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## **On Uncertain Ice: The Future of Arctic Shipping and the Northwest Passage**

by Whitney Lackenbauer and Adam Lajeunesse  
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# POLICY PAPER

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## **On Uncertain Ice: The Future of Arctic Shipping and the Northwest Passage\***

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## ► Executive Summary

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The Arctic sea-ice is in a state of rapid decline. Barriers to navigation that once doomed the likes of Sir John Franklin and closed the shortcut to the Orient now seem to be melting away. The prospect of shorter, transpolar transportation routes linking Asian and Western markets has inspired excitement and fear, and particularly the latter when it comes to Canadian sovereignty.

This paper confirms recent studies suggesting that, in spite of the general trend towards reduced ice cover in the Arctic Basin, environmental variability, scarce infrastructure and other navigational aids, and uncertain economics make it unlikely that the Northwest Passage will emerge as a viable trans-shipping route in the foreseeable future. Instead, the region is likely to witness a steady increase in resource, resupply, and tourist destination shipping. Accordingly, concerns that this increased activity will adversely affect Canadian sovereignty are misplaced. Rather than calling into question Canadian control, foreign vessels engaged in local activities are likely to reinforce Canada's legal position by demonstrating an international acceptance of Canadian laws and regulations.

Rather than worrying about the "sovereignty" ramifications of Arctic shipping, the Canadian government should focus its short – and medium – term energies on the practical requirements of developing and maintaining safe shipping routes. At the heart of this requirement is ensuring that such activity is beneficial to Inuit, whose traditional "highways" will double as transits routes for resource carriers and cruise liners. If developed with an eye to those most directly affected, Canada's Arctic waters can become a well-managed route to an increasingly attractive region, making our Arctic a *destination* rather than mere *space* through which to pass.

## ► Résumé

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La banquise arctique fond à vue d'œil. Les obstacles à la navigation — qui ont jadis scellé le sort de Sir John Franklin et qui bloquent le raccourci vers l'Orient — semblent en voie de disparaître. La perspective de voies de transport transpolaires plus courtes reliant les marchés asiatiques et occidentaux a suscité de l'enthousiasme et de la peur, mais surtout de l'inquiétude par rapport à la souveraineté du Canada.

Le présent document confirme les résultats d'études récentes : en dépit de la tendance générale de réduction de la couverture de glace dans le bassin de l'Arctique, la variabilité de l'environnement, le manque d'infrastructures et d'autres aides à la navigation et des économies incertaines sont autant de facteurs qui s'opposent dans un avenir prévisible à la viabilité du passage du Nord-Ouest comme voie de transbordement. La région sera plutôt le théâtre d'une augmentation constante du transport maritime de ressources, de ravitaillements et de touristes. Il n'y a donc pas lieu de craindre que cette activité accrue nuise à la souveraineté du Canada. Selon toute probabilité, les navires étrangers en activité dans la région, loin de remettre en cause la surveillance du Canada, renforceront la position juridique du Canada en montrant une acceptation internationale des lois et règlements canadiens.

Au lieu de se soucier des conséquences de la navigation dans l'Arctique sur la « souveraineté » du pays, le gouvernement canadien devrait concentrer ses efforts à court et à moyen terme sur les exigences pratiques liées à l'établissement et au maintien d'itinéraires de navigation sûrs. En outre, cette activité doit absolument être avantageuse pour les Inuits, dont les « autoroutes » traditionnelles feront office de routes du large tant pour les transporteurs de ressources que pour les paquebots de croisière. Un développement des eaux arctiques du Canada tenant compte des personnes les plus directement touchées pourrait en faire un itinéraire bien géré et une destination attrayante, plutôt qu'une simple zone de passage.

\* Cette recherche a été soutenue financièrement en partie par le gouvernement du Canada via Diversification de l'économie de l'Ouest Canada.



In October 2013, the Danish bulk carrier *Nordic Orion* completed the first successful commercial transit of the Northwest Passage. By avoiding the Panama Canal, the ship saved a week of travel time, tens of thousands in canal fees, and \$80,000 in fuel costs.<sup>1</sup> Optimistic commentators hailed the voyage as the beginning of a new era of Arctic commercial activity, and analysts confidently predicted that more ships, following in the *Nordic Orion's* wake, would take advantage of the Arctic's melting ice.<sup>2</sup> In 2014, however, high ice levels have put this dream on hold. Instead, the much-trumpeted discovery of one of John Franklin's ill-fated ships might remind Canadians about the dangers of Arctic navigation – dangers that technology and modern shipbuilding have yet to overcome completely.

In spite of the popular concern and enthusiasm surrounding Arctic shipping, our survey of recent Canadian and international studies and data reaffirms that the much-hyped Northwest Passage routes will remain inhospitable to international shipping for the foreseeable future. Fears that cargo ships will carve a new commercial transshipment route through the Canadian archipelago and, in so doing, undermine Ottawa's internal waters position, are overblown.<sup>3</sup> Nonetheless, the Canadian Arctic has already seen increased *destinational* shipping, and this trend will continue.<sup>4</sup> These considerations warrant the careful attention of the federal government, which emphasizes the importance of safe shipping in its Northern Strategy and as one of its overarching priorities as chair of the Arctic Council (2013-15). Given variable environmental conditions and uncertainties about ice levels and the economics of northern operations, the Canadian government should continue to dedicate its primary focus and resources to practical matters of environmental protection, charting, and ensuring that the local communities benefit from nascent industry – not succumbing to concerns often raised in the popular press.<sup>5</sup>

Although the Arctic ice cover has shrunk dramatically over the past decade, confirming a clear trend line towards less and thinner ice across the region as a whole, the process has been anything but reliable or consistent from an operator's standpoint. Scheduling a transit through specific waters of the Canadian Arctic remains both difficult and dangerous. Winds and currents shift the ice constantly, often clogging channels that had been clear the week, or even day,

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<sup>1</sup> Marsh Risk Management Research, "Arctic Shipping: Navigating the Risks and Opportunities" (August 19, 2014).

<sup>2</sup> John McGarrity, "Northwest Passage Crossed by First Cargo Ship, The Nordic Orion, Heralding New Era of Arctic Commercial Activity," *National Post* (September 27, 2013).

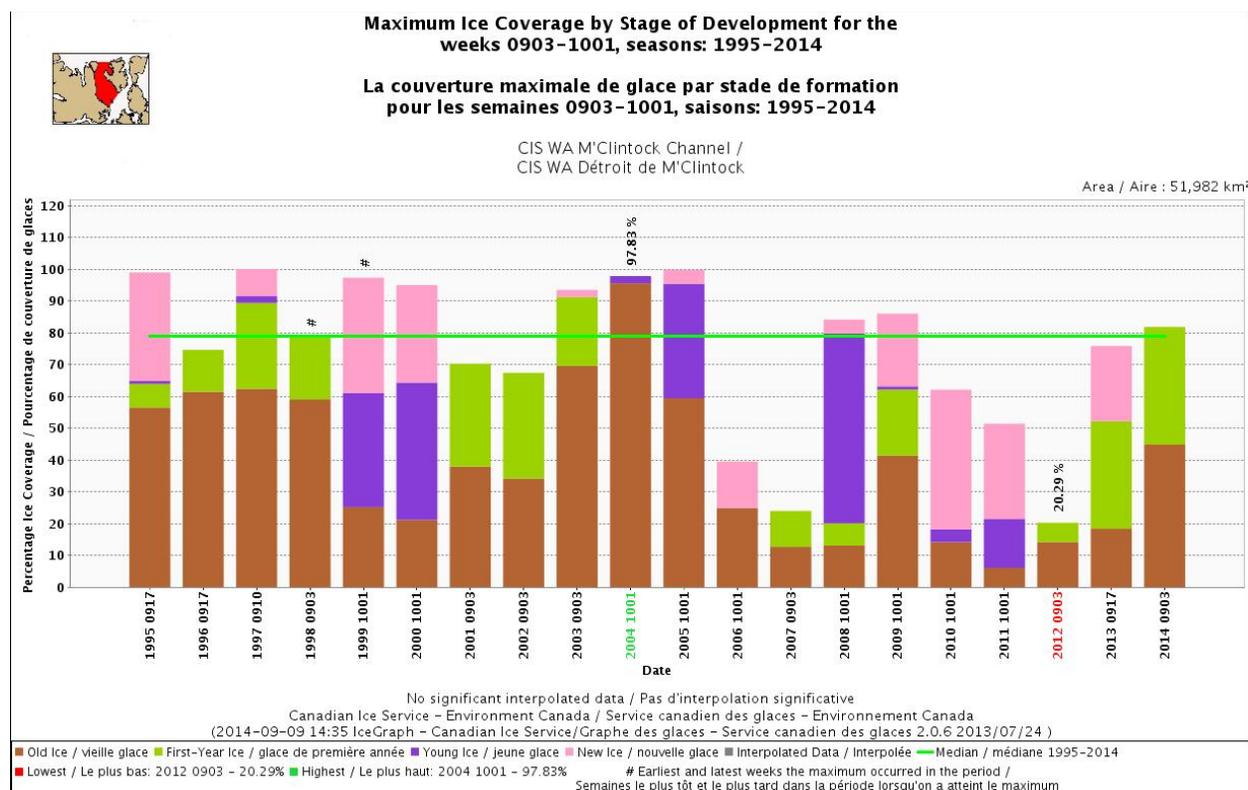
<sup>3</sup> There is an extensive literature analyzing the different legal positions on the status of the waters of the Northwest Passage and, by extension, the controls Canada that can exercise over foreign navigation. Canada maintains the position that these waters are internal waters by virtue of historic title, enclosed by straight baselines, and that it has an unfettered right to regulate the Passage as it would land territory. Accordingly, there is no right of transit passage or innocent passage through these waters. The United States argues that Canada enjoys no sovereignty over the Arctic waters outside of its 12-mile territorial sea, that Canadian baselines are excessive and do not meet the requirements of UNCLOS, and that the Passage as a whole constitutes an international strait (connecting one area of high seas to another) and is thus open to international navigation with the right of transit passage. For a recent analysis, see Suzanne Lalonde and Frédéric Lasserre, "The Position of the United States on the Northwest Passage: Is the Fear of a Precedent Warranted?" *Ocean Development and International Law* 44, no.1 (2013): 28-72.

<sup>4</sup> See, for example, Arctic Council, *Arctic Marine Shipping Assessment 2009 Report* (hereafter *AMSA 2009*) (Protection of the Arctic Marine Environment Working Group, 2009); Joshua Ho, "The Implications of Arctic Sea Ice Decline on Shipping," *Marine Policy* 34 (2010), 713-715; and Frédéric Lasserre and Sébastien Pelletier, "Polar Super Seaways? Maritime Transport in the Arctic: An Analysis of Shipowners' Intentions," *Journal of Transport Geography* 19, no.6 (2011), 1465-1473.

<sup>5</sup> See for example: Brian Case, "Sovereignty Issues Loom as Arctic Sea Ice Shrinks," *Globe and Mail* (September 12, 2012).

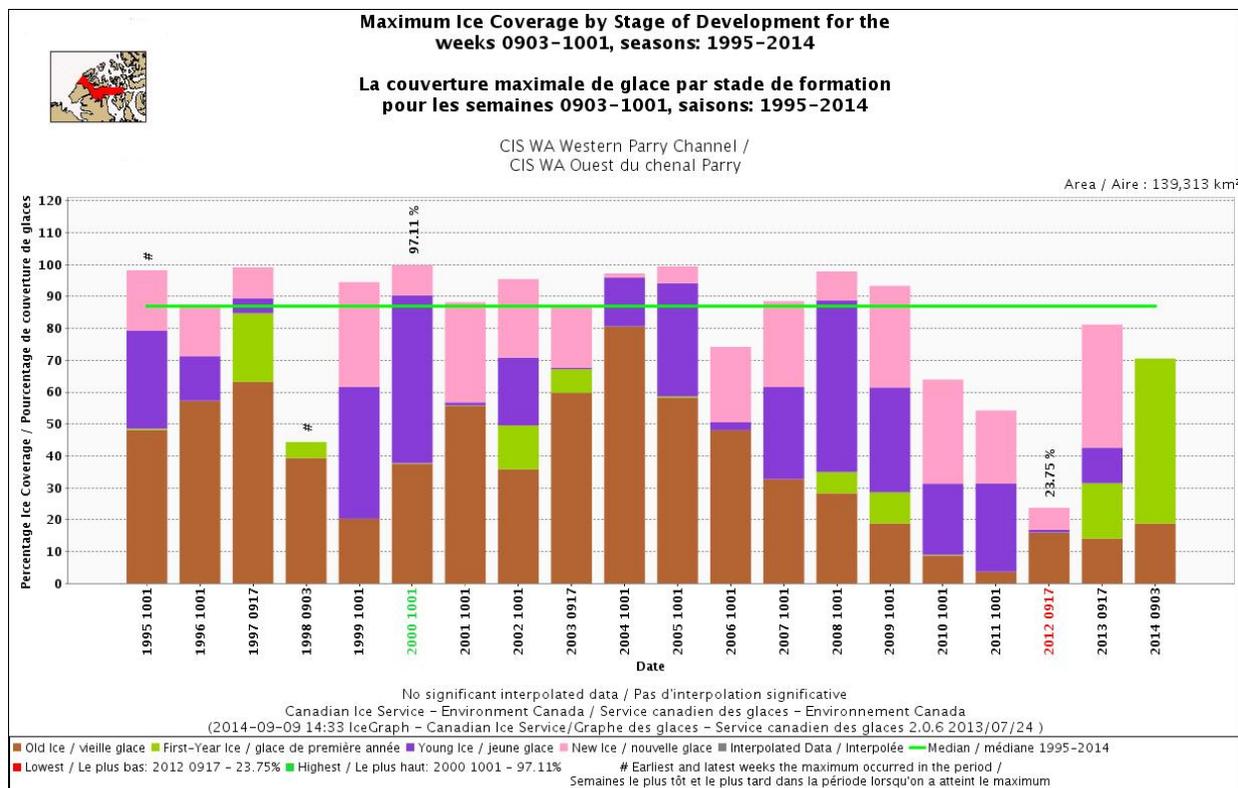


before. Accordingly, a longer shipping season on paper does not necessarily translate into consecutive weeks of open water in practice.<sup>6</sup> Annual variability is also significant, rendering it impossible to accurately predict shipping conditions for the next season. Optimistic forecasts at the end of 2013, for instance, proved ephemeral as the sea-ice in the 2014 shipping season rebounded to average 6.22 million square kilometers – well above the August 2012 average of 4.71 million square kilometers.<sup>7</sup>



<sup>6</sup> Willy Østreg, "Shipping and Resources in the Arctic Ocean: A Hemispheric Perspective," *Arctic Yearbook* (2012), 259, and Franklyn Griffiths, "The Shipping News: Canada's Arctic Sovereignty not on Thinning Ice," *International Journal*, 58:2 (Spring 2003).

<sup>7</sup> Colorado University Sea Level Research Group, "NSIDC Arctic Sea Ice News" (August 7, 2014): <http://sealevel.colorado.edu/aggregator/sources/9>



Source: Canadian Ice Service, Transport Canada.

**Charts 1 and 2:** Note the variability in two key shipping routes: M'Clintock Channel in the east and M'Clure-Barrow Strait in the west.

In the Canadian Arctic context, this year's increase in ice coverage is concentrated in certain chokepoints. M'Clintock Channel saw more than 100% more old ice in the 2014 season than in 2013, and close to 800% more than in 2011 (see charts 1 and 2). Unpredictable ice and weather conditions, which prevent a captain from maintaining a consistent high-speed and course, are not conducive to the timetables maintained by an industry governed by just-in-time delivery. As Laval University geographer Frédéric Lasserre and other experts note, these conditions will continue to dissuade shipping firms from risking their tight schedules on uncertain routes.<sup>8</sup>

<sup>8</sup> See, for example, Østreg, "Shipping and Resources"; Frédéric Lasserre, "The Geopolitics of Arctic Passages and Continental Shelves," *Public Sector Digest* (November 2011), 2; and Willy Østreg, Karl Magnus Eger, Brit Fløistad, Arnfinn Jørgensen-Dahl, Lars Lothe, Morten Mejlænder-Larsen, and Tor Wergeland, *Shipping in Arctic Waters: A Comparison of the Northeast, Northwest and Trans Polar Passages* (Chichester, UK: Springer-Praxis, 2013).



Circumpolar maps showing the shrinking polar ice cap using annual averages do not illustrate the considerable dangers that remain in the Arctic. To date, only 12 percent of Canada’s Arctic waters have been charted to modern standards, a deficiency that was dramatically demonstrated by the 2010 groundings of the *Nanny*, a tanker carrying nine million litres of fuel in the Simpson Strait, and the *Clipper Adventure*, a cruise ship in Coronation Gulf.<sup>9</sup>

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Accidents	6	0	4	3	5	6	5	1	6	6

Source: Transportation Safety Board of Canada, “Statistical Summary Marine Occurrences 2013,” (Ottawa: 2014)

These dangers likely translate into extremely high insurance premiums for would-be Arctic shippers. The cost of insurance remains speculative since only one voyage has taken place, and the premium paid by the *Nordic Orion* is not public. Insurance brokers, however, have offered an estimate of \$100,000 or more to insure a ship of the class and size of *Nordic Orion*, with a 30% Arctic operations premium.<sup>10</sup> Recently, Lasserre’s comprehensive study of container ship operations in the Arctic found that insurance premiums in this sector would likely range from 50% to more than 100%, P&I premiums (covering third-party liabilities) would have to be 16.7% to 100% more, while H&M (for damage done to the ship itself) would be 25% to 100% more.<sup>11</sup> Furthermore, given the lack of historical, commercial navigation data to calculate costs and risks, it is difficult for marine insurers to price an insurable risk – or to agree to cover a voyage in the first place.<sup>12</sup> In a widely-cited report, the Marsh Global Marine Practice notes a real short-term fear within the insurance industry of incurring large, high-profile losses while the Arctic shipping market remains in its infancy.<sup>13</sup>

Uncharted sea-lanes and limited salvage, repair, and emergency response infrastructure also pose significant dangers to regular shipping through the Northwest Passage, thus limiting prospective short to medium-term activity to niche voyages and government-supported operations. Assessments by former Deputy Minister of Transport John Higginbotham and political scientist Andrea Charron, that the *Nordic Orion* voyage represents “the tip of the proverbial economic iceberg,” are likely mistaken.<sup>14</sup> Lasserre’s analysis shows that shipping models reflect uncertainty about the potential profitability of using the passage, while his own calculations question the route’s utility (with variables like speed, load factors, and delays playing a crucial role in profitability).<sup>15</sup>

<sup>9</sup> Transportation Safety Board, Marine Investigation Report M10H0006 (on the *Clipper Adventurer*, 27 August 2010), <http://www.tsb.gc.ca/eng/rappports-reports/marine/2010/m10h0006/m10h0006.asp>. See also Lee Berthiaume, “Coast Guard to Scope out Arctic Shipping Lanes,” *Windsor Star* (January 21, 2014).

<sup>10</sup> Wendy Stueck, “Groundbreaking Northwest Passage Voyage almost Foundered over Insurance,” *Globe and Mail* (October 2, 2013).

<sup>11</sup> Frédéric Lasserre, “Case Studies of Shipping along Arctic Routes: Analysis and Profitability Perspectives for the Container Sector,” *Transportation Research Part A* 66 (2014), 150.

<sup>12</sup> “Marine Insurers Wary of Arctic Shipping Routes” *World Maritime News* (August 25, 2014).

<sup>13</sup> Marsh Risk Management Research, “Arctic Shipping: Navigating the Risks and Opportunities” (August 19, 2014). Østreng et al predict, based upon the risk factors that they identify in their study, insurance premiums will be higher for the NWP than for the Russian Northern Sea Route. *Shipping in Arctic Waters*, xxvi, 224-30.

<sup>14</sup> John Higginbotham et al., “Canada-US Arctic Marine Corridors and Resource Development,” *Policy Brief* 24 (November, 2012), 1.

<sup>15</sup> Frédéric Lasserre, “Case Studies of Shipping along Arctic Routes,” 151.



The emergence of the Northern Sea Route as a feasible shortcut from northern Europe to Asia has demonstrated that, in most cases, the Northwest Passage will never constitute the optimal Arctic route for most international shipping. In most scenarios, the Russian route is shorter and, in practical terms, is far better supplied with icebreakers, ports, and navigational support. If the polar ice continues to melt at current rates, a transpolar route may also become a possibility.<sup>16</sup> In that scenario a seasonal deep-water route over the Pole would render the shallow and rocky Northwest Passage an unattractive alternative. Thus, while it is almost universally agreed that the Arctic waters will see more activity in the next two decades,<sup>17</sup> most systematic, empirical studies predict that the Arctic shipping – particularly in Canadian waters – will most likely consist of destination shipping, comprised of resource carriers, service ships, resupply vessels, and cruise liners.<sup>18</sup>

This scenario assumes heightened resource development in the region – itself a proposition dependent on many variables, from global resource prices to permitting and support from local populations. Nevertheless, China Minmetals Group (MMG) is slowly moving through the permitting process for the Izok Corridor, a major zinc, copper, and lead project near Bathurst Inlet in the Kitikmeot region and the most advanced mining projects are already precipitating increased destination shipping. ArcelorMittal and Baffinland are on the cusp of opening the Mary River iron mine and will soon begin shipping ore through Milne Inlet.<sup>19</sup> Fednav, a Canadian-owned shipping company, moved the first cargo of nickel concentrate from Deception Bay, Quebec to China via the Northwest Passage in September 2014.<sup>20</sup> Oil and gas producers are likewise moving forward. Shell has requested new drilling permits in the Chukchi sea, indicating that it will continue its operations in the area, while Imperial Oil Canada, Exxon Mobil, and BP have jointly filed an application to drill at least one well in the Beaufort Sea.

The future of Arctic oil and gas remains highly speculative. In recent years, the global production surge from shale oil has lowered prices and called into question the need to drill in the Arctic. Nevertheless, the world's major oil companies still see potential value in the region. Shell's search in the Chukchi Sea and Exxon's in the Kara Sea are focused on discovering the world's last "elephant" fields – fields so large that they can be produced in even the harshest environment at a reasonable cost. Shale oil, while far more accessible, will never be cheap. Furthermore, because of the geological nature of the wells, their high depletion rates normally render them unproductive after only two years. Accordingly, many shale drillers in the US are not even profitable.<sup>21</sup> As such, while shale oil production in the continental US continues to

<sup>16</sup> Willy Østregren et al, *Shipping in Arctic Waters A Comparison of the Northeast, Northwest and Trans Polar Passages* (New York: Springer, 2013), 209-15, 264-65.

<sup>17</sup> Frédéric Lasserre, "High North Shipping: Myths and Realities?" *Security Prospects in the High North: Geostrategic Thaw or Freeze?*, Sven G. Holtsmark and Brooke A. Smith-Windsor eds. (Rome: NATO Defence College Research Division, 2009); Arctic Council, PAME, *Arctic Marine Shipping Assessment* (2009); Willy Østregren et al, *Shipping in Arctic Waters A Comparison of the Northeast, Northwest and Trans Polar Passages* (New York: Springer, 2013); Frédéric Lasserre and Sébastien Pelletier, "Polar Super Seaways;" and Malte Humpert, *The Future of Arctic Shipping: A New Silk Road for China* (The Arctic Institute: Centre for Circumpolar Studies, 2013).

<sup>18</sup> See for instance: Arctic Council, *Arctic Marine Shipping Assessment*; Willy Østregren et al, *Shipping in Arctic Waters*; and Frédéric Lasserre, "Vers une Autoroute Maritime? Passages Arctiques et Trafic Maritime International," *Passages et Mers Arctiques: Géopolitique d'une Région en Mutation* (Québec: Presses de l'Université du Québec, 2010).

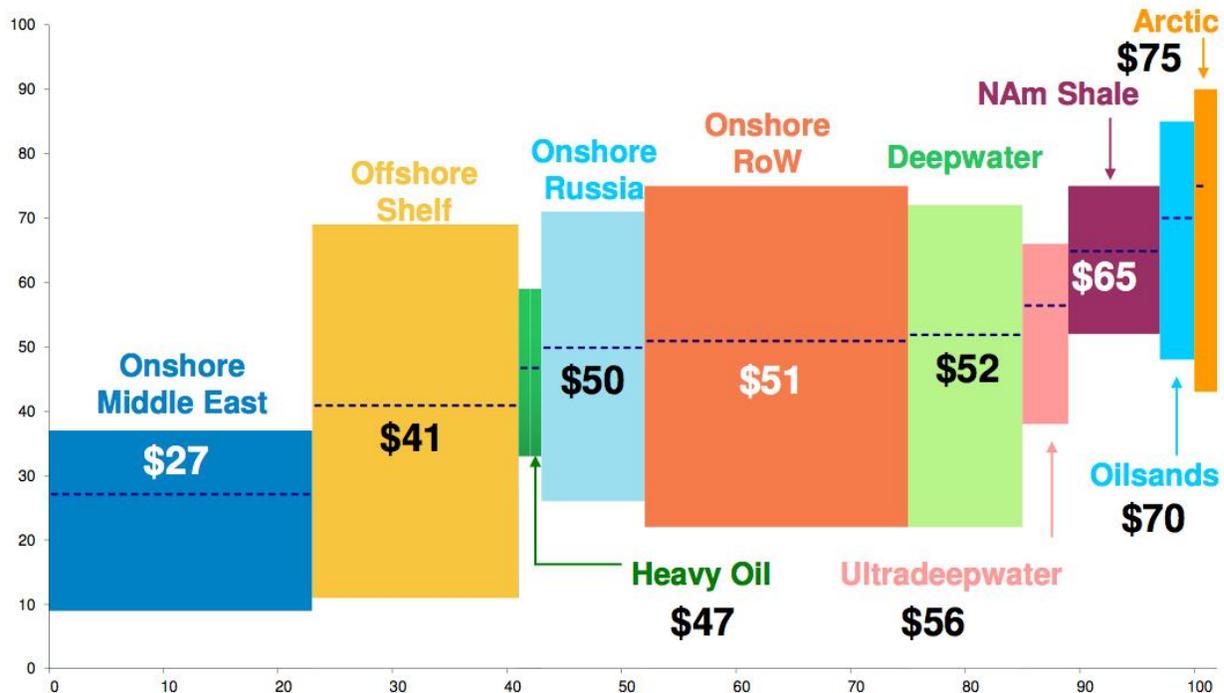
<sup>19</sup> "Arcelormittal: Mining at Mary River could begin in Summer; Baffinland Announces Final Approval for Iron Mine," *4-Traders* (August 22, 2014). Projections estimate 55 cargo shipments per summer season.

<sup>20</sup> Fednav, "First Arctic Cargo Shipped through the Northwest Passage," (September 19, 2014): <http://www.fednav.com/en/media/first-arctic-cargo-shipped-through-northwest-passage-0>

<sup>21</sup> "Could The 'Shale Oil Miracle' Be Just A Pipe Dream?" *Seeking Alpha* (October 14, 2014).



escalate, profit margins are narrower than they might be with a major Arctic field. This rationale has moved companies to invest billions in the Arctic and, as the best shale reserves are depleted, Arctic oil exploration – and shipping to support it – is likely to increase.



Source: Seadrill, Morgan Stanley Equity Research, International Energy Agency

The potential impact on Canadian sovereignty of increased shipping activity through the Northwest Passage has been the source of considerable academic debate. In 2003, University of Calgary political scientist Rob Huebert predicted that international shipping companies would soon exploit the route to carry goods between Atlantic and Pacific ports in light of global warming (less sea ice) and simple geographical criteria. The Northwest Passage is 3,450 km shorter from Shanghai to Rotterdam than the Suez Canal, and 3,850 km shorter from Shanghai to New York,<sup>22</sup> yielding considerable *theoretical* savings in time and fuel. Huebert believed that even a single ship moving through Canadian waters, without permission, could establish the Northwest Passage as an international strait used for commercial navigation, thus undermining the legal basis of Canada's position that the waters within the Arctic Archipelago are internal waters.<sup>23</sup> Political scientist Franklyn Griffiths challenged this hypothesis, downplaying the dangers of random and isolated transits, insisting that Canadian sovereignty was not nearly as fragile as Huebert intimated.<sup>24</sup>

<sup>22</sup> Frédéric Lasserre, *China and the Arctic: Threat or Cooperation Potential for Canada?* Canadian International Council, China Papers 11 (June 2010), 6.

<sup>23</sup> Rob Huebert, "The Shipping News Part II," *International Journal* 58:3 (Summer, 2003), 302.

<sup>24</sup> Franklyn Griffiths, "The Shipping News: Canada's Arctic Sovereignty Not on Thinning Ice," *International Journal* 58:2 (2003).



More recently, commentators point to growing Asian interest in the Arctic and suggest that these states are poised to challenge Canada's maritime claims to exploit transpolar shipping lanes and the Arctic's mineral and hydrocarbon reserves. Although China has neither released an official Arctic strategy nor taken a clear position on the legal status of the waters of the Northwest Passage, University of Calgary historian David Wright observes that it is "carefully examining Canada's claims of historical sovereignty over the Arctic in general and the Northwest Passage in particular."<sup>25</sup>

Most other Asian nations continue to reserve their position on the status of the Northwest Passage or have confined themselves to *pro forma* objections. Singapore, for instance, voiced its concern over Canada's 2010 decision to make vessel reporting in the Northwest Passage mandatory but did not go so far as to dispute Canadian sovereignty.<sup>26</sup> Japan has not released an official Arctic policy, but a government-funded report by the Japanese Institute of International Affairs recommended that "appropriate application" of UNCLOS III principles on the freedom of navigation should apply to "Arctic shipping routes."<sup>27</sup>

While their economic reliance on foreign trade would seem to suggest that Asia's commercial powers will eventually side with the United States in challenging Canadian sovereignty, none have ever seen a need to provoke a confrontation over the Northwest Passage. Like the European Union, the Asian maritime powers consider Arctic shipping a hypothetical and have been content to allow the US to manage the issue. Equally important, many of these states have, themselves, made liberal use of straight baselines or made jurisdictional claims considered excessive by other states.<sup>28</sup> South Korea and Japan have both drawn straight baselines far longer than what the United States considers legally permissible.<sup>29</sup> China's longest baseline is 121.7 miles long, only 8 miles shorter than the longest Canadian baseline, which stretches across McClure Strait.<sup>30</sup>

Contrary to many of the fearful articles populating Canadian media, increased destination shipping in the Arctic is likely to strengthen Canada's sovereignty position. Canada requires the acquiescence of foreign users, "particularly those whose interests are primarily affected," to demonstrate internationally that Arctic waters are internal waters.<sup>31</sup> In the twenty-first century,

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<sup>25</sup> David Wright, *The Panda Readies to Meet the Polar Bear: China and Canada's Arctic Sovereignty Challenge* (Calgary: Canadian Defence & Foreign Affairs Institute, March 2011), 1-2. For the basic debate, see Whitney Lackenbauer and James Manicom, *Canada's Northern Strategy and East Asian Interests in the Arctic* (Waterloo: Centre for International Governance Innovation East Asia-Arctic Paper No.5, December 2013), [http://www.cigionline.org/sites/default/files/no5\\_4.pdf](http://www.cigionline.org/sites/default/files/no5_4.pdf).

<sup>26</sup> Rob Huebert, "Canada has to Walk its Arctic Talk," *Globe and Mail* (August 23, 2013).

<sup>27</sup> Fujia Ohnishi, "The Process of Formulating Japan's Arctic Policy: From Involvement to Engagement," *East Asia-Arctic Relations: Boundary, Security and International Politics* 1 (November, 2013), 4.

<sup>28</sup> For more on Asian practice with straight baselines see: Sam Bateman and Clive Schofield, "State Practice Regarding Straight Baselines in East Asia: Legal, Technical and Political Issues in a Changing World," *Conference on Difficulties Implementing the Provisions of UNCLOS*, Monaco (October 16-17, 2008).

<sup>29</sup> Japan's longest straight baseline is 85.2 nm while South Korea's measures 60.3 nm. The United States considers these, and many other baselines drawn by the two nations, to be outside of what is permitted in international law. United States, Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, "Straight Baseline and Territorial Sea Claims: South Korea," *Limits in the Seas* 121 (September 30, 1998) and "Straight Baseline and Territorial Sea Claims: Japan" *Limits in the Seas* 121 (April 30, 1998).

<sup>30</sup> United States, Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, "Straight Baseline Claim: China," *Limits in the Seas* 117 (July 9, 1996).

<sup>31</sup> Donat Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit," *Ocean Development & International Law*, 38:1 (2007), 7.



those non-Canadian interests that are “primarily affected” will be private enterprise, and shipping with resource companies likely to respect Canadian sovereignty out of self-interest. As Canadian icebreakers and shipping infrastructure are needed for safe transit, companies involved in moving goods across the Arctic will need Canadian government support. A refusal to recognize Canadian sovereignty or jurisdiction would simply invite Ottawa to deny vital services, or worse, to impound a vessel. However, it seems unlikely that an offshore service company towing a rig through Canadian waters will fail to comply with the necessary regulations, or to openly demand transit passage. Given that an offshore rig costs its parent company hundreds of thousands of dollars per day (depending on its size and capabilities), risking impound or a revocation of its drilling rights could mean serious financial damage.

In moving beyond a traditional fixation on potential sovereignty threats, the Canadian government should continue to concentrate on practical questions related to the safe development of Arctic shipping lanes. These include hydrographic surveys, improved navigational charts, marine infrastructure, more comprehensive maritime domain awareness (with data fused and shared between government users), enhanced search and rescue (SAR) capabilities, and a robust plan to measure and mitigate deleterious impacts on Northern communities and ecosystems.<sup>32</sup> Transport Canada is already working on a series of marine corridors as a means of concentrating shipping into areas where the Coast Guard has focused its surveying efforts. Initial studies have shown that 50% of marine traffic already operate within these corridors, with an additional 27% operating close by (within 5nm).<sup>33</sup> This project is the first step in creating safe sea-lanes from which Canadian infrastructure can grow.

These shipping routes will have to be carefully selected to limit noise and vessel source pollution in particularly sensitive areas. The Arctic Council has begun to identify areas of heightened ecological and cultural significance along with measures to protect these areas from the impacts of shipping. In 2012, three Arctic Council working groups published a report identifying areas of heightened ecological and cultural significance within the Arctic marine environment. The Arctic Biodiversity Assessment (ABA) and the Circumpolar Biodiversity Monitoring Program (CBMP) also support these initiatives, as does the implementation of marine biodiversity monitoring plans.

The efforts of the International Maritime Organization (IMO) to develop a mandatory international code for the safety of ships operating in polar waters (Polar Code) have obvious applications and benefits for Canada, which has long played a pivotal role in drafting and promoting this instrument.<sup>34</sup> The draft code, approved in principle by the IMO’s Maritime Safety Committee in May 2014, “covers the full range of design, construction, equipment, training, operational, training, search and rescue and environmental protection matters relevant to ships operating in the inhospitable waters surrounding the two poles.”<sup>35</sup> Canada must be vigilant to ensure that the Code is not critically diluted – or “neutered,” as one polar expert

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<sup>32</sup> On these themes, see *AMSA 2009* and Arctic Council, *Status on Implementation of the AMSA 2009 Report Recommendations* (Protection of the Arctic Marine Environment Working Group, May 2013).

<sup>33</sup> Canadian Coast Guard and Transport Canada, “Northern Marine Transportation Corridors Initiative,” Presentation to ASWG Meeting, Yellowknife (May, 2014).

<sup>34</sup> See Peter Kikkert, “Promoting National Interests and Fostering Cooperation: Canada and the Development of a Polar Code,” *Journal of Maritime Law and Commerce*, 43:3 (July 2012): 319-334. The need for mandatory and universal regulations was recognized by Arctic Marine Shipping Assessment in 2009 and by the Arctic Council in its 2011 Nuuk Declaration.

<sup>35</sup> IMO, “Shipping in Polar Waters,” <http://www.imo.org/MediaCentre/HotTopics/polar/Pages/default.aspx>.



suggested about the removal of the requirement for an experienced ice navigator – to secure quick, global ratification to meet expectations for a 1 July 2016 deadline.<sup>36</sup>

The federal government should continue to invest in integrated, practical measures that address knowledge and capability gaps amongst operators. During his visit to Yukon this August, Prime Minister Harper promised \$2.1 million per year for improved ice management, the effective detection and clean-up of oil under ice, and the development of new technologies to reduce the number of vessel accidents.<sup>37</sup> This investment is a step in the right direction, but more remains to be done. The Arctic lacks salvage infrastructure, safe harbours, waste disposal facilities, and sufficient aids to navigation. The costs for this infrastructure will run into the billions of dollars and will have to be rolled out gradually as shipping increases. The lead times required for major Arctic projects, however, require advanced planning and proactive investment if the government wishes to prime the proverbial pump for “sustainable shipping”<sup>38</sup> in the Arctic.

Improved oil spill response and ship salvage infrastructure stands out as a particular priority, given the practical and symbolic damage of an accident on delicate Arctic ecosystems, Inuit and other Northern peoples who depend upon the lands and waters, and popular support for resource development in general. For local Inuit, the dangers of disturbing the marine environment transcend traditional fears about pollution. As a marine culture, Inuit are more fundamentally dependent upon the maritime ecosystem for food, material, and cultural survival. These concerns have been voiced in Inuit Circumpolar Council publications<sup>39</sup> and also at the grassroots level. The Nunavut Review Impact Board (NIRB) holds community meetings to discuss proposed resource projects in the territory and, during these sessions, the most frequent and common concern voiced by community members relates to the impact that more shipping and development will have on the environment and their way of life.<sup>40</sup>

To protect the interests of Northerners, benefit from northern development, and meet the federal government’s explicit Northern Strategic objectives, Canadians must accept the reality that the full spectrum of dangers posed by Arctic shipping must be mitigated – but they cannot be entirely avoided. The desired end state is not to curtail Arctic shipping, which represents the resupply lifeline to Arctic communities. More efficient shipping in the region can reduce the costs of supplies and improve standards of living in remote areas. It is also a necessary precondition to many of the resource development projects that offer the promise of

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<sup>36</sup> Wendy Laursen, “Making and Breaking the Polar Code,” *Maritime Executive*, 14 July 2014, <http://www.maritime-executive.com/article/Making-and-Breaking-the-Polar-Code-2014-07-14>. On the interaction of national and international regulations, see Østreng et al, *Shipping in Arctic Waters*, 245-46.

<sup>37</sup> “PM Launches Northern Tour, Announces Money for Arctic Technology,” *Nunatsiaq Online* (August 22, 2014). [http://www.nunatsiaqonline.ca/stories/article/65674pm\\_launched\\_northern\\_tour\\_announces\\_money\\_for\\_arctic\\_technology/](http://www.nunatsiaqonline.ca/stories/article/65674pm_launched_northern_tour_announces_money_for_arctic_technology/)

<sup>38</sup> Lloyd’s, “Lloyds Develops Arctic Ice Regime to Compliment Polar Code,” 14 March 2014, <http://www.lloyds.com/news-and-insight/news-and-features/emerging-risk/emerging-risk-2014/a-common-ice-regime-for-arctic-shippers>.

<sup>39</sup> Inuit Circumpolar Council (Canada), *The Sea Ice is Our Highway: An Inuit Perspective on Transportation in the Arctic* (Ottawa: ICC Canada, March 2008).

<sup>40</sup> See, for example, Nunavut Review Impact Board, Community Comments on the Bathurst Inlet Road Project, 2018; “Public Information Meetings Summary Report, May 22-May 30, 2012,” NIRB Review of Areva Resources Canada’s Kiggavik Project (June, 2012); Public Information Meetings Summary Report for the NIRB’s Review of Agnico Eagle Mines Ltd.’s Meliadine Gold Project October 15 – October 22, 2013; Public Information Meetings Summary Report for the NIRB’s Review of Sbina Gold & Silver Corp.’s Back River Project. March 24 – April 1, 2014.



employment to local residents. (In 2014 the unemployment rate in Nunavut is 15.3% – twice the national average.)<sup>41</sup>

Although Inuit use the term “open for business” to describe their stance on Arctic resource development,<sup>42</sup> they also insist that projects proceed according to Inuit conditions and rules. The Inuit Circumpolar Council’s *Circumpolar Declaration on Sovereignty in the Arctic* (2009)<sup>43</sup> and the *Circumpolar Inuit Declaration on Resource Development* detail the rights of Inuit to be involved in all decision-making and governance processes that impact their traditional homelands.<sup>44</sup> On the ground, however, industry and Inuit often perceive the dangers of shipping differently. While companies often see ice as a risk or financial liability, Inuit see it as an important conduit for transportation and access to sustenance.<sup>45</sup> At Chesterfield Inlet, for instance, NIRB meetings to discuss the Meliadine gold mine project heard local resident’s voice serious concerns about the impact shipping would have on local fish and marine mammals.<sup>46</sup> Mine developer Agnico Eagle deemed these dangers “short term” and “not significant,”<sup>47</sup> but these differing assessments point to different values and processes for assessing threats.

In the end, studies indicate strong local support for the federal government to control and regulate activities in Arctic waters, improve systems for search and rescue, and enhance preparedness to respond to a maritime spill or accident.<sup>48</sup> Concurrently, shipping and resource companies will continue to turn to Canada to provide the navigation services and supports they need to operate in what Nick Beecroft, the manager of emerging risks & research at Lloyd’s Exposure Management, characterizes as a “genuine frontier environment.” Remoteness, extreme weather, ice, poor charts, communication challenges, and “a lack of recoverability should a vessel get into difficulty” remain significant risk factors that constrain Arctic operations.<sup>49</sup> These challenges are particularly acute in Canada’s Arctic waters and will not disappear in the medium-term.

Despite the international hype around the prospective benefits of transpolar shipping routes, and although every indicator suggests that Arctic summer sea ice will continue to recede in general, *uncertainty* will continue to be the key inhibitor to trans-Arctic shipping through Canada’s Arctic waters. As Willy Østrem et al conclude about the Northwest Passage in their recent comparative study on Arctic shipping:

Although much has been written and said about the impact of climate change and that an ice-free Arctic will likely occur, it is important to note that such ice-free conditions are not likely to occur prior to 2070. Even then, the Arctic will continue

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<sup>41</sup> Nunaut Bureau of statistics, “Quick Facts,” online: <http://www.stats.gov.nu.ca/en/home.aspx>

<sup>42</sup> See Whit Fraser, “The Coming Age of Arctic Oil and Gas Development: Inuit Cautiously Prepare for the Future,” *Above & Beyond: Canada’s Arctic Journal* (May/June 2011).

<sup>43</sup> CIC, *A Circumpolar Inuit Declaration on Sovereignty in the Arctic* (April, 2009).

<sup>44</sup> ICC Press Release: “Circumpolar Inuit Launch Declaration on Arctic Sovereignty” (Tromsø, April 28, 2009).

<sup>45</sup> Michael Bravo, “Epilogue: The Humanism of Sea Ice,” in *SIKU: Knowing Our Ice – Documenting Inuit Sea-Ice Knowledge and Use*, ed. Igor Krupnik, Claudio Aporto, Shari Gearheard, Gita Laidler, and Lene Kielsen Holm (New York: Springer, 2010), 448.

<sup>46</sup> Public Information Meetings Summary Report for the NIRB’s Review of Agnico Eagle Mines Ltd.’s Meliadine Gold Project October 15 – October 22, 2013

<sup>47</sup> NIRB Public Information Meetings for the Review of the Meliadine Gold Mine Project, October 15-22, 2013.

<sup>48</sup> See, for example, Karen Kelley, “Inuit Involvement in the Canadian Arctic Sovereignty Debate: Perspectives from Cape Dorset, Nunavut,” in *Nillijut: Inuit Perspectives on Security, Patriotism and Sovereignty*, ed. Scot Nickels et al (Ottawa: Inuit Qaujisarvingat/Knowledge Centre, 2013), 60, 62.

<sup>49</sup> Quoted in “Lloyds Develops Arctic Ice Regime.”



to be ice-covered during the winter and large seasonal, annual and year-to-year variations will continue to occur. Ice conditions will continue to impede shipping through a major portion of the year. On the NWP, large quantities of drifting ice will continue despite Arctic warming, and shipping through the Northwest Passage will remain risky.<sup>50</sup>

In this context, rather than worrying about the “sovereignty” ramifications of trans-Arctic shipping, the Canadian government should focus its short- and medium-term energies on the practical requirements of developing and maintaining safe shipping routes for destination and intra-Arctic traffic, largely associated with resource development and community resupply. At the heart of this requirement is ensuring that such activity is beneficial to Inuit, whose traditional “highways” will double as transits routes for resource carriers and cruise ships. If developed with an eye to those most directly affected, Canada’s Arctic waters can offer a well-managed route to an increasingly attractive region, making our Arctic a *destination* rather than mere *space* through which to pass.

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<sup>50</sup> Østreng et al, *Shipping in Arctic Waters*, 169. See also 304.

## ► About the Authors

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