

Shipping Risk Mitigation Research and Practice in Canada: Considering Area-Based Management Approaches

Room 105, Weldon Law Building, Dalhousie University, Halifax, Nova Scotia, Canada

30-31 August 2022

CONTEXT AND PURPOSE

Shipping is vital to Canadian domestic and foreign trade. It is also a bearer of risks exacerbated by climate change. The loss of sea ice cover is extending the navigation season and attracting more diverse shipping into Arctic waters, and with that the risk of incidents that could adversely affect the unique and highly sensitive environment. Shipping produces various wastes during operations, including emissions. There is a general expectation for shipping to decarbonize to reflect its contribution to reaching the Paris Agreement goals to mitigate climate change. Although shipping has improved its environmental record over the years, it continues to have adverse impacts on the marine environment, human health and well-being of coastal communities.

Indigenous communities and the marine environment are affected by shipping in a number of ways. In Arctic waters shipping carries vital supplies to coastal communities but increased commercial shipping increases noise that is deleterious to a range of marine species. Noise is also a concern in other Canadian waters. Shipping in the North often requires icebreaking support and this activity may affect the mobility of hunters and animals. On the Pacific and Atlantic coasts, particular types of shipping, such as tankers in the oil trade and tug and tow operations, may pose added risks to the sensitive coastal environment upon which Indigenous and other communities depend. The spectre of a spill of oil or hazardous and noxious substances is real. Changing ecosystems and movement patterns of marine animals has heightened concerns over ship strikes in all waters.

The governance of shipping in Canada is undergoing change. It is evolving from administration to collaborative planning and management. With respect to Indigenous peoples in Canada, the governance of shipping demands an inclusive and respectful approach in the spirit of reconciliation to ensure that rights under the United Nations Declaration on the Rights of Indigenous Peoples are fully observed and acted upon. Hence, there are efforts to rethink ocean governance to ensure that Indigenous rights are respected and Indigenous people are involved in a partnership approach.

Several tools may be utilised in the collaborative governance of shipping to mitigate risks to Indigenous communities and the marine environment. Area-based marine management tools have emerged as important approaches to mitigate the impacts of shipping on the marine environment and coastal communities. While ship routing has long enhanced navigational safety, recent routing measures have been fashioned to address particular environmental and health risks posed by ships in defined areas. Sensitive marine areas and species have been protected from shipping risks through mechanisms such as particularly sensitive sea areas (PSSAs) or marine protected areas (MPAs) and specific measures such as areas to be avoided and adjustment to routing. Further, emission control areas have been

designated to reduce the emission of nitrogen oxides and sulphur oxides harmful to human health and the environment. Restrictions on the discharge of certain wastes, such as oily residues, hazardous substances, sewage and garbage, have also been created. Importantly, marine spatial planning as an integrated exercise to mitigate the impacts of shipping and reduce conflicts with other ocean uses has been advocated.

The purpose of this workshop is to consider current and emerging practices of area-based management to mitigate the risks and impacts of shipping in Canada and in a comparative manner. The workshop will consider research on the subject and moving from theory to applications, and then hopefully to best practices. The hope is that we can learn from theory, research and the experiences of practitioners for better outcomes.

The workshop is planned as an in-person and webcast event with some remote presentations. The workshop has two parts, each lasting a day. The first part will examine the big picture of area-based management tools in response to particular risks posed by shipping. The second part will focus on Indigenous perspectives and concerns over the interface between shipping and their rights and interests. The outcomes will consist of a policy brief on the interface between Indigenous rights and shipping in Canadian waters for communication to decision-makers and workshop proceedings published in open access.

The workshop will bring together project researchers and highly qualified personnel (HQP), as well as participants from partner institutions, government, Indigenous organizations and industry from across Canada, as well as from overseas.

WORKSHOP CONVENORS

The workshop joint convenors are Module N and the Clear Seas Centre for Responsible Marine Shipping (Clear Seas). Module N: Safe Navigation and Environment Protection is a research project supported by a grant from the Ocean Frontier Institute's Safe and Sustainable Development of the Ocean funded by the Canada First Research Excellent Fund (CFREF) (<https://oceanfrontierinstitute.com/research/safe-navigation-environmental-protection>). The project investigates how ocean change and anthropogenic impacts affect our understanding of risk, policy, management and regulation for safe navigation, environment protection, conflict management between ocean users, and protection of Indigenous Peoples' interests.

Clear Seas is an independent research centre established in 2015 to support safer and more sustainable marine shipping in Canada (<https://clearseas.org/en/>). Its research projects address contemporary topics concerning risks and the sustainability of shipping in Canada to contribute independent, fact-based information for better decision-making by policy makers, industry, and the public. This contribution to public dialogue also aims to support the maritime industry's efforts toward reconciliation with Indigenous peoples. Clear Seas receives its funding from federal and provincial governments, port authorities and research partners.

PROGRAMME

Tuesday, 30 August

<p>08.30-09.00 Opening</p>	<p>Acknowledgement of Mi'Kmaq ancestral lands, territories and Treaty rights</p> <p>Opening remarks</p> <ul style="list-style-type: none">• Anya Waite, Scientific Director & CEO, Ocean Frontier Institute; Dalhousie University Associate Vice-President Research (Ocean), Halifax, NS• Murray Coolican, Board Chair, Clear Seas Centre for Responsible Marine Shipping, Halifax, NS• Aldo Chircop, Professor of Law, Marine & Environmental Law Institute, Dalhousie University, Halifax, NS <p>Workshop purposes and procedure</p>
<p>09.00-09.30 Keynote Address</p>	<p>Ken Paul, Wolastoqey Nation, New Brunswick</p>
<p>09.30-11.00 Session 1 Vessel traffic management</p>	<p>Moderator: Ronald Pelot, Professor, Department of Industrial Engineering, Dalhousie University, Halifax, NS</p> <p>Waterway risk analysis as a basis for a framework for risk-based vessel traffic management</p> <ul style="list-style-type: none">• Floris Goerlandt, Assistant Professor & Canada Research Chair in Risk Management and Resource Optimization for Marine Industries, Department of Industrial Engineering, Dalhousie University, Halifax, NS <p>Vessel traffic management experiences in European waters</p> <ul style="list-style-type: none">• Jens-Uwe Schröder-Hinrichs, Vice-President Academic, IMO-World Maritime University, Malmo, Sweden and• Anish Hebbar, Assistant Professor, IMO-World Maritime University, Malmo, Sweden (virtual) <p>Canada's experience with vessel traffic management in its marine regions</p>

	<ul style="list-style-type: none"> • Antonella Ferro, Director, Marine Navigation in the Fleet and Maritime Services (FMS) branch, Canadian Coast Guard, Ottawa, ON (virtual) <p>Commentator: Paul Blomerus, Executive Director, Clear Seas Centre for Responsible Marine Shipping, Vancouver, BC (virtual)</p>
<p>11.00-11.15</p>	<p>Networking break</p>
<p>11.15-12.45 Session 2 Marine spatial planning and environment protection</p>	<p>Moderator: Claudio Aporta, Canadian Chair in Marine Environment Protection, IMO-World Maritime University, Malmo, Sweden</p> <p>Marine spatial planning in Canada</p> <ul style="list-style-type: none"> • Silke Neve, Senior Director, Marine Spatial Planning, Fisheries and Oceans Canada, Ottawa, ON <p>Area-based management approaches to address marine and atmospheric pollution and impacts from shipping: Practices, successes and failures</p> <ul style="list-style-type: none"> • Sam Davin, Specialist, Marine Shipping and Conservation, WWF-Canada, Ottawa, ON <p>Challenges in incorporating local knowledge in marine spatial planning decision-support tools</p> <ul style="list-style-type: none"> • Claudio Aporta, Canadian Chair in Marine Environment Protection, IMO-World Maritime University, Malmo, Sweden <p>Commentator: Gerald Singh, Assistant Professor and Ocean Nexus Chair in Global Change and Sustainable Development, School of Environmental Studies, University of Victoria, Victoria, BC (virtual)</p>
<p>12.45-13.45</p>	<p>Lunch break</p>
<p>13.45-15.15 Session 3 Prevention and mitigation of vessel environmental</p>	<p>Moderator: Bruce Martin, Applied Sciences Manager (Halifax), JASCO Applied Sciences (Canada) Ltd., Halifax, NS</p> <p>Understanding and mitigating underwater noise through routing measures</p>

<p>impacts on marine biological diversity</p>	<ul style="list-style-type: none"> • David Barclay, Associate Professor, Department of Oceanography, Dalhousie University, Halifax, NS <p>Understanding vessel size and speed as a factor in preventing ship strikes of marine mammals</p> <ul style="list-style-type: none"> • Sean Brilliant, Senior Conservation Biologist, Marine Programs, Canadian Wildlife Federation, Halifax, NS <p>Comparing area-based management approaches on east and west coasts</p> <ul style="list-style-type: none"> • Michel Charron, Acting Director, Whale Protection Policy, Transport Canada, Ottawa, ON (virtual) <p>Commentator: Sarah Fortune, Canadian Wildlife Federation Chair in Large Whale Conservation, Department of Oceanography, Dalhousie University, Halifax, NS</p>
<p>15.15-15.30</p>	<p>Networking break</p>
<p>15.30-17.00 Session 4 Managing human safety at sea in remote areas</p>	<p>Moderator: Gregory Wilkie, Commanding Officer, CCG Atlantic Region, Dartmouth, NS</p> <p>Arctic Search and Rescue (SAR): Issues, challenges, and pathways to solutions</p> <ul style="list-style-type: none"> • Peter Kikkert, Irving Shipbuilding Chair in Arctic Policy, Brian Mulroney Institute of Government, St Francis Xavier University, Antigonish, NS (virtual) and • Ronald Pelot, Department of Industrial Engineering, Dalhousie University, Halifax, NS <p>Community connectivity in Arctic SAR</p> <ul style="list-style-type: none"> • Mark Stoddard, PhD Candidate, Department of Industrial Engineering, Dalhousie University, Halifax, NS <p>The impact of COVID-19 on Arctic shipping: An occupational health and safety perspective</p> <ul style="list-style-type: none"> • Desai Shan, Community Health and Humanities, Faculty of Medicine, Memorial University, St. John's, NL <p>Commentator: Captain Jack Gallagher, Hammurabi Consulting, Halifax, NS</p>

Wednesday, 31 August

<p>09.00-10.15 Session 5 Shipping's interface with Indigenous rights and area-based management perspectives</p>	<p>Purpose: to share Indigenous rights-holders' experiences with shipping and area-based management, to identify successes and challenges, to share guidelines to more effectively engage and collaborate in future on these issues.</p> <p>Moderator: Meghan Mathieson, Clear Seas Centre for Responsible Marine Shipping, Vancouver, BC</p> <p>Context: Area-based management for shipping and Indigenous Peoples' involvement on three coasts</p> <ul style="list-style-type: none"> • Weishan Wang, Interdisciplinary PhD Candidate, Dalhousie University, Halifax <p>Atlantic Region: Initiatives and collaborations to make marine navigation safer and more respectful of the environment and Indigenous rights in the St. Lawrence Region</p> <ul style="list-style-type: none"> • Institut de développement durable des Premières Nations du Québec et du Labrador First Nations of Quebec and Labrador Sustainable Development Institute, Wendake, QC <ul style="list-style-type: none"> ○ Mélissa Whittom, Consultation Project Manager, Centre of Expertise in Consultation and Accommodation ○ Coralie Lessard Bolâtre, Conservation Project Manager, Planning and Marine Conservation
<p>10.15-10.45</p>	<p>Networking break</p>
<p>10.45-12.00 Session 5 (continued)</p>	<p>Pacific: Voluntary Protection Zone for Shipping on the West Coast of Haida Gwaii</p> <ul style="list-style-type: none"> • Chief Russ Jones, Contractor Marine Planning Program, Council of the Haida Nation, Skidegate, BC • Louise Murgatroyd, Regional Program Manager, Proactive Vessel Management, Transport Canada, Vancouver, BC (virtual) • Robert Lewis-Manning, President, Chamber of Shipping, Vancouver, BC
<p>12.00-13.00</p>	<p>Lunch break</p>
<p>13.00-14.15</p>	<p>Arctic Region: Northern Low-Impact Shipping Corridors initiative and engagement with Inuit, First Nations, and Métis</p>

Session 5 (continued)	<p>organizations and governments, industry and other Northern partners</p> <ul style="list-style-type: none"> • Sue McLennan, Manager, Arctic Projects and Governance for the Canadian Coast Guard Arctic Region, Ottawa, ON • Lindsey Raymond, Manager, Domestic Shipping Policy, Transport Canada, Ottawa, ON • René Chénier, Manager, Geodetic Engineering, Earth Observation and Geomatics, Canadian Hydrographic Service, Ottawa, ON <p>Arctic Region: Perspective of the Inuvialuit Game Council on the Arctic Shipping Corridors initiative through the lens of the Inuit-Crown relationship</p> <ul style="list-style-type: none"> • Jody Illasiak, Inuvialuit Game Council, Inuvik, NT • Leah Beveridge, Interdisciplinary PhD Candidate, Dalhousie University, Halifax, NS
14.15-14.45	General discussion
14.45-15.00	Networking break
15.00-16.30 Concluding roundtable discussion	<p>Policy directions for area-based management of shipping in Canadian waters</p> <p>Moderator: Aldo Chircop, Professor of Law, Marine & Environmental Law Institute, Dalhousie University, Halifax, NS</p> <ul style="list-style-type: none"> • Erin Abou-Abssi, Oceans North, Ottawa, ON (virtual) • Floris Goerlandt, Assistant Professor & Canada Research Chair in Risk Management and Resource Optimization for Marine Industries, Department of Industrial Engineering, Dalhousie University, Halifax, NS • Chief Russ Jones, Contractor Marine Planning Program, Council of the Haida Nation, Skidegate, BC • Robert Lewis-Manning, Chamber of Shipping, Vancouver, BC • Bud Streeter, on behalf of the Board of Clear Seas Centre for Responsible Marine Shipping, Halifax, NS
16.30-16.45	Workshop closure