

THREAT ASSESSMENT

International and Domestic Arctic Assessment: Canada's Arctic Threats and Vulnerabilities

Lindsay Speirs, Sasha Tiaglei and Andrea Charron

November 2024



CONFERENCE OF DEFENCE ASSOCIATIONS INSTITUTE

THREAT ASSESSMENT

International and Domestic Arctic Assessment: Canada's Arctic Threats and Vulnerabilities

Lindsay Speirs, Sasha Tiaglei and Andrea Charron¹

November 2024

About the Authors

Lindsay Spiers is MA candidate in Political Studies, University of Manitoba

Sasha Tiaglei is BA honours candidate in Political Studies and Central and Eastern European Studies, University of Manitoba

Andrea Charron is Professor and Director of the Center for Defence and Security Studies, University of Manitoba

On the Cover

Combat Camera / Flickr

“Exercise ARCTIC EDGE 2022”

Photo by Senior Airman Joseph P. LeVeille, U.S. Air Force

<https://www.flickr.com/photos/cfcombatcamera/51928712928/>

¹ The authors are grateful for the wisdom and sage advice of Troy Bouffard, Heather Exner-Pirot, James Fergusson, Nicholas Glesby, Ray Henault, Chris Henderson, Chris Morrison, and Lindsay Rodman as well as the anonymous peer reviewers. All omissions and errors remain those of the authors.

Executive Summary

This assessment analyses the international and domestic factors that point to Canada's most pressing Arctic threats and vulnerabilities. Threats directly harm Canadians and Canada whereas vulnerabilities are weakness, gaps, and deficiencies that can be exploited by adversaries. Given geopolitical and geophysical changes coupled with a lack of sustained attention to and funding for the Arctic on the part of successive Governments of Canada (GoC), the readiness of the Canadian Armed Forces (CAF) to mitigate threats in, through, and to the Arctic (Lackenbauer, 2021)ⁱ is in question. The current government has made the Arctic a defence priority with its planned NORAD Modernization commitments and the latest defence policy update (ONSAF, 2024). The time horizons to fulfill all of the commitments, however, are measured in decades.

The potentially most damaging threats to Canadians or Canadian territory are the following:

- 1) Climate change;
- 2) State-based threats especially emanating from Russia and China; and
- 3) An eroding international order based on the rule of law.

These threats to the Canadian Arctic, Canada, North America and the world cannot be resolved by the Department of National Defence (DND) and the CAF alone. Domestic vulnerabilities and challenges, which are distinct from military ones, coupled with the lack of priority and strategy setting by successive governments, means CAF readiness and campaigning, especially for the Arctic, are compromised. Vulnerabilities in the Canadian Arctic are a major challenge, if not, *ironically*, a threat to the defence of Canada and North America that cannot be ignored. While this analysis uses the DND/CAF as the lens of focus, it is very clear that the Government of Canada needs a more coordinated and integrated approach to all of the Arctic safety, security and defence issues raised. Unfortunately, the Canadian government is not structured to provide an integrated approach to these threats and challenges. Nonetheless, the key requirements for the government in the Canadian Arctic is to go beyond the rhetoric of a whole of government approach and put it into actual, organizational practice.

In addition to the 26 recommendations provided to the GoC by the House of Commons' Standing Committee on National Defence (NDDN, 2023) and 23 recommendations of the Senate (SECD, 2023), we offer the following unique recommendations. Recommendations 1-6 are internal to Canada. 7-9 are external to Canada.

Recommendations for the next five years:

1. Designate a Canadian Arctic champion (similar to US Ambassador at Large for Arctic Affairs (who is not from CAF or DND)) who reports to Parliament, whose sole job is to map, facilitate and integrate federal and territorial Canadian Arctic projects, facilitate communication among the domestic agencies and connect with Canadian Arctic rightsholders. The Arctic Security Working Group would be chaired by them and the territorial leader who hosts the meetings rather than the CAF/DND.
2. Draft a GoC Arctic strategy that integrates GoC efforts with concrete steps as opposed to aspirational "visions". Separate domestic Arctic issues (ideally drafted by Crown Indigenous Relations and Northern Affairs) and international issues (drafted by Global Affairs Canada). Too often the latter obfuscates attention to the more pressing domestic issues. Be disciplined referencing threats to Canada's sovereignty. Sovereignty

ⁱ Whitney Lackenbauer (2021) notes the importance of evaluating threats through the Arctic (using the Ocean as a short cut), to the Arctic (originating from outside the region into the region, such as foreign interference) and in the Arctic (example: permafrost melt).

is not a panacea catchall term for any problems or concerns about the Arctic.

3. The 19 NORAD modernization projects must be delivered on time and integrated with American efforts. Their successful delivery must remain Canada's defence priority. GoC must be more transparent on the opportunities and limits of NORAD modernization funding benefits to communities.
4. JTFN must be better resourced. Civilian "Op LENTUS" responses should be the goal in all but the most extreme cases.
5. Canadian industries in the Arctic must have clauses that allow for access to their infrastructure by emergency personnel in times of crisis.
6. Do not open the Nanisivik fuel depot. Instead establish one in Iqaluit and with industries in the region.
7. Reopen Canada's Arctic office in Norway. Support vigorously, the Inuit Circumpolar Council's observer status at the International Maritime Organization.
8. Come to agreement with allies the United States on the Beaufort Sea maritime boundary and Denmark and Greenland on the Lincoln Sea boundary.
9. Better coordinate strategic messaging with allies regarding Arctic exercises.

Acronyms

ADIZ = Air Defence Identification Zone

AI-ARC = Artificial Intelligence-Based Virtual Control Room for the Arctic

AIS = Automatic Identification System (for maritime vessels)

ASWG = Arctic Security Working Group

CAF = Canadian Armed Forces

CCASCOE = NATO Climate Change and Security Centre of Excellence

CCG = Canada Coast Guard

CHARS = Canadian High Arctic Research Station

CJOC = Canadian Joint Operations Command

CRESST = Climate Resilience and Environmental Sustainability Science and Technology Strategy

CRPG = Canadian Ranger Patrol Group

CSIS = Canadian Security Intelligence Service

DND = Department of National Defence

FISHPAT = Fisheries patrols

FOL = Forward Operating Locations

FONOP = Freedom of Navigation Operations

GIUK = Greenland-Iceland-UK Gap

GoC = Government of Canada

GPS = Global Positioning Systems (GPS)

ICE Pact = Icebreaker Collaboration Effort Pact

IDEaS = Innovation for Defence Excellence and Security

IUU = Illegal, Unreported and Unregulated fishing

JTFN = Joint Task Force North

NATO = North Atlantic Treaty Organization

NORAD = North American Aerospace Defence Command

NWP = Northwest Passage

NWS = North Warning System

ONSAF = Our North, Strong and Free

OP = Operation

OTHR = Over the Horizon Radar

PRC = People's Republic of China

RCN = Royal Canadian Navy

RJTF = Regional Joint Task Forces

SAR = Search and Rescue

SLOC = Sea Lines of Communication

UNCLOS = United Nations Convention on the Law of the Sea

USNORTHCOM = United States Northern Command

Disclaimer

This analysis was requested of us by the Conference of Defence Associations Institute. As its primary audience is interested in DND and CAF issues, that is the lens we used to evaluate the issues of concern facing the Arctic. The CAF's mission is to defend Canada, then North America and then prioritize other places in the world and the analysis should start and end with those few defence-specific issues, such as potential foreign state armed attacks on Canada, Canadians and critical infrastructure.

However, it is quite clear that the majority of safety and security issues that are most pressing in the Canadian Arctic are not in the purview of the military to solve but the CAF's size, planning expertise, strategic lift capabilities and persistent presence in the Arctic mean that it is often aware of and/or called upon to help coordinate a response to these non-defence issues. The complexity and diversity of issues discussed in this paper is therefore reflective of this muddy context. The fact that Canada's Arctic Security Working Group (ASWG) is organized and cohosted by the CAF's Joint Task Force North (JTFN) (and the territorial premier who hosts the meeting) speaks to the continued implication of the CAF by the Government of Canada (GoC) in non-defence-related issues. The ASWG brings together federal and territorial representatives and all of the federal agencies which operate in the Arctic to discuss issues around safety and security. The myriad jurisdictions, mandates and varying levels of capacity, reach and resources means that the GoC should be organizing and integrating the efforts of the various agencies and levels of government. Instead, it falls to the CAF because they are "there", but this then impacts CAF's readiness levels and its core mission to defend Canada.

Introduction

Canada's 2024 defence policy update entitled *Our North, Strong and Free: A Renewed Vision for Canada's Defence* (ONSAF) has made climate change and "asserting Canada's sovereignty in the Arctic and northern regions" (ix) key priorities for the CAF. Although climate change, in and of itself, is not a military threat (defined as capability + intent that can cause significant harm), *per se*, it does pose a significant challenge in terms of infrastructure destruction and access to the region for the military not to mention an existential threat to life on earth. As for asserting sovereignty, this is achieved by "enforce[ing] Canada's legislative and regulatory frameworks in the Arctic and North" as stated in Canada's Arctic and Northern Policy Framework (2019, Objective 4). It is perplexing, therefore, that it is **the** defence priority in ONSAF given that sovereignty is confirmed by the enforcement of laws and regulations, but the CAF lacks constabulary powers to enforce Canadian laws. In other words, the CAF is only symbolically "attached" to enforcing sovereignty; it hasn't the mandate or legal powers to enforce the laws of Canada essential to asserting sovereignty. Enforcement of Canadian laws belong to agencies like Transport Canada, Fisheries and Oceans Canada, and the Royal Canadian Mounted Police (RCMP) to name a few.

Although the main military threats to the territorial integrity and critical infrastructure of North America (via the Arctic as the avenue of approach) emanate from Russia and potentially China, Canadian domestic vulnerabilities (defined as weakness, gaps, and deficiencies) especially in terms of the health and sustainability of Canadian Arctic communities, will affect the defence side of the equation.

This analysis begins with an examination of the international context, which is at the heart of the threats to Canada and North America via the Arctic, and then continues with an assessment of the domestic environment which determines how Canada should or will respond. It ends with discussions about and solutions for the main Arctic threats and vulnerabilities.

I. International Context

The Arctic regionⁱⁱ was once considered an "exceptional" zone of peace (Gorbachev, 1987; Spence et al. 2023). Somehow, despite conflicts raging around the world, the Arctic was a region of cooperation evidenced by numerous agreements including a pre-emptive one banning commercial fishing in the central Arctic Ocean (Arctic Council, 2021).ⁱⁱⁱ The Inuit Circumpolar Council (a Permanent Participant of the Arctic Council) was granted provisional Observer Status at the International Maritime Organization in 2021. Rightsholders were finally having a say in a state-ruled world and relatively cordial state relations were underpinned by the shared interests reflected in the Arctic Council.^{iv} When the Arctic Council celebrated its 25th anniversary in 2021, the region was at the height of a functional Arctic: states, Indigenous peoples (Permanent Participants) and organizations working together to solve Arctic environmental and sustainable development issues under a Russian Chairship.

Russia's aggression against Ukraine has disrupted cooperation in the Arctic. The Arctic Council was put on hiatus following the full-scale Russian invasion of Ukraine in 2022; a decision made by the seven Western Arctic states without consulting Russia or the Permanent Participants. The Arctic Council is only just resuming its working group meetings online with Rus-

ii The Arctic is an ocean ringed by five states: Canada, the United States, Russia, Norway and Denmark (Greenland). Sweden, Finland and Iceland are also considered Arctic states because they have territory that falls north of the Arctic circle. There is a Russian Arctic region, European Arctic region and North American region. They differ in terms of security concerns, geography, temperatures, population density and development. Canada's Arctic and Greenland are the most sparsely populated and the least developed of the seven other Arctic states.

iii China, Japan, Russia, Iceland, Norway, South Korea, Canada, the EU, US and Denmark (for Greenland and Faroe Islands) all signed the agreement which came into force on 25 June 2021.

iv A Canadian creation, it brings together all eight Arctic states, six Indigenous Permanent Participants and 35 Observers (including states like China, India, Japan, the UK and France and several organizations) (Arctic Council 2024a)

sia (Arctic Council, 2024b). The seven Arctic states, now all members of NATO, share the Chairship of the Council until 2037 when Iceland hands it to Russia. Russia, however, is refusing to share important scientific data with the other Arctic states given western sanctions against it (Nuwer, 2024). Arctic security fora like the Arctic Security Forces Roundtable, the Arctic Coast Guard Forum and the Arctic Chief of Defence Staff Forum, have only included the seven Arctic states since 2014 becoming de facto NATO groups with the ascension of Finland (2023) and Sweden (2024) to the alliance.

In effect, the 'exceptional' status of the Arctic has now become a victim of Russian aggression. Russia's increased military presence, with the re-opening/modernization of its Arctic military bases, alongside an expansion of its military capabilities in the region have reinforced perceptions of a Russian military threat to the region. In response, in 2018, NATO held a large Arctic exercise TRIDENT JUNCTURE with 50,000 personnel hosted by Norway. During the exercise, Russian military attempted to jam NATO Global Positioning Systems (GPS) and 'buzzed' allied ships. In contrast, NATO's largest exercise since the Cold War, STEADFAST DEFENDER, held from January to May 2024 with over 90,000 personnel in and around Norway, did not result in Russian spoiling attempts (NATO, 2024a). Whether the lack of Russian activity was because Russia was overstretched by the war in Ukraine or feared provoking NATO remains open to speculation.

The Russian threat to the Canadian Arctic directly, and through the Arctic to southern high-value targets, has long been air-based. These include long-range aircraft equipped with air-launched cruise missiles which now can be released long before the aircraft approach the Canadian (and American) air defence identification zones (ADIZ). In addition, two other military developments pose a threat to Canada and its Arctic; hypersonic vehicles, which can be launched by air, land and sea platforms, and a new generation of long-range sea-launched cruise missiles. Related, greater access to the Arctic as a function climate change, and the retreat of

the polar ice cap are likely to result in more naval military activity beyond nuclear submarines which pose an emerging new threat.

Deterring and defending against air-based threats have been the purview of the binational North American Air (later Aerospace) Defence Command (NORAD) to address since 1957 when operational. NORAD remains the first line of defence for North America and its Arctic. Partially due to the sea-launched threats, NORAD's maritime warning mission was incorporated into the binational agreement in 2006 and there is need to explore, in more depth, maritime defence generally. These air and sea-based threats explain the particular focus on NORAD modernization by the United States and Canada and especially the need for improved all domain awareness.^v NORAD modernization is the number one defence priority of both the United States and Canada but there are always other pressures that can divert attention from these goals.

Due to increased global competition between Russia and the West directly and China obliquely, the US 2nd Fleet (for which a Canadian naval officer has now served as the Vice twice) was reestablished in 2019. It is responsible for defending the North Atlantic and Arctic and is now twinned to a new NATO command – Joint Forces Command Norfolk with responsibility from "southern Florida to Finnmark, from seabed to space". Together, they have renewed concentration on the strategic and problematic Greenland-Iceland-UK (GIUK) Gap, or the "high north" in NATO parlance (See the Annex for a map). The GIUK gap joins the North Atlantic to the Arctic Ocean and it, along with the area around the Svalbard archipelago off the coast of Norway, are where Russia has a bastion defence to protect its Kola Peninsula engaging in anti-access and area denial activity. The Northern Fleet - Russia's largest - prowls this area, including with nuclear powered ballistic missile submarines. The latest US Arctic strategy (DoD, 2024) focuses on enhancing domain awareness and Arctic defence capabilities, engaging with Allies, partners, and key stakeholders, and exercising tailored presence.

^v Now is the time to rediscover the Tricommand framework for Arctic cooperation created in 2019 which includes NORAD, USNORTHCOM and Canadian Joint Operation Command.

The Chair of NATO's Military Committee has stated that the "Arctic remains essential to NATO's deterrence and defence posture" (NATO, 2023) because the Arctic Ocean is the fastest avenue of approach to many NATO member states and to Russia. Modern weaponry has increased range, accuracy and lethality (Walt, 2024).

Not all NATO allies can operate in the Arctic, however. NATO's 2024 Washington Summit Declaration (NATO, 2024b) reaffirms a 'regionalization' of niche expertise. Arctic NATO allies, for example, are expected to take the lead in the Arctic including Canada, while southern European NATO states take the lead in the Mediterranean. While many of the NATO Arctic states host multilateral Arctic exercises, rarely does the strategic messaging of those exercises appear coherent across the alliance. They also seem to re-enforce WWII plans that assume North America will come to the aid of Europe, not the other way around.

Assessments about, and thus responses to the Russian Arctic threat must be tempered by Russian behaviour with regard to the UN Commission on the Limits of the Continental Shelf (CLCS) process to recognize extended continental shelves.^{vi} Russia, to date, has followed the procedures laid out by the CLCS, indicating a commitment to the process and the importance of the Arctic for fossil fuel exploitation (found on the ocean floor) to Russia's GDP; 20% of which is from fossil fuel exports (Yermekov, 2024, 2).

Although most attention is paid to Russia as a major Arctic actor, the threat environment also extends to the People's Republic of China (PRC). Reflective of this fact, the 2024 US Arctic Strategy states: "The PRC seeks to increase its influence in the Arctic through an expanded slate of economic, diplomatic, scientific, and military activities. It has also emphasized its intention to play a larger role in

shaping regional governance" (DoD, 2024). Over the last decade, the PRC has expanded its investments with a focus on critical mineral extraction, increased its scientific activities, and used these engagements to conduct dual-use research with intelligence or military utility. China is trying to establish its bona fides as a polar nation (beyond its consultative status to the Antarctic Treaty), including the highly questionable assertion that the Himalayas constitute a third pole as a justification for inserting itself in Arctic decision-making. China's tacit support of the abhorrent practices of illegal and unregulated (IUU) fishing and the race for protein, which will spill into the Arctic despite the current ban on fishing in the Central Arctic Ocean, are threats to the international order based on international law.^{vii} Recent diplomatic efforts to insinuate Chinese businesses, media and community interests with Canadian Indigenous communities using their "unblemished" record of not being a colonizer are destabilizing and deflect from the PRC's human rights record (Xie, 2023). China's ambassador to Canada, Wang Di, visited Iqaluit in August 2024 to meet with local leaders and the Premier of Nunavut to discuss "sub-national level" relationships (Sarkisian, 2024). This tactic could be used to create a wedge between Canadian Indigenous peoples and the Government of Canada (GoC).

In addition, the presence of Chinese aircraft tracking in and towards the North American Air Defense Identification Zone (ADIZ) (NORAD, 2024)^{viii}, as well as the incursion of the 2023 Chinese spy balloon in North American airspace means that China poses an air threat to North America (Rigby, 2023). In addition, the Aleutian Islands and Bering Sea have witnessed combined Russian and Chinese naval activity met by the US Coast Guard's 17th District (McKenney and Nelson, 2023).

Unlike Russia, it is difficult to estimate the sig-

vi Currently Canada's Arctic submission is #84 (its Atlantic submission is #70). The CLCS has produced 34 recommendations since 2001 on original submissions and 6 recommendations on revised submissions (CLCS, 2024).

vii This wording is preferred to the Rules Based International Order (RBIO). According to Dr. Stephen Nagy, Department of Politics and International Studies at the International Christian University, RBIO suggests Russia and the PRC had no part to play in the post WWII world order. This is, of course patently false. International law and orders evolve. This wording is reflective of these facts.

viii On 24 July 2024, 2 TU-95 Russian bombers and 2 H-6 Chinese bombers buzzed the Alaskan Air Identification zone. They remained in international airspace but Russian and Chinese air platforms flying together near North America is new.

nificance of a Chinese threat to the Canadian Arctic. From the perspective of the United States in particular, China is perceived as a 'pacing' threat and therefore emerging whereas Russia is a persistent, proximate one (NSS, 2022). However, China is not an Arctic state, even though it has observer status on the Arctic Council. Its primary interests reside in the Asia-Pacific. Threatening Canada and North America as a function of these interests, however, cannot be ignored, and this brings the Arctic into play. In addition, new Chinese military capabilities, especially the development of its strategic nuclear submarine forces and expansion of its naval capabilities, pose potential threats to the Arctic.

China's relationship with Russia is of significant concern and cannot be entirely discounted relative to the Arctic. The Chinese relationship with Russia may be simply a temporary marriage of convenience – only time will tell. China's interests and activities in the Arctic may simply be understood as reflecting their self-defined status as a 'Great Power' on par with the United States, whose interests and input in issues across the globe should not be ignored. A related, but alternative view is that China, for economic reasons, has a major stake in the Arctic region as a valuable transportation route for Chinese exports to Europe and the East Coast of North America, hence China's focus on the establishment of a Polar Silk Road (Sharma, 2021) which has fizzled of late largely because Arctic states have rebuffed offers from China.

In conclusion, the Arctic is on the path to see more military activity. This creates the conditions for accidents, incidents or misperceptions to escalate to conflict. Even so, the likelihood that these activities in the Arctic will, in and of themselves, result in a major confrontation among states is low. But the probability that a major confrontation between the West and Russia/China elsewhere in the world could spill over into the Arctic is comparatively high. Much will depend upon steps taken by all Arctic states to manage the threat environment through the development of confidence and security building measures. More pressing are not the external threats, but the threats that greater access to and activity in the region pose to the rights-holders in the region.

II. Canadian Context

Canada faces many vulnerabilities in its Arctic. The concern is that adversaries can exploit them. Decades of underfunding, a legacy of colonization, poorer health outcomes and few employment opportunities for local inhabitants invites potential foreign interference and the forfeiture of economic and development opportunities directly benefitting rightsholders. Canada projects power from the South into the Arctic which has mitigated against sustained investment in and focus on the Arctic. Canada has several agencies, units and commands with Arctic responsibility but no GoC Arctic champion. Despite ONSAF's insistence that protecting the Arctic is a national imperative, Arctic responsibilities are dispersed across the military and other agencies often in stovepipes dictated by domains and mandates creating jurisdictional seams.

Large defence investments in the Arctic are expected via NORAD modernization but there are limits as to how these projects can benefit local communities. The lack of priority and strategy setting by successive governments means CAF readiness and campaigning, especially for the Arctic, are compromised.

Canada's (Managed) Disagreements and Resources

Canada's Arctic is vast. It represents 40% of its landmass and 75% of the coastline (the largest in the world). 200,000 people live in the Canadian Arctic which is defined as north of 60 degrees latitude and includes the three territories (Inuvialuit and Nunavut), northern Quebec (specifically Nunavik) and parts of Labrador (Nunatsiavut), representing the four Inuit homelands (Inuit Nunangat, 2021). Canada's Arctic population is young and over half are Indigenous (Inuit, Métis and First Nations). And yet, Canada has no Arctic strategy and is the only Arctic state without one. Even non-Arctic states like France, China, and Germany have Arctic strategies. The CCG has released an Arctic Strategy (CCG, 2024) and GoC has an Arctic and Northern Policy Framework, released in 2019, which is geared to ensuring a whole of government approach to the Arctic, reinforce the reliance on

international rules and confirms that the GoC will engage in meaningful truth and reconciliation with Inuit, First Nations and Métis peoples. These are important goals, but whereas frameworks outline aspirations, strategies provide concrete steps to achieve results.^{ix}

While successive governments underline the “threat” to Canadian sovereignty in the Arctic by other states, there is no evidence that any foreign state questions the legitimacy of Canadian territorial sovereignty. Certainly, the issue of the Northwest Passage (NWP) will not disappear in political terms, but disagreements regarding its status (Canada’s classification of it as historic, internal waters versus an international strait) is not, itself, a sovereignty threat. Canada has managed disagreements with allies. Canada and the United States continue to agree to disagree on the status of the NWP. A new CANUS task force is set to negotiate the maritime boundary in the Bering Sea (GoC, 2024e). Denmark, Greenland and Canada reached agreement on shared management of Hans Island (now Tartupaluk) and there is every indication that an agreement on the maritime boundary in the Lincoln Sea will be made soon. Greenlandic and Canadian Inuit comanage the largest freshwater polynya in northern Baffin Bay. When it comes to enforcement of sovereignty and management of boundary disputes, Indigenous peoples, law enforcement agencies and Global Affairs Canada are the leads.^x Continued suggestions by GoC that Canada’s sovereignty is under threat plays into the hands of adversaries; Canada looks weak and disorganized.

The Canadian Arctic is rich in natural resources and critical minerals. The GoC has banned offshore drilling but there is significant diamond, gold, and iron mining, as well as critical mineral projects in various stages, including copper, rare earths, zinc and lithium. There is also some onshore oil and natural gas production in NWT (NWT, 2024). There is

a mix of Canadian and foreign ownership with these extraction companies. For example, the Mary River Iron Ore Mine in Baffinland is Canadian owned, but Rio Tinto (British-Australian) owns Diavik Dimond mine and De Beers (South African-British) owns Snap Lake Diamond Mine both in NWT. There have been instances of China offering to invest in critical infrastructure in the Arctic including the Chinese Ambassador’s latest visit to Iqaluit in August 2024 and several attempts to leverage ownership with Canadian Arctic mining companies (Van Dine, 2024). Absent clear industry and foreign policy strategies, the GoC is often playing catchup.^{xi} The Canadian Security and Intelligence Service is now warning academics, researchers, and northerners to be wary of potential foreign adversaries’ intentions when they offer to partner and finance projects or conduct research (Tunney, 2023). But warnings alone are not sufficient. They must be followed by a concrete plan to help provide the necessary infrastructure spending that is needed. A new federal regulation requiring a minimum of 5% Canadian Indigenous participation in any federal contracts has been important to raise the profile of indigenous companies. The Inuit-majority owned Nasittuq, which has the maintenance contract for the current North Warning System (NWS), is an example of the success of such a requirement (GoC, 2023a).

Military Footprint

NORAD (with its Canadian headquarters in Winnipeg) is Canada’s first line of defence against air incursions especially through the Arctic. Over 67 years, NORAD has detected, tracked and intercepted Soviet/Russian aircraft and more recently Chinese ones. NORAD has been quick to note that these aircraft have remained in international airspace (NORAD 2024, Charron and Fergusson, 2022). That they are

ix While the horizontal initiatives project led by Crown Indigenous Relations and Indigenous Services Canada aims for more reporting and coordination by departments on Arctic and Northern Initiatives, this is not the same as a strategy. See <https://www.rcaanc-cirnac.gc.ca/eng/1706209595720/1706209616923>.

x Canada’s Senior Arctic Official is a Director-General level position as opposed to an ambassador level as was the case until 2006. In addition to the SAO role, they are also responsible for Arctic, Eurasia, and European Affairs.

xi For example, China was interested in purchasing a hangar in Inuvik – one of Canada’s FOLs - capable of hangaring C-130 air-to-air refuellers and Hercules aircraft. It was under lease to the DND until 2021 now owned by the GoC (Hudson, 2024).

flying missions together, however, is a new and a worrying development. Any unplanned aviation activity can create the conditions for accidents with civilian aircrafts.

Air Defence Identification Zones (ADIZs) are common and are established unilaterally by states to identify (especially commercial) aircraft. ADIZ can and often do extend beyond a country's sovereign airspace. Until 2018, Canada's ADIZ (or CADIZ) matched the extent of the North Warning Systems' "reach". The series of uncrewed long- and short-range radar systems dotted across Canada's Arctic could not see to the full extent of Canada's Arctic land territory, let alone beyond into the approaches. Now, the CADIZ aligns with Canada's sovereign airspace and approaches but there is a gap between the CADIZ and what the NWS can detect. With the announcement of new Arctic and Polar over the horizon radars, Canada will be able to detect air objects beyond its own territory and over Greenland (GoC, 2024a). In the meantime, more surveillance sorties by NORAD and Canada are expected until the radars are functional (in the 2030s), and it explains the announcement of the GoC to purchase airborne early warning and control (AWACs) aircraft and MQ-9B Sky Guardian remotely piloted aircrafts.

The military footprint in Canada's Arctic is and has been very modest. Canada has four forward operating locations for fighter jets in Yellowknife, Iqaluit, Inuvik and Goose Bay². These runways need constant maintenance especially given climate change and resulting permafrost melt. The F35s will need longer runways, secure hangers and a large security perimeter that will require the very highest level of security clearance.

Canada's signals' intelligence base ALERT in the high Arctic at the tip of Ellesmere Island provides vital geolocation capability to support operations and high frequency and direction-finding facilities to support Search and Rescue (SAR) and other operations (GoC, 2019). It is also essential for Environment and Climate Change Canada. ALERT is resupplied bi-annually through the RCAF's Operation BOXTOP deploying from Greenland and US Space Base Pituffik (formerly Thule) Greenland.^{xii} This, along with other emerging defence requirements raises the place of Greenland, and thus Denmark, in North American defence. Whereas in the past, and still today, Greenland has been placed in the NATO and US European Combatant Command area of responsibilities, the new geopolitical environment suggests that it should be engaged within the North American area.^{xiii}

Beyond NORAD, Canada's primary military presence in the Canadian Arctic is Joint Task Force North (JTFN) headquartered in Yellowknife (Northwest Territories)^{xiv} with small detachments in Whitehorse (Yukon) and Iqaluit (Nunavut). JTFN is responsible for all of the Arctic - the largest geographic region of any of Canadian Joint Operation Command's (CJOC) six Regional Joint Task Forces (RJTF) supported by fewer than 300 military personnel. And yet, there is no mention of JTFN in ONSAF despite it being the primary military presence in Canada's Arctic and the significance ONSAF places on the Arctic which reinforces the lack of attention to integrated, coordinated action in the Arctic. JTFN needs communication and community liaison specialists and would benefit from a non-CAF Arctic champion who is responsible for coordinating GoC projects and communication in the Arctic rather than relying on JTFN.

The most visible representation of the GoC in

2 There are disagreements as to whether or not Goose Bay is a "forward" operating location.

xii Note force was particularly left out of the name (Space Base not Space Force Base) to ensure that Greenland and Denmark 'felt ownership'. The name doesn't imply belonging to a specific 'force'.

xiii Specifically, are more access, basing and overflight permissions required in support of NORAD operations? Greenland has direct flights from Nuuk to Iqaluit and the Greenlandic and Canadian Inuit have deep, familial ties. Canada has an honorary consul in Greenland. Honorary Consulates are staffed by volunteers – often local inhabitants with a connection to the Consulate state. They are common in many large Canadian cities. Perhaps more formal representation is required of Canada in Greenland and vice versa?

xiv Yellowknife also hosts 440 (Transport) Squadron – the only RCAF flying unit based in the North - and the Loyal Edmonton Army Reserve Regiment, C Company.

the Arctic is the Canadian Rangers. They are nested in the Army Reserves. 1 Canadian Ranger Patrol Group (1CRPG) is the largest and is headquartered at JTFN. 1,725 members in 60 patrols spread across the Arctic are the government's eyes and ears there. That they are not combat capable does not make them less crucial to surveillance, warning, and operations in the Arctic. Rangers use their own equipment, like snowmobiles, and receive up to 12 days annual pay in addition to compensation for any official CAF taskings. Red tape to reimburse Rangers for claims (such as damage to equipment, travel etc.) is still overly bureaucratic. When a Ranger is waiting for the Crown to reimburse for damage (and then there is the matter of waiting for a part to be ordered and arrive), this impacts not only the member but families and communities.

In addition to the Rangers, the Canadian Army has four (mainly reserves) Arctic Response Companies (two for summer and two for winter) that are on high readiness. Canada's Special Forces are also rediscovering Arctic operations. Equipment can be prepositioned at the DND and Natural Resources Canada CAF Arctic Training Centre (ATC) located in Resolute Bay, Nunavut. ONSAF also makes mention of Northern Operational Support Hubs but there are no funding or other details yet.

While the Royal Canadian Navy (RCN) now has Arctic Offshore Patrol Vessels (GoC 2024b), they have limited abilities to deal with heavy ice (beyond 1 year) and RCN personnel do not have officer powers to enforce Canadian shipping, pollution and other laws.^{xv} This means that there will be greater reliance on long-range air patrols for surveillance. The new P-8A

Poseidon Multi Mission Aircraft (which will replace the CP-140 Aurora Fleet) cannot come soon enough (Department of National Defence 2023). According to the GoC, "full operational capability is anticipated] by 2033" (GoC, 2024d).

Navigating the Northwest Passage (NWP) has always been difficult. It is shallow and narrow in parts, it is not fully chartered and there are few navigational aids. New scientific research suggests climate change will make the NWP more not less ice choked and even more difficult to navigate (Cook et al. 2024). There are no ports in Canada's Arctic – only a dock in Iqaluit which boasts some of the biggest variances in tides in the world, beaten only by the Bay of Fundy. There is no place to refuel vessels in Canada's Arctic; vessels refuel in Nuuk, Greenland (GoC, 2023b). The GoC's refuelling depot at Nanisivik is likely never to be fully operational and probably should be abandoned for a better location in Iqaluit and colocated with Arctic industries in the region.^{xvi} This means the likelihood of SAR requests, because there are no places to dock or make repairs in the NWP, will increase requiring CAF assistance.

Cyber attacks are an increasing concern. The Government of Nunavut was confronted by a ransomware incident on 2 November 2019 (Government of Nunavut, 2020) followed by a denial of service of the Government of Nunavut's website in 2023. Communities are highly dependent on internet connections. Qulliq Energy was also hit which could have proved deadly had power generators been taken offline (Murray, 2023). There are few back up systems in the Arctic, fewer cyber experts and high dependence on generic software. Starlink has improved connectivity,

xv The CAF will assist with fishery patrols (FISHPATs) to monitor fishing vessels and enforce fishing regulations in the Atlantic Ocean. They do so by conducting ship and aircraft patrols. See <https://www.canada.ca/en/departement-national-defence/services/operations/military-operations/current-operations/fishpats.html>.

xvi The Nanisivik Fuel depot may never be fully operational and/or of logistical value to the Government of Canada. In 2007, the Government announced its plan to convert the deep-water port at Nanisivik to a logistics hub, which will operate as a docking and refueling facility for the Royal Canadian Navy and other government vessels and serve to enhance the Navy's presence in the North. There have been too many delays, providing heat for stored fuel tanks has not been sorted, it will require ice to be broken in an ecologically sensitive part of the NWP and will not have the infrastructure to facilitate repairs on government vessels. The latest Auditor General's 2023 report estimates it could operate for maybe 4 weeks in the summer only. Our suggestion is to scrap the plan and make Iqaluit the resupply port. The Port of Churchill is not technically in the Arctic and currently has berths for only 4 vessels and can be resupplied by rail or air only.

but internet access is still unreliable in bad weather and the dependence on one industry supplier is problematic.

While the bulk of NATO Arctic exercises are hosted by Norway, a future NATO exercise is possible in North America but unlikely in the near future given several obstacles. Canada, given current readiness levels, could not support a large, all domain NATO Arctic exercise, especially not in the NWP given concerns about damage to the fragile ecosystem and internal water status. Air and land exercises might be possible, but not before Canada and the United States agree to a NATO exercise as opposed to the current individual NATO-allied invitations in the North American Arctic. JTFN would have to be staffed accordingly.

Of course, all exercises in the Arctic presuppose prior consultation with the Indigenous rights' holders as per Canada's commitments to the UN Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007) and consideration for the effects on migrating herds and the environment by increased air traffic and other activity. Communication of exercises to Arctic residents needs to be broadcast on different media than the CAF's preferred NORAD and RCAF X accounts and internet campaigns. CAF and NORAD need to use Facebook and radio which are the preferred communication tools of the Arctic. Providing information in French and Inuktitut is also advisable.

All postings to the Arctic are considered isolated posts which can make recruitment and retention more challenging especially given the competition for talent faced by all GoC agencies. Even surging forces into the Arctic necessary, for example, during the quarterly Operation NANOOK missions, can be challenging. When surge capacity is needed in the Arctic, personnel deployed from the South are required. This means that there is often a "negotiation" for resources given competing priorities.

Overall, the geopolitical and geophysical environments impacting the Canadian Arctic suggest a significant increase in military activity in general, and increased presence of the CAF in particular.

Intergovernmental Coordination

One of the major challenges to increased international and domestic attention and activity in the Arctic is Canadian governance structures. While there have been improvements to coordination between federal agencies, efforts in the Arctic can still be stovepiped. For example, the Auditor General of Canada has been particularly critical of Canadian maritime agencies' long-standing gaps affecting the surveillance of Canada's Arctic waters given the expected increased rates of unauthorized access, safety incidents, illegal fishing and environmental impacts (2023).

Large capital projects financed by one department rarely consider their value and utility to other departments. Public expectations as to the purpose and limits of funds must be communicated transparently. For example, despite the \$38.6 billion earmarked for NORAD modernization projects, these funds cannot be spent to fix sewer systems, recruit public health nurses or build schools in the Arctic (GoC, 2024a). The GoC, however, has not always been clear about what NORAD modernization can and cannot fund. Stricter security protocols associated with the F35s, for example, will limit who and which agencies can access related infrastructure. Promises of dual use and multipurpose infrastructure can conjure up assumptions about employment and support resources that are not available via NORAD modernization funds.

The quarterly CAF-led Op NANOOK missions have been important to bring federal agencies together for at least one exercise a year (Op NANOOK-TA-TIGITT). The Arctic Security Forces Working Group, which brings together territorial governments and federal agencies, is a valuable step in coordinating the activities of multiple departments, agencies and levels of government but should not be organized and led by the CAF/JTFN given the safety and security focus of the meetings.

An Arctic maritime picture is produced currently by the Marine Security Operations Centre (MSOC) based in Halifax. This whole of government picture, with contributions from Canada's maritime agencies including the RCMP, is shared with Canadian Joint Operations Command, allies, USNORTHCOM, and

NORAD (in support of its maritime warning mission). The picture, however, is heavily dependent on Automatic Identification System (AIS) data which is not required of vessels below 300 gross tons – a change in legislation requiring more vessels of a lower tonnage in the Arctic to carry AIS could help in SAR scenarios and reduce the number of vessels of interest to track; vessels not displaying AIS are usually doing so for nefarious reasons. The next step is to provide a scrubbed version to local hamlets, ensuring their awareness, especially of cruise ship activity.

Special mention must be made of the CCG which has the maritime lead in Canada's Arctic and has deep roots with Nordic and US counterparts. The announcement to purchase six new icebreakers (Public Services and Procurement Canada, 2024) for the CCG is significant but they will not be mission ready for years. This means an aging CCG fleet will be asked to operate beyond its normal serviceable lifespan unless the recent ICE pact with Finland and the United States accelerates production (The White House, 2024). Besides maritime SAR, and ice breaking services, support to community resupply remains a key priority for the CCG in the summer months. With increased tourist traffic and more challenging ice conditions, there is real concern that SAR requests will impede the ability of the CCG to aid communities so dependent on the summer sea lift for their year's supply of food, construction material, fuel (still mostly diesel), and any other goods. The CCG's mobile maritime domain awareness pilot project is one to watch and potentially replicate by other agencies (Charron, 2023).

Human Security Failings

Living conditions in Canada's Arctic can be appalling. These conditions present vulnerabilities for Canada and Arctic inhabitants that do impact operations in the Arctic. Adversaries use the conditions to highlight the disingenuous efforts of successive governments to care about their people and can create the perfect conditions for foreign interference and wedge politics between Indigenous peoples and the GoC (Gaignard, 2022; Montgomery, Marc, 2020).

Many hamlets in the Arctic, such as Kugluktuk (population approx. 1000), have some of the highest rates of teen suicide in the country. Between 2009 and

2013, the national average suicide rate was 11.3 per 100,000, while in the Inuit homelands it is between 60.4 and 275.3 per 100,000 (Inuit Tapiriit Kanatami, 2016). Women in Nunavut are the victims of violent crime at a rate more than 13 times higher than the rate for women in Canada as a whole (GoC, 2020). The risk of a woman being sexually assaulted in Nunavut is 12 times greater than the national average (GoC, 2020).

Despite the federal program Nutrition North Canada (NNC), food prices are too high for many and there continues to be concerns as to who benefits from the program. NNC provided \$131 million dollars in 2022-2023 to subsidize a list of nutritious eligible foods, as well as certain non-food items such as diapers and soap, hand-sanitizers and personal hygiene products, sold by registered retailers, suppliers, country food processors and local food growers (GoC, 2022). And yet, the food insecurity rate in Inuvik, for example, is 46.1% and is over 8 times the Canadian average (Ford et al. 2023).

Given that southern food prices are predicted to grow by 4.5% in 2024 where consumers benefit from economies of scale and lower transportation fees, it is no wonder that academic research studies show that Inuit in Nunavut have higher rates of obesity and diabetes because of the many barriers to healthy eating and the fact that "unhealthy (junk) foods are cheaper [...]" (Akande et al. 2021, 5). Traditional foods (or country foods) which are nutritious, are harder and harder to hunt and fish because of climate change. Alcohol, cigarettes and drugs, however, never seem to suffer from supply chain problems. Treatments and supports for substance abuse are rarely available.

The lack of medical staff compounds the issues. Many communities are dependent on "locums" - physicians and dentists deploying to the North for a few weeks at a time. Fewer and fewer specialists are interested in these positions. It doesn't help that the hamlets are in competition with each other and pay different rates^{xvii} (SRPC, 2024).

Colonization, residential schools, tuberculosis sanatoriums and a lack of consistent and adequate funding to Arctic communities by generations of Canadian governments are all contributing factors. The Indigenous governments of the Arctic, such as the Inuit Tapiriit Kanatami representing all Inuit in Can-

ada, are not sitting idle. Indigenous-owned and managed companies, like Canadian North, are filling vital needs in the Arctic but most of its flights are filled by northerners having no choice but to fly south to seek medical attention, including to give birth, or get chemotherapy, or dialysis. Inuit organizations in Winnipeg, for example, have bought hotels in the city to ensure northerners have a place to stay while undergoing treatment and, most importantly, have a network of support during their stay which can be for months at a time. Big cities, however, can be unsafe places for Indigenous women and girls.^{xviii}

Infrastructure and Energy

The CAF relies on infrastructure and energy for all operations in the Arctic, but they are inadequate at the best of times but stand in stark relief to the deplorable housing conditions of most Arctic inhabitants. Diesel remains the most reliable fuel option, but it is polluting, poor for health and impractical for the increasing number of uncrewed and remote military infrastructure forecasted.

Lack of housing is a problem for all of Canada but in the Arctic, it is dire. Limited capacity of government and non-government organizations to support housing, low-income levels and high costs of living, complex social challenges, underdeveloped economies, and aging infrastructure combine resulting in much higher rates of households in need. Nunavut currently has 39% of households in need, while the Northwest Territories has 20%, and Yukon 15%. The national average is 13% (Northern Housing, n.d.) Budget 2023 highlights that billions of dollars are earmarked for everything from housing to dental care, but the amounts may not cover the full cost of programs and will not keep pace with the growing and very young population of the Arctic (GoC, 2023c).

More of a team Canada approach is needed. For example, the Mary River Mine has infrastructure

(such as Milne port and gravel runways) that could be used by federal and territorial agencies in times of crises. Agreements that allow for federal agencies to make use of industry-built runways and infrastructure need to be in place.

Successive governments have balked at spending what is needed on infrastructure but there is a security cost to that indecision. Indeed, Greenland's rebuff of Chinese offers to pay for infrastructure in exchange for access to ports is instructive (Bennett, 2018). Critical infrastructure in Canada's Arctic will be expensive but it is a security imperative. Indigenous rights holders must be part of codeveloped projects and planning must extend beyond federal election cycles.

Green alternatives to diesel fuel for power needs in the Arctic has long been a goal. New energy sources for the Arctic, such as small nuclear power reactors, synthetic fuels and batteries are all possibilities that Northerners are exploring. The CAF and other GoC agencies will need these new sources too. The partnerships forming between northerners, industry and government are promising but there is much more to do. Failed projects like the wind turbines in Rankin Inlet, Cambridge Bay and Kugluktuk that do not think through the long-term operations, maintenance and sustainability budgeting are decidedly unhelpful (CBC, 2012).

Increased Number of Domestic Emergencies, Disasters and Search and Rescue Incidents

Operation LENTUS captures CAF missions that provide support to provincial and territorial authorities in response to natural and human-caused disasters in Canada, and these calls for assistance are increasing on a year-to-year basis. 2023 was a record-breaking

xvii For example, Rankin Inlet pays \$1500/24 hours to be on-call, with callbacks billed after 17:30 at \$150/hour. Backup in Rankin Inlet pays \$600/24 hours plus all callbacks at \$150/hour. ER in Iqaluit pays \$175/hour. OBS in Iqaluit pays \$2500/24 hours. Hospitalist pays \$1400/day. Anesthesia pays \$2000/day. There is no fee-for-service pay structure.

xviii Based on discussions with NGOs working with indigenous groups in Winnipeg.

year for forest fires, doubling the amount of forest destroyed since 1989. The equivalent total area of Greece and more was lost, and this trend is expected to increase (GoC, 2023d). CAF is in danger of being the resource of first resort rather than last. There is no civilian version of Op LENTUS (although civilian agencies also provide assistance). Too often, due to lack of resources and absent a fully functioning civilian Canadian operations centre (as opposed to the current GoC Operations Centre which coordinates federal responses), the CAF is the safety net of other governments and agencies.

Canada has no civilian equivalent to OP LENTUS which means costs and resources across civilian agencies and NGOs cannot be tracked easily. Public Safety Canada, created in 2003, can coordinate some action but does not take charge to direct other civilian federal agencies. Given climate change, the Arctic will feel its effect most acutely. From more forest fires to new invasive species to bio habitat destruction, given the size of Canada's Arctic, climate change is the number one threat to Canada, and this is confirmed in ONSAF. But no civilian agency is in charge with the resources and mandate to react. Where, for example, was the oversight on Victoria Gold's Eagle Mine that might have prevented the cyanide gas leak (attributed to a landside) into the Yukon River in July 2024 (Pilkington, 2024)?

While climate change is expected to make Canadian Arctic waters more accessible to external actors, with a range of implications, caution is warranted. The increased rate of maritime-based tourism raises the likelihood of accidents and pressure on the local communities to respond.

Canada's Arctic is highly dependent on volunteer organizations for SAR. Community-based Ground Search and Rescue (GSAR) teams, Canadian Coast Guard Auxiliary (CCGA) units, the Canadian Red Cross, Marine SAR Societies, Civil Air Search and Rescue Association (CASARA) members, supported by the CAF Canadian Rangers play essential roles in Arctic SAR (Kitikmeot SAR, n.d.)

These volunteer resources coupled with the likelihood of increased incidents of requests for assistance from federal agencies for disaster assistance and SAR are insufficient for the growing needs putting pressure

on the CAF to provide more and more assistance.

Lack of People

The CAF currently faces a serious recruitment and retention problem, resulting in a significant shortfall of personnel to meet growing demand. The CAF is considering many different and innovative hiring programs (Duval Lantoin, 2024) but not specifically for the Arctic. The lack of housing, hospitals, secondary education opportunities and employment for spouses frustrate recruitment for the North.

Northern Premiers have all identified the need for careers and opportunities for Northerners. All files for northern applicants for the CAF should be prioritized in the manner that Indigenous applicants' files currently are and allow military personnel to have a career in the Arctic for those who wish. It is often difficult for Northerners to compete for positions, given southern-based education standards and the need for security clearances.

Of course, the most glaring lack is of people willing and able to live in the Arctic. Too few resources, infrastructure and employment opportunities are part of the problem but so has been the legacy of harm. Now that Canada's Arctic is devolved, Indigenous and Northern-led development must be supported with consistent, predictable levels of funding.

III. Prognosis? Immediate Threats and Vulnerabilities and their Mitigation Measures

Geopolitical tensions around the world are not likely to resolve soon which means the Arctic's exceptional days are long over and exclusive reliance on fora like the Arctic Council to contain competition is problematic. While all Arctic states still maintain that a full-blown conflict in the Arctic and about the Arctic is unlikely, there is serious concern that misunderstandings could precipitate an unintended armed response that sets off dangerous escalation. The Arctic is sparsely populated, with too few resources and

a lack of persistent, consistent federal funding. This has been the status quo for decades but these facts are jeopardizing the CAF’s ability to detect, deter and defeat state adversaries with lethal weapons and/or use grey zone activity. The most immediate threats, therefore, accessed for their immediate or potential physical destruction to Canadians or Canadian territory, are the following.

- 1. Climate change and eroding international order based on international law – GoC purview.
- 2. State based kinetic threats – CAF purview.

Note, however, that the climate change and eroding international order fall to a whole of government response while state-based kinetic threats fall to the CAF for response. The lack of attention to the needs of Northerners by successive governments means CAF readiness and campaigning (defined as “conduct and sequencing of logically linked activities to strategy-aligned activities over time”) (DoD, 2022, 12), will be challenged, especially for the Arctic.

Table 1: Summary of Threats, Vulnerabilities and Mitigation Efforts

GoC Concerns	
Threat	Mitigation Efforts
Climate change is an existential threat to Canada and the world. The Arctic is particularly vulnerable. i.) Requests for assistance are unsustainable. ii.) Destruction of infrastructure iii.) Security/Climate Change Nexus	i) Consider CAF’s role in assistance missions. ii) Take advantage of latest science and Indigenous knowledge for building materials and locations iii) Canada is hosting NATO’s Climate Change and Security Centre of Excellence (CCASCOE) in Montréal
Eroding International Order Based on Law i.) Affecting the integrity of the Arctic Council and other fora ii.) Future disagreements on maritime and other boundaries iii.) IUU, scientific research as guise for spying	i.) Encourage cooperation via the Arctic Council working groups. Canada should coordinate its Chairship (2029-2031) now and with the 6 other NATO Arctic states. ii.) Continued support of international fora but limit Chinese trends to talk about the Arctic as a “global common”. iii.) Education campaigns for academics and funding for infrastructure. Consider a Northwest Atlantic Fisheries Organization-like organization for the central Arctic Ocean in the future. Prosecute illegal activity and require Canadian partnerships of foreign scientists
GoC Vulnerabilities	
Priority	Mitigation efforts
The Arctic has not been a sustained priority. i.) Human security challenges and lack of infrastructure ii.) Distract from defence of Canada. iii.) Stovepiped federal initiatives	i.) Development of the Arctic is defence of the Arctic. Revisit funding and support to JTFN. ii.) Arctic is the main avenue of approach for an attack. iii.) Need an Arctic strategy. Heed the advice of the Auditor General on maritime domain awareness.

Table 1 continues on the following page.

Table 1: Summary of Threats, Vulnerabilities and Mitigation Efforts (cont'd)

CAF Concerns	
Threat	Mitigation efforts
<p>State Based Threats</p> <p>i.) Russia is a proximate persistent threat (both directly and indirectly via gray zone activities). PRC via increased influence</p> <p>ii.) Lack of Situational Awareness</p> <p>iii.) Foreign interference especially exploiting lack of services and attention in the Arctic</p> <p>iv.) Revisit Canada's Position on missile defence.</p>	<p>i.) Need a foreign policy, national security strategy, and defence strategy that makes clear defence of Canada (which means defending the Arctic) is the priority of priorities. Name adversaries and their nefarious intent vis-à-vis Canada.</p> <p>ii.) Improved understanding of the operational environment and complete 19 NORAD projects.</p> <p>iii.) Prioritize Canadian codeveloped industry. Keep 5% requirement in gov't contracts for Indigenous owned companies.</p> <p>iv.) Given new technology, Canada must rethink its "no" to continental missile defence on the defeat side (NORAD should remain responsible for warning)</p>

Government of Canada Responsibilities: Climate Change

Climate change is **the** most dangerous threat given the impact on the world and ecosystems. However, the CAF is not the solution to climate change. Rather, its main responsibility is to be ready and equipped to mitigate the risks. The CAF is not a first responder.

A government decision must be made about the continued role of the CAF in OP LENTUS missions. The current tempo means that the CAF's readiness level for other missions is dangerously low and a campaign plan for the Arctic is impossible to follow if created. Canada needs to allow the CAF to consider climate change as an operating environment factor and not a series of surprise, ad hoc assistance missions. Provincial and territorial readiness levels are uneven, and Canada lacks a centralizing civilian organization to provide planning, and coordination capacity. Instead, CAF planners are often called in, CAF training is interrupted, and military personnel and assets are relocated. This cannot continue given future, projected disaster incident levels.

Military infrastructure in the Arctic will be affected by climate change but new science and Indigenous knowledge is making for more resilient infrastructure and an appetite for new energy sources. Federal programs, like Innovation for Defence Excellence and Security (IDEaS) in addition to research by the Defence Research and Development Canada should preference these solutions. New sources of green energy are needed including synthetic fuel and small nuclear reactors.

Canada now hosts a NATO Climate Change and Security Centre of Excellence (CCASCOE) that investigates how climate change affects security and the operational capabilities of allies. CCASCOE is particularly interested in understanding the effects of climate change on allied defence levels – from local communities to geopolitical developments. The CCASCOE will focus on four pillars: awareness, adaptation, mitigation, and outreach. This is a step in the right direction as is the CAF/DND's Climate Resilience and Environmental Sustainability Science & Technology Strategy (CRESST).^{xix}

xix CRESTT aims to reduce the military's carbon emissions and protect the environment, while preparing for and adapting to a world transformed by climate change. See <https://www.canada.ca/en/departement-national-defence/corporate/reports-publications/overview-dnd-caf-climate-resilience-environmental-sustainability-science-technology-strategy/climate-resilience-environmental-sustainability-science-technology-strategy-cresst.html>.

Eroding International Order based on International Law

Russia's continued participation in the Arctic Council is tied to the conflict in Ukraine. Where Russia can contribute to environmental protection efforts, they must be encouraged. Its Arctic is the largest and consequences there (including Cold War legacy radioactive material or methane release from melting permafrost) will impact the rest of the world. It is short-sighted then that Global Affairs Canada shut down its Canadian International Arctic Centre in Oslo, Norway in 2023 (Exner-Pirot, 2023). Tromsø Norway is home to the Arctic Council and Indigenous Permanent Participants' Secretariats and Norway is widely considered the locus of Arctic geopolitics.

Whether at the UN or in the Arctic Council, the (NATO) Arctic 7 must ensure that China does not erode the rights of coastal states or damage relations between Indigenous peoples and the GoC. The Central Arctic Ocean is a global common but the rules and processes of UNCLOS, as they relate to coastal states, must be protected. Most importantly, GoC and public servants should stop referencing China as a "near Arctic state". This is Chinese language from its 2018 Arctic strategy (PRC, 2018). There are only two categories of states – Arctic or non-Arctic. Using near Arctic suggests a special, third category for China which does not exist in UNCLOS or the Arctic Council. Canada also needs to be far more disciplined and circumspect about references to losses of sovereignty. Canada looks weak, alarmist and disorganized especially considering the war of aggression by Russia against Ukraine. Three years on and Ukraine has not lost its sovereignty (confirmed by its continued seat and vote in the General Assembly) nor does it reference losses to sovereignty; rightly, it points to occupation of territory. Sovereignty is not something that can be taken by other states – that is Russian propaganda. And sovereignty has not been ceded by Canadian Indigenous Peoples. Canada's sovereignty can only be jeopardized by Canadian government neglect.

Canada must work with Denmark and Greenland to solve the Lincoln Sea boundary dispute. Canada and the United States announced a task force to begin

negotiations on the Bering Sea maritime boundary (GoC, 2024e) and the status of the NWP can remain an "agree to disagree" issue. The Commission on the Limits of the Continental Shelf process will take decades. In the meantime, Canada should continue to collaborate with members of the US Senate to underline the merits of accession to UNCLOS.

Lessons learned from organizations like the Northwest Atlantic Fishing Organization regarding IUU fishing is essential. Vessels which engage in IUU in the NAFO regulatory area are banned from docking at ports of member states. Enforcement, however, is never 100%. An Arctic version of NAFO may be warranted in the future.

Recognize that scientific studies can often be a guise for collecting vital intelligence. No foreign science team should operate in Canada's Arctic without Canadian scientists and Indigenous rights-holders.

Make the Arctic the Persistent Priority for Successive Governments of Canada

Concerted, consistent attention to the domestic vulnerabilities of Canada's Arctic is the best form of defence against foreign interference and criminal activity.

ONSAF confirms that the Arctic Ocean is the main avenue of approach for an attack against Canada and the United States. The attacks can come in many forms via several domains (space, air, land, maritime, cyber and cognitive). The Standing House of Commons Committee on National Defence made 26 recommendations, and the Standing Senate Committee on National Security, Defence and Veterans Affairs made 23 recommendations to improve Arctic Security that were feasible, logical, and immediately implementable (NDDN, 2023; SECD, 2023). In many cases, Canadian investment from a military perspective is moving in the right direction – especially with the announcement of the NORAD modernization projects, but JTFN has been completely overlooked. Staying on

time and on budget will be hard if the Canadian government diverts efforts to new or different priorities. NORAD modernization and support to JTFN are not discretionary; they are Canada's most important priorities.

Major federal projects in the Arctic must be coordinated across all departments. Care must be taken to be transparent about the purpose and extent of funding to benefit local communities directly. The MSOCs are a model of interagency coordination but there are still clearly gaps in terms of sharing information to achieve maritime domain awareness as noted by the Auditor General.

State Based Kinetic Threats

Of late, there has been a noticeable and palpable shift in Canada's attention to its military readiness and support to allies. It is dawning on Canadians and Americans that North America can be held to ransom by adversaries targeting key infrastructure using the Arctic as an avenue of approach.

In an age of deterrence by denial (Charron and Fergusson, 2021), the most pressing need for Canada, the United States and allies, is situational (or all domain in military speak) awareness. This speaks to the bona fide military threat that is an attack on Canada or North America by Russia, China or other adversaries. The Auditor General of Canada has written several scathing reports noting Canada's deficiencies (2023).^{xx} To achieve domain awareness (in space, underwater, on the land, in cyber space and in the air) new networked sensors are required. NORAD's modernization projects are essential to assuring that these sensors are put in place and networked securely so that allies, other government departments, and northerners

are aware of the activity in the Arctic. This will not only provide the government of Canada with more options to respond to potential concerns in advance of a crisis, but it is Canada's most important contributions to its NORAD and NATO commitments.

Therefore, the 19 NORAD projects must remain the government's top military priority (GoC, 2024a). It is recommended that Canada appoint a NORAD civilian champion, someone highly respected, with deep connections to the United States, to keep Canada's projects on time. Normally, the Permanent Joint Board on Defence would serve as a champion of sorts, but it meets too infrequently, and Canadian and US co-chair membership is currently mismatched.^{xxi} There are serious concerns that the NORAD modernization targets will not be met given their complexity, and other competing priorities. For example, transmission and receiver sites that must be in southern Ontario for the Arctic OTHR to function have yet to be announced as of 28 November 2024. Given that the target implementation date for Arctic OTHR is 2026, and a radar system has yet to be selected and networked, time is running out (Canada Buys, 2023).

The 12 new "conventionally powered subs" recently announced are also an important (though far in the future given Canada's normal procurement record) contribution to domain awareness. Conventionally powered subs might be acquired in a decade. As testified by VAdm Auchterlonie (CJOC Commander at the time), new technology, such as air-independent propulsion that could allow diesel-electric submarines to operate under Arctic ice, means a conventionally powered sub is a good choice for Canada (Dean and Dagenais 2023, 64). Remotely piloted subs will also be vital – especially given the size of Canada's Arctic coast.

xx The Auditor General concludes: "Overall, the federal government has not taken the required action to address long-standing gaps affecting its surveillance of Canada's Arctic waters. As a result, the federal organizations that are responsible for safety and security in the Arctic region do not have a full awareness of maritime activities in Arctic waters and are not ready to respond to increased surveillance requirements. These requirements are growing as a warming climate makes our Arctic waters increasingly accessible to vessels and as interest and competition for this region grows" (6.12).

xxi The US Cochair is the Assistant Secretary of Defense for Homeland Defense and Hemispheric Affairs. She is a technical expert and deeply involved in budget and DoD decision making. Canada's Co Chair is a member of Parliament who is not privy to the 'in-the-weeds' details that NORAD modernization projects demand because of position and security clearance.

Foreign interference is tackled with a clear strategy for the Arctic, intelligence, clear rules about ownership and percentage of control of companies and support to local and indigenous companies to compete for contracts. The best defence is for the Government of Canada to invest the necessary funds to entice Canadian industries to partner and codevelop sustainable projects.

Finally, the decision by the Paul Martin government in 2005 to not participate in the defeat side of the US continental ballistic missile defence system (the US ground based, midcourse system ideally oriented for missiles from North Korea) needs reassessment. The plan is not to participate in the current US system necessarily but in future ones. Hypersonic weapons and other new technologies mean that the defence of Canada and North America are imperatives. Likely discussions are underway given new missile technology but now, considering new command and control systems are coming online for NORAD, is the time to enter discussions. There will be deep resistance to open the NORAD agreement lest it be disappeared. Therefore, a plan that can be accommodated by existing terms of reference or other arrangements will have a better chance of success. This, however, will take more than five years to complete given the emerging nature of missiles and defence systems.

Conclusion

The list of threats and vulnerabilities are not new. Decades of inattention, under funding and lack of guidance and strategies means that in today's global contested world, the CAF cannot prioritize the defence of the Arctic as required by ONSAF.

Climate change is a worldwide problem, but the Arctic will feel its effects first. Scientists and northerners have the information. Politicians must be guided by their expert advice; derelict wind turbines and Nanisivik are what happens when politics trumps

informed, expert advice.

Given that the NATO Arctic States will share the Chairship of the Arctic Council until 2037 when Iceland, in theory, will hand the Chairship to Russia, now is the time to plan and coordinate the 13 years of Chairs on environmental protection and sustainable development with Indigenous Permanent Participants.

If the international order based on international law is to be preserved, Global Affairs Canada will need to be more engaged on Arctic files, consider re-opening their centre in Oslo and consider an Arctic champion.

Silos of excellence will not work in an Arctic context. A whole of society effort is needed. The federal government and its agencies need to coordinate and co-develop projects with territorial premiers and communities.

Most importantly, for Canada, the Arctic cannot be seen as simply a bulwark to protect southern Canada. It is a homeland, and the government needs to pay sustained attention to and provide resources for northerners.

Recommendations for the next five years:

In addition to the many recommendations made by various Standing Committees, we offer the following unique considerations. Recommendation 1-6 are internal to Canada while 7-9 are external to Canada.

1. Designate a Canadian Arctic champion (similar to US Ambassador at Large for Arctic Affairs^{xxii} (who is not from CAF or DND) who reports to Parliament, whose sole job is to map, facilitate and integrate federal and territorial Canadian Arctic projects, facilitate communication among the domestic agencies and connect with Canadian Arctic rightsholders. The Arctic Security Working Group

xxii The Office of the Ambassador-at-Large for Arctic Affairs leads and coordinates the advancement of US interests in the Arctic related to safety and security, sustainable economic growth, and strengthening cooperation among Arctic States to perpetuate and defend the rules-based order in the region <https://www.wilsoncenter.org/article/dr-mike-sfraga-confirmed-us-ambassador-large-arctic-affairs>

would be chaired by them and the territorial leader who hosts the meetings rather than the CAF/DND.

2. Draft a GoC Arctic strategy that integrates GoC efforts with concrete steps as opposed to aspirational “visions”. Separate domestic Arctic issues (ideally drafted by Crown Indigenous Relations and Northern Affairs) and international issues (drafted by Global Affairs Canada). Too often the latter obfuscates attention to the more pressing domestic issues. Be disciplined referencing threats to Canada’s sovereignty. Sovereignty is not a pan-acea catchall term for any problems or concerns about the Arctic.
3. The 19 NORAD modernization projects must be delivered on time and integrated with American efforts. Their successful delivery must remain Canada’s defence priority. GoC must be more transparent on the opportunities and limits of NORAD modernization funding benefits to communities.
4. JTFN must be better resourced and civilian “Op LENTUS” responses should be the goal except in extreme cases.
5. Canadian Industries in the Arctic must have clauses that allow for access to their infrastructure by emergency personnel in times of crisis.
6. Abandon the Nanisivik fuel depot. Instead establish one in Iqaluit and with industries in the region.
7. Reopen Canada’s Arctic office in Norway. Support vigorously, the Inuit Circumpolar Council’s observer status on the International Maritime Organization.
8. Come to agreement with allies the United States on the Beaufort Sea maritime boundary and Denmark and Greenland on the Lincoln Sea boundary.
9. Better coordinate strategic messaging with allies regarding Arctic exercises

References

Akande, V., Fawehinmi, T.O., Ruiter, R.A.C., and Kremers, S.P.J. (2021).

Healthy Dietary Choices and Physical Activity Participation in the Canadian Arctic: Understanding Nunavut Inuit Perspectives on the Barriers and Enablers. *Int. J. Environ. Res. Public Health*, 18(3), 940. <https://doi.org/10.3390/ijerph18030940>

Arctic Council. (2021). *An Introduction To: The International Agreement to Prevent Unregulated Fishing in the High Seas of the Central Arctic Ocean*. <https://arctic-council.org/news/introduction-to-international-agreement-to-prevent-unregulated-fishing-in-the-high-seas-of-the-central-arctic-ocean/>

Arctic Council. (2024a). *Arctic Council*. <https://arctic-council.org>

Arctic Council. (2024b). *Arctic Council Advances Resumption of Project-Level Work*. <https://arctic-council.org/news/arctic-council-advances-resumption-of-project-level-work/>

Auditor General of Canada. (2022). *Arctic Water Surveillance (Report No. 6)*. https://www.oag-bvg.gc.ca/internet/English/parl_oag_202211_06_e_44152.html

Bennett, Mia. (2018). *The controversy over Greenland airports shows China isn't fully welcome in the Arctic – yet*. Arctic Business Journal – Arctic Today. <https://www.arctictoday.com/controversy-greenland-airports-shows-china-still-unwelcome-arctic/>.

Canada Buys. (2023). *Invitation to Submit an Expression of Interest as the availability of lands for sale in various municipalities in the province of Ontario*. R.125817. <https://canadiannorth.com/about/executive-team/>

CBC. (2012). *Rankin Inlet Wind Turbine Loses Its Blades*. <https://www.cbc.ca/news/canada/north/rankin-inlet-wind-turbine-loses-its-blades-1.1208272>

Charron, Andrea. (2023). Maritime Domain Awareness Afloat: An Exciting CCG Pilot Study. *Canadian Naval Review* 19(2).

Charron, A., & Fergusson, J. (2022). *NORAD: In Perpetuity and Beyond*. McGill-Queen's University Press.

Charron, A., & Fergusson, J. (2021). North America's Imperative: Strengthen Deterrence by Denial. *Strategic Studies Quarterly* 15(4), 42. https://www.airuniversity.af.edu/Portals/10/SSQ/documents/Volume-15_Issue-4/D-Charron.pdf.

Commission on the Limits of the Continental Shelf. (1982). *Submissions, through the Secretary-General of the United Nations, to the Commission on the Limits of the Continental Shelf, pursuant to article 76, paragraph 8, of the United Nations Convention on the Law of the Sea of 10 December 1982*. https://www.un.org/depts/los/clcs_new/commission_submissions.htm

Cook, A.J., Dawson, J., Howell, S., Holloway, J., and Brady, M., (2024) *Sea Ice Choke Points Reduce the Length of Shipping season in the Northwest Passage*. Communications Earth and Environment. <https://www.nature.com/articles/s43247-024-01477-6>

- Department of Defense. (2022). *National Defense Strategy of the United States*. <https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF>
- Department of Defense, (2024). *Arctic Strategy of the United States*. <https://media.defense.gov/2024/Jul/22/2003507411/-1/-1/0/DOD-ARCTIC-STRATEGY-2024.PDF>
- Department of National Defence. (2023). *Canada purchasing up to 16 P-8A Poseidon Multi Mission Aircraft for the Royal Canadian Air Force*. Government of Canada. <https://www.canada.ca/en/department-national-defence/news/2023/11/canada-purchasing-up-to-16-p-8a-poseidon-multi-mission-aircraft-for-the-royal-canadian-air-force.html>.
- Department of National Defence. (2024). *Our North Strong and Free: A Renewed Vision for Canada's Defence*. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/north-strong-free-2024.html>
- Duval Lantoin, C. (2024). *Time To Rethink Military Recruitment*. CGAI. https://www.cgai.ca/time_to_rethink_military_recruitment
- Exner-Pirot, H. (2023). *The Arctic is where Canada should be leading, not turning out the lights*. National Post. <https://nationalpost.com/opinion/the-arctic-is-where-canada-should-be-leading-not-turning-out-the-lights>
- Ford, J.D., Lardeau, M.P., Blackett, H. Chatwood, S. & Kurszewski, D. (2023). *Community food program use in Inuvik, Northwest Territories*. BMC Public Health. <http://www.biomedcentral.com/1471-2458/13/970>
- Gagnard, J. (2022). *China, Circumpolar Indigenous People and the Colonial Past of the Arctic*. The Arctic Institute. <https://www.thearcticinstitute.org/china-circumpolar-indigenous-people-colonial-past-arctic/>
- Gorbachev, M. (1987). *Murmansk Speech*, https://www.barentsinfo.fi/docs/gorbachev_speech.pdf
- Government of Canada. (2019). *Canadian Forces Station ALERT*. <https://www.canada.ca/en/air-force/corporate/alert.html>
- Government of Canada. (2020). *Gendered Violence Against Inuit Women: A Review of Policies and Practices in Inuit Nunangat*. <https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/rvw-plc-prctcs-pauk/index-en.aspx>
- Government of Canada. (2022). *How Nutrition North Canada Works*. <https://www.nutritionnorthcanada.gc.ca/eng/1415538638170/1415538670874>
- Government of Canada. (2023a). *Mandatory minimum 5% Indigenous procurement target*. <https://www.sac-isc.gc.ca/eng/1691786841904/1691786863431#>
- Government of Canada. (2023b). *Infrastructure in the North*. <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/proactive-disclosure/secd-april-24-2023/infrastructure-north.html>
- Government of Canada. (2023c). *Investments supporting the Arctic and Northern Policy Framework*. <https://www.rcaanc-cirnac.gc.ca/eng/1562853124135/1562853167783>

- Government of Canada. (2023d). *Canada's record-breaking wildfires in 2023: A fiery wake-up call*. <https://natural-resources.canada.ca/simply-science/canadas-record-breaking-wildfires-2023-fiery-wake-call/25303>.
- Government of Canada. (2024a). *NORAD modernization project timelines*. <https://www.canada.ca/en/department-national-defence/services/operations/allies-partners/norad/norad-modernization-project-timelines.html>
- Government of Canada. (2024b). *Harry DeWolf Class Royal Canadian Navy*. <https://www.canada.ca/en/navy/corporate/fleet-units/surface/harry-dewolf-class.html>.
- Government of Canada. (2024c). *Canada's Indo-Pacific Strategy*. <https://www.international.gc.ca/transparency-transparence/indo-pacific-indo-pacifique/index.aspx?lang=eng>
- Government of Canada. (2024d). *Canada's P-8A Poseidon aircraft procurement bringing investment and economic growth to British Columbia*. <https://www.canada.ca/en/department-national-defence/news/2024/08/canadas-p-8a-poseidon-aircraft-procurement-bringing-investment-and-economic-growth-to-british-columbia.html>
- Government of Canada. (2024e). *Joint Statement on Creation of Joint Task Force to Negotiate Beaufort Sea Boundary*. <https://www.canada.ca/en/global-affairs/news/2024/09/joint-statement-on-creation-of-joint-task-force-to-negotiate-beaufort-sea-boundary.html>
- Government of Nunavut. (2020). *Government of Nunavut Ransomware Report (14 July)*. [https://assembly.nu.ca/sites/default/files/TD-393-5\(2\)-EN-GN-Ransomware-Report.pdf](https://assembly.nu.ca/sites/default/files/TD-393-5(2)-EN-GN-Ransomware-Report.pdf)
- Hudson, A. (2024). *Canada's purchase of Inuvik hanger applauded by northerners and Arctic security experts*. CBC News. <https://www.cbc.ca/news/canada/north/canada-s-purchase-of-inuvik-hangar-applauded-by-northerners-and-arctic-security-experts-1.7260047>
- Inuit Nunangat. (2021). *Inuit Nunangat Policy*. <https://www.rcaanc-cirnac.gc.ca/eng/1650556354784/1650556491509>
- Inuit Tapiriit Kanatami. (2016). *National Inuit Suicide Prevention Strategy*. <https://www.itk.ca/wp-content/uploads/2016/07/ITK-National-Inuit-Suicide-Prevention-Strategy-2016.pdf>.
- Kitikmeot SAR. (n.d.) <https://kitikmeotsar.ca/>
- Lackenbauer, W. (2021). *Threats to, through and in the Arctic*. North American and Arctic Defence and Security Network. https://www.naadsn.ca/wp-content/uploads/2021/03/Lackenbauer_Threats-Through-To-and-In-the-Arctic.pdf
- MacNeil, P.LCdr. (2018). *Submarines in the North: Challenges to Arctic Sovereignty and Security*. Canadian Forces College. <https://www.cfc.forces.gc.ca/259/290/405/305/macneil.pdf>. 7
- McKenney, H., and Nelson, M. (2023). *Sighting of Chinese and Russian Warships near Aleutians Prompts Navy Response*. Alaska Public Media. <https://alaskapublic.org/2023/08/08/sighting-of-chinese-and-russian-warships-near-aleutians-prompts-navy-response/>.
- Montgomery, M. (2020). *China's effort to buy an Arctic gold mine raises many concerns*. RCI. <https://www.rcinet.ca/en/2020/08/10/chinas-effort-to-buy-an-arctic-gold-mine-raises-many-concerns/>

- Murray, N. (2023). *Qulliq Energy stops short of labelling cyberattack another Nunavut ransomware incident*. CBC News. <https://www.cbc.ca/news/canada/north/qulliq-energy-cyberattack-ransomware-1.6728376>
- NATO. (2023). *Arctic remains essential to NATO's Deterrence and Defence Posture*, says Chair of the NATO Military Committee. NATO. https://www.nato.int/cps/en/natohq/news_219529.htm
- NATO. (2024a). *Steadfast Defender 24*. NATO. <https://www.nato.int/cps/en/natohq/222847.htm>.
- NATO. (2024b). *Washington Summit Declaration: Issued by the NATO Heads of State and Government participating in the meeting of the North Atlantic Council in Washington, D.C. 10 July 2024*. NATO. https://www.nato.int/cps/en/natohq/official_texts_227678.htm
- NDDN. (2023). *A Secure and Sovereignty Arctic*. <https://www.ourcommons.ca/Committees/en/NDDN/StudyActivity?studyActivityId=11851202>
- NORAD. (2024) *NORAD detects, tracks and intercepts Russian and PRC aircraft operating in the Alaska ADIZ*. <https://www.norad.mil/Newsroom/Press-Releases/Article/3849184/norad-detects-tracks-and-intercepts-russian-and-prc-aircraft-operating-in-the-a/>
- Northern Housing. (n.d.) *Importance of Federal Investment in Northern Housing Pan-Territorial Housing Analysis and Position Paper*. <http://northernhousing.ca/assets/docs/northern-housing-position-paper.pdf>
- Northwest Territories. (2024) *NWT Oil and Gas*. NWT Bureau of Statistics. <https://www.statsnwt.ca/economy/oil-gas/>
- Nuwer, R. (2024). *Missing Russian Data Is Harming Arctic Research at a Critical Time*. Scientific American. <https://www.scientificamerican.com/article/missing-russian-data-is-harming-arctic-research-at-a-critical-time/>
- OSCE. (1999). *Vienna Document: Of the Negotiations on Confidence and Security Building Measures*. <https://www.osce.org/files/f/documents/b/2/41276.pd>
- Peoples Republic of China. (2018). *Arctic Strategy (English translation)*. The State Council Information Office of the People's Republic of China https://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm
- Pilkington, V. (2024). *Documents show 'disastrous' cyanide leaks continue at Eagle mine in Yukon*. CBC. <https://www.cbc.ca/news/canada/north/eagle-mine-july-23-documents-cyanide-leaks-1.7272765>
- Public Services and Procurement Canada. (2024). *Government of Canada awards initial contract for Program icebreakers to Chantier Davie*. <https://www.canada.ca/en/public-services-procurement/news/2024/03/government-of-canada-awards-initial-contract-for-program-icebreakers-to-chantier-davie.html>.
- Rigby, V. (2023). *Up in the Air: The Spy Balloon and What It Means for Canada*. Center for Strategic and International Studies. <https://www.csis.org/analysis/air-spy-balloon-and-what-it-means-canada>
- Sarkisian, A. (2024). *China wants to tap Nunavut minerals: Ambassador*. Nunatsiaq. <https://nunatsiaq.com/stories/article/china-wants-to-tap-nunavut-minerals-ambassador/>

Sharma, A. (2021). China's Polar Silk Road: Implications for the Arctic Region. *Journal of Indo-Pacific Affairs*. <https://www.airuniversity.af.edu/JIPA/Display/Article/2820750/chinas-polar-silk-road-implications-for-the-arctic-region/>

Standing Senate Committee on National Security, Defence and Veterans Affairs (SECD). (2023). *Arctic Security Threat: Urgent Needs in a Changing Geopolitical and Environmental Landscape*. https://sencanada.ca/content/sen/committee/441/SECD/reports/2023-06-28_SECD_ArcticReport_e.pdf

Society of Rural Physicians in Canada (SRPC). (2023). *Nunavut*. <https://srpc.ca/nu>

Spence, J., Alexander E., Rodven, R., Harriger, S. (2023). *What makes the Arctic and its governance exceptional? Stories of geopolitics, environments and homelands*. Arctic Yearbook. https://arcticyearbook.com/images/yearbook/2023/Scholarly_Papers/17_Spence_AY2023.pdf

Tunney, C. (2023). *CSIS warning Inuit leaders about covert foreign investment in Arctic, documents show*. CBC News. <https://www.cbc.ca/news/politics/csis-arctic-obed-russia-china-1.6993128>.

UN Declaration on the Rights of Indigenous Peoples (2007). https://www.un.org/development/desa/indigenous-peoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

Van Dine, S. (2024). *Closing Canada's Back Door – Strategies to Control Our Arctic Critical Minerals: Commentary*. Macdonald-Laurier Institute. <https://macdonaldlaurier.ca/closing-canadas-back-door-stephen-van-dine-commentary/>

Walt, S. (2024). The Two Biggest Global Trends are at War. *Foreign Policy*. <https://foreignpolicy.com/2024/08/06/trends-war-drones-identity-gaza-ukraine-houthis/>

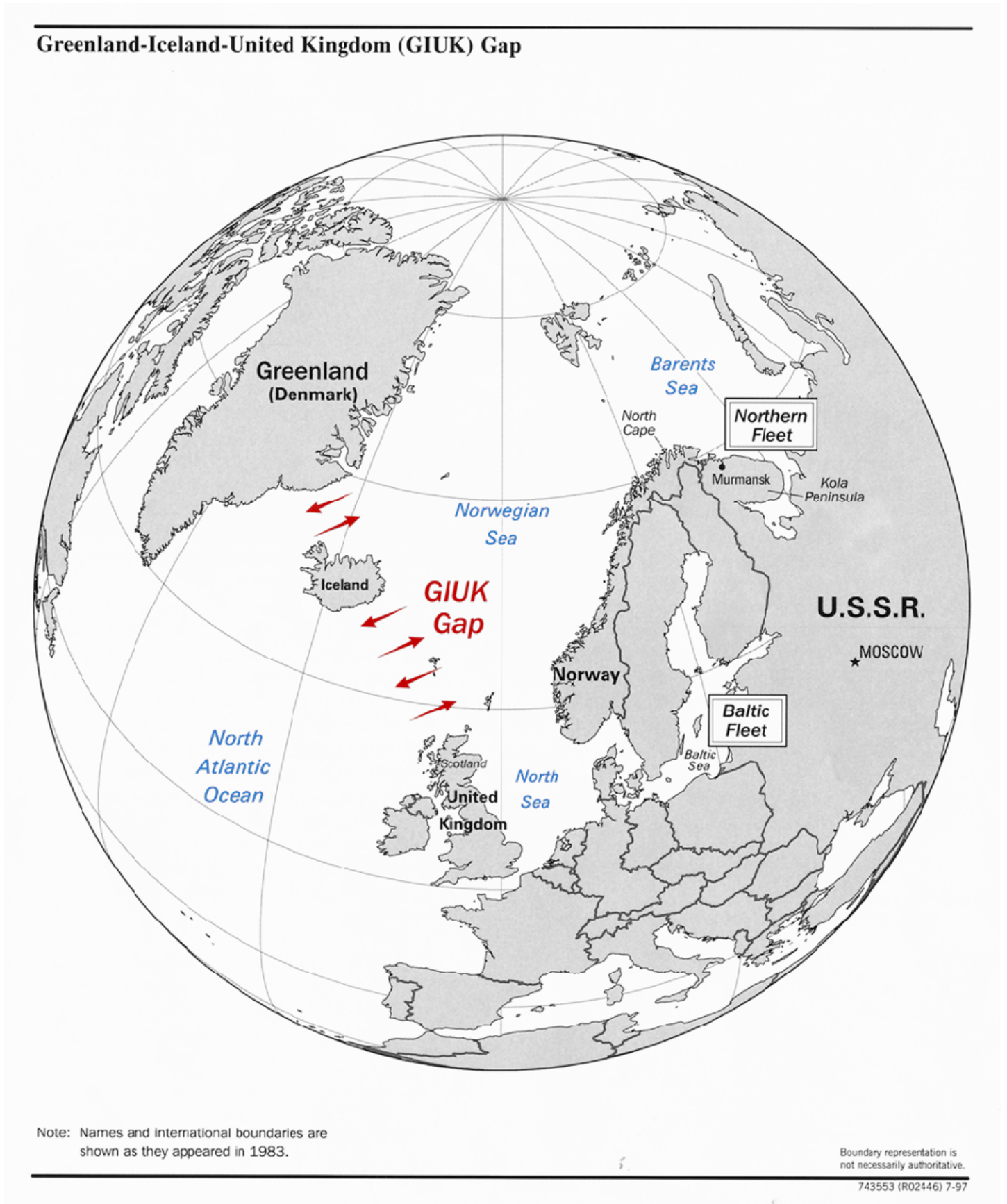
White House. (2024). *Biden-Harris Administration Announces New Polar Partnership “ICE Pact” Alongside Finland and Canada*. <https://www.whitehouse.gov/briefing-room/statements-releases/2024/07/11/biden-harris-administration-announces-new-polar-partnership-ice-pact-alongside-finland-and-canada/>.

White House. (2022). *National Security Strategy*. <https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf>

Xie, X. (2023). Why China Cares about Canada's Indigenous Residential Schools: from Whataboutism to Internal Denial. *Genocide Studies and Prevention: An International Journal*. 17(1). <https://doi.org/10.5038/1911-9933.17.1.1906>

Yermekov, V. (2024). *Follow the Money: Understanding Russia's Oil and Gas Revenues*. Oxford Institute for Energy Studies (March). The Oxford Institute For Energy Studies. <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2024/03/Follow-the-Money-Russian-Oil.pdf>

Annex: GIUK Gap



https://upload.wikimedia.org/wikipedia/commons/f/f7/GIUK_gap.png (Global Commons)