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## Making the Most of Canada's Northwest Passage

Major Zachary Gatehouse

**JCSP 48**

**Service Paper**

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**Making the Most of Canada's Northwest Passage**

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## **MAKING THE MOST OF CANADA'S NORTHWEST PASSAGE**

### **Aim**

The Canadian Arctic is opening several areas of opportunity for the Canadian Government. It is opening up several opportunities for foreign governments as well. Many departments must be included in discussions before large decisions are made involving infrastructure, defence, and transportation. Inevitably, there will need to be a balanced approach to ensure that Canada remains the benefactor of opportunity while not degrading its territorial claim to the Arctic. This Service paper will inspect the opportunity of monetizing foreign use of the Northwest Passage (NWP) and how that infrastructure could be beneficial to current and desired Intelligence, Surveillance and Reconnaissance (ISR) platforms. It will also inspect the value and desire for these opportunities to be explored by our indigenous populations along the NWP.

### **Introduction**

This is a complicated topic with several factors at play. To begin, this paper will attempt to define the area and the ongoing legal framework that is important when looking at the NWP. China's "polar silk road" initiative will uncover key advantages and disadvantages from a foreign investment perspective and will be supplemented with Canadian projects and investments as well. The locations of projects, geographically, in relation to the NWP sea route, will matter when discussing opportunities for ISR infrastructure amalgamation or certain limitations of specific platforms.

The Arctic, and specifically the NWP, is mainly monitored by aerial and space assets. With the opening of the NWP this will increase the amount that the maritime and land domains will need to participate in Arctic ISR and sovereignty. There are gaps across all of the domains that need to be understood.

Canada's northern Indigenous leaders have strong opinions on what the future of the north should look like. Their thoughts on the effects to fishing, transportation, shipping and security need to be understood by all Canadian agencies. These four areas naturally align several ministries such as Transport, National Defence, Crown-Indigenous Relations, Innovation, Science and Industry, Health, Immigration, Environment and Climate Change, Fisheries, Northern Affairs, Natural Resources and Foreign Affairs to name a few. While each one will not directly be spoken of in the confines of this paper, the solution space will eventually require input from the whole of Government of Canada.

### **Discussion**

Some basic definitions are required to begin understanding the NWP. How the NWP is classified in the eyes of international law matters to Canada if it is to establish the required infrastructure, routes and support. This section will make use of annexes A, B, and C to demonstrate the area being discussed.

There are three elements of international law that must be considered. They are the United Nations Convention on the Law of the Sea (UNCLOS), The Arctic Council, and the agreement on Arctic Cooperation 1988 between the United States and Canada.<sup>1</sup> To establish the issue at hand and its pertinence to monetizing the NWP this paper will examine the US, Canadian, and Chinese points of view.

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<sup>1</sup> Nolin, Mathieu. "Heated Conflict Over the Northwest Passage: Is Canada's Sovereignty Melting Away?" Journal of Maritime Law and Commerce 48, no. 3 (07, 2017): 344 <https://www.proquest.com/scholarly-journals/heated-conflict-over-northwest-passage-is-canadas/docview/1964511336/se-2?accountid=9867>.

The US aims to classify the NWP as an International Strait. For this to occur, two conditions need to be met. The disputing nation must first prove that geographically “there is an overlap of Territorial waters in the natural passage between land joining two parts of the high seas (or (Exclusive Economic Zone) EEZ) or one part of the high seas (or EEZ) with the territorial sea of a foreign state.”<sup>2</sup> Secondly, it must be demonstrated that functionally, the strait is a ‘useful route for international maritime traffic.’<sup>3</sup> The US argument is that the first condition is met quite obviously given the position of Alaska and that the second condition should not have the same weight because of the non-year round nature of the passage. As the ice melts and traffic increases, this argument will gain more credibility.<sup>4</sup>

Canada contests the NWP is Internal Waters through historical claim and the 1986 drawing of “straight Baselines” to connect the outer headlands. This defines any water directed at land from those lines as internal.<sup>5</sup> UNCLOS detailed that for a straight baseline to be legal it could “not depart to any appreciable extent from the general direction of the coast”. Also, water “within these lines must be sufficiently closely linked to the land domain” and finally that “there are certain economic interest peculiar to a region, the reality and importance of which are clearly evidenced by a long usage.”<sup>6</sup> Naturally, Canada believes these conditions are met citing the general direction of the lines drawn and the fact that the ratio of sea to land is 0.822 to 1 (where as the precedent setting case from a Norwegian fisheries debate cited a 3.5 to 1 sea to land ratio). Lastly, Canada’s Inuit people have maintained an economic interest in the area.<sup>7</sup>

In terms of monetizing the NWP, there is no shortage of Chinese money or desire to aide in infrastructure development, scientific research, and shipping. China has published its own arctic policy as part of its overall belt and road initiative dubbed the “Polar Silk Road.”<sup>8</sup> China is a world leader in shipping and trade and shortening its routes by sea increases this production. The change in distances to large ports can be seen at Annex D. However, while the sea ice is melting and climate change is affecting the arctic waters, the world is still decades away from a time where year-round shipping through the NWP will be a viable and cost-effective solution. At present, there are still several risks highlighted at Annex E.

If Canada is to maintain an Internal Water claim, then the country is responsible for several of the support services to aide ships moving through the NWP. This includes 900 nautical miles of land that is not part of the international debate. The NWP passage infrastructure would then need to be increased to support year-round navigation, ports of refuge, charting and ice data. From a security perspective, Canada would also be responsible for search and rescue, police and coast guard.<sup>9</sup>

Investing in these areas, considering the holistic nature of maintaining operations through the NWP would be extremely costly considering that Canada has negligible infrastructure along the NWP now. Without any deep-water ports through the NWP, any money to be made from an increase in natural resource production and/or shipping routes cannot be realized for local

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<sup>2</sup> Ibid., p. 344

<sup>3</sup> Ibid., p. 344

<sup>4</sup> Ibid., p. 354

<sup>5</sup> Ibid., p. 346

<sup>6</sup> Ibid., p. 346-47

<sup>7</sup> Ibid., p. 347

<sup>8</sup> State, Council Information Office. *China's Arctic Policy (English Version)*

<sup>9</sup> Michael Byers and Emma Lodge, “China and the Northwest Passage,” *Chinese Journal of International Law*, Vol 18, Issue 1 (March 2019): 76.

economies. Nunavut has no permanent rail or road infrastructure to the south, no deep-sea port and struggles to maintain air lines open year-round.<sup>10</sup>

In 2017, the Inuvik Tuktoyaktuk Highway (ITH) was opened in the Northwest Territories. This was a 300-million-dollar project and became the first year-round road to Canada's arctic coastline. There was an expectation that Tuktoyaktuk would then produce a deep-water port, but this was not considered in the initial plans therefore the road itself may not be able to service the port as needed.<sup>11</sup>

ISR in the Arctic is currently established to monitor an aged threat, which means that it is not set up to track traffic from commercial maritime vessels to the expected scale of the future. The North Warning System (NWS) makes up the bulk of radars but there are RCAF assets, space sensors, and data from Transport Canada that is used to monitor and manage Canada's arctic region. This allows the country to protect its sovereignty from a security perspective while also managing commercial transportation through water ways, when those water ways are open.<sup>12</sup>

The NWS is a network of 11 AN/FPS-117 Long Range Radars (200-250 nautical mile range) and 36 AN/FPS-124 Short Range Radars (up to 70 miles). A visual of the zones and current locations of these radars can be seen at Annex G.<sup>13</sup> These systems provide data on all aircrafts that enter the North American air space through CFB North Bay but have no capability to monitor the waterways or ground. The RCAF's CP-140 Aurora is the workhorse but also has some limitations given the vastness of the Arctic region to be covered. The Aurora provides first class ISR while also providing anti-submarine capability. In a future NWP scenario where there is less ice and more traffic, this skillset will become irreplaceable. Canada has 18 Auroras and the fleet overall is nearing 50 years old. Upgrades to the technology will keep the planes safe and, in the air, as well as the ISR capabilities relevant. However, many of the planes have not been updated and cannot be expected be available all at once to cover the Arctic.<sup>14</sup>

Maritime ISR is lacking the most simply because, even now, there are limited windows where waterways are navigable. RADARSAT Constellation Mission (RCM) via the Canadian Space Agency works with the Automatic Identification System (AIS) throughout the Arctic to manage this surface gap. Equally, the Navy is also procuring Arctic Offshore Patrol Vessels (AOPVs) to maintain a presence in Arctic waters as the sea ice changes.<sup>15</sup> A visual on AIS locations can be seen at Annex H. AIS is vastly more spread out and has less systems in place specifically along the NWP. Monitoring the NWP is not their only mandate. Nonetheless, they

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<sup>10</sup> *Canadian ports on the Northwest Passage*. ARCTIS. (n.d.). Retrieved January 22, 2022, from <http://www.arctis-search.com/Canadian+Ports+on+the+Northwest+Passage>

<sup>11</sup> *The trillion-dollar reason for an Arctic Infrastructure Standard*. The Polar Connection. (2019, September 28). Retrieved January 22, 2022, from <https://polarconnection.org/arctic-infrastructure-standard/>

<sup>12</sup> Buckley, Stephen. *Airborne Early Warning Aircraft as a Solution to Arctic Surveillance and Control*. Canadian Forces College, 2019, p. 4. <https://www.cfc.forces.gc.ca/259/290/405/305/buckley.pdf>

<sup>13</sup> Watkins, Steffan. "Canadian North Warning System Locations." *Canadian North Warning System Locations*, 1 Jan. 1970, <https://campingcdn.blogspot.com/2013/10/canadian-north-warning-system-locations.html>.

<sup>14</sup> Juby, T. M. *The Missing Piece to the Umbrella Puzzle: Canadian ISR in the Maritime Domain*. Canadian Forces College, 2016

<sup>15</sup> Buckley, Stephen, and Canadian Forces College. *Airborne Early Warning Aircraft as a Solution to Arctic Surveillance and Control*. Canadian Forces College, 2019, p. 6.

provide accurate data on a ship's identification number, navigational status, speed, course, and position every 2-10 seconds. Every six minutes, the ships call sign, type, and destination (among other things) are broadcasted.<sup>16</sup>

Using the previously discussed ITH as a case study for the use of funds created from investment in infrastructure, the results can be viewed as positive. The project required 1000 person years of employment and established many full-time jobs upon its completion. Residents of the area have seen a decrease in the cost of living and an increase in social services which includes health care access. Lastly, year-round access increased tourism revenue to \$2.7 million annually supported by additional full-time positions who work for the province.<sup>17</sup> It must be noted, that while this is a success story, other communities that would receive infrastructure projects as part of the NWP route would not be as linked and would still be isolated and remote in some cases. Each project in each location would have to be considered individually in order to understand the potential long-term benefits.

The Canadian Government has several projects directed towards northern communities although the arctic nations as a whole in 2016 were investing in approximately 900 projects of various sizes amounting close to 1 Trillion dollars over the course of 15 years.<sup>18</sup> In Canada specifically, it is looking to invest \$40 million for port infrastructure to support Nunavut in off shore fishing which includes a deep-water port in Qikiqtarjuaq on the NWP route. The Rankin Inlet Wastewater Treatment Plant is getting a \$225 000 facelift to support a healthier community while an additional \$1.8 million will go to additional water treatment plant planning in Grise Fiord, Pond Inlet, Rankin Inlet and Sanikiluaq.<sup>19</sup>

Additionally, the National Trade Corridors Fund, which began in 2017, is delivering \$2.3 billion towards transportation systems over an 11-year span. \$800 million of this is specifically directed at Arctic and Northern projects. The Investing in Canada Infrastructure plan, in total, has seen \$518 million in Nunavut infrastructure projects, several of which support directly or indirectly the NWP shipping route.<sup>20</sup>

The Minister of Crown-Indigenous Relations and Northern Affairs produced the Arctic and Northern Policy Framework (ANPF) in 2019.<sup>21</sup> Therein, northern Indigenous leaders can lead the way in how the north is developed and control economic progress at a pace that makes

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<sup>16</sup> Sproule, David, and Whitney Lackenbauer. "Voices from the Arctic: Diverse Views on Canadian Arctic Security." *North American and Arctic Defence and Security Network*. January 2021, 30, 20-nov-ArcticVoicesProceedings-upload.pdf (naadsn.ca)

<sup>17</sup> Infrastructure. (n.d.). Inuvik Tuktoyaktuk Highway Project. Retrieved January 22, 2022, from <https://www.inf.gov.nt.ca/en/ITH>

<sup>18</sup> *The trillion-dollar reason for an Arctic Infrastructure Standard*. The Polar Connection. (2019, September 28). Retrieved January 22, 2022, from <https://polarconnection.org/arctic-infrastructure-standard/>

<sup>19</sup> Canada, T. (2021, August 4). *Government of Canada invests in transportation infrastructure in Nunavut*. Canada.ca. Retrieved January 22, 2022, from <https://www.canada.ca/en/transport-canada/news/2021/08/government-of-canada-invests-in-transportation-infrastructure-in-nunavut.html>

<sup>20</sup> Ibid.

<sup>21</sup> Sproule, David, and Whitney Lackenbauer. "Voices from the Arctic: Diverse Views on Canadian Arctic Security." *North American and Arctic Defence and Security Network*. January 2021, 7, 20-nov-ArcticVoicesProceedings-upload.pdf (naadsn.ca)

sense to their communities. Increased ship traffic in the NWP will cause erosion and a drastic change in marine and littoral habitats. A graphic of this cross over between shipping routes and marine life can be seen at Annex F. Spills and hazardous waste will be a bi product of increased traffic despite them being unintended and accountable to law.<sup>22</sup>

The sovereignty debate in the Arctic will naturally drive militarization of the area. An exponential increase in shipping whether these ships are arriving at Canadian ports or passing through will require more of a security presence. While institutionally these capabilities do not need to come from the military, the Canadian Armed Forces (CAF) will need to be able to demonstrate that it can get to, support, and protect the Arctic on a more regular basis. The Nanisivik Naval facility (to be used for refueling mainly) is one small step in the CAF integrating with the NWP equation.

### **Conclusion**

Climate change is melting the sea ice and the arctic waterways and landscape are changing. As demonstrated, there are many projects worth several millions of dollars that are being funded in Arctic communities. This aims to bolster quality of life as well as establish quality infrastructure for the future use of the NWP to enable commercial use. The locations of these projects are not all relevant to the NWP and this is where the vastness of the Arctic continues to be an important factor. Canada as the territorial owner of the passage will need to ensure that relevant protocols for safety are in place. To cover the passage properly, establishments will need to be made in places where economic sustainment would not be plausible. Many areas along the route would continue to be remote and may or may not have access to year-round roads. Members of the service community such as CAF, RCMP, or Coast Guard could be stationed in these places but there would not be any form of stable economy. Logistical hubs where goods can be received would then need access to areas large enough to support rail, road, or air assets to that port. Except for the ITH, the remainder of the NWP does not have these capabilities. Therefore, there would be an economic boom during the construction but a detailed analysis on the future sustainment of such an economy would need to be completed for those specific areas.

The Arctic is layered with ISR assets that work well enough. Authorities and responsibility along with Command and Control will require whole of Government agreement in this future scenario. Given the current state where traffic from air, land and sea remain limited due to weather and ice supports the idea of a maintained status quo. Increased traffic from all these domains, with special attention given to the maritime domain for shipping, means there needs to be more coordination from all agencies. The security agencies should not be the focus but they have a large stake in the execution.

Canada's Indigenous leaders in the north are focused on building a sustainable future in their areas. A rise in maritime traffic through the NWP could bring some economic rise to certain industries and locations. However, when coupled with concerns over militarization and the effects of shipping routes on marine life and fishing grounds, an economic boost on one hand could be dismantling another source of sustainment. Environmental concerns surrounding spills and increased traffic should also be heavily considered.

### **Recommendations**

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<sup>22</sup> Ibid., p. 9

This service paper has attempted to demonstrate the opportunities to be gained from leveraging the NWP as a means of foreign investment and used, when open from the sea ice, as an economical benefit.

First, Canada's legal position for the NWP will need to be confirmed by the international community if the country wants to monetize the route. Canada's claim is weakening as the ice melts and our key partner in both security and trade, the US, will continue to disagree. From a security perspective and as a NORAD partner, the true opening of the NWP for trade will be a large issue of security for the United States. It would be arrogant of Canada to assume that the US will allow it to have its 'Internal Waters' if they are the ones that will put up the most assets to protect it.

Second, Canada needs to get serious about the security details along the NWP. The required security framework that would span the geographical domain needs to be thoroughly assessed and established before the route is at a full operating capacity. The ground-based radars and space assets will need continued improvements and Command and Control considerations. The RCAF assets are aging and limited in number and the one operational AOPV is simply not a sustainable security framework. A detailed analysis of infrastructure for the pan domain fleet of assets will need to be done. The outcome will inevitably require resources to ensure the construction and implementation of the security network ahead of the NWP being regularly used for commercial shipping.

Third, the future of the natural area needs to be understood and local desires and expertise must be heard and heeded. Economic boosts can happen in northern communities through foreign investment, use of the NWP, or Canadian investments. Future economic sustainment and Indigenous desires must agree on this subject. Concerns for the environment, fishing patterns, animal migration will influence certain regions. Job creation and job sustainment will need to have detailed initial and continuous training plans to ensure its viability long-term. Bringing people to the north to do specialized jobs is a good beginning but it does nothing for the Indigenous communities in a lasting economic uplift if they are not integrated. It is recommended that the Indigenous leaders take the lead in these discussions with the Whole of Government at the table.



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<https://www.proquest.com/scholarly-journals/heated-conflict-over-northwest-passage-is-canadas/docview/1964511336/se-2>
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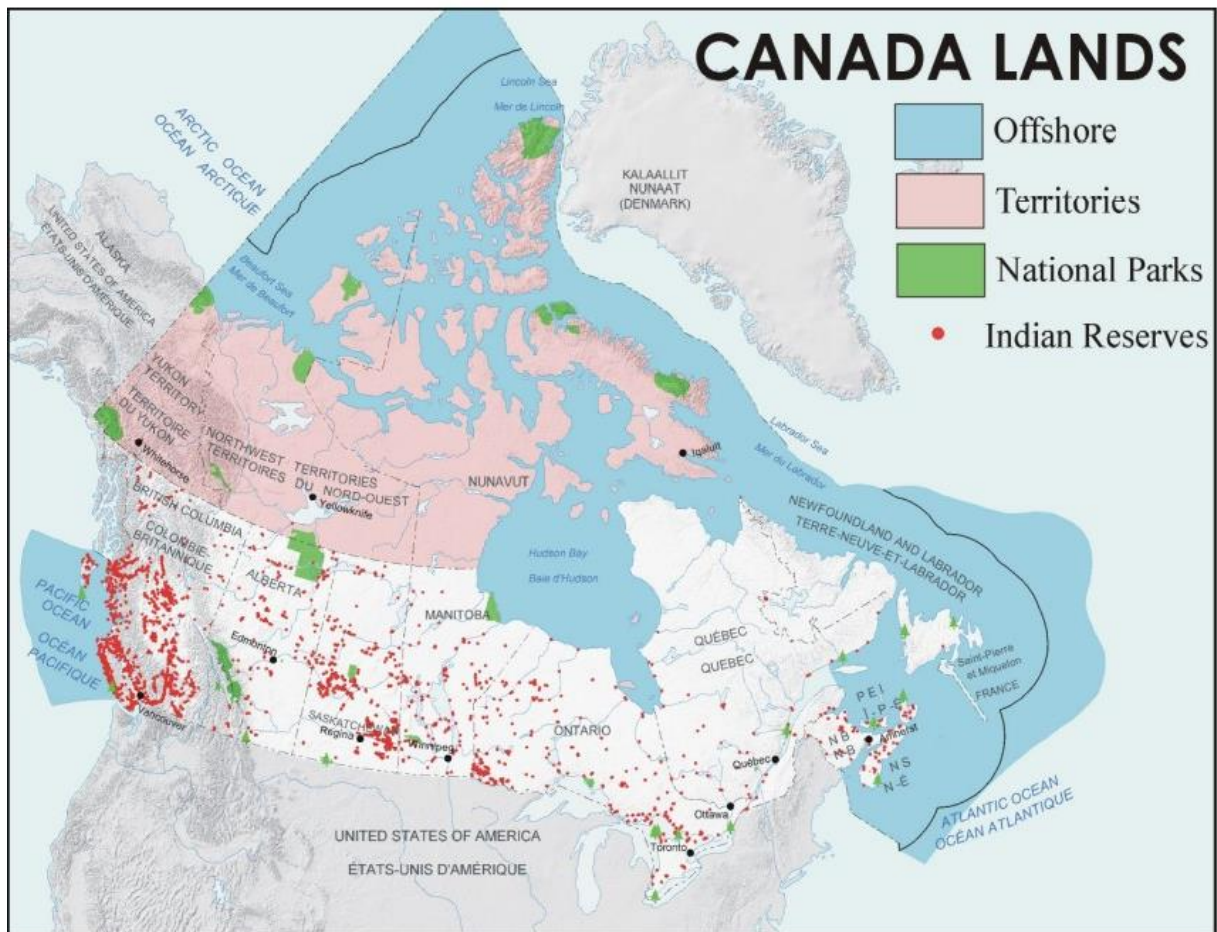
content/uploads/2017/03/ACLS-UNCLOS1.pdf.

“The Northwest Passage – the Arctic Grail.” *Discovering the Arctic*, 22 Sept. 2018, <https://discoveringthearctic.org.uk/arctic-people-resources/resources-from-the-edge/northwest-passage-the-arctic-grail/>.

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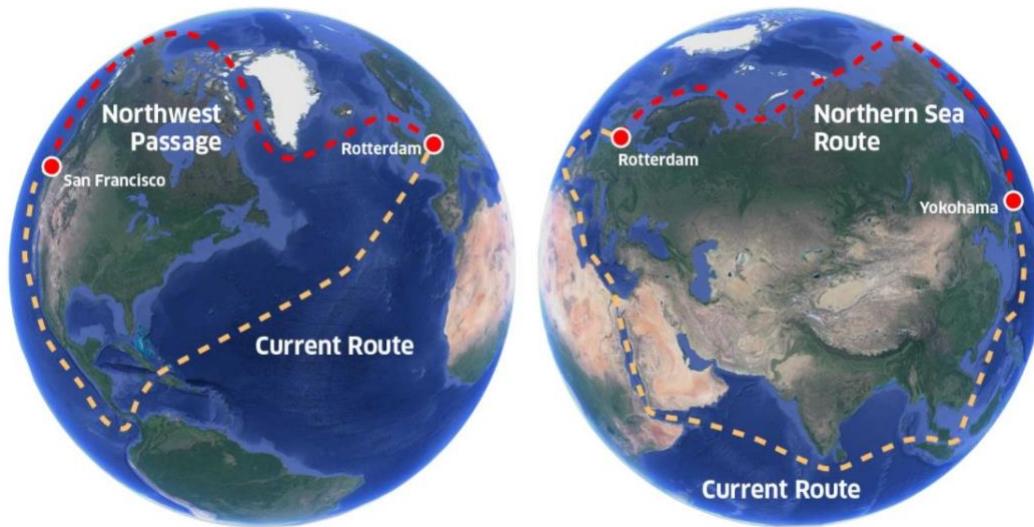
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## Annex A:



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<sup>23</sup> *The Need for Canada Lands Surveyors to Define Canada's Offshore Lands*. Association of Canada Land Surveyors - ACLS-AATC. 17 June, 2008. <https://www.acls-aatc.ca/wp-content/uploads/2017/03/ACLS-UNCLOS1.pdf>.

**Annex B:**

The new Arctic sea routes

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<sup>24</sup> “The Northwest Passage – the Arctic Grail.” *Discovering the Arctic*, 22 Sept. 2018, <https://discoveringthearctic.org.uk/arctic-people-resources/resources-from-the-edge/northwest-passage-the-arctic-grail/>.

## Annex C:



Figure 8. North Warning System coverage map of Canada. The FPS-117 long range radars are shown in red, FPS-124 short range radars in blue. The black "push-pin" icons show former DEW line sites.

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<sup>25</sup> Forand, J.L., Larochelle, V., Brookes, D., Lee, J., MacLeod, M.R., Dao, R., Heard, G.J., McCoy, N.H., & Kollenberg, K.D. (2008). Surveillance of Canada's high Arctic. *OCEANS 2008*, 1-8. Surveillance of Canada's high Arctic | Semantic Scholar

**Annex D:**

**3.1 Distances between Major Ports.** Dark grey indicates the shortest routes, light grey indicates those that are nearly as short.

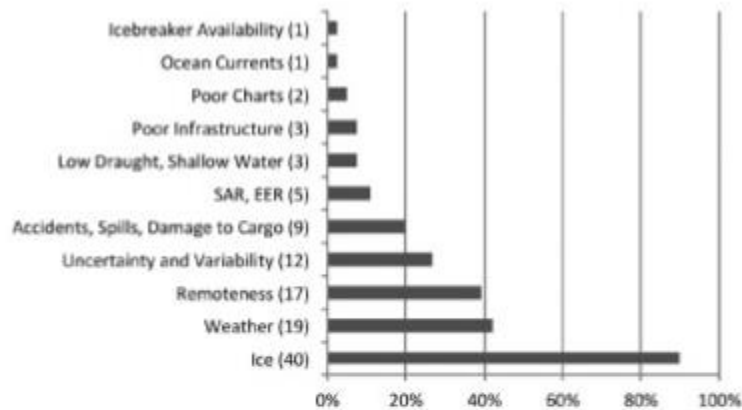
<b>Origin–Destination</b>	<b>Panama</b>	<b>Northwest Passage</b>	<b>Northeast Passage</b>	<b>Suez and Malacca</b>
Rotterdam–Shanghai	25,588	16,100	15,793	19,550
Bordeaux–Shanghai	24,980	16,100	16,750	19,030
Marseilles–Shanghai	26,038	19,160	19,718	16,460
Gioia Tauro (Italy)–Hong Kong	25,934	20,230	20,950	14,093
Barcelona–Hong Kong	25,044	18,950	20,090	14,693
New York–Shanghai	20,880	17,030	19,893	22,930
New York–Hong Kong	21,260	18,140	20,985	21,570
Rotterdam–Los Angeles	14,490	15,120	15,552	29,750
Lisbon–Los Angeles	14,165	14,940	16,150	27,225

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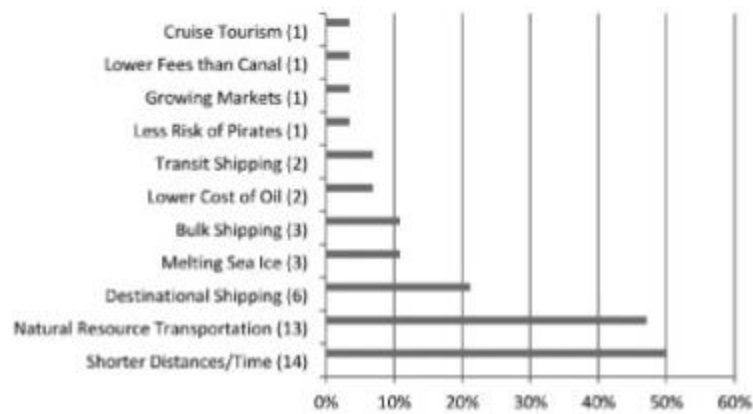
<sup>26</sup> Lackenbauer, P. Whitney, et al. *China's Arctic Ambitions and What They Mean for Canada*, University of Calgary Press, 2018. *ProQuest Ebook Central*, 74,.

## Annex E:

3.6 Risks of Arctic Shipping, Leigh Beveridge et al., "Interest of Asian Shipping Companies in Navigating the Arctic," *Polar Science* 10, no. 3 (2016).



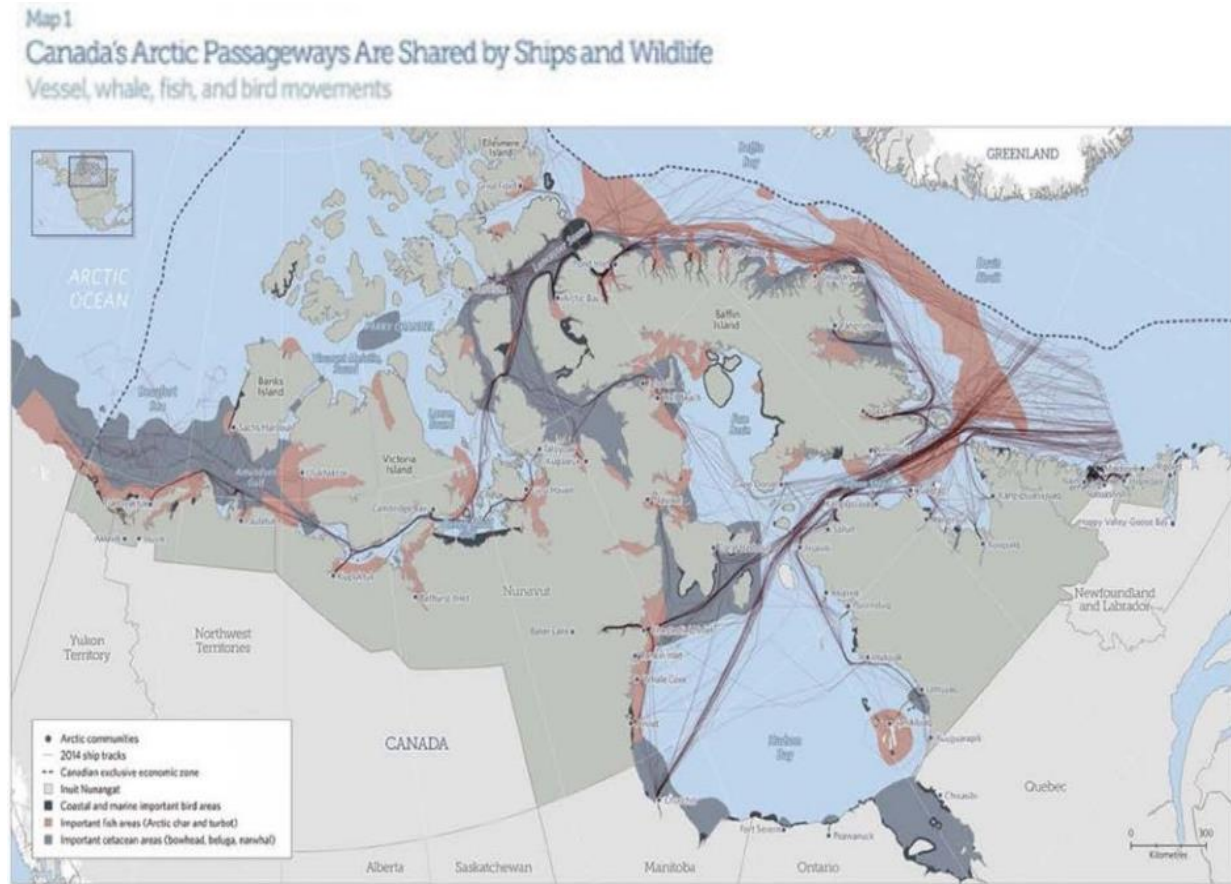
3.7 Interests in Arctic Shipping, Leigh Beveridge et al., "Interest of Asian Shipping Companies in Navigating the Arctic," *Polar Science* 10, no. 3 (2016).



<sup>27</sup> Lackenbauer, P. Whitney, et al. *China's Arctic Ambitions and What They Mean for Canada*, University of Calgary Press, 2018.



## Annex F:

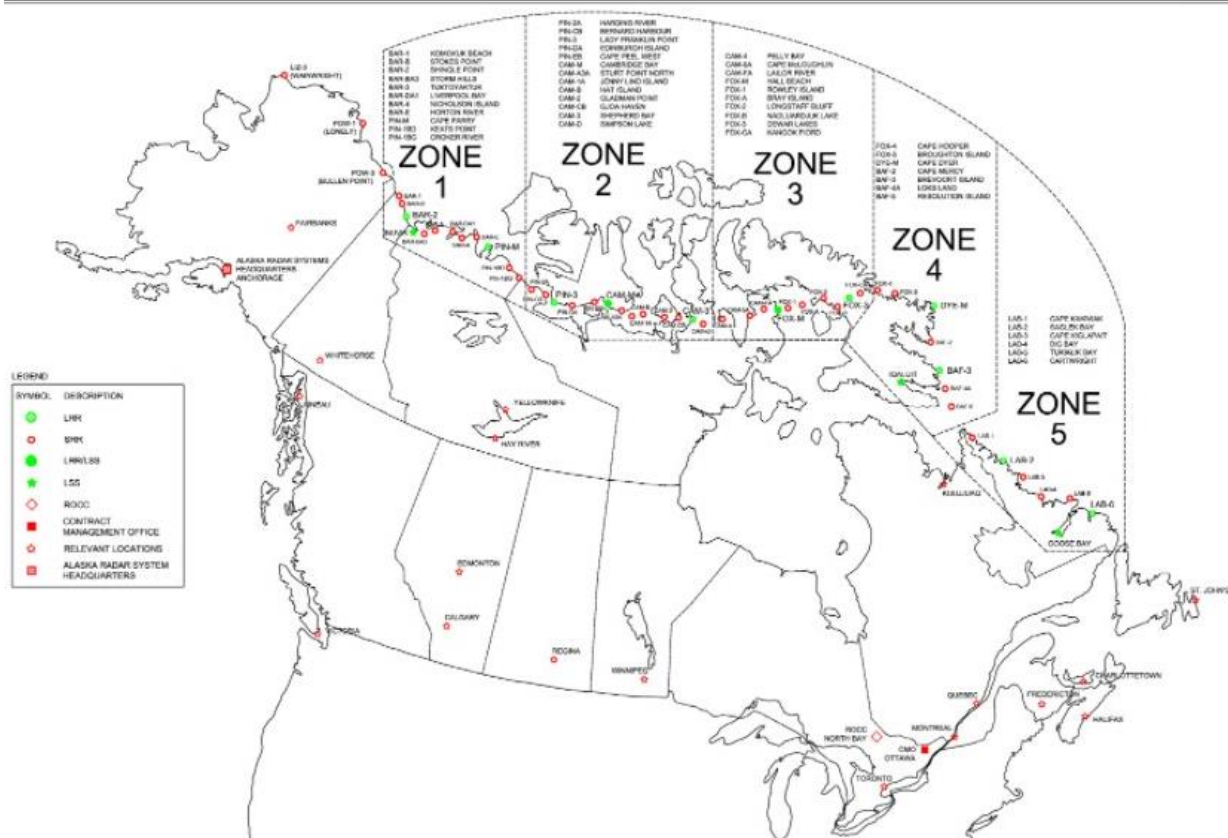


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<sup>28</sup> Sproule, David, and Whitney Lackenbauer. "Voices from the Arctic: Diverse Views on Canadian Arctic Security." *North American and Arctic Defence and Security Network*. January 2021, 27, 20-nov-ArcticVoicesProceedings-upload.pdf (naadsn.ca)



## Annex G:



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<sup>29</sup> Watkins, Steffan. "Canadian North Warning System Locations." *Canadian North Warning System Locations*, 1 Jan. 1970, <https://campingcdn.blogspot.com/2013/10/canadian-north-warning-system-locations.html>.

## Annex H:



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<sup>30</sup> Sproule, David, and Whitney Lackenbauer. "Voices from the Arctic: Diverse Views on Canadian Arctic Security." *North American and Arctic Defence and Security Network*. January 2021, 32-33, 20-nov-ArcticVoicesProceedings-upload.pdf (naadsn.ca)