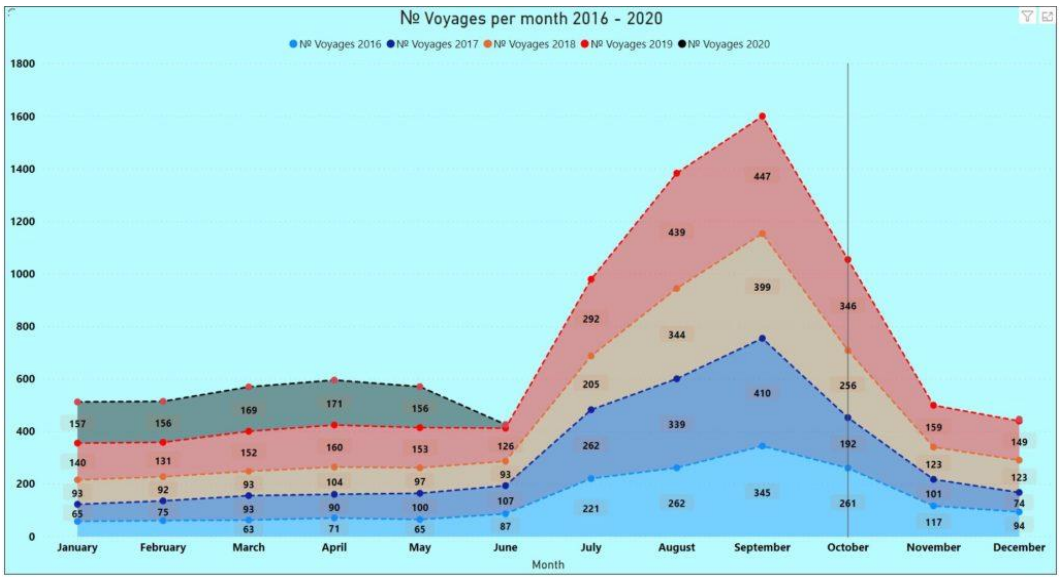
Vessel traffic growth heightens the risk of maritime accidents in the Arctic

In the media, the increase in shipping in the Arctic is often associated with climate change and resulting sea ice reduction. The Arctic sea ice extent for September 2020 was the second lowest during the 42-year satellite record period, after only September 2012 [1]. The shipping activity in the Arctic has in the recent years moved 300 km closer to the North Pole, and more small ships like fishing boats travel further into Arctic waters. Russian Arctic shipping more than quadrupled in the five last years, and traffic on the Northern Sea Route is expected to increase even more significantly.



Picture 1: Number of voyages through Northern Sea Route. Source: CHNL. www.chnl.no [5]

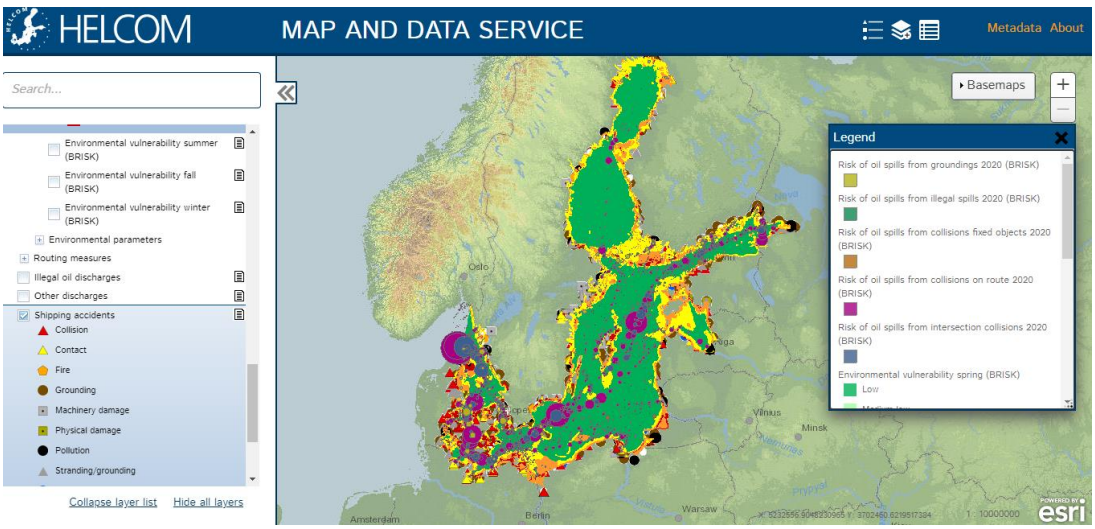
In addition to the changing climate conditions, increasing economic activity in High North areas and rising political interests to the Arctic have also facilitated traffic growth. The increase in traffic may heighten the probability of maritime accidents in the Arctic. According to the Safety and Shipping review 2019 [6], there were 41 reported shipping incidents in the Arctic Circle waters in 2019. The total number of incidents was almost the same as in the previous year, but in 2019 there were two total losses compared with none in 2018. On the other hand, the unpublished statistics of the Murmansk Maritime Rescue Coordination Center, located in the Russian Arctic, show a decline from 50 calls in 2016 to 31 ones in 2018. According to these figures, the risk for major incidents in the Russian Arctic is relatively low, and there have not been large-scale accidents in this

region. Nevertheless, geographical remoteness from search and rescue centers and severe climatic conditions can turn even a minor incident into a major one.

Furthermore, the public concern about the risks of increasing marine traffic for the vulnerable Arctic environment and its safety is growing. The lack of accident and emergency preparedness information can further feed these concerns. Risks associated with the navigation in the Arctic are an important factor influencing the shipping decision along the Northern Sea Route. The ship owners as potential users of this route emphasize the importance of safety factors, particularly risks for crew health and safety. [7]. Therefore, responsible authorities should monitor the risk trends and accident probability and take the needed actions.

Visualization of data helps to prepare for and avoid accidents

Some countries have online maritime accident databases and digital resources with detailed statistics and hot points, which are made available by the relevant authorities [4]. Emergency organizations document accidents and responses in a structured format, and government institutions collect and analyze this information on a national level. The major part of the information, expect some special data, is publicly available and can be used for statistics-based reports, risk assessments or research. Some of the services provide maps showing the distribution of accidents by type and marking the dangerous areas within a specific area. One example is the map and data service of the Baltic Marine Environment Protection Commission (HELCOM) shown in Picture 2 [2].



Picture 2: HELCOM map and data service.

Some organizations or thematic groups, such as the Marine Accident Investigators International Forum, analyze accidents at sea to provide reports and case studies. However, these digital platforms do not address the Arctic region in particular.

Lesson learning and knowledge sharing is paramount to avoid accidents, enhance safety, develop expertise and upgrade capacities of all involved actors.

The collection of statistical data about accidents is important to follow the general trend and to keep the authorities informed about the situation. However, from the perspective of on-board safety, vivid examples and case studies are more valuable than databases for accident management, decision-making, and training. A detailed case description and a picture of a ship in distress will attract more attention and have greater impact than bare figures. One example of such approach on data is the digital map "MarEmAr" [3] that contains case descriptions of real Arctic accidents with pictures, links to open source accident investigation reports, and some statistical data.

The approach to public accident information sharing can be different, but lesson learning and knowledge sharing is paramount to enhance human and ship safety, to develop expertise and upgrade capacities of all involved actors.

Knowledge of accidents should be shared more efficiently

The Russian maritime Search and Rescue/Oil Spill Response systems are based on cooperation between different Federal ministries, agencies and services. In addition, local actors are involved in emergency preparedness in the Arctic. The main actors in this field are the Ministry of Transport and Ministry for Emergency Situations that could jointly initiate an effective mechanism to analyze the potential risks and accident data and establish a digital base for sharing this knowledge. It is essential to encourage and motivate all relevant emergency organizations operating in the Arctic to provide a stable and accurate flow of accident statistics, and to participate in data analysis, case investigation and further mapping for risk picture visualizing.

The results of this work can be used by the responsible authorities for better monitoring, decision-making models and understanding how accidents can be avoided in the future, and for improved planning in risk mitigation. This would also serve as an example of open governance, which builds trust in the Arctic, business, and in the society more broadly.

Literature

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