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The Northwest Diversion: On Climate Change and Arctic Security in Canada

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JCSP 49 DL

Exercise Solo Flight

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INTRODUCTION

Climate change poses a threat to Canadians through many vectors. Defence and security literature on the subject concentrates on Arctic sovereignty, surveillance, and a renewed interest in the Northwest Passage. This focus itself invokes a new potential threat – the threat of being unprepared for the second-order effects of climate change on Canadian security. These events draw on defence resources and present a preventable and unsustainable threat to operational readiness through attrition. "Put simply, climate change compounds all other known human security issues and serves as an accelerant towards negative security outcomes."[1]

While Arctic sovereignty, surveillance, and foreign access to the Northwest Passage present an immediate and potentially kinetic challenge to the Canadian Armed Forces (CAF), they are more accurately described as a diversion from more pressing non-kinetic, domestic threats reliant upon the same limited resources. The convergence of Canada's limited Northern infrastructure, the vast expanse of the Arctic region, and the CAF's diminished capabilities highlights three specific threats:

1. The need for an effective Search and Rescue (SAR) network as climate change increases Arctic access.
2. Increasing frequency and intensity of disaster relief efforts.
3. Arctic mobility, hampered by a lack of infrastructure and access will see its capacity strained.

This paper explores these deficiencies, examines their common causes, and proposes a framework to improve the CAF's outcomes. While conventional defense literature prioritizes Arctic sovereignty and surveillance, the looming specter of climate change presents Canada with a more pressing security challenge. This paper contends that the CAF must pivot towards non-kinetic, domestic threats exacerbated by climate change, including the need for robust SAR network, disaster relief efforts, and Arctic mobility. By addressing these critical deficiencies through a comprehensive readiness framework that leverages key partnerships, the CAF can bolster its operational readiness and be better prepared to deal with other emergent threats.

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[1] John Bronskill, "Climate change threatens Canadian security, prosperity, warns stark spy agency brief," *Canadian Pres*s, CBC News (2023), https://www.cbc.ca/news/politics/csis-climate-change-threats-canada-1.6768803. Excerpt from an analysis by the Canadian Security Intelligence Service (CSIS).

BACKGROUND

The increasing prominence of the junction between climate change and security in scientific and policy circles,[2] known as "climate security," highlights the Government of Canada (GOC)'s acknowledgement of the issue. Security literature displays a notable preoccupation with sovereignty and surveillance, while Canada's Northern policy documents – including its National Defence Policy, *Our North, Strong and Free* and *Arctic and Northern Policy Framework* – focus on Northern communities and collaboration with these communities in the development of policy.[3]

Acknowledging that security is broader than the defence perspective, defence itself encompasses more than just kinetic effects. As the Arctic warms at unprecedented rates and Canada's Northern waterways become more accessible, both foreign and domestic traffic will increase, and a proportional increase in the demand signal for security resources in the region will follow.[4] This increasing demand for security resources like the CAF and the Canadian Coast Guard (CCG) is well understood to have a direct impact on the operational capacities of these institutions. What is less understood, or at least less acknowledged, are the indirect effects of this increased demand and how it impacts existing capabilities and infrastructure.

Increased traffic in the North will place untold demands on infrastructure, both in frequency of use of existing roadways, airports, waterways, and community resources, and in creating a demand signal for new infrastructure in remote regions.[5] With this change it is reasonable to prepare for an associated demand on the CAF, further straining resources in the rest of Canada. What begs to be reconsidered is the interplay between Canada's Northern policy and the demands on its effective forces, resources, and infrastructure. The remainder of this paper will apply a comparative review of Canada's Northern policy documents, including its recently published defence policy update, *Our North, Strong and Free,* the *Defence Climate and Sustainability Strategy*, and the *Arctic and Northern Policy Framework*, to identify strategic gaps in SAR, disaster relief, and Arctic mobility.

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[2] Jill Barclay, Jayde Lavoie, Carly MacArthur, and Maria Nallim, "The Impacts of Climate Change on North American Defence and Security," *North American and Arctic Defence and Security Network* (2020), https://www.naadsn.ca/wp-content/uploads/2020/09/20_September_Climate-Change-Policy-Primer.pdf

[3] Andrew Chater, "Three Takeaways from Canada's Arctic and Northern Policy," *The Polar Connection* (2019), https://polarconnection.org/canada-arctic-northern-policy/

[4] Standing Senate Committee on National Security, Defence and Veterans Affairs Senate, "Arctic Security Under Threat," *Senate Canada* (2023): 45, https://sencanada.ca/content/sen/committee/441/SECD/reports/2023-06-28_SECD_ArcticReport_e.pdf

[5] Ernie Regehr, "Good Governance and Arctic Security," *The Simons Foundation Canada Arctic Security Briefing Papers* (2024), https://www.thesimonsfoundation.ca/highlights/good-governance-and-arctic-security

SEARCH AND RESCUE

SAR contributes to human security by ensuring safe passage in remote regions. As a "partnered response,"[6] the effectiveness of SAR in Canada relies on the coordination of myriad agencies, the integration of advanced technology, and the ability to reach and access remote areas. Canada's National SAR Policy (NSP), derived from the Department of Public Safety and Emergency Preparedness and enabled by the National SAR Secretariat (NSS),[7] coordinates the efforts of several government, military, volunteer, and industry groups.[8] This includes the CCG, responsible for marine SAR; the Royal Canadian Air Force (RCAF), responsible for aeronautical SAR; and provincial and territorial governments responsible for SAR on land; and further supported by many civilian and government organizations.

Despite the RCAF's recent integration of a new aeronautical SAR platform, the CC295 Kingfisher,[9] and the CCG's incoming Arctic Offshore Patrol Ships (AOPS),[10] there is an increasing requirement to rely on civil partnerships to achieve effective SAR in the North for which the CAF is ill prepared. Increasing civilian and commercial traffic in the North, new shipping routes, and economic opportunities heighten the potential for maritime incidents requiring SAR response. The remoteness of region requires range and speed – notably lacking from the Kingfisher and AOPS, respectively. Without the ability to reach potential victims in a timely manner, the effectiveness of SAR operations is severely compromised. To this end, an interesting statistic has come to light. That is, SAR cases have not appreciably increased in the region because of this increased traffic.[11] It is plausible that the increased traffic has made the region less austere and thus safer,[12] but the data is sparce and yet very new. Thus, drawing so consequential a conclusion begs reconsideration, considering reliance on historical data to predict future trends is inherently problematic when predicated on a changing dynamic.

While the NSP calls for an integrated, coordinated response from SAR resources, little actual coordination takes place, with entities operating in parallel rather than in concert.[13] The desired coordination is prevented by gaps between strategic and operational level elements, and

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[6] Canadian Armed Forces, "About Search and Rescue (SAR)," *Government of Canada* (2018), https://www.canada.ca/en/department-national-defence/services/operations/military-operations/types/search-rescue/about.html

[7] Jean Leroux, "Canadian Search and Rescue Puzzle: The Missing Pieces," *Canadian Military Journal* 18, no. 2 (Spring 2018): 26, http://www.journal.forces.gc.ca/vol18/no2/PDF/CMJ182Ep24.pdf

[8] Canadian Armed Forces, "About Search and Rescue (SAR)" ...

[9] Royal Canadian Air Force, "CC-295 Kingfisher," *Government of Canada* (2020), https://www.canada.ca/en/air-force/services/aircraft/cc-295.html

[10] Public Service and Procurement Canada, "Arctic and offshore Patrol Ships: Canadian Coast Guard," *Government of Canada* (2024), https://www.tpsgc-pwgsc.gc.ca/app-acq/amd-dp/mer-sea/sncn-nss/arctique-coastgd-eng.html

[11] Jean Leroux, "The Arctic Search and Rescue Region: Frozen in Time," *Canadian Military Journal* 22, no.4 (Fall 2022): 6, http://www.journal.forces.gc.ca/PDFs/CMJ224Ep5.pdf

[12] *Ibid*.

[13] Jean Leroux, "Canadian Search and Rescue Puzzle...," 28.

challenges in federal-territorial relationships and jurisdictional boundaries.[14] This lack of coordination leads to scope creep set by "erroneous expectations"[15] from the public. Their understanding of SAR readiness is often disconnected from the operational realities, creating confusion and unrealistic assumptions about who will respond, how quickly, and with what resources during a SAR incident.

DISASTER RELIEF

Domestic disaster assistance has evolved into a signature function of the CAF through Operation LENTUS.[16] Despite disaster response in Canada being a provincial responsibility, the CAF is inevitably looked upon to assist with increasing frequency. [17] For perspective, the demand for CAF involvement in disaster relief operations has doubled every five years in the last two decades, and in 2023, the CAF responded to eight requests for assistance across Canada.[18] This significant uptick of natural disasters in Canada and demands on the CAF signals a need for it to prepare for a continual commitment for the foreseeable future. This is not strictly a Northern concern, though it certainly impacts Northern communities due to their remote nature and limited resources.

Disaster relief represents a set of capabilities well within the scope of its common military tasks. The successful CAF contributions during Manitoba floods of 1997, the Quebec ice storm in 1998, Operation VECTOR during the COVID pandemic, and innumerable flood and forest fire support operations demonstrates the CAF's ability to integrate with local agencies and execute complex humanitarian and disaster-relief missions on short notice. The CAF is also equipped with several capabilities specifically intended to counter the threats posed by natural and humanitarian disasters, including the Disaster Assistance Response Team (DART),[19] the pronouncement of Humanitarian Assistance and Disaster Relief (HADR) in Canada's Defence Policy,[20] and the deployment and integration of 2 Wing as a command-and-control element. Despite this, there exists no dedicated capacity to support disaster relief in terms of strategic and tactical airlift, engineering support, or logistical and administrative enablers. These resources are

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[14] *Ibid*.

[15] *Ibid*., 31.

[16] Canadian Armed Forces, "Operation LENTUS," *Government of Canada* (2023), https://www.canada.ca/en/department-national-defence/services/operations/military-operations/current-operations/operation-lentus.html

[17] Peter Kikkert, "Creating a Non-Military Disaster Workforce Must be Part of Canada's Climate Change Response," *North American and Arctic Defence and Security Network* (2021), https://www.naadsn.ca/wp-content/uploads/2021/12/21-dec-Kikkert-Disaster-Workforce-Policy-Brief.pdf

[18] Canadian Armed Forces, "Operation LENTUS" ...

[19] Canadian Armed Forces, "Disaster Assistance Response Team, (DART) Organization," *Government of Canada* (2018), https://www.canada.ca/en/department-national-defence/services/operations/military-operations/types/dart/organization.html

[20] Martin Shadwick, "The Canadian Armed Forces and Humanitarian Assistance and Disaster Relief (HADR)," *Canadian Military Journal* 18, no.4 (Autumn 2018): 77. http://www.journal.forces.gc.ca/vol18/no4/PDF/CMJ184Ep76.pdf

drawn from other capabilities, often with limited functional training or capacity.[21] Thus, the problem exists not as a question of capability but rather one of capacity, highlighting a notable gap between the focus of the CAF's mandate and its lived reality. Without a dedicated disaster relief force that can rapidly deploy with organic transportation, engineering, medical, and sustainment elements, the CAF will continue to face capability gaps in this area.

ARCTIC MOBILITY

A significant body of research suggests that the airport, seaport, and road network in the North is a concern not just for CAF operations, but for Northern prosperity.[22] The ability to move about the Arctic freely and unencumbered will be key to supporting the SAR network and disaster relief operations, as well as having a considerable impact on Northern sovereignty and surveillance. Arctic mobility is further challenged by several factors including climate change, remote geography, low population density, and crumbling infrastructure.[23] These challenges affect the CAF by limiting mobility while the loss of sea ice resulting from climate change simultaneously makes the region more accessible and, thus, less stable in terms of resource competition and sovereignty.

Canada's Northern policy signals an intention for future investment in Arctic infrastructure, including the proposed expansion of several key airfields and seaports, but significant gaps remain. Problematically, Arctic mobility relies on a limited highway system augmented by ice roads and all-season roads, as well as transportation by over-snow vehicles.[24] As the permafrost melts because of climate change, this infrastructure will begin to degrade.[25] In the absence of a robust highway system, air infrastructure plays a critical role in Northern Canada, but there are only eleven airports with paved runways which will fall victim to the same degradation from melting permafrost.[26] This infrastructure is already struggling to meet demand given the vast relative distances between these runways. Some communities are only accessible by air for portions of the year, while others are inaccessible by sea during other times. The effects of climate change threaten to exacerbate these challenges.

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[21] Christian Leuprecht and Peter Kasurak, "The Canadian Armed Forces and Humanitarian Assistance and Disaster Relief: Defining a Role," *Centre for International Governance Innovation* (2020), https://www.cigionline.org/articles/canadian-armed-forces-and-humanitarian-assistance-and-disaster-relief-defining-role/

[22] Katherin Stephen, "Canada in the Arctic – Arctic Shipping: Routes, Forecasts, and Politics," *The Arctic Institute* (2012), https://www.thearcticinstitute.org/canada-arctic-shipping-part2/

[23] James Kraska, *Arctic Security in an Age of Climate Change,* (Cambridge, New York: Cambridge University Press, 2011).

[24] Christina Bouchard, "Arctic Highways as Critical Infrastructure," *North American and Arctic Defence and Security Network* (2020), https://www.naadsn.ca/wp-content/uploads/2020/08/20-Aug_Bouchard_Policy-Primer-1.pdf

[25] Christina Bouchard, "Arctic Airports and Aerodromes as Critical Infrastructure," *North American and Arctic Defence and Security Network* (2020), https://www.naadsn.ca/wp-content/uploads/2020/11/Airports_CI_2020_11_05.pdf

[26] *Ibid*.

Improvements to Arctic mobility and its infrastructure are important to sovereignty and surveillance operations. By supporting the ability to deploy and sustain forces, they are equally critical to supporting SAR and disaster relief operations by enabling rapid, effective response. This development is also critical for the economic prosperity and quality of life of Northern communities. Problematically, the rate of change is failing to keep pace with the impacts of climate change and failing to keep pace with the potential of technological change.[27] hat is, traditional construction methods may not be a sufficient solution to the problems posed by climate change, and investment in new approaches like airships, reinforced embankments, portable bridges, and other innovative solutions may be required.

IMPLICATIONS FOR THE CANADIAN ARMED FORCES

These issues represent a complex problem facing the CAF. Observed from a systems perspective, these interrelated challenges highlight systemic limitations and offer an opportunity for creative solutions. Application of comparative systems analysis tools like the Ishikawa diagram connects problems with their root causes through common aggravators[28] to provide appropriate recommendations for the CAF to better anticipate, prepare for, and act upon these identified challenges. The Ishikawa is a powerful tool for examining the impact of climate change on Northern security, and specifically the interplay of non-kinetic effects on Canadian security. Figure 1 is a graphic examination of this interplay, illustrating their cumulative effects. It was compiled from a review of Canadian policy documents,[29] several reports sponsored by the Canadian Senate and House of Commons,[30] and a series of research articles by the North American and Arctic Defence and Security Network .[31]

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[27] Standing Senate Committee on National Defence, "A Secure and Sovereign Arctic," *Senate Canada* (2023): 44, https://www.ourcommons.ca/Content/Committee/441/NDDN/Reports/RP12342748/nddnrp03/nddnrp03-e.pdf

[28] American Society for Quality, "Fishbone Diagram," *Learn about Qua*lity (2024), https://asq.org/quality-resources/fishbone

[29] Including: Department of National Defence, "Strong, Secure, Engaged: Canada's Defence Policy," *Government of Canada* (2017); Department of National Defence, "Our North, Strong and Free," *Government of Canada* (2024); Department of National Defence, "Defence Climate and Sustainability Strategy 2023-2027," *Government of Canada* (2023); and Crown-Indigenous and Northern Affairs Canada, "Canada's Arctic and Northern Policy Framework," *Government of Canada* (2019).

[30] Including: Standing Senate Committee on National Defence, "A Secure and Sovereign Arctic," *Senate Canada* (2023); Standing Senate Committee on National Security, Defence and Veterans Affairs Senate, "Arctic Security Under Threat," *Senate Canada* (2023); Standing Senate Committee on National Security, Defence and Veterans Affairs Senate, "Impact of Climate Change on CAF Operations," *Senate Canada* (2023); and Library of Parliament, "Climate Change: It's Impact and Policy Implications," *Library of Parliament Background Paper No. 2019-46-E*, (Economics, Resources, and International Affairs Division, Ottawa: 2020).

[31] Including: Christina Bouchard, "Arctic Airports and Aerodromes as Critical Infrastructure," *NAADSN* (2020); Christina Bouchard, "Arctic Highways as Critical Infrastructure," *NAADSN* (2020); Christina Bouchard, "Powering Canada's Territories: Governing Critical Infrastructure Assets (2015-2021)," *NAADSN* (2021); Peter Kikkert and P. Whitney Lackenbauer, "Enhancing the Canadian Ranger Role in Disaster/Emergency Management (DEM)," *NAADSN* (2021); Peter Kikkert and P. Whitney Lackenbauer, "Strengthening Search and Rescue in Nunavut: Approaches and Options," *NAADSN* (2021); Jill Barclay, Jayde Lavoie, Carly MacArthur, and Maria

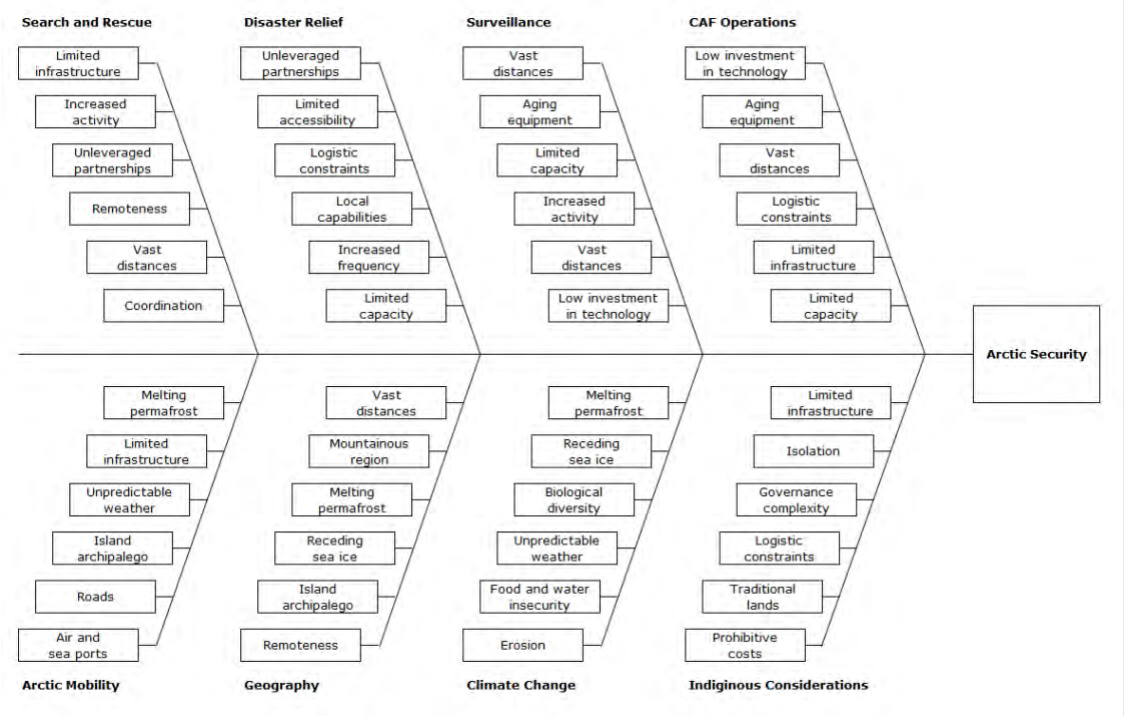

Figure 1 – Arctic Security Ishikawa Diagram

Northern operations are naturally complex, exacerbated by and the tyranny of geography and climate change. Several interrelated themes emerged from this analysis warranting additional consideration. The impact of climate change on non-kinetic, domestic threats to Arctic security will be exacerbated by:

1. *Limited Capacity*. The effects of climate change will increase the demand on the CAF's limited capacity for Northern operations.[32] Melting sea ice and permafrost degradation will increase the need for SAR, disaster relief, and surveillance missions. The impact of climate change on infrastructure will hamper logistical planning, increasing demands on limited air assets. Coupled with the region's austerity, this increased operational tempo will stretch CAF resources, personnel, and equipment beyond their capacity.[33]

Nalim, "The Impacts of Climate Change on North American Defence and Security," *NAADSN* (2020); Justin Barnes, "Climate Security in an 'Anthropocene Arctic'," *NAADSN* (2022); and Peter Kikkert, "Creating a Non-Military Disaster Workforce Must be Part of Canada's Climate Change Response," *NAADSN* (2021).

[32] Standing Senate Committee on National Security, Defence and Veterans Affairs Senate, "Impact of Climate Change on CAF Operations," *Senate Canada* (2023), https://www.canada.ca/en/department-national-defence/corporate/reports-publications/proactive-disclosure/secd-april-24-2023/impact-climate-change.html

[33] Peter Gizewski and Katherine Banko, "Assessing the Implications of Climate Change on Canada's Army," *Defence Research and Development Canada* (2019), https://cradpdf.drdc-rddc.gc.ca/PDFS/unc341/p811067_A1b.pdf

2. *Infrastructure*. Climate change will impact existing infrastructure and create an urgent need for improved transportation networks.[34] Melting permafrost places its runways, facilities, roadways at risk, and rising sea levels threaten its coastal installations.[35] Regional security and emergency response requires investment in all-season road networks, deep-water ports, and modern airport infrastructure.[36] However, the considerable cost of construction and maintenance in the North present considerable hurdles for these projects.

3. *Logistical Constraints*. The region's geography is dominated by a mountainous archipelago, which alone is sufficient to complicate the logistics of sustainment.[37] Sustainment efforts are heavily reliant on infrastructure like seaports and airports, dependent on weather and sea ice conditions, and subject to the unpredictable impacts of climate change. Compounding these constraints is the vast scale of the region, with sparse population centers and limited local resources.[38] Transportation of personnel, equipment, supplies, and fuel over vast distances and complex terrain presents a formidable obstacle for an effective, sustained CAF presence in the region.

4. *Remoteness and Isolation*. Northern communities are remote and isolated from the rest of the country. Socioeconomic challenges like food insecurity, and access to housing and healthcare already exist.[39] Climate change risks exacerbating these issues, increasing demands on the CAF during emergencies and limiting local sustainment options in the region. The region's remoteness and infrastructure challenges hinder the CAF's ability to establish permanent installations or deploy temporary resources, and attracting and retaining military personnel and civilian talent in the region is complicated by isolation and remoteness.

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[34] Michael Mullan, Lisa Danielson, Berenice Lasfargues, Needa Morgado and Edward Perry, "Climate-Resilient Infrastructure," *OECD Environment Policy Paper* no. 11 (2018), https://www.oecd.org/environment/cc/policy-perspectives-climate-resilient-infrastructure.pdf

[35] Christina Bouchard, "Powering Canada's Territories: Governing Critical Infrastructure Assets (2015-2021)," *North American and Arctic Defence and Security Network* (2021), https://www.naadsn.ca/wp-content/uploads/2021/10/21-October-Bouchard-PoweringCanadasTerritories.pdf

[36] National Defence, "The DND/CAF Climate Resilience and Environmental Sustainability Science & Technology Strategy (CRESST)," *Government of Canada* (2023), https://www.canada.ca/en/department-national-defence/corporate/reports-publications/overview-dnd-caf-climate-resilience-environmental-sustainability-science-technology-strategy/climate-resilience-environmental-sustainability-science-technology-strategy-cresst.html

[37] Peter Sherwin, "The Trillion-Dollar Reason for an Arctic Infrastructure Standard," *The Polar Connection* (2019), https://polarconnection.org/arctic-infrastructure-standard/

[38] *Ibid*.

[39] Nunavut Climate Change Secretariat, "Climate Change Impacts," *Climate Change Nunavut* (n.d.), https://www.climatechangenunavut.ca/en/understanding-climate-change/climate-change-impact

RECOMMENDATIONS

Finding actionable solutions to these problems requires consideration of insurmountable structural, budgetary, and capability challenges. Given the limited scope of this paper, these recommendations are described only in brief, and without a comprehensive implementation proposal. The key stakeholder relationships, training opportunities, and capability gaps that might bridge the gap between these related issues are the foundational pillars upon which a framework for Northern security can be built. These pillars, rooted in existing capabilities, offer tangible levers to improve Northern security by focussing on non-kinetic, domestic threats:

1. *Invest in shared critical infrastructure*. Bolstering Northern access and infrastructure will pay dividends for the CAF by improving SAR and disaster response, as well as contributing to kinetic operations like sovereignty and surveillance.[40] Northern access is not just a concern for the CAF, affecting territorial governments, local communities, and private entities alike.[41] The cost of investment can be offset by engaging in shared critical infrastructure projects with key stakeholders. Improvements that would be mutually beneficial include airfield infrastructure like runways, ramps, hangars, and accommodations, deep seaports and stores facilities, and improved communications, radar, and surveillance infrastructure.

2. *Expanded capabilities and responsibilities of the CCG and Canadian Rangers*. Thes underutilized resources, available to the CAF and with existing Arctic capabilities, could boost its SAR and disaster relief capacity.[42] Increasing the CCG's icebreaking fleet, air assets, and infrastructure along Arctic coastlines, and leveraging their experience in Northern maritime operations would enhance domain awareness and maritime mobility. Growing the number of Canadian Ranger patrol groups, enhancing their equipment and training, and applying traditional Indigenous knowledge would create a strong local presence to support the CAF. Leveraging these existing assets with Arctic experience is an opportunity for a cost-effective solution to the challenges presented by climate change and growing international interest in the Arctic.[43]

3. *Inter-agency training, planning, and execution*. Reliance on inter-agency cooperation highlights a need to focus on joint training, integrated planning, and coordinated execution across stakeholders operating in the Arctic. Improving coordination and interoperability between dissimilar organizations through regular joint exercises and standardized procedures will enhance Arctic capabilities while reducing redundancies

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[40] Jill Barclay, Jayde Lavoie, Carly MacArthur, and Maria Nalim, "The Impacts of Climate Change..."
[41] Peter Kikkert, "Creating a Non-Military Disaster Workforce..."
[42] Peter Kikkert, "The Canadian Rangers: Strengthening Community Disaster Resilience in Canada's Remote and Isolated Communities," *The Northern Review* 51 (2021), https://thenorthernreview.ca/index.php/nr/article/view/901/935
[43] *Ibid*.

and demands on CAF resources. In stark contrast to the current paradigm, Arctic exercises must include partner agencies from planning to execution – if not for the sake of the CAF, then for that of its partner agencies, to strengthen their inter-agency cohesion.

OPPORTUNITIES FOR FURTHER RESEARCH

The limited scope of this paper leaves several questions unanswered. As a summary investigation of the topic, it does not delve into the detail that a comprehensive analysis would require. Despite its isolation, Canada's North is undoubtedly subject to complex regional dynamics with diverse stakeholder interests and by no means do the recommendations in this paper account for the full range of these concerns. A comprehensive stakeholder review and engagement, outside the scope of this research, is an appropriate first step prior to engaging in any major policy decisions or capability development for Northern security. This would ensure the perspectives and rights of Indigenous communities, territorial governments, industry players, and environmental groups are considered.

Similarly, an exploration of the capacity and limitations of the CCG and Canadian Rangers to take on expanded roles is warranted. While this paper proposes leveraging their capabilities, a detailed assessment of their resources, training needs, jurisdictional limitations, and operational constraints would better inform the extent of their involvement.

Demonstrating the time-value and socio-economic benefits of investment in Northern infrastructure would be beneficial to building a stronger business case and secure funding for they type of costly, long-term projects this paper proposes.

Finally, assuming the permanence of Northern security solutions would be a critical error, necessitating the implementation of continuous monitoring, evaluation, and revision. The evolving Arctic, driven by climate change and increased human activity, demands agile approaches that respond to emerging threats and changing requirements.

CONCLUSION

This paper highlights how climate change poses a threat to Northern security in Canada that demands attention. While sovereignty and foreign access remain important considerations, the more pressing, non-kinetic challenges like ensuring robust SAR capabilities, disaster response, and improving Arctic mobility should be priorities for the CAF.

The intersection of limited infrastructure, vast geography, and compromised operational capabilities risk leaving the country ill-prepared to manage the intensifying threat of climate change in the region. Reinforcing the CAF's readiness through a comprehensive framework that expands inter-agency cooperation, leverages existing federal resources, and prioritizes infrastructure development are critical and often overlooked steps to ensuring regional security. However, to ensure the CAF can adapt to new challenges in the region over time, continuous monitoring, evaluation, and adaptation will be required, and comprehensive stakeholder engagement – particularly with Indigenous communities – is vital to ensure all perspectives are considered.

By taking measures to bolster non-kinetic capabilities in the North, Canada can confront the security risks posed by climate change. Failure to do so not only undermines sovereignty efforts but could have devastating humanitarian consequences for Northern communities. Foreign access to the Northwest Passage is merely a distraction from the far more pervasive and imminent threat that climate change poses to Canada's Northern security through cascading, non-kinetic impacts on SAR, disaster response, and Arctic mobility and infrastructure.

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