



---

# Proceedings of the Northern Marine Transportation Corridors Workshop

December 8, 2015, Vancouver, BC

---

# Table of Contents

---

<b>Overview</b> .....	1
<b>Background</b> .....	1
<b>Design and Development of the NMTC</b> .....	4
<b>International Implications of Corridor Implementation</b> .....	5
<b>The Role of Inuit and Northern Communities</b> .....	6
<b>Potential Environmental Effects</b> .....	7
<b>Possible Governance and Management Approaches</b> .....	8
<b>The Importance of Strategic Partnerships</b> .....	9
<b>Data Gaps and Research Needs</b> .....	10
<b>Next Steps and Moving Forward</b> .....	10
<b>Attendees (published with permission)</b> .....	12

*Suggested Citation: Dawson, J., Porta, L., Okuribido-Malcolm, S., deHann, M., and Mussels, O. (2016). Proceedings of the Northern Marine Transportation Corridors Workshop, December 8, Vancouver, B.C., uO Research: Ottawa, ON.*

# Proceedings of the Northern Marine Transportation Corridors Workshop

December 8, 2015, Vancouver, BC

---

## Overview

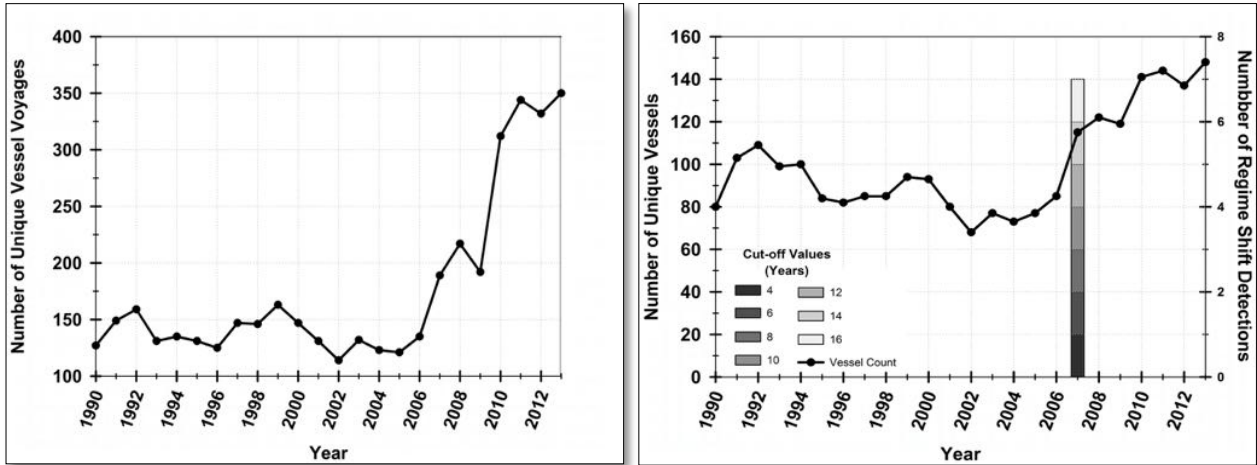
In December 2015, a workshop was jointly organized by the Canadian Coast Guard (CCG), the Environment, Society and Policy Group (ESPG) of the University of Ottawa, and Oceans North Canada (ONC) and held during an ArcticNet meeting in Vancouver, BC. The aim of the workshop was to discuss with key academic and other stakeholders the Northern Marine Transportation Corridors Initiative in order to: 1) outline opportunities and concerns; and 2) identify the best ways to move forward.



The workshop consisted of presentations by Seyi Okuribido-Malcolm from the CCG and Jackie Dawson from the ESPG that outlined the NMTC Initiative and current shipping trends across Arctic Canada. Following the presentation Louie Porta of ONC facilitated a series of group and breakout discussions. This report summarizes the material presented at the workshop, as well as the major thematic findings based on participant opinion and open discussion. The workshop was very well attended by over 60 academics, community residents, industry stakeholders, and government representatives.

## Background

Marine traffic in Arctic Canada has increased significantly in the past decade (Figure 1). This increase has been more pronounced for particular types of vessels. Based on NORDREG data from the CCG, bulk carriers and passenger ships have increased at a rate of 3 vessels per decade, while government vessels (including research vessels) have increased at 8 vessels per decade, and pleasure craft have increased at 20 vessels per decade between 1990 and 2013. Because of changes in sea ice conditions, the shipping season has lengthened, resulting in increased ship traffic during the shoulder seasons. Overall vessel traffic has increased by 9 vessels per decade in June, by 22 vessels per decade in July, and by 13 vessels per decade in November.



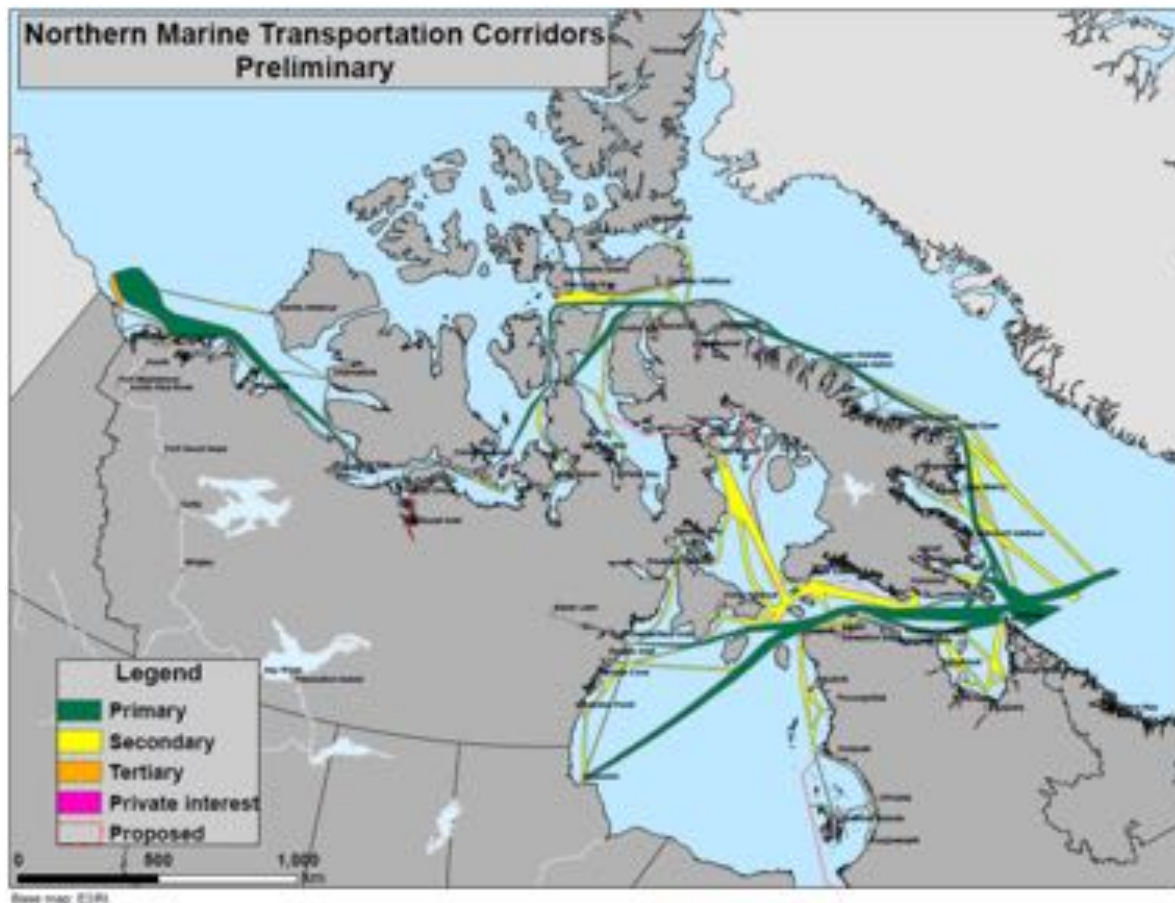
**Figure 1: Number of Unique Vessel Voyages in Arctic Canada 1990–2013 (left); Number of Unique Vessels Operating in Arctic Canada 1990–2013 (right)**

The CCG provides critical services and support to Northern communities and Arctic mariners, including: responding to mariners in distress; protecting the environment from marine spills; providing mariners with navigable services; ensuring Canada’s sovereignty and security by establishing a strong presence on the water; and supporting Arctic science research. Currently, the CCG is facing ongoing challenges in the Arctic. Vessel traffic in the region is evolving, while decades-old marine navigation services, including aids to navigation and charting, are becoming obsolete. The CCG fleet is aging, which has led to decreased availability of assets. The operating season has lengthened and there is increased interest from non-Arctic states as to how Canada’s internal waters, including how the Northwest Passages, will be managed.

The Northern Marine Transportation Corridors are shipping routes within which key navigational information services are prioritized, such as hydrography, icebreaking, and aids to navigation. The NMTC approach will incentivize rather than regulate their use. The goal of the corridors is to enhance marine navigation safety in the North to both provide greater predictability for mariners and reduce risk of incidents. As well, the corridors help to develop a pragmatic planning framework for future Arctic infrastructure investments. They will benefit mariners by providing greater predictability and communities by enhancing reliability of access, as well as afford key hunting, harvesting, and cultural sites additional protections through enhanced management.

The corridors were developed by the CCG and the Canadian Hydrographic Service (CHS) in consultation with commercial master mariners and CCG commanding officers. Data was

collected based on: traffic volume (AIS data from 2011–2013); probability of groundings; access to mitigation measures (aids); channel width, length, and depth; and tidal variations. The corridors ensure that CCG is ready to put the right resources in the right place at the right time, based on risk. The current Northern Marine Transportation Corridors are presented in Figure 1. However, as discussed at the workshop additional information needs to be collected in order to re-prioritize the corridors based on local community needs, environmental concerns, and other impacts.



**Figure 2: Current Northern Marine Transportation Corridors (CCG, 2015)**



The following sections summarize workshop respondent reactions and key thematic discussion areas, including: 1) design and development of the corridors; 2) international implications of implementation; 3) the role of Inuit and other Northern communities; 4) potential environmental effects; 5) possible governance and management approaches; 6) the importance of strategic partnerships; and 6) future data and research needs.

### **Design and Development of the NMTC**

Workshop participants were highly supportive of the corridors approach and the intention behind their development. There was strong consensus that the NMTC Initiative is urgently necessary and will be effective in prioritizing investments and facilitating decision-making.

*I am impressed with corridors approach; I like the incentivization.*

- Vicky Johnston, Environment Canada -

It was also recognized by the participants that the current placement of the corridors could be improved through the inclusion of a wider range of data inputs.

Some suggestions for the prioritization of corridor placement included consulting additional data sources such as Environment Canada's site-specific ecological data and identified EBSAs (ecological and biological sensitive areas). It was also suggested that there is a need for comprehensive consideration of sensitive cultural sites and areas of traditional use by Inuit and other Northerners through a review of existing documents and data sets, as well as through direct community consultations. It was also suggested by David Barber that an NMTC initiative "could partner with existing Arctic observing networks for example, the Centre for Earth Observation Science has an observation system in the Hudson Bay and others are currently being developed."

Furthermore, it was explained that the corridors were created using just 3 years of AIS data (2011–2013) and thus are only representative of those vessels that carried AIS instrumentation (typically larger vessels). It was noted that a more comprehensive ship traffic analysis could help to refine the prioritization of corridors, including a longitudinal understand of past, current, and projected future activity. This longer term temporal and spatial ship trend analysis is currently being completed by the ESPG at the University of Ottawa. Analysis of ship traffic conducted to establish the corridors also excluded certain ship types, such as fishing and tourism vessels, because of their erratic travel patterns that purposefully take them "off the beaten path." However, it was noted that analysis of fishing and tourism vessels is also vital, given the need to ensure that the corridors do not interfere with key fishing areas or tourism routes. The discussion also raised an important point about the real purpose of the corridors: are they simply destinational and for transiting

vessels that aim to take the most economical and “safe” route from point A to point B, or will they also aim to account for the particular needs of fishing and tourism vessels? It was recognized that the corridors do not serve all needs of all vessel types, but that they do still play an important role in the Canadian Arctic.

We have the corridors, which are a great framework for transiting vessels. But they are not as effective for tourism vessels. We need to think about what supplementary framework would be good to manage and support tourism vessels and fisheries in addition to the corridors ... such as the creation of site guidelines—which essentially drive tourists to those sites which are identified and better served.

- Jackie Dawson, University of Ottawa -

Workshop participants also questioned the corridors’ adaptability and whether there is any intention of revising or reprioritizing them in the future based on new data, new knowledge, adapting economic opportunities, and changing environmental conditions. For example, it was noted that the NMTC needs to be able to react to the sharp increase or decrease in ship traffic to an area associated with the opening or closing of a resource extraction operation.

### International Implications of Corridor Implementation

*It is entirely possible that the establishment of the corridors will actually encourage a greater number of transits by foreign vessels.*

- Rob Huebert, University of Calgary -

The NMTC could have important international implications, which need to be assessed. For example, could the establishment of corridors actually encourage a greater number of transits by foreign vessels rather than just directing existing traffic? It was suggested that there needs to be consultation with other government ministries dealing in foreign affairs and security on this issue,

such as Global Affairs Canada, the Department of National Defense and the RCMP. The current goal of the corridors is to incentivize their use through the provision of services, which would make them the most logical route for transiting vessels; however the CCG understands that not all vessels will be compelled to use the corridors.

The CCG identified the Canadian Arctic Archipelago as internal waters, how is the CCG examining the risk of countries that do not follow the corridors? What if countries don’t play by the rules?

- Rob Huebert, University of Calgary -

It is absolutely imperative that this [the development of corridors] be done in consultation with lawyers at GAC. Could go to IMO for designation as NWP as particularly sensitive sea area. For example, Australia has already done this. There would be increased compliance for foreign ships as a result of partnering with IMO. This can be done without sacrificing the “internal waters” designation. There are precedents with doing this. I think the corridors initiative is fantastic but it needs to be done in close coordination with lawyers.

- Michael Byers, University of British Columbia –

### **The Role of Inuit and Northern Communities**

The area that drew the most attention in the workshop was the role of communities in corridor development and the need for improved lines of communication between affected communities and the CCG, among other government departments. Many members of the

workshop, particularly those from the North, wondered what outreach efforts had already been made to engage local communities in the establishment of the corridors and were concerned about the lack of Northern input in the corridor development. The need to consult communities on their existing risk factors was highlighted, as these might differ from those of vessel operators. Currently, only the risk of vessel groundings is included in the risk assessment matrix.

*The communities most affected by these things have the least access to information.*

- Shelly Elverum, Ikaarvik -

There needs to be not just an improvement in the flow of information and consideration of local cultural risks in communities, but also in Inuit empowerment to have meaningful input in the corridor establishment and prioritization process. There needs to be meaningful consultation of Northern communities, including allowing sufficient time for communities to process information provided and consult among themselves, and to identify and prioritize existing local and cultural risks, including to culture, lifestyle, wildlife, and the local environment. For example, the establishment of the corridors needs to take into account local marine uses, such as the use of ice for hunting and traveling, and the traditional and cultural importance of certain marine areas across the Arctic. Risks to marine resources, cultural processes, the integrity of existing harbours, the effects of tourism, and disturbances to community life all need to be identified, considered, and mitigated.

I feel the need to stress that this is just a first step. Lines drawn on the map don't necessarily mean that there is a decision made. There needs to be an improvement in

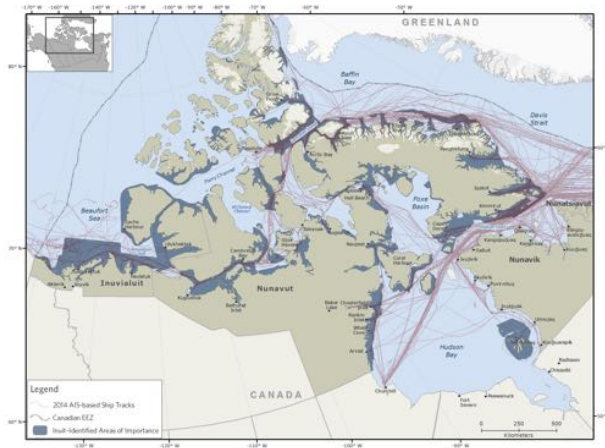


the information flow. We would like to extend the invitation to you to speak directly to communities. The potential for communities to partner on something like this and create something really meaningful is only limited by access to information. Please, let's open those doors to communicating directly with affected people. I'll challenge anyone who says that it's already happening. We have an opportunity for people in the south not to be making decision for people in the north. We need to improve communication and I think this is a beautiful opportunity for that.

- Shelly Elverum, Ikaarvik -

The role of the communities isn't going to be simply informed or involved, but its needs to be decision-makers at the table. If we don't include them, then we're going to be wasting our time. It's important that we include them now in our discussion.

- Chris Milley, NEXUS -



The Canadian Coast Guard and other federal departments are currently involved in two specific research projects aimed at improving our understanding of the impacts of shipping on Canadian Arctic communities and in identifying sensitive marine sites for the specific purpose of better prioritizing the NMTC. Marine ship traffic in the Arctic currently has a high degree of concurrence with areas that Inuit and other northern organizations have identified as “sensitive cultural sites.” A formal inventory, including

a temporal and spatial sensitive analysis of these sites, will be highly valuable for fulfilling the need to better considering community perspectives and cultural sites in the NMTC.

### Potential Environmental Effects

The increasing number of ships operating in the Canadian Arctic presents escalating environmental risks. The corridors serve to reduce this risk through the prioritization of amenities and services that can help prevent accidents, groundings, and other accidents. While there are important environmental

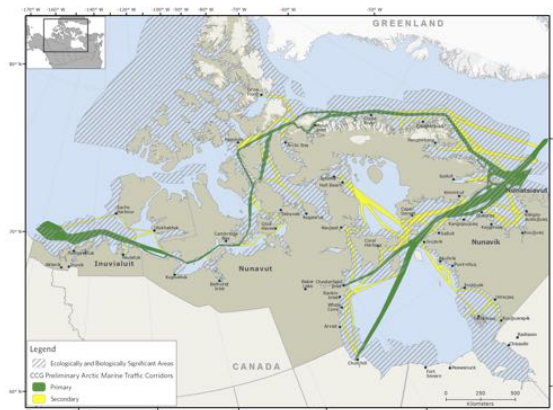
*The temporal aspects of environmental sensitivity need to be taken into account by the corridors ... some sensitive ecological sites may only be sensitive at certain times of the year.*

- Unknown -

considerations inherent in the corridors approach, there are also risks. Importantly, it was identified that there is a high level of concurrence between ecologically and biologically sensitive areas (EBSAs), as identified by Fisheries and Oceans Canada, and the location of the corridors. How these corridors interact with the identified areas will need to be addressed and in particular there is currently no consideration of the temporal component of sensitive ecological sites, such as breeding and feeding times for marine mammals or other biota.

Identified ecologically and biologically sensitive areas are also important hunting and harvesting areas, and thus there may be a close correlation between sensitive ecological sites and sensitive cultural sites. These overlaps need to be acknowledged and accounted for.

*Environment cannot be an afterthought.*  
- Vicky Johnston, Environment Canada -



### **Possible Governance and Management Approaches**

The NMTC has been a joint initiative by the Canadian Coast Guard, Transport Canada, and the Canadian Hydrographic Service. Workshop participants stressed that governance of the corridors must extend beyond these three organizations to draw upon the expertise and viewpoints of a variety of stakeholders from government, industry, and communities—but it also requires a point organization to ensure leadership and organization. Information needs to flow from all levels of governance, from communities, and industry. The roles and responsibilities of the involved agencies should be very clear so that everyone can understand. It was noted by participants that the onus is on the southern participants to ensure that information is provided in plain language that is accessible to all, including Aboriginal stakeholders. It was suggested that a glossary of terms used in shipping and by the CCG would be beneficial for making documents more easily understood by community members. In general, there was a strong desire among community representatives to be more directly involved in the governance of the corridors. In particular, the rights of devolved territories and land claims need to be investigated, as these factors will also determine the management strategies of the corridors.

There also needs to be a framework built into the governing body to ensure the ongoing adaptability of the corridors and the ability to account for the dynamism of the Canadian North. The needs of vessels and communities will continue to change in the future and the corridors should reflect these changes. For example, it was noted that if the corridors are to be considered internal waters, then there might be the possibility of charging for ice breaking services, similar to what occurs on the Great Lakes. Currently, there is an opportunity to capitalize on existing political will and momentum with regards to the Canadian Arctic. This is necessary for the ongoing success of the project. Finally, the NMTC Initiative represents a great opportunity for Arctic marine management and marine spatial planning; it could be expanded to include inputs from a variety of government ministries and agencies and Northern communities, and could manage all marine transportation activities.



### **The Importance of Strategic Partnerships**

The governance of the corridors can greatly benefit from strategic partnerships. These include partnerships among Northern communities, academia, government, and NGOs. In the case of communities, two possible ways of engaging were highlighted: centralized workshops or community specific visits. While centralized workshops foster the sharing of experiences between different communities, they can be extremely costly and

achieving meaningful representation from each community can be difficult. However, given the existing consultation fatigue in northern communities, workshops and consultation should be partnered with other engagement activities, such as government engagement and existing academic activities. The territorial governments are excellent partners that should be pursued moving forward, especially given their close contact with communities. As for academia, ArcticNet, MEOPAR, the Canadian High Arctic Research Station (CHARS), and Polar Knowledge Canada are all potential partners representing northern researchers in Canada. ENGOs also provide valuable potential partnerships and access to knowledge. For example, Oceans North Canada and World Wildlife Fund Canada are currently carrying out marine mapping work at the community level. Tides Canada also has direct links to Northern communities, and the Ikaarvik program could be utilized to engage youth and training opportunities. Finally, international partnerships are also important. By coordinating with organizations in Alaska, the CCG could ensure continuity between American shipping corridors and Canadian ones. Audubon Alaska is currently working on developing marine transportation corridors in Alaska in conjunction with other ENGOs.

### **Data Gaps and Research Needs**

One of the principal data needs is better bathymetry charts. These are currently expensive to acquire, but new methods, such as outsourcing or crowdsourcing some charting initiatives, could help fill in this knowledge gap. Satellite data could also be used, as it now provides more coverage at higher resolutions than before. There is also a need for better marine mammal data in the Arctic, including migration patterns, range data, and impact data (i.e., noise, ship strikes, etc.). There is an urgent need to inventory traditional-use areas and sensitive cultural sites in a similar manner to which was performed during the Land Use Occupancy Project (Freeman 1976) that focused on terrestrial use and occupancy in the Canadian Arctic and only limitedly considered marine areas. There is also a need to determine the best complements to the NMTC for vessel types, such as fishing and tourism ships, which purposefully travel off the corridors into less charted and less serviced areas of the Arctic.

Using traditional knowledge will be an excellent source of information for filling in knowledge gaps. However, combining traditional knowledge with scientific research (natural, social, and policy-focused) will be the most fruitful approach. Hiring community members to carry out ongoing monitoring also represents an excellent opportunity for tapping into local knowledge sources and could provide important economic opportunities in the region. Finally, the NMTC Initiative in and of itself will greatly benefit scientific research, as it outlines priority regions and themes for focused research.

### **Next Steps and Moving Forward**

There is a need for ongoing conversations with interested stakeholders, which, given the difficulty of assembling everyone in one place again, could take the form of webinars or conference calls. Of priority is a need to improve information flow to Northern communities, including community workshops and the creation of a glossary of important terms. This comes with challenges, as communities need dedicated time and space to work on this issue, but many Northern agencies are already overwhelmed by requests for their time. The adaptive approach taken in the corridors is an important one, and data and stakeholder engagement should continue to influence the prioritization and implementation of the corridors initiative. The corridors cannot be viewed as a static system that we now need to work around, but rather should be viewed as an adaptive governance approach that will continue to evolve in innovative and strategic ways. However, the adaptive nature of the framework should not paralyze investments, decision-making and the overall implementation of the NMTC. The strength of the approach is its ability to be adaptable, while at the same time strongly guide and incentivize development, safety, and security in the region.

A number of potential next steps have been identified, including:

- Workshop with Inuit leaders;
- Multi-stakeholder workshop;
- Defined governance structure for NMTC;
- Focused research projects;
- Letter to the Minister of Fisheries Oceans, Coast Guard; and
- Op-ed piece signed by attendees.

The workshop was a great success and provided widespread support and feedback on the NMTC Initiative. The Initiative represents a great opportunity for the Canadian Arctic, and early collaboration will help to ensure that everyone can benefit from their establishment.

