Advancing Collaboration in Canada-U.S. Arctic Regional Security (ACCUSARS)

17-18 September 2020

Workshop Summary

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North American and Arctic Defence and Security Network

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EVENT REPORT

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Advancing Collaboration in Canada- US Arctic Regional Security (ACCUSARS) Workshop Report

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Key Themes

- "Great Power Politics" has returned globally with implications for the Arctic along multiple vectors, particularly in the military and economic spheres.
- The re-emergence of the Arctic as an area of contestation, in combination with changes in technology and operational concepts, requires more political and economic focus.
- An unpredictable, changing Arctic requires continuous reassessment of environmental conditions and domain awareness.
- Changes to the physical environment bring new opportunities alongside tremendous challenges for Indigenous communities.
- Indigenous peoples bring essential capacity and knowledge to security and defence in the Arctic, and it is incumbent on US and Canadian policymakers to nurture positive relationships with Northern peoples.
- Effective engagement in the Arctic requires both whole-of-continent and whole-of-government approaches. North American Arctic security and defence challenges cannot be addressed by a single state actor or branch of government. This necessitates deeper Canada-US engagement, rooted in shared values and interests.

Introduction

Participants in this two-day workshop, held on 17-18 September 2020, explored the current reality and future of Arctic security and defence from a North American perspective. Bringing together a diverse array of experienced and knowledgeable practitioners and academics, the workshop considered Arctic issues holistically, drawing out and highlighting the interconnected web of challenges and opportunities that underpin and frame actions in a Northern context.

Despite the uniqueness and oft-purported isolation of the Arctic environment, activities in the region are frequently an extension and driver of politics, actions, and changes that are more broadly based. As such, the nomenclature of 'Arctic security' itself can be a misnomer, requiring careful parsing to differentiate between Arctic defence (relating to military operations) and Arctic security (relating to the safety of, and support for, human populations and activity in the face of non-military threats). Furthermore, as Whitney Lackenbauer emphasized in his presentation, it is useful to distinguish whether 'Arctic threats' are ***in***, ***to***, *or* ***through*** the Arctic, and to differentiate between distinct geographic regions within the Arctic. This is not to suggest that these silos of concentration are unconnected, and participants emphasized that the ripple effects between and across them are highly significant. Understanding the myriad facets of Arctic security and defence requires a keen appreciation of each plane, as well as the seams and connections between them.

In response to a wide variety of international and regional drivers, the US and Canada are stepping up their military capability in the Arctic and working cooperatively to develop capability across multiple facets of Arctic defence. Exercises have increased in frequency, intensity, and scope, and US troops based in Alaska are no longer there simply to rotate through the region but to develop operational expertise. NORAD represents a superb example of how such cooperation can lead to shared responsibility and operational effectiveness. This is not currently reflected in other areas, however, and continued engagement at command levels and between troops engaging in various exercises in both land and naval forces is crucial to further develop interoperability and a common operational picture. Doing so will provide Canada and the US with the ability to engage in military action if necessary, and simultaneously enhance the deterrent effect of Arctic-capable North American forces.

Although such advances are beneficial, actions on a military-to-military level alone are insufficient if Arctic defence and security is to be holistically advanced, and a whole-of-government approach is necessary for positive and productive action. This requires deep and broad engagement across international borders and also within the US and Canada. Many advances in Arctic technology and knowledge can have multiple uses and applications, and connecting these dots of understanding can drastically improve defence and security while removing duplication of effort. Canada and the US are fortunate to have a firm foundation of shared values, and this commonality provides a platform for the joint engagement required for security and defence to be enhanced. The strict upholding of the rule of law in the Arctic, particularly through existing institutions, is a vital priority for both governments.

Maximizing the effectiveness of Canadian and US activity in the Arctic requires enhanced situational awareness and a deep appreciation of capabilities and the gaps that exist in knowledge and capability. Achieving this requires the effective leverage of all aspects of government, integrating knowledge and capability from multiple departments as well as from private industry and academia. It is also imperative that politicians remain engaged in the region and that the current wave of interest, particularly within the US, is maintained. A more complex array of actors seeking access to, and a presence in, the Arctic creates an urgent need for further investment in Search and Rescue (SAR) and disaster response, robust and resilient infrastructure, and improved communications. In addition to politicians, it is vital that the public in the US and Canada are invested in the Arctic, moving away from a perception that it is a remote, almost abstract location. Doing so will require a concerted and innovative public relations campaign to highlight changes and actions that are occurring in the Arctic and the importance of these activities for North American security and prosperity.

Canada and the US are not aligned on every Arctic issue, but there is a common understanding of the challenges and the shape of action required to address or mitigate them. The shared values and principles of the two countries with respect to defence and security are fundamental to the success of current and future endeavours in the region. At all levels of Canadian-US interaction, there remain opportunities for generating greater understanding and interoperability. Understanding and responding to Arctic defence and security needs requires awareness of a rich and deep network of interconnected challenges and issues, framed within an evolving international security and defence context wherein the security threats to the people living and working in the Arctic are increasingly intertwined with global interests, drivers, and dynamics.

Panel 1: The Confluence of Canadian and US Arctic Security Interests

Purpose:
"This panel will refresh workshop participants on the current focus of leaders of security and defence forces, Arctic Indigenous leaders concerned with North America's "Northernmost Border" security, and academic thought leaders who contribute to understanding the challenges and concerns of the changing physical terrain and "human terrain" of the North American Arctic."

Context and Challenges:

- "Great Power Politics" has returned to the international system, and the Arctic is a site of increased Chinese, Russian, and US activity.
- The changing geographical environment in the Arctic necessitates a new understanding of the threat environment for North America and an awareness that North America itself is now under threat.
- There is a lack of infrastructure in the Arctic, with particular shortfalls in communications, energy, and transportation links.
- Climate change exacerbates an unpredictable operating environment, heightening the challenges associated with living and working in the Arctic.
- Northern Indigenous communities are significantly impacted by climate change and rising levels of activity in their Arctic homeland.
- Canada and the US have an extremely close working relationship, founded on common values . Where there is incomplete alignment, there is opportunity for discussion and practical cooperation.

Actions and Activities:

- The Arctic requires a "Whole of Government" approach to deal effectively with security challenges in and to the region.
- It is necessary for the US and Canada to engage meaningfully with local and Indigenous communities in the North American Arctic.
- The US and Canada are stepping up their engagement in exercises and training in order to improve operational capability .

Climate change, the return of great power competition, and food insecurity are all examples of threats facing the North American Arctic today. The added constraints of operating in an extreme cold environment with little infrastructure and limited accessibility compound these challenges. Given their common strategic interests, geographic proximity, and the history of their military relationship, it is natural that the US and Canada should approach evolving threats through, to, and in the North American Arctic together. While their prioritization of

threats may differ, and preferred approaches do not always align, there is certainly no shortage of opportunity for deeper discussion between these states and other allies.

The Return of Great Power Competition

Before the War on Terror, the US military was heavily involved in Arctic operations. Over the past twenty years, it has prioritized military involvement in Iraq and Afghanistan over engaging in winter or Arctic training. For decades, liberal states such as the US and Canada have organized their militaries to prepare for operations outside of their own territories. Now, with the return of great power competition, US and Canadian strategists are calling for greater attention to the Arctic as an area of rising geostrategic importance. This has important implications for military restructuring in both countries.

It is difficult to determine exactly *when* the return to great power competition began, but the more pivotal question is *why*. In order to move forward with effective policymaking, both the US and Canada must be able to explain why they are turning their attention to the Arctic now. Russia's significant military and dual-purpose investments in the region are often cited as a focus for concern. While some commentators argue that Russia has returned with a much more offensive nature, others posit that Russia is responding defensively to NATO expansion. There is no consensus amongst experts on this question, but these competing arguments each underscore the necessity of better understanding Russia's intentions in the region. Some commentators insist that the US and Canada must be careful not to accelerate the collapse of the relationship with Russia, particularly in light of opportunities to work constructively with Russia on non- divisive issues of common interest through fora such as the Arctic Council.

As the state with the largest Arctic territory and population, Russia has increased its activities in its northern regions over the last decade and is investing heavily in dual- use and Arctic-specific technology and infrastructure. Russia's growing icebreaker fleet is symbolic of the importance that it places on the region and the country's commitment to further Arctic development. Although not an Arctic state, China also sees the Arctic as a region of importance. Through its "Polar Silk Road" initiative, China has signalled its ongoing interest in investing, participating in scientific research, and expanding shipping through and in the region. Northern Indigenous communities have expressed concerns about the amount of fishing that China is doing in other states' waters, as this may have longer term impacts on their food security. Other concerns include China's interest in oil and gas deposits in the Arctic. Ultimately, China's actions in the Arctic to date demonstrate an interest in position itself, over the long term, as a key player in the region. Despite significant challenges associated with establishing and maintaining a presence in the Arctic, Russia and China are each investing money and time in doing so. This is prompting the US and Canada to do the same.

The political environment influences what these investments will look like. Canada and the US have not always cooperated effectively in terms of procurement or coordinating investments. For example, each state has purchased icebreakers and naval patrol vessels independently. On a broader scale, while the importance of military alliances like NATO and NORAD are arguably of the utmost importance in the current geopolitical

climate, the Trump administration has shown signs of pulling away from its allies. At the same time, Canada has been hesitant to publicly acknowledge that it has adversaries who threaten its interests in or through the Arctic, and tends to concentrate on social spending in the Arctic. These political differences remain salient given the necessity that both countries work together to ensure the security and defence of the North American Arctic.

Climate change

Arctic communities and Indigenous peoples are significantly affected by climate change. Many Arctic communities are subsistence-based and rely on the land and waters for food. In recent years, there has been a collapse of the silver salmon run, largely caused by warmer waters and the fish moving northwards. These fish were usually frozen or dried and provided a key food source throughout the long winters, but they can no longer be relied upon as a source of subsistence. Climate change has also resulted in foreign garbage entering North American Arctic waters and washing ashore. This garbage has devastating impacts on sea mammals, either killing them or filling their stomachs with this garbage that they cannot digest. This, combined with changing patterns in land and sea mammals' activities, contributes to food insecurity for Arctic communities.

Coastal communities are also at a high risk due to sea level rise. Two ice shelves in Antarctica are currently in the process of breaking up, and the same process is beginning in the Arctic. The relocation of some coastal communities has already begun because of higher waters flooding the land. It is likely that, in the near future, more Arctic communities will be affected by coastal flooding and more frequent and intense storms.

Climate change also has implications for ongoing military and re- supply operations in the Arctic. For example, from one year to the next there may be no ice and no navigational issues, and the following year the same area may be impassable. This unpredictability can only be addressed through further research, monitoring, and improved infrastructure in the North.

Challenges to operating in the North

Operating in the North, especially for prolonged periods of time, remains highly challenging. The level of accessibility, terrain, and amount of infrastructure varies across the US and Canadian Arctic, with some areas inaccessible by road and re- supplied by barge during the warmer seasons. Some Arctic communities are connected by one fiber-optic line, while others have no fiber-optic cable. Many communities are reliant on oil that is only re-supplied on an annual basis, and generators are required to produce energy. A growing Northern population also heightens requirements, but re-supply remains expensive and difficult because of unpredictable sea and ice conditions owing to climate change.

From a military perspective, operating in cold weather environments requires Arctic-specific training and cold weather equipment. While operational priorities vary, improved communications, research into alternative energy sources, and more transportation infrastructure are all important to improving domain awareness and the lives of Arctic peoples. In each of these areas, all stakeholders must place a special emphasis on consultation

and collaboration with Indigenous peoples and other Northern residents. Building and maintaining relationships of trust and undertaking such projects in mutually beneficial ways is essential.

What are we doing now, and what can we do in the future?

Canada and the US share many values when it comes to the Arctic, such as the importance of the rules-based international order and enforcing standards of behaviour in the maritime domain. While working in the Arctic or creating Arctic policies based on these shared values, collaborating with international partners and local Indigenous peoples is critical.

Defence: operating in an Arctic environment

Both the US and Canada are keenly interested in generating domain awareness and military readiness in an Arctic environment. In the past, US forces would train in the Arctic through limited exercises such as ARCTIC EDGE. This was considered only modestly effective, because training did not focus on sustained operations, did not involve cold weather equipment, and did not occur during the coldest period of the year. These issues are now being discussed, and the Army is working on a new Arctic strategy. In the meantime, the US forces in Alaska are engaging in more cold weather training. Larger exercises are now being added to the training schedule such as ARCTIC WARRIOR 21, which is meant to be a brigade+ level exercise, and ARCTIC EDGE 2022. These exercises are expected to include Canadian and European partners. In the future, it is likely that more units from the lower 48 states will be brought up to train in Alaska and gain experience in the cold weather environment.

In Canada, Operation NANOOK encompasses periodic exercises that span the entire year. This includes winter defence exercises between February and April which are usually multi-national. In the summer months, domain awareness exercises occur around the Northwest Passage and the Royal Canadian Navy conducts the maritime component, Operation NANOOK-TUUGAALIK, with other allied navies in the summer. In August-September, the Canadian Armed Forces trains with key federal, territorial, and local partners in O'whole of government' exercises designed to involve multiple government departments. Operation NANOOK strengthens regional knowledge, allows Canada to work closely with key allies, and hones the CAF's ability to operate in a challenging environment requiring unique skillsets, in-depth local knowledge, and equipment and support specifically designed to operate in extreme weather conditions. Canada's expertise can be considered an asset to the US, and the countries are expected to enhance their collaboration in Arctic exercises.

Moving beyond "defence" to security

Moving beyond defence means looking at other, non- military threats to Arctic security, and operating jointly to monitor, report, and protect against these threats. Maintaining security can also involve collaborating when conducting research, sharing resources, and making the most out of investments in dual- use equipment.

Existing frameworks for Canada-US collaboration have proven highly beneficial for pursuing these goals. For example, both countries are involved in the Arctic Coast Guard Forum, an independent, informal, operationally-driven organization, not bound by treaty, that fosters safe, secure, and environmentally responsible maritime activity in the Arctic. Another example of a collaborative framework is the Joint Marine Pollution Contingency Plan, which outlines how the two states can coordinate oil spill responses.

Conservation and the protection of economically-significant fishing stocks represent another important shared security interest between the US and Canada. Concerns about illegal fishing affect both states as well as subsistence-based Arctic communities. The US Coast Guard has been working with the Canadian Department of Fisheries and Oceans and the Canadian Coast Guard to address this issue over the past few decades. This partnership involves sharing intelligence, command and control, and deploying ships and aircraft as needed.

Both states also recognize the expertise and knowledge of Northern Indigenous peoples. Canada's Arctic and Northern Policy Framework, released in September 2019, encourages engagement, consultation, and collaboration between government departments and Northerners. In the Canadian Arctic, presence, surveillance, and control are exercised by the Canadian Rangers, with close to 2000 Rangers operating in more than 70 communities across the Canadian North. Youth also have a chance to participate and learn from adult community members through the Junior Canadian Rangers program. Through this work, Rangers are empowered to exercise sovereignty over their lands and waters.

The Canadian Coast Guard's Arctic region, headquartered in Yellowknife and stood up in 2018, has made it possible to focus full- time on the Arctic. In collaboration with Transport Canada, the Canadian Coast Guard (CCG) has made efforts to improve communications and relationships with community members in the Arctic. Together, they are hoping to further pursue local approaches to tracking and reporting foreign vessels and illegal fishing. This approach has already proven mutually beneficial, with local Inuit monitoring and reporting foreign vessels to federal decisionmakers. The Canadian Coast Guard and the US US Coast Guard are actively discussing how they can move forward in similar ways.

In terms of research, US icebreakers are more regularly inviting Canadians on board and gathering information for Canadian scientists, while Canadian icebreakers are also conducting missions in the US Arctic. Canadian and American scientists have been very open to working collaboratively through the Arctic Council and other multilateral and bilateral forums to conduct scientific and social scientific research.

These significant examples highlight the importance of a whole-of-government approach. By increasing collaboration between states and across government departments, more ground can be covered in the physical sense, and more can be achieved. Nevertheless, more remains to be done to address persistent and emerging human security and defence-related issues in the North American Arctic. Despite being costly and logistically challenging, further investments in improved communications, airfields, and ports will allow the US and Canada to cooperate more effectively and strengthen deterrence, while benefitting local communities. Furthermore, given Russia's extensive icebreaker fleet, the discussion highlighted the importance of minimizing the "icebreaker gap" over the long-term, accompanied by improved land capabilities in the Arctic as well.

While the threats that the US and Canada now face in the North American Arctic require re-assessment and re-organization, these states share a strong history, maintain shared values, and have many opportunities for dialogue and collaboration through various organizations, frameworks, and agreements. The description of the two states as "premier partners," which was included in the 2010 *Statement on Canada's Arctic Foreign Policy*, remains an apt characterization of the relationship.

Panel 2: The Arctic Security Environment: Deepening, Broadening, and Sharpening our Strategic Analysis

Purpose:
"Shifting power dynamics in the Arctic include increased militarization, Chinese economic activity, Russian actions and responses, and engagement with partners considered adversaries or competitors in other venues. How do Canada and the US conceptualize these dynamics as potential security risks or threats through, to, and in the North American Arctic?"

Context and Challenges:

- "Threats" are not monolithic, and differentiation is required between threats "to," "in," and "through" the Arctic.
- "Great Power" competition is likely to be most noticeable in the economic domain.
- The Arctic is connected, in policy terms, to events in other international regions, and activities in the Arctic may be a reaction to, or a result of, political decisions that were intended to affect other locations.
- Changes in technology have altered the nature of "threat" in the Arctic, including the emergence of 'hybrid' tactics and the information domain.
- Despite global warming and much talk of growing "accessibility," the Arctic remains a highly challenging operational environment.
- Members of the general public in the US and Canada have differing views of Arctic security issues, which may complicate joint Arctic policymaking.

Actions and Activities:

- Shaping the Arctic environment while upholding the rule of law is the critical underpinning of US and Canadian action in the region.
- The US and Canada participate actively in important forums which facilitate dialogue between themselves and other Arctic states.
- Improvement in Intelligence, Surveillance and Reconnaissance (ISR) capability is necessary for effective US and Canadian action in the Arctic.

Conceptualizing threats

The Arctic is only one of many fronts between Russia, China, and the "West." For this reason, we must ask why the Arctic has become of such great importance in an era of renewed great power competition.

It can be difficult to conceptualize all of the threats facing the Arctic at once, particularly because this makes addressing individual threats more challenging. Policymakers may find it overwhelming to provide "unlimited' funding and resources for security and defence in "the Arctic" writ large, unless they understand how the funding will directly address threats. For this reason, there may be analytical value in distinguishing between threats through, over, and to the Arctic. When thinking about grand strategic threats, we can consider whether missiles will be travelling through the Arctic, or actually targeting the Arctic itself. The latter, it is argued, is unlikely. We also must consider threats 'to' the Arctic, meaning those that jeopardize the security of Arctic communities. These might include the inability or failure of the government to provide infrastructure, to protect against rising sea levels, or to prevent COVID-19 from being imported into the Arctic. By distinguishing these threats from one another, we open up greater possibilities to hone in on different types of threats, and can provide better advice about how to address them.

Another way of conceptualizing the current emphasis on the Arctic as a place of geostrategic importance is through levels of analysis. Specifically, there are two global trends – climate change and great power competition – which have an effect on the entire global system, but which impact the Arctic in some unique ways. For example, climate change is occurring at an accelerated rate in the Arctic compared to other regions. This illustrates how policies made outside of the Arctic, or in different realms, influence or dictate what happens in the Arctic, and policies made to address the Arctic specifically will have rippling effects outside of the Arctic as well. For this reason, strategy needs to work on two levels, keeping in mind the connectendess between domains. There is both cooperation and competition occurring in the Circumpolar Arctic, and competition does not always imply vulnerability. Additionally, while the Arctic is certainly an area of importance, the risk of open and high- end conflict actually occurring there appears low for the time being. From this perspective, the main concern of the West should be the possibility of issues in other areas (for example, the economic domain), spilling over and having impacts in the Arctic, causing accidental escalation.

Since Russia's economy is based on selling raw materials, it is natural that the Russian economy relies on its extensive Arctic domain as source of these resources. This helps to explain Russia's intensive investments in dual- use equipment in the region, as it seeks to protect its most valued assets. On the other hand, China's economy is based on importing raw materials and selling them back to the world as manufactured goods. Accordingly, it is interested in the raw materials that the Arctic offers. One perspective notes that those state and non-state actors that invest in the Arctic, and therefore compete in the Arctic, will inevitably have the greatest understanding and flexibility to operate there in the future. In other words, those who invest now will be best positioned to benefit economically as exploration, resource exploitation, and other human activities expand. Since the US primarily maintains a service-based economy, the Arctic receives limited attention and non-military investment. However, the Arctic naturally remains of particular strategic importance to the US

because it represents a primary 'avenue of approach' to the American homeland. More importantly, the Arctic is also the homeland of many Indigenous peoples in both the US and Canada.

We must also acknowledge the role of soft power in the competition between the North American allies and China related to the Arctic. For example, China may be willing to expand internet and communications services to Arctic communities where the West has failed to do so. Being in the Arctic 'virtually' is a matter of soft power. If the US and Canada are unwilling or unable to provide reliable communications, infrastructure, or other opportunities for Arctic communities, it may be politically difficult to deny China and other non-state actors the opportunity to invest in those communities. While the idea of China investing in the North American Arctic may be perceived as a threat, these concerns must be balanced with local communities' demands and needs. In general, regulations about investments by foreign actors should be discussed at all levels of government, and with individual communities.

When considering the needs and interests of Northern communities, it is also necessary to think more broadly about public opinion, and how the public conceptualizes threats to the Arctic. In Canada in particular, perceived threats to Arctic sovereignty are a perennial topic of discussion that garners widespread public attention. Even if this concept of 'sovereignty under threat' is largely symbolic, invoking this language can trigger an over-reaction by the public, which could lead to escalation of political tensions. Diverging public ideas about what constitute the most important threats may also distinguish the US and Canada. For example, Alaskans have been very vocal and supportive of military investments and training in the Arctic for traditional 'defence' purposes, whereas Canadians and Indigenous communities in the Arctic typically emphasize threats to human security and propose increased social spending to address these issues. Public opinion influences policy decisions about the Arctic, and popular reactions to statements and decisions about Arctic threats must be anticipated.

Around the world, Russia and China are using "gray zone" tactics that target civilians for misinformation and disinformation campaigns. For this reason, both countries should heighten their efforts to increase civilian knowledge about gray zone tactics and their resilience in the face of these tactics.

Ideological differences

An additional Western concern relates to Russia and China deepening their relationship to pursue aligned economic interests and a shared dissatisfaction with the international *status quo*. This connection may prove short term, however, because underlying values connecting the two states are absent.

First, Russia's activities in the Arctic may be understood in the context of its broader goals to maintain regime stability domestically and to enhance its status globally. Because Russia lacks the alliance structure and wealth required to achieve both, power is based on military capability, and particularly nuclear weapons. As new Russian capabilities reinvigorate its ability to use the Arctic as an avenue of strategic approach to North America, the US and Canada have to recognize and adapt their strategies to acknowledge the vulnerability of their homelands.

China, on the other hand, has claimed status as a "near Arctic state," signalling its desire to be a key player in the region. Western commentators have expressed concerns about how China is conducting itself in the region. For example, China has attempted to buy an old military base in Greenland and has been approaching Arctic communities directly with money to invest in development projects. While the West does not object outright to Chinese investment in the Arctic, Arctic states recognize that strategic investments will add to China's global influence. One way of conceptualizing China's actions in the Arctic and elsewhere is through the lens of Sun Tzu: "Subduing the enemy without fighting is the acme of skill." Otherwise stated, China is increasing its influence in the world without engaging in military combat or warfare. At the same time, unconstrained by four-year election cycles, the Communist regime is able to adopt and enact strategies based upon longer-term thinking than democratic Western states.

Regardless of whether Russia and China maintain their relationship, the West must begin thinking long-term with its own strategies. For example, regardless of the extent to which climate change opens up Arctic shipping routes, better technology and more icebreakers are likely to bring an increase in naval and commercial activities in and around the Arctic. As this occurs, the US and Canada share a common goal of ensuring that maritime activities do not take on non-Western, or 'non-rules-based,' characteristics. While conducting our own exercises to ensure a rules-based order, it is important to avoid unwanted escalation. A growing number of exercises, coupled with a lack of dialogue between the West and Russia and China, may lead to accidental escalation.

Dialogue and forums for cooperation

Despite the ideological differences between Russia, China, and the West, it is possible to balance concerns with inclusivity and dialogue. In the past, there was a more open dialogue between Russia and the US on a military-to-military basis. For example, each state informed the other when their long-range bombers would be flying and when they would be intercepting these flights. Even in the absence of complete trust, this relationship kept lines open for discussion and provided greater predictability than we have now. It is possible to re-visit this in the future.

Useful frameworks also exist that provide space for dialogue between Russia, China, and the West. For example, Russia and China are generally abiding by the rules of the Arctic Counciland the Arctic Coast Guard Forum, which deal with issues of soft security. The Arctic Security Forces Roundtable, which discusses hard security issues, no longer includes Russian representation, but workshop participants debated options for that forum to promote more open dialogue with Russia.

Participants identified many opportunities to engage across government departments, with the military, and with academia to deepen Canada-US dialogue and cooperation. Taking an ISR approach to Arctic defence requires the sharing of information, resources, and expertise between states. Towards this end, Alaska Command maintains an academic support and educational role in partnership with the University of Alaska Fairbanks and Canadian academics. For example, the Arctic Synchronization Forum (ASF) provides a space for

sharing educational and discussion-based events and symposia. Alaska Command also enjoys a strong relationship with Joint Task Force (North), which involves the exchange of military personnel. Furthermore, it is supported by the work of the Arctic Security Working Group (ASWG) and the Arctic Capability Advocacy Group, which led to the creation of the Arctic Sustainment Package and an Arctic support vehicle, both of which help save lives during search and rescue (SAR) missions.

While NORAD is considered the 'gold standard' in the West for how defence partners can operate together, it must be considered within a larger whole of government approach. This enduring alliance serves as a basis for long-term strategic thinking, but this requires bringing more government departments on board and into dialogue. Maintaining a longer-term outlook also enables more stable and consistent messaging and enhanced credibility. This can help to solidify deterrence.

NORAD photo 200616-F-ZZ999-982

Roundtable 3: The Homeland is Not a Sanctuary: Capabilities and Strategic Messaging

Purpose:
"The Commander NORAD/USNORTHCOM, in recent testimonies to Congress, has described the North American homeland as no longer a sanctuary owing to evolving threats. How well known are these risks and threats to the Canadian and American populations, politicians, and policy makers? What is the realistic scope of responsibility that Canada-US defence- and security-focused teams can assume in the Arctic, particularly given resource constraints and competing global demands? What additional resources might be required to meet current and future expectations?"

Context and Challenges:

- The Arctic is a dynamic environment (in a state of what one panelist described as "dynamic constance") requiring improved domain awareness.
- Although they are highly interconnected, it is necessary to differentiate "security" and "defence" as concepts.
- Allies of the US are increasingly expected to contribute actively to bilateral and multilateral efforts.
- Canada and the US are rendered more vulnerable due to changes in security capabilities and advances in Russian military technology that hold North America targets at heightened risk.

Actions and Activities:

- In the North American Arctic, success requires a continental perspective and the involvement of multiple partners.
- Decisions must be taken with both the local and strategic levels, and the connections between them, in mind.
- The forthcoming Russian Chairship of the Arctic Council provides an opportunity to reinforce and encourage interactions in the Arctic that are rules-following and co-operative.
- The North American approach to the Arctic seeks predictability and stability.
- The US pivot to the Arctic seeks to develop the ability to deploy forward when necessary, rather than permanent forward deployment in the region.

In the context of re-emergent "Great Power" politics, the notion of the Arctic as a 'moat' providing a degree of protection to North America is shrinking rapidly. While Canada and the US have focused their attention elsewhere in the world, others have developed extensive Arctic knowledge and capability. The situation is changing in unpredictable ways, generating new challenges, risks, threats, and opportunities. As such, Canada and the US must respond by enhancing capabilities, improving situational awareness, and planning comprehensively. It is incumbent upon both states to consider present-day needs and to anticipate those that

will emerge in coming decades. In line with this, it is critical that a focus on defence is aligned with attentiveness to other security challenges in and related to the region.

Despite the conflation of 'security' and 'defence' in many discussions, the two terms – while connected – are not synonymous. Achieving operational success in both areas requires a refined understanding of both, as well as their interconnections.

Understandably, the post-911 War on Terror shifted focus away from the Arctic. While North American attention was elsewhere, Russia and China dramatically enhanced their Arctic capabilities. By contrast, those of the US and Canada atrophied.

Viewed through the prism of the defence technology that has been used to protect the North American homeland in recent decades, technological advancements and shifts in the balance of capability have rendered the North American homeland vulnerable to attack over, in, and through the Arctic. In addition to this direct threat, holding targets in North America under threat can potentially be leveraged to influence US and Canadian activities in other geographic regions. Vulnerabilities to North America emanate from multiple threat vectors. Traditionally, the narrative has been that the maritime 'risk domain' has been central to the Arctic threat environment. This is no longer an adequate reflection of the situation. The ongoing importance of air defence, reflected in NORAD's mandate, testifies to the importance of non-maritime facets of Arctic defence, as do satellite and cyber systems that enable operating capabilities but also are targets or mechanisms for attack.

The manipulation of information as a common tool in the political armoury has also reached the Arctic, with foreign actors supplying local communities with misinformation. Such actions have the potential to undermine the relationship between the US and Canadian governments and these communities. Furthermore, care and attention needs to be paid to commercial developments in the region, particularly where such developments stem from overseas. The movement of ostensibly private business (such as mining corporations) with ties to foreign states to purchase the rights to operate in the North American Arctic represents a new form of challenge that links defence risks (depending on the location of such infrastructure), potential foreign influence or interference activities, environmental challenges, and changes in physical and human presence in the region. Such changes may, if not addressed over time, challenge sovereign control and generate new vulnerabilities.

The significance of a shift in the strategic landscape to one in which the North American homeland is put at risk cannot be overstated. Combatting this threat requires a truly continental approach. In isolation, the US and Canada are significantly less able to achieve defence goals than they are when acting in conjunction. Similarly, security threats are likely to require a common approach. At the operator and tactical levels, connections between Canada and the US have been excellent, and they are improving at the strategic level where governance is shaped, although enhancing the connections that are required for this to function effectively could still be further developed. It is also important to consider and appreciate the connection between actions and decisions taken at the local and strategic levels. Similarly, in the context of the new security and defence environment, the US is calling upon its allies to contribute more directly and to a greater extent than they have

been in recent years. Although this contribution is of political and practical significance, it may strain political relationships – for example, Canada is likely to remain reluctant to fully engage with the nuclear component of defence infrastructure.

Bolstering defence and security in the Arctic requires more engagement with the North American public and politicians. The latter, through their holding of the purse-strings, ultimately dictate much of what will be done in the region. In the US, increasing political interest in the Arctic and American activities in the region are promising, but engagement with political elites must remain fulsome and productive to ensure progress on proposed initiatives. Similarly, Canadian politicians have an appreciation for the Arctic, and Arctic sovereignty in particular. The CCG is increasingly well-supported by the Canadian government, and its multi-purpose nature supports both science and a range of security and safety missions.

The wider civilian population requires greater understanding of the Arctic and the challenges that operators face therein. Generating interest in the region is not straightforward, and creating a common appreciation that the Arctic is 'here,' rather than being perceived as a distant location with little relevance to their lives beyond a simple recognition of sovereign control, requires creative thinking and effective messaging.

Increasing activities in the Arctic also require more robust control processes and cross-national engagement. The US-Canada axis is vital, and it is also important to engage with Greenland, the United Kingdom, and Norway. For example, the impacts of climate change on fishing zones requires political engagement to properly shape management techniques. While not a North American issue, the more rapidly warming European Arctic is likely to accelerate similar discussions between Norway and Russia.

Domain awareness, epitomised by NORAD, is intended to enhance early warning of impending attack, thus providing the platform for homeland defence rather than a basis for offensive action. Similarly, phrasing and discourse about the 'pivot to the Arctic' is less about high levels of investment in permanent bases of land forces in the Arctic, and more about enhancing our understanding of the domain and generating the ability to deploy forward into the region when and where required. Climate change and the probability of increased marine traffic and other activities in the region amplify the need for improved situational awareness, charting, and mapping. The Canadian Coast Guard has also been at the forefront of developing SAR capability, and also – in the context of the Oceans Protection Plan – providing support to other government departments in co-ordinating environmental response operations, traffic management, and scientific missions.

While defence of the homeland must be robust, strategic communications must be effective to prevent escalatory spirals. It is incontrovertible that Russia has increased its military presence in the Arctic, and this raises significant questions about how the US and Canada should respond. Russian forces are not preparing for a land force invasion through Alaska, but it remains vital to consider an appropriate response to the new balance of capabilities in and around the Arctic. The US is in the process of developing a robust Arctic strategy, and Canada will also soon create a marine operations strategy that will include sections addressing the Arctic. Ultimately, all parties operating in the Arctic share a core desire for predictability, stability, and control.

The discussion of, and emphasis on, defence in discourse and practice must not be at the expense of diplomacy, which enables us to identify interests common to the US, Canada, and Russia in the Arctic. This can serve as a starting point for discussion and cooperation, rather than assuming that conflict between is inevitable or likely and can only be staved off through the balance of military capability. The forthcoming Russian Chairship of the Arctic Council provides an opportunity to emphasize the significance of productive and peaceful engagement and the rule of law in the Arctic, and Canada and the US can continue to use this forum to highlight to Russia and China in particular the mutual gains that can be achieved through cooperation (rather than activities that push the boundaries of acceptable behaviour, which are increasingly apparent around the world). The US and Canada must demonstrate responsible leadership in the Arctic. Otherwise, others may step into the void and press interests that are debilitating for North America and do not promote our values. Accordingly, language used to describe our aims and posture in the region must be clear and unambiguous. Leaving room for misperception and ambiguously articulating our goals or operational concepts may result in unexpected and unintended escalation.

Photo of Ranger MCpl Matthew Manik by P. Whitney Lackenbauer

Roundtable 4: Operational Insights: Gaps, Seams, and Best Practices

Purpose:
"What are the roles of land, sea, air, and/or special operations forces, as well as other government departments/agencies, in demonstrating sovereignty, enforcing laws, and exercising deterrence against activities that undermine or threaten to undermine CANUS interests in the North American Arctic? What forms and levels of surveillance are required? How do we operate in this environment to achieve these effects? How can CANUS practitioners better share "best practices"?"

Context and Challenges:

- The changing situational picture in the Arctic incorporates a wide range of Arctic defence and security components.
- We are gradually developing a clearer understanding of the Arctic environment and activities occurring within it.
- There is deep interconnectivity across and between issues and activities within the Arctic.
- Development of and/or investment in dual-use equipment could address some gaps in communication, information sharing, and logistics.

Actions and Activities:

- Diverse, interconnected activities require that security practitioners leverage knowledge from a diverse range of sources and experts, including Indigenous experts and academia.
- The creation of Joint Force Command Norfolk is a strong signal that NATO is "back" in the context of Atlantic and Arctic defence.

Partnerships and alliances are the critical foundation for addressing gaps and seams in the Arctic defence and security environment, and for sharing best practices. From an operational perspective, the North American homeland is no longer a sanctuary: the Atlantic is a contested battlefield, not simply the unimpeded waterway that it has been in the past. The US Second Fleet remains focused on its plans and mission in this increasingly contested battlespace, and it is important that operations in the Atlantic can be conducted without impediment. However, the pathway to the Arctic is via the North Atlantic, and we must focus on gaining a clearer picture of the environment at the speed of relevance and address major gaps and seams that are no longer hidden.

Involving allies and engaging in collaborative approaches unlocks opportunities to deliver success and enhance competencies – and this holds for both operations and research. For the US surface fleet, there is an acknowledged shortfall in icebreakers, and Arctic capability is currently lower than that of ideological competitors. In order to close this gap, there is a need to leverage both geography and the experience of allies and partners, and Norwegian, UK, and French personnel are already working closely with Second Fleet. Simultaneously, while Canada continues to mature in its Arctic capabilities and expertise, widening the aperture of the Operation NANOOK exercise series to include like-minded partners, including the US Navy, is helpful to

build and sustain skillsets required to conduct Arctic operations. The creation of NATO Joint Force Command Norfolk (JFC-NF) sends a message that NATO is back, even as it is learning about its role, and this footprint bridging the Atlantic is highly beneficial. 2021 will see full operational capability and further "leaning into" the mission.

The US Navy faces challenges in building ports in the Arctic, as established principles for port services have created cultural expectations that may not be able to be matched in the region. The US needs to become more comfortable in operating outside these norms, and must develop a better understanding of what capabilities and augmentation can be brought by a sea-based force, and what can be brought by the private sector. Important questions are also raised about how to adapt to this new environment, such as whether tug boats should be funded and sustained, or ships fitted with bow thrusters. Furthermore, issues of weather and the now-contested space environment make satellite communication challenging. Second Fleet is working with the Department of State to find solutions, as well as embedding US personnel with the staffs of other countries in order to get 'other eyes' on the problem space. The importance of the Arctic is well understood, and the challenge now is prioritizing investment.

International research partnerships also help to address 'gaps and seams.' For example, the International Cooperative Engagement Program for Polar Research (ICE-PPR) brings together six Arctic states as well as New Zealand, leveraging both Arctic and Antarctic knowledge. The organization is available to support agencies both within and outside the realm of defence and, using a 'whole of government' approach and involving Indigenous communities, enables a better understanding of the environment, communication capabilities, infrastructure, and human performance. Dividing workload through four working groups, each headed by a different state (Finland, Canada, the US, and Norway), facilitates dedicated research into environmental modelling and observations, human performance (including nutrition and clothing), platforms and materials, and situational awareness. This research is then integrated and put into action. A Memorandum of Understanding also allows for the transfer of information between like-minded nations up to the 'Secret' level.

Acknowledging the interconnectedness of Arctic issues, information sharing and collaboration remains a major priority within individual states as well. Collaboration must occur at all levels: tactical, strategic, academic, and across government departments. Strong relationships are vital. Defence Research and Development Canada (DRDC) works to provide scientific and technical advice to inform and help decisionmakers at all levels, developing and demonstrating solutions that fill operational gaps. For example, Arctic surveillance falls into the categories of defence, security, and safety. However, identified gaps span this whole spectrum. DRDC is working to address them, and where possible, solving more than one problem at a time. For example, alongside the Department of Fisheries and Oceans, research is being conducted into the possible use of commercial satellites to overcome the inability to detect small non-compliant vessels; machine learning and leveraging Transport Canada aircraft is addressing the added resources needed for airborne imagery analysis; and, the lack of a recognized maritime picture is leading to work with the Royal Canadian Navy to use machine learning in order to improve sensor fusion. In addition, through the All Domain Situational Awareness (ADSA) Science and Technology program, the broader defence of North America is being considered in collaboration with NORAD.

Furthermore, the Innovation for Defence Excellence and Security (IDEaS) program bridges defence, safety, and security issues. By increasing the numbers of people involved in discussions to promote cross-pollination of ideas, the Mobilizing Insights in Defence and Security (MINDS) program promotes and enables mechanisms of collaboration that provide convergence with academia, strengthening the foundation of evidence-based policymaking.

Even without using classified data, and basing research on open source information, researchers can discern previously hidden patterns of activity. Research has indicated how China and Russia have worked together to exploit North American policies, culture, and democracy to their advantage. Russia's political approach to interlinking issues in different geographical areas is well appreciated, and China is developing a deep understanding of North American society and politics. The narrative of 'near-peer' competitors in the Arctic is now outdated: both Russia and China have been acting in the Arctic for the past two decades. By looking at 'events of interest' that fit specific criteria, such as the creation of sites close to certain types of infrastructure or resources, or scientific maritime activities, we can perceive activities, mechanisms, and tactics within an extremely complex environment, one in which an understanding of what can and cannot be done is just emerging.

Working with academia and small businesses may be a fruitful approach to enhancing knowledge and effectiveness in the Arctic, and absolute operational knowledge is not required to make a positive impact. There are, however, challenges to academic integration into security-related research, notably security clearance requirements and how external actdors may potentially compromise or exploit the work of some academics. Without a fuller understanding of how and where academia has been compromised, there is a risk of handing over competitive advantage to adversarial actors. Consequently, while there are safe areas in which academics can work, they cannot have the whole picture.

Ultimately, a 'partners and allies' approach is required to address gaps and seams. The US, Canada, and their allies are aware that the Arctic is an increasingly competitive space, and mutual dependability and trust are key. This operational environment requires a sustained commitment to 'smart' action and to 'getting smarter.' The Arctic is not simply a geographic area, but an environment in which people live. Indigenous knowledge is place- and situation-based. The loss of Elders fractures some continuity, while new technology helps to inform and enable activities. While operators must be careful not to overburden these communities, engaging with them is an important part of capability development.

Day 1 : Breakout Sessions

Over the last eight months, the North American and Arctic Defence and Security Network (NAADSN) has assembled small teams to apply the findings of the 2017 NATO Strategic Foresight Analysis (SFA) to Canadian Arctic defence and security to help frame a conceptual model that anticipates and conveys an understanding of the future Arctic security environment. Participants in the ACCUSARS workshop were provided with a short, draft narrative describing relationships between NATO SFA trends, and Arctic defence and security implications across various scales (global, regional, national), which identified key indicators of changing risk or threat levels in the defence and security domains. In six planned breakout groups, ACCUSARS participants assessed the North American Arctic defence/defense and security implications of one theme described in the 2017 NATO SFA (political, human, economics/resources, and environment).

Questions to explore:
Do participants agree with the assumptions and projections?
Do they apply to the North American Arctic as a whole?
Based on these observations and discussions, what are the primary indicators of changing risk or threat levels to the North American Arctic?

Group 1 : Political: International/Governance Challenges
Summary by Nicholas Glesby

Key Drivers and Proposed Indicators:

- Consensus (or lack thereof) in the Canada-US bilateral relationship and the US-NATO alliance
- Balance between defence priorities versus security priorities
- Cultural sensitivities about how the Arctic is viewed
- Russian and Chinese economic issues as drivers of defence priorities
- Indigenous peoples' consultation and collaboration in policy making and integration in operations

Key Drivers and Proposed Indicators:

1. **Lack of consensus** in the Canada-US bilateral relationship and the US-NATO alliance writ large.
2. **Problem of defence priorities versus security priorities**. This is primarily in an American versus Canadian context.
3. **Cultural Sensitivities** about how the Arctic is viewed in the US and between the US and Canada.
4. R**ussian and Chinese economic issues as drivers of defence priorities** (i.e. Arctic is a resource-laden frontier for China that primarily relies on raw materials to manufacture and export).
5. **Climate Change** will disproportionately affect Arctic communities and hamlets. Flooding, erosion, and melting ice will relocate towns and have the potential to alter the viability of shipping routes.
6. **Indigenous Persons'** consultation and collaboration in policy making, and their integration in operations.

Themes and Trends:

1. **Great Power Competition and Confrontation**
2. **Climate Change, Human Security**
3. **Hard Security**
4. **Economic Interests**
5. **Competing Interests not in the Arctic** (i.e. "ripple effects" from adversarial brush-ups in Asia, Europe, and the Middle East)
6. **Worldwide Partisanship** is moving the political spectrum further to the edges

Group 2 : Political : Regional/Circumpolar/North America
Summary by Danielle Cherpako

Key Drivers and Proposed Indicators:

- Congruence of strategies (NORAD, NATO) and potential for adversarial interference
- China's interests and activities
- Ground mobility – sustainability of operations, domestic response, economic development, and infrastructure
- Disappearing sea ice and implications

First, it is important to differentiate between real and deliberate threats to the security and defence of the region, versus more accidental or ongoing threats (such as those posed by climate change). Differentiating between threats facilitates better risk analysis. For example, there are 'most likely' threats and 'most dangerous' threats. An example of a 'most dangerous' threat might be an actual attack from an adversary, yet this is also less likely to occur than something such as climate change, which is already occurring. One example of a likely and somewhat dangerous threat is China's activities and interests in the Arctic, which help to increase China's global influence. Prioritizing this threat might look like monitoring China's activities in the region over the long term. For example, one might measure or track China's involvement in the region based on numbers of installations, loans, or investments in the Arctic.

Unfortunately, while Canada and the US have identified myriad defence and security threats, they have been slow to provide funding and actual resources to address these threats. Because the Arctic does not tend to attract as much coverage, support, commitment, and funding as other areas, both Canada and the US have been slow to act to new geostrategic threats. For example, missile defence in the Arctic is an important aspect of overall regional security because of the early warning system. Canada does not want to be actively involved with missile defence or pay for costly updates to the North Warning System, but it is content to have the warning system in its territories. This is problematic, because CANUS needs to be thinking longer term to ensure that the technology remains relevant in the coming decades. When it comes to defending North America, CANUS cannot simply discuss issues: there must be political will, practical plans, and funding to make things happen.

It is also important to look at how NORAD and NATO interact with one another, and how their strategies overlap. Using communications and data sharing will help these organizations create a more coherent picture of common threats that they face. One concern, however, is that Russia tends to express confidence in NORAD but is very sensitive about NATO (and particularly NATO expansion). Therefore, bringing NORAD and NATO closer together could undermine NORAD's relationship vis-à-vis Russia.

The US and Canada continue to closely monitor the disappearance of sea ice, as this may affect other activities occurring in and around the Arctic. If the Polar Route does open as a commercial route, this would have major implications for regional maritime security. The US and Canada must also be concerned about pollution caused by shipping in the Arctic. Furthermore, growing plastic and especially micro-plastic pollution in our waters threatens various species and ecosystems. Unless addressed, pollution will continue to accumulate in the food chain, ultimately causing some species to disappear and leading to food insecurity for Arctic communities.

At the operational level, ground mobility has been limited in the Arctic. Challenges such as permafrost degradation and adverse weather conditions make mobility increasingly difficult, but improved infrastructure and logistical planning can help to ameliorate the constraints imposed by these conditions. Ultimately, if the US and Canada want to put more forces in the North, they must dedicate more consideration to logistics, including waste removal and the delivery of food and equipment.

Group 3 : Political : National/ North American Arctic
Based on a summary by John Lauzon

Key Drivers and Proposed Indicators:

- Opaqueness around Russian policy (as well as potential confusion caused by conflicting messaging from the US and Canada)
- Economic distress of Northern communities
- Transportation and underdeveloped infrastructure
- Perceptions of citizenship and self-determination of Northern Indigenous people, and relationships with national governments and militaries

The lack of consistency in messaging and strategy within the US, between the US and Canada, and with other allies, may cause future problems for Arctic security. First, there is a disconnect between those in the US government working with and knowledgeable about Arctic issues, and the rest of the government. This has led to US intentions being unclearly communicated, which affects how both adversaries and allies perceive the US. For example, US policies regarding Russia lack intentionality and a clear end goal. The number of exercises occurring in the Arctic is increasing, but diplomatic efforts have also increased. This can lead to confusion and miscommunication about the US approach to Russia. If Russia is worried about a US attack or invasion by the West, it is natural that it will create a buffer to prevent this from occurring. At the same time, digital misinformation campaigns may also seek to further undermine US messaging and community- government relations.

Communication with Russia is increasingly important. Whereas transit through Arctic states' territorial waters was not feasible previously, more icebreakers and melting sea ice may lead to increased shipping activity. This is concerning because the US has not ratified the UN Convention on the Law of the Sea (UNCLOS), which may further lead to miscommunication about standards and expectations in the maritime domain. As Russia takes the Arctic Council chairship in 2021, it is important that these concerns are emphasized and discussed. Other ideas to focus on include ongoing scientific cooperation in the region, and the economics of 'opening' the Arctic to foreign (non-Arctic state) investment.

Finally, Indigenous and Arctic communities face many significant internal challenges, while also facing potential debt traps from actors like China. First, there are differences between meanings of Indigenous sovereignty and self- determination in the US and in Canada. Indigenous peoples living in Canada's High North may want the greater economic means of the US, while Indigenous peoples living in Alaska may want the governance mechanisms exercised by their counterparts in Canada. Communities facing economic distress are more susceptible to foreign loan debt traps, and Indigenous communities may be more receptive to China's critiques of Western colonialism. Since China has never held colonies, and is willing to offer investments to Arctic communities with few obvious "strings" attached, the US and Canada must realize that they cannot take community goodwill for granted.

Group 4 : Environmental
Summary by Thomas Hughes

Key Drivers and Proposed Indicators:

- Communications capabilities
- Data collection, analysis, and sharing on environmental issues and changes in the Arctic in forms and at the speed of relevance
- Use of natural resources (e.g. fisheries, shipping routes, and extractive resources)

Although the areas of 'through' and 'over' the Arctic were not intended to be a focus for this group's discussion, there is a potential connection between the environment and these two areas. This is the case, for example, in the responsibility for the marine mammal protected area in Lancaster Sound being given to Parks Canada, a consequence of acknowledgement of the needs of communities who are living off the ocean, and the endangering of certain species due to marine traffic.

The discussion opened with an analogy to indicate the 'system' nature of the Arctic. The Arctic was described as a room in which there are inflows and outflows (doors and windows). However, if the ceiling is removed from a room, everything in that room changes and further risks are created, even if there are no immediate further

alterations. This form of systemic alteration has occurred in the Arctic through the changing of the surface boundary of the Arctic Ocean. In doing so, risk has similarly increased.

Furthermore, there is a "continuum of urgencies across time," as well across the tactical, operational, and strategic levels. The inability to acknowledge this and view the long-term impact of developments puts an actor at a disadvantage.

Finally, it was noted that the Arctic is not changing uniformly. Thus, effects on Baffin Bay will not be the same as the Northwest Passage. We are observing localized changes: not in one Arctic but in many smaller, local Arctics. Each necessitates different ways of conceptualizing missions.

Communications

Communications are a key indicator. In the absence of effective communications, there are problems. Thus the creation and development of communication capability is an indicator. Communications are a key driver in the North, especially during a significant event, and are an issue across emergency/SAR activities. Connectivity with and between end users is critical in operating across the continuum of urgency.

As a minor point of conversation regarding communication, it was suggested that rule changes to require all vessels in the North to carry Automatic Identification Systems (AIS) would be helpful, as some private vessels at the moment may not fall into this category.

Data

This discussion started with a reference to looking at weather events, which are becoming more complex and frequent, requiring longer deployments which in turn draw on resources and limits the ability to deploy elsewhere. Climate change also accelerates the degradation of infrastructure, and maintaining and modernizing equipment to mediate this requires significant financial resources.

The reference to 'weather events' indicated the existence of data, which raised the question of whether there is sufficient capacity to analyze it in a timely fashion, and thus whether data availability may be an indicator of capability. Such data is vital to structure deployments and capabilities, and to understanding what force is needed. However, much of the older data has been discarded, with the problem being not the analytical process but the speed of obsolescence. Thus the data from the 1980s, 1990s, and 2000s is no longer helpful as the Arctic has changed too much. Also, the scale of the Arctic is such that Canada alone does not have the human and financial resources to conduct measurement at optimal levels.

Conversation shifted to the degree of connectivity within data gathering and analysis, starting with a suggestion/ question that Canada and the US may be able to conduct joint data collection. The interface between the US Department of Defense (DOD) and academia was thought to be good, but focusing on climate change in terms

of the operating environment is too nebulous, and specific sets of data are required. Two further questions on this point were raised:

- How well do you feel you are able to tap into the non-DOD agencies to leverage their operations and research?
- As an aspect of communication: How well are we tapping into agencies to get the information we need?

It was suggested that, while the equipment available to certain agencies (for example, the National Oceanic and Atmospheric Association - NOAA) is valuable and doing good work, it is not necessarily the case that DoD or other agencies are aware of it. In looking at sensor data, there is no clear picture of who has what sensor and what data they are collecting. Analysis of what data is available, and what centres exist, would be useful from a tactical level – what we do with this data is then strategic.

This has decreased in the US, with everyone concentrating on their own areas, again being rendered more challenging during the COVID-19 pandemic, and NOAA and DoD could do a better job of connecting. In terms of data exchange, efforts have been made within the Directorate of National Intelligence, but in practice it is difficult. However, data is a key driver, and lower barriers to data sharing would be helpful. One of the biggest barriers to data sharing is the maintenance of the *status quo*. A driver of measuring environmental indicators is, therefore, having better data flow and having this analyzed.

It is therefore important that NOAA, DoD, etc. come together to find questions of common concern. This sort of roundtable may precede the data collection itself. While there was agreement in principle, some concerns were raised about the robustness of connections to do this.

Concerns were also raised about the ability of satellites to provide timely and sufficient information in real time, particularly as the satellites may be providing different forms of information, and local communities are insufficient in isolation to do everything.

One example of potentially useful data would be to continue to measure the mass of hot water at the bottom of the Arctic Ocean that has never moved but is currently sending up heat flares, raising fears that it may rise to the surface and cause a planet-scale temperature shift.

Resource Use

The use of resources has always defined human expansion into new areas, and the Chinese and Russian approaches to the Arctic reflect this typical pattern of attempting to leverage natural resources. This can provide an indicator of access and, by looking at government mechanisms and built infrastructure, it is possible to see timescales for resource use. In addition, the attempted use of resources must be differentiated by the actor: what are the policies at local, state, and other levels? Who has access, and who is the key decision-maker? Private industry is often ahead of certain aspects of government, and it would be useful to look at their activities.

For example, the theory around the movement of fish northwards has been discussed within government agencies, but private industry is acting and following these fish stocks.

Methodological Challenges

'Indicators' are scale and context dependent, and strong linguistic precision is critical. A challenge for academia lies in translating theorizing and recommendations into precise policy. Greater emphasis needs to be placed on diverse end users, including local communities as well as the oil and gas industries. Similarly, different communities and different indicators are going to require different data. Consequently, the first step to outlining and defining drivers and indicators is recognizing that there needs to be clarity on scale and context. The latter point includes the authority of decisionmakers, and the timeframe that decisionmakers have in which to make their decisions. On a similar point, "drivers" and "indicators" require clear definition, with "drivers" potentially being exogenous and / or endogenous. Furthermore, China's diversity of approach, in buying icebreakers as well as looking to purchase ports in Greece, for example, indicates that the drivers may be both exogenous and endogenous.

Miscellaneous Additional Comment

The changing environmental circumstances and the opening of the region to tourism have significant impacts on Arctic communities. These communities have been isolated for a long time, and now they are experiencing and influx of visitors for which they are unprepared. This disruption changes their way of life. Thus, visitors are having a *direct* impact (potentially by purchasing goods that have been transported across long distance to the communities), but this is an *indirect* impact of environmental change.

Furthermore, it would be helpful for Northern communities to be less reliant on energy (diesel) from the south. Solar and wind power may be options, but Northern communities are typically late adopters and remain reliant on diesel supplies.

Supporting Northern operations from the southern hubs is difficult, and has been exacerbated by COVID-19 this summer. The deployment of Rangers in the region raises questions of how the Rangers should be integrated into the broader way of working.

Presence is a benefit, and Canadian icebreakers are valuable. There is significant commercial traffic, but also private sailboats. Responding to SAR requests could become a burden. However, to have capability requires the coupling of capabilities. Emergency response systems without the structure to implement them are hollow. This raises the question of how to use observation, and the coupling mechanisms of government and infrastructure, to operate on different timescales.

Group 5 : Economic/ Resources
Summary by Kristen Csenkey

Key Drivers and Proposed Indicators:

- Foreign-backed investments projects (including in academic/ scientific research and expeditions, and infrastructure development or acquisition).
- Governance rules around fisheries and other key emerging resources
- Public and political consciousness of the Arctic and internal perceptions of social cohesion and identity; areas or issues that spur polarization
- Infrastructure project development and lifecycle to completion
- Demand and supply of scarce resources

Economic/ Resources

Key Drivers:

- *Private sector influence (including foreign investment) in the economic development of the region*. This can impact supply chain resiliency, ownership, and influence; control of maritime infrastructure (ports); local employment opportunities; shipping and port maintenance; and environmental impact of mineral extraction.
- *Increase in population.* Local populations are increasing due to higher birth rates, relocation of communities due to rising sea levels, and more economic opportunities. Growing cities need resources. This puts a strain on infrastructure and supply chains. Local populations may seek to create economic linkages with foreign and private sector actors to secure reliable access to resources. The US and Canada need to ensure sustainable models for economic growth, environmental protection, and engagement with local people.

Themes and Trends:

- Dynamic security environment presents challenges to the management of resources and people. Many actors – public, private, indigenous governments, researchers, etc. contribute to the complexity.
- Rapidly changing climate impacts the environment. This has a trickle-down impact on security issues, Canada-US defence capacities, and infrastructure development and maintenance.
- Foreign-backed private sector actors have attempted to penetrate the region and influence local populations. They have used disinformation and propaganda campaigns to create the impression that local populations are autonomous decisionmakers.

- Shifting alliances in the region based on investment, infrastructure development and modernization. State and private sector actors compete to fulfil the ever-growing demand for resources and opportunities.

Proposed Indicators

- Foreign-backed investments projects (including in academic/ scientific research, and expeditions and infrastructure development or acquisition).
    - Quantify their location, type of project, method of engagement with local stakeholders/ actors, influence activities, linkages to other projects or key strategic positions or resources in the area.
- Governance rules around fisheries and other key emerging resources.
    - Measure governance rules, actors who influence the frameworks, and compliance mechanisms.
- Perception of Arctic and Arctic issues.
    - Discuss public and political consciousness of the Arctic and internal perceptions of social cohesion and identity. Identify areas or issues that spur polarization.
- Infrastructure project development and lifecycle to completion.
    - Capture the types of projects that are proposed, by whom, investigate funding sources, and dual-use capacities.
- Demand and supply of scare resources
    - Local community buy-in to external investment in sensitive economic projects. This includes dwindling fish stocks.

Group 6 : Human
Summary by Justin Barnes

Key Drivers and Proposed Indicators:

- Colonialism/Reconciliation – cultural contestation (racial, tribal, religious, etc.) affecting policy coordination; persistence of colonial frameworks and fate control
- Health – Arctic Council One Health indicators as basis for analysis
- Environmental disasters and implications for disaster response / community capacity
- Education – understanding diverse views on development and security
- Infrastructure Needs – potential for dual-use infrastructure; private sector; alignment across different scales
- Economic models – conceptualize different models for small, isolated communities to support mixed Northern economies

Key Drivers:

Colonialism/Reconciliation

- Cultural contestation (racial, tribal, religious, etc.) affecting policy coordination
- Tail end of colonialism. Colonial framework had been the driver of negative impacts on communities and continues to constrain us when trying to redesign systems

Indicators:

- Cultural wellbeing: measure the number of indigenous language speakers
- Fate control. How able are local level people to influence the security regimes that protect them? At local scale, you might be able to participate in how your community does SAR

Health

- The "One Health" program is the epitome of health of the Arctic environment, humans and animals. Needs to be carried out and actually implemented
- COVID was an example of a focus on prevention rather than reaction. Vigilance looked quite good when recognizing an outside threat. Remoteness was an aid.

Indicators:

- Where does healthcare take place and at what levels and scales?
- Use Arctic Council One Health indicators

Climate Change/Environment

- Environmental disasters are a direct threat
- Implications for disaster response (wildfires, flooding, coastal erosion, etc.)
- Sink holes, changes to coastline, infrastructure degradation (including roads and buildings)
- More fires in Yukon and Northwest Territories along with increased flooding, severe weather events, coastal erosion, larger waves, etc.
- Pollution from shipping and cruise liners

Indicators:

- Lack of community capacity to deal with disasters, need more assets which can respond and raise local capacity level. Substantial gaps in service provision.

Education of Southerners

- Outsiders views (military personnel included) affecting Northerners and their development
    - A lot of misinformation amongst military personal which lead to negative views of Indigenous people, etc.
- Source of education important (national news does not have local context). Needs to be driven locally
- Context can be gained through education. There is a deep context in the North, familiarity with issues is needed

Indicators:

- Schools that meet the needs of remote communities are needed
- Education for those new to the North (either in industry or military) to provide local context for issues and challenges in the Arctic

Theme: Lack of Economic Development and Investment

Key Drivers:

Lack of Infrastructure Development

- Transformational infrastructure development is needed, the lack of infrastructure is a constraint for multiple human security concerns for Arctic communities
- COVID costs could deplete funds for infrastructure
- Alaska needs more deep-water ports, but does not have the economy to drive one with not enough exports

Indicators:

- Military assists in developing infrastructure and Alaska develops dual uses
- Private sector increasingly participates in developing/building/owning infrastructure
- Needs at different scales become better aligned
- Dollars spent on infrastructure and per capita income

Economic Models and Challenges

- There has been a lack of imagination on different economic models for small isolated communities and how these can work
- Co-create with local people without having to use national policies (a system that is relatively inflexible). Find other ways that are novel and allow for people to have both the subsistence and lifestyle (eg. conservation economy)
- Economic challenges associated with over-fishing and depleting resources for local communities

Indicators:

- Monitoring the increase or decrease in populations in Northern regions and in remote or urban centres – indicators of population dynamics can indicate economic success
- Surveys of fish stock
- Reduced price of a basket of goods would indicate better networks, infrastructure shipments

Day 2 : Breakout sessions

Setting North American Arctic Research Priorities: Threats Through and To the North American Arctic. In four breakout groups, ACCUSARS participants identified key priorities for North American defence/defense and security collaboration.

Questions to explore:

- Given the changing nature of the threats through/to/in the North American Arctic, are we investing in the right capabilities?
- How can research and development help to identify and develop other capabilities that would support CANUS objectives in the Arctic?

Group 1 : Aerospace Domain

Based on Reporting by Nicholas Glesby

The North American aerospace domain has typically focussed on the idea of "detect, deter, and defeat." Today, this is more important than ever, as the North American homeland is now more vulnerable to attack than it has been over the past two decades. The North Warning System (NWS) requires updating, and it is worthwhile to consider how we might not only update but upgrade the technology used. Participants discussed how Canada and the US should invest in gaining a thorough understanding of the Arctic environment, and the science associated with the use of technology in this area. Since the Arctic environment is changing so rapidly, it is important that we do not harness ourselves to assessments drawn at any single point in time, but rather remain flexible and attentive to what scientific research tells us about a dynamic region.

The main takeaway from this discussion was the need for a "common operational picture" between security actors in the aerospace domain, much like what exists in the maritime domain. High-latitute communications remain difficult, owing to a continued reliance on global geosynchronous satellites (situated to primilarly cover temperate latitudes) as well as interference from the northern lights, solar storms, and radio signals. Challenges also remain with respect to information sharing. In Canada, while there are solid mechanisms in the maritime domain for cooperation between the Army, the Canadian Rangers, the Canadian Coast Guard, and Transport Canada, this system does not seem to translate as well to the aerospace realm. This compounds challenges with data interpretation. For example, if a tracker is displaying incorrect information, it may be difficult to detect an anomaly, and it is difficult to interpret without other eyes and ears to confirm or disprove the information. Therefore, a fusion of satellite, airborne early warning and control (AWACS) aircraft, ship- and air-based sensors, and other systems can support an all-domain awareness approach capable of detecting cruise-based missiles. Developing stronger ties with ground-based observers, and ensuring that backup systems can be deployed quickly, are examples of immediate-term steps that should be considered.

The US can also share information and resources through the Five Eyes and NATO databases – although barriers to sharing some intelligence still remain. Satellite systems and intelligence are vulnerable to cyber attacks by adversaries. Since there are many different security actors involved in these organizations, the US may feel insecure about sharing some sensitive but important data. At the same time, it is important to think innovatively about how researchers and civilians can share data that have security implications. For example, data could be encrypted prior to distribution. This type of engagement and collaboration is possible, but requires enhanced cooperation and investment in enabling technology.

Group 2 : Maritime Domain

Based on Reporting by Danielle Cherpako

The Department of Defense, other US departments and agencies, and their Canadian counterparts already cooperate closely in the maritime domain. Yet, because many departments are limited to constabulary missions, innovations in one department may not be available to all other organizations that might benefit, and not all information is being leveraged effectively.

To more fully leverage knowledge, we might reconsider how different American and Canadian companies, research teams, and government departments are managing data and sharing knowledge. Once data is gathered, it can be filtered so that only relevant information is passed on to different organizations, and artificial intelligence (AI) can assist in the process of analyzing data. For example, if there is a string of acoustic recorders along the border listening to fish, how might this tool and the data gathered be relevant to a different department? Especially now with COVID-19, finding ways to collaborate and brainstorm about data sharing and analysis can be done online. One example of this is through a 'hackathon' format – essentially an online platform open for an extended period of time. If this online platform is opened up to various departments, organizations, and scientists over a 72-hour period, people can contribute different ideas and build off of each other's thoughts. This is essentially a form of crowdsourcing which can help us to tackle issues together, both within and between states.

Incentives are important to encourage resource sharing and costly investments, including long-term strategies promoting public-private partnerships in the Arctic. Incentives also work when enforcing laws. In the maritime domain, coast guards and the insurance industry are primary mechanisms for enforcing international laws and regulations. Establishing vessel traffic routes and clearly and accurately charting those waters can reduce insurance premiums for ships operating within them, thus incentivizing compliance and improving the efficacy of SAR missions.

From a military and security standpoint, we also have to think about developments in sectors like fisheries involving interrelated social, economic, and security issues. For example, if China is overfishing and climate change is warming waters, this might drive North Pacific fish stocks further north and into contentious waters between the US and Russia. Not only is this a food security issue for Northern communities, but we have to think about how we might regulate and monitor fishing to prevent conflict between neighbouring states. Using

a third-party arbitrator to monitor the fishing or using independent technology to maintain surveillance are two possible options. This problem also raises the question of whether current international agreements and bans on fishing can keep pace with changes in the region over the next 10-15 years. It may be in the interest of all Arctic states to discuss the future of the current fishing moratorium sooner rather than later.

Group 3 : Land Domain

Based on Reporting by John Lauzon and Thomas Hughes

The key priority in the land domain is responding to the changing nature of threats, and discussion around the subject can be guided by six foundational questions:

- What are the land force requirements in the Arctic?
- What is the role for land forces in this context?
- How can experience in the High North be leveraged, particularly through engagement with local populations and Indigenous knowledge?
- What are the right investments, and are they being made?
- What are the interoperability requirements between land, sea, air, cyberspace, space, information, and ISR development?
- How can research and development capabilities support US-Canada objectives in the Arctic?

Particular awareness is also required of material and personnel issues, enhancing situational awareness, and identifying and addressing 'gaps and seams' in the existing land-based security and defence context.

One of the greatest challenges in the land domain is that Arctic security exists in the eye of the beholder. Arctic land power is an issue with which the public engages but, from the perspective of defence experts, when viewed alongside the air, sea, space, and cyberspace, has long been seen as the least significant of potential threat vectors. Instead, greater emphasis has been placed on threats in the maritime and air domains. No-one has expected Russian land forces to invade North America, and the joke within Canada in the past has been that the greatest concern regarding a Russian invasion is the SAR mission that would then be required. Part of the problem for the land domain and Arctic security in general, therefore, is the tendency to interpret an issue within preferred frameworks. Thus, for example, the overall orientation among academics is to start from the assumption that there is no land threat. There has also been a reluctance to acknowledge the reality of the return of Great Power politics, despite significant changes to Russian behaviour, notably the resumption of bomber and ballistic-missile submarine (SSBN) patrols from 2007.

There is a lack of understanding of how the Russians and Chinese see the use of land forces regarding Arctic defence issues. Participants also highlighted that it is crucially important to distinguish between security and defence. In the land domain in Canada, emphasis has been on security, particularly in relation to SAR and providing aid to civil authorities, rather than the defence component, which focuses on warfighting and conflict.

Nevertheless the interdependence of 'security' and 'defence' is fundamental, and land force must be considered as an aid to the civil power.

It is also worth reconsidering the assumption that there is no land threat to "the Arctic" writ large. The Arctic Coast Guard Forum yields a good understanding of certain Russian security activities, but it does not cover defence issues. Increasing numbers of Arctic exercises, particularly those involving paratroops and special forces, contribute to concerns about the Norwegian border, and raise questions about the nature of these exercises: are they deterrent activities, threats, or spillovers? Could these exercises be preparation for invading Iceland or Norway? Notably, such exercises are translatable to any remote deployment. Arctic exercises may be used to practice and prepare for actions in Syria or Southeast Asia. Adversaries may not be developing capabilities to use against Canada or the US directly, but they certainly have military applications globally.

Operational and strategic level analysis is therefore critical, the chief challenge being to discern what Russia means through its actions. The fungibility of land forces is also difficult to interpret, raising further questions for the defence of the Baltic states, and highlighting the possibility of spillover to other land domains from actions in the Arctic. However, caution in perceiving a land threat in the North American Arctic is required, considering that 'winter warfare' capability is different from the capability required to operate in extreme Arctic conditions. It is also notable that much of the Russian land-based activity focuses on the former rather than the latter. Successful operations on land in the Arctic tend to require highly-trained troops. Considering that the majority of Russian troops deployed to remote Arctic islands are poorly-trained conscripts, we can discern some impressions of Russian capability and intent.

Furthermore, the US discussion around defence in the Arctic has raised the possibility of a tactical nuclear exchange. Russia has commented on a nuclear response, as well as developing nuclear capabilities in the Arctic. It may be possible for tactical nuclear weapons to be used against a base such as Fort Greely, Alaska. The land domain then potentially becomes a site of escalation, posing uncomfortable questions about defence and around the use of land forces. Developing an awareness of how we can understand Russian intent and capability is therefore extremely important. Furthermore, considering only the North American context in conversations regarding the Arctic land domain misses the broader NATO context, particularly for Norway and Denmark, as well as Partnership for Peace partners such as Sweden and Finland. These considerations also highlight the importance of seeing the Arctic as different geographic areas, rather than a single homogeneous geographical unit.

It is important to think about the way in which the US, Canada, and its allies have been preparing their land forces. In terms of North American and NATO Arctic land training and preparation, SAR has taken priority over defence. The bulk of core exercises, such as Operation NANOOK have occurred in the summer months, when weather is more clement; the US NORTHERN EDGE exercise has focused on long-range resupply, with an eye on a potential conflict in Asia; the Norwegian-led COLD RESPONSE exercises have focused on how a small country can respond to the military incursion of a large country. The importance of training in extreme conditions year-round, rather than only in favourable seasonal conditions, has not yet been addressed. Key questions remain

about whether North America really is safe in the land domain, and how the "threat" is to be understood. The answers to these questions will provide the foundation for connections to be built between the military and civil authorities as well as facilitate large-unit exercises in North America. It is also important to determine not only what Russia and China 'mean' by their exercises and other activities, but also how the activities of the US, Canada, and their allies are perceived in those countries. Improved strategic signalling is required.

Improving physical infrastructure in the Arctic is important in the land domain, but it is imperative to consider all levels of governance and take a multi-decade approach. The altered political and geographical landscape in which new infrastructure would exist, and the threats that may emerge, must be acknowledged. Imagination must therefore be exercised when thinking about the future. Indigenous lands, for example, are going to become more open, and will still be held and controlled by Indigenous groups. Infrastructure projects must not be rushed into being sited in certain locations simply because they are believed to be significant for defence and security today, as such infrastructure may be rendered obsolete in twenty years due to climate change. In addition, infrastructure has the potential to become an 'attractive nuisance,' providing a focus for the start of a cyber-based conflict. Land operations can be challenging relative to maritime operations, being too slow and insufficiently flexible to address dynamic threats. By the time land-bound infrastructure is operational, the location of the threat may have changed. This is rendered even more difficult when road networks are poor or nonexistent.

Military units, including engineers, may also ultimately be responsible for certain aspects of infrastructure development and support. Climate change, notably the thawing of the permafrost, may have serious implications for existing physical infrastructure. Fuel storage depots in forward operating bases and airfields are particularly at risk. The presence of such infrastructure raises questions about the ability and responsibility to provide the engineering support and state-of-the-art design required to maintain or remove it.

On a more expeditionary basis, the increased price and scarcity of fresh water may create security risks but there is a vast quantity of meltwater in the Arctic, with a substantial terrestrial component to its extraction. A consideration of the types of engineering battalions and amphibious capability required for these sorts of missions would be helpful. In addition, engineering units could be involved in building roads and runways in the Arctic. The combination of climate change and shifting operational imperatives has also rendered it vital to install aspects of the North Warning System in the High Arctic, where the Distant Early Warning (DEW) Line could not be sited due to technological constraints. We do not currently have a clear picture of who is performing infrastructure installation in the Russian Arctic, whether military or civilian contractors. It would be helpful for Canada and the US to focus the attention of Army engineering on the Arctic, while also engaging in the broader question of the balance of civilian and military responsibility. In both cases, however, generating the ability to operate at all times of the year in the Arctic, not just the summer months, must be a critical focus in the short term.

As the North American Arctic develops, it will also be vital to maintain awareness of the intersection of private and public inputs, and the potential re-shaping of the security and defence context that emerges from the

creation of infrastructure – both as a target and a platform for future action. For important economic developments to be made, certain critical infrastructure is necessary, which then poses questions about who is responsible for security and maintenance. For example, it may be feasible to use a small nuclear reactor to power a new deep-draft port, but doing so then raises the potential for enormous damage to be caused if it is attacked. The Russian operational concept of "Strategic Operations for the Destruction of Critical Infrastructure and Technology" indicates that the potential for such an attack on infrastructure exists, and Russia remains concerned that Western forces may conduct a strike against Russian nuclear power plants. With these forms of defence issues in mind, it may be valuable to involve Special Operational Forces (SOF). Some attention is already being paid to the region by the SOF community, but further work is required to clarify legal authorities and doctrines, as well as familiarization and equipment development missions. Also critical is the inclusion of local populations, law enforcement, and the Royal Canadian Mounted Police (RCMP) in discussions about current and future security and defence issues, as they represent the first responders and first early warning system.

From a local perspective, it is also important to think about the federal presence, and consider what local communities experience and see, and what an increased presence would mean for them. Conducting operations when ice floes are moving and the situation is unclear is difficult. Changes in ice can change the very terrain upon which operations are conducted. Efforts are being made to retain and preserve traditional knowledge such as route-finding while integrating new technologies

Increasing the land force presence in the Arctic, however, particularly in Alaska, may also influence relationships with local communities. The interface between land forces and Indigenous peoples in Canada has primarily been through Ranger units. In the US, there is potential that increased military presence in Alaska, and consequent greater engagement with Indigenous populations, could be beneficial, resulting in better national-to-local partnerships. Longer-term deployments in Alaska, whether in training or support roles, rather than troops just moving through, is a positive step.

Attention must also be paid to the non-military threats faced by civilians in the Arctic such as coastal erosion, food security, and domestic abuse. Limiting the scope of action at 'higher' levels of security endangers community trust in government. By developing a better recognition of what it means to be 'secure,' productive partnerships can be created on all levels.

Further Research Questions:

- In distinguishing security from defence roles for land forces in the Arctic, what does this mean for mission requirements and training? How should the security role of land forces be distinguished from the roles of the other branches?
- What infrastructure requirements will be required in the coming years?
- What is the land threat and what is the role for land forces in response to it? There are opportunities to learn from how smaller countries such as Norway plan to rebuff incursions – these involve land forces landed via maritime or air platforms.

- What is the strategic effect of US, Canadian, and Russian forces in the Arctic? How can this be measured?
- How do we develop a year-round Arctic-capable force? Does this require regular units trained for Arctic operations, or a dedicated Arctic-capable Special Operations Force (SOF)?
- In light of US nuclear policy including nuclear warfighting concepts, what is the role of land forces engaging in force protection in a potential future tactical nuclear war environment? This includes considerations of escalation, the protection of land assets, and resilience.
- How can land forces be involved in integrating traditional knowledge with new emerging technology and approaches in response to new threats?
- What non-land roles could land forces' training include (e.g. amphibious operations) in order to protect resources and infrastructure? This includes potential SOF units to protect assets and infrastructure, and a reinforcement role.
- What are the likely requirements for a SOF Arctic force? When and how are we preparing? Where are we at this time, assuming that this capability is under development?
- From a military and SOF perspective, what is the 'End State', for better identification of the problem? This concerns the strategic and operational levels, given the variability and change happening in the region.

Group 4 : Information Domain

Based on Reporting by Justin Barnes

Information is a critical area of consideration in Arctic security and defence. However, it can be understood, and has value in, multiple dimensions, from the collection of data to Information Operations (IO) which have the potential to re-shape the relationship between Arctic communities and the US and Canadian governments.

Information on human activity and environmental change in the Arctic is intertwined and can serve dual-use purposes if collected properly. Publicly-available data, such as ship-traffic information from satellite and other sources, can be used to produce critical information on activities taking place in the Arctic, indicating how long individual vessels are remaining in the region and where they are travelling. In the case of shipping, this is not simply about tracking potential adversaries' activities, but also about mapping the routes of activity of US and Canadian vessels. This has tremendous value in providing up-to-date data on transportation corridors – information that is not always immediately available through oceanographic data. Information-gathering should occur around subjects that have an Arctic impact, if not a direct physical Arctic focus. For example, better understanding how other states are researching and approaching research on norms and rules around the Law of the Sea may help to influence and shape how Canada and the US can best uphold the rules-based order in the Arctic. Finding and addressing issues of common concern and common interest in the Arctic could provide a key foundation for ensuring that engagement between states is not based on, or defined by, conflict.

Oceanographic data is valuable to improve knowledge about the movement of water in the Arctic and the rate of ice melt. As it stands, there are significant gaps in data – for example, changing tidal patterns have been noted, but there is limited understanding of the extent to which they have altered. Particularly given the speed of change, missing information is problematic. However, it is important that data-gathering occurs as part of a long-term cohesive strategy, rather than simply back-filling the 'missing' data. Through multi-sensor and multi-source analysis, the 'hidden patterns' of human activity and environmental change can be rendered visible. Information-gathering must occur in parallel to improving information storage and organization, and there is a risk that un-coordinated data collection from multiple sources may result in unhelpful data overload.

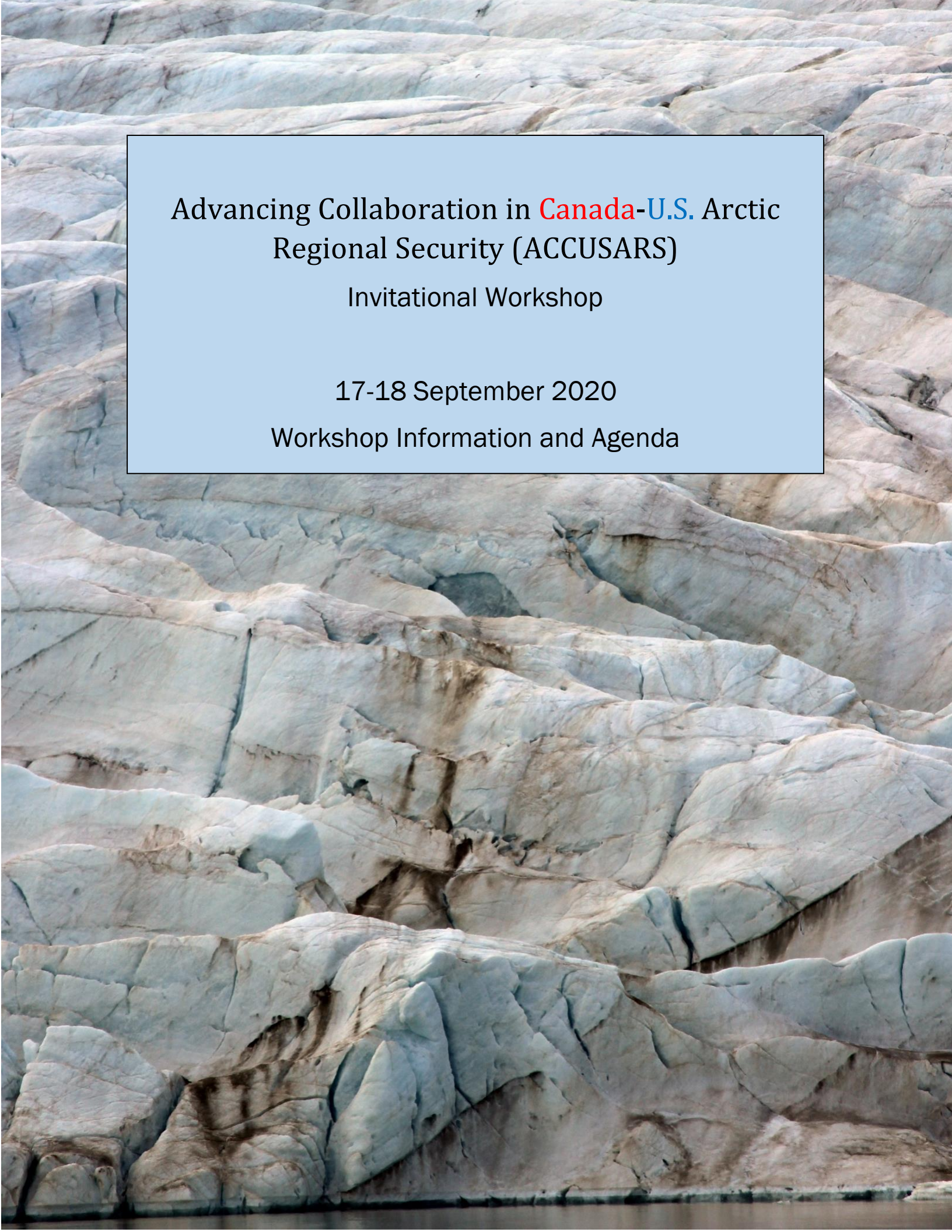
'Information' is also vital in the context of maintaining strong socio-political relationships with Arctic communities, and the 'information domain' has emerged as an area of contestation alongside more traditional defence 'domains.' It is apparent that 'information operations' are occurring in the Arctic, with foreign actors attempting to undermine the links between Arctic communities and the state, as well as disrupt economic activities through misinformation campaigns targeting specific economic or environmental activities. Notable misinformation tactics have already been applied by certain groups, countering which confounds traditional concepts of deterrence. Failure to deter this behaviour, however, can have deleterious effects across the political, military, and economic spectrum, and it is crucial for Canada and the US to mend and improve relationships with local communities. Misinformation can intersect with broader conversations about sovereignty and may encourage local communities to engage with foreign governments and organizations to access services and infrastructure even thought this may not be in their long-term interest. In addition, it would be helpful to gather more information on the source of funds for advocacy groups whose activities negatively influence the state's ability to pursue its desired Arctic policies, as well as identify who is posting particularly misleading or damaging statements online regarding state activities or agencies operating in the Arctic. These measures are key for understanding potentially non-traditional adversaries or threats.

Arctic communities can be better supported with information and intelligence, particularly in helping them to react to emergency situations and make long-term decisions. Sharing classified military data may be difficult, but careful consideration of processes, and the creation of dual-use databases, could connect Arctic communities to the large bank of data being assembled. Furthermore, the research process itself represents a risk and an opportunity to enhance engagement with local communities. Communities must be briefed prior to, during, and after research has commenced to avoid unnecessary concern and suspicion from community members. Through an approach founded on partnership, links between researchers and the communities in which the research is taking place can be strengthened, rather than researchers simply operating within the same geographical area but having little contact. Communities have frequently expressed a desire to participate in research, which also raises questions about joint ownership of sensitive data collected during the research.

Co-ordinating research and information-gathering is beneficial. Some efforts have already been made through the Arctic Observing Network (AON) program, which brings together US federal agencies and their partners, but further work can be done to involve perspectives from other states and other scientific and research communities. Recognizing that the future is as urgent as the present, it is important to ensure that research

funding is channelled into long-term, sustainable, multi-stakeholder projects that acknowledge a continuum of urgency. Recognizing that decisionmaking by governments happens at various time scales, responsiveness and adaptability of research activities and data collection are important factors for filling gaps that arise. Prioritizing different risks is always challenging, and Arctic research should be funded with an eye on the anticipated shape of future development and long-term trends, and cognizant of strategic-level risk, rather than areas of immediate concern that more frequently attract shorter-term political and research attention.

Photo of the Pangirtung Canadian Ranger patrol, courtesy of 1st Canadian Ranger Patrol Group



Advancing Collaboration in Canada-U.S. Arctic Regional Security (ACCUSARS)

Invitational Workshop

17-18 September 2020

Workshop Information and Agenda

As/of 17 September 2020

Introduction

The Arctic region continues to evolve into an ever more complex domain. Significantly warming temperatures are inducing drastic changes to the physical environment. At the same time, human activity in the region is rapidly increasing. Such activities range from the helpful efforts of government entities, Indigenous groups, various industries, non-profit groups, academics and research; to the unhelpful measures of rising competition that correspondingly risks confrontation, as well as dramatic increases in criminal activities that often co-opt law enforcement. The collective result of these activities is driving rapid change across the "human terrain" of the Arctic, while in parallel to the rapid pace of the changing physical terrain.

Two Arctic research-focused teams…the Arctic Domain Awareness Center (ADAC), a U.S. Department of Homeland Security Center of Excellence in Maritime Research, hosted by the University of Alaska Anchorage, and the North American and Arctic Defence and Security Network (NAADSN), hosted by Trent University in Peterborough, Ontario, are seeking to advance baselines of analysis that will result in greater understanding of the developing security challenges and risks affecting the North American Arctic.

Building upon a June 2017 workshop on Security in the Arctic Borderlands Region, the North American Marine and Environmental Security Workshop in September 2018, and the Alaskan Command's Arctic Symposium held in November 2019, NAADSN and ADAC are pleased to co-host a follow-on workshop to focus on **specific initiatives that will improve understanding and enhance collaboration between Canada and U.S. Arctic security and defense professionals**.

The Arctic region represents an important international crossroads where issues of climate change impacts on the environment, international trade, and global security meet. State and commercial actors from around the world seek to share in the long-term benefits of an accessible Arctic. However, some of this increased activity in the region has the potential to threaten U.S. and Canadian sovereign

interests, including activities outside of the traditional military realm, such as increased growing foreign investment, tourism and scientific research.

By focusing on emerging trends in the medium- and long-term **North American Arctic security environment**, the gathering of academics and practitioners at this workshop will seek to anticipate potential North American Arctic futures in order to better identify and codify the understood capability gaps and shortfalls when it comes to securing Canada and U.S. sovereign territory in the Arctic. Workshop participants and panelists will also assess the challenges of achieving domestic security in a region that remains sparsely occupied by security forces and infrastructure.

Workshop Day 1 will explore the intersection of current context and coming challenges for the North American Arctic, including: the changing physical environment and climate; economic opportunities; surface and maritime transportation networks; infrastructure and communication needs; foreign economic and military interests impacting Canada and the U.S. High North; and symmetrical and asymmetrical threats to North American security. Workshop Day 2 will focus on contemplating the future security environment of the North American Arctic in order to frame gaps and shortfalls. The activities of Day 2 will further seek to generate research questions designed to provide useful knowledge products to support policy makers, as well as defense and security communities. In sum, these will include recommended strategic approaches, in addition to policy and resourcing decisions useful to reducing and/or mitigating risk. Supporting questions will focus on the pathways necessary to develop useful/practical solutions, oriented to the outcomes most helpful to achieving a peaceful and safe opening of the Arctic region.

The ACCUSARS two-day workshop will consist of panel presentations and breakout group activities that will use online technology while accomplishing Delphi style priorities.

Chatham House protocols will be in effect for the entire workshop. The workshop will also be recorded in order to gain accurate understanding of the discussions. However, this recording will not be released to the public.

Notes taken during the meeting will be formed into a summary report which will be shared with NAADSN and ADAC networks, including DND/CAF, DHS, and the broader community of CANUS Arctic security professionals.

Workshop Agenda

Thursday, 17 September 2020

0800-1230 Alaska Daylight Time (AKDT) / 1000-14300 Mountain Daylight Time (MDT) 1200-1630 Eastern Daylight Time (EDT)

Workshop Day 1

0800-0810 AKDT / 1000-1010 MDT/1200-1210 EDT:

Welcome and orienting remarks

Administrative remarks by **Dr. Whitney Lackenbauer**, Network Lead, North American Arctic Defence and Security Network, Trent University, and **Maj Gen (Ret), Church Kee,** USAF, Executive Director, Arctic Domain Awareness Center, University of Alaska

0810-0930 AKDT/1010-1130 MDT/1210-1330 EDT:

The Confluence of Canadian and U.S. Arctic Security Interests

How do Canadian and American Arctic strategic security frameworks compare to one another?

This panel will refresh workshop participants on the current focus of leaders of security and defense forces, Arctic Indigenous leaders concerned with North America's "Northernmost Border" security, and academic thought leaders who contribute to understanding the challenges and concerns of the changing physical terrain and "human terrain" of the North American Arctic.

Panel Moderator: Church Kee

Opening remarks by Commander Alaska Command, Alaska NORAD Region and 11th Air Force, Lt Gen David Krumm, USAF, Joint Base Elmendorf-Richardson, Alaska (Confirmed).

Panelists:

- Canadian Armed Forces Northern Perspective: BGen Patrick Carpentier, RCAF, Commander, Joint Task Force North, Yellowknife Northwest Territories (NWT) (Confirmed).
- Alaska Command & U.S. Army Alaska Perspective: MG Peter Andrysiak, USA, Deputy CDR, ALCOM and CDR, USARAK, Joint Base Elmendorf-Richardson, Alaska (Confirmed).
- USCG District 17 (D17) Commander RADM Matt Bell, USCG (Alaska and U.S. Arctic). Juneau Alaska (Confirmed).
- Assistant Commissioner – Arctic Region: Neil O'Rourke, Canadian Coast Guard Ottawa Ontario (Confirmed).
- Indigenous reflections on the Arctic Security: Gail Schubert, President and CEO, Bering Straits Native Corporation, Nome, Alaska (Confirmed).
- Academic reflections: Dr. Rob Huebert, University of Calgary, Alberta (Confirmed).

0930-0940 AKDT/1130-1140 MDT/1330-1340 EDT

Break

0940-1040 AKDT/1140-1240 MDT/1340-1440 EDT

The Arctic Security Environment: Deepening, Broadening, and Sharpening our Strategic Analysis

Shifting power dynamics in the Arctic include increased militarization, Chinese activity, Russian actions and responses, and engagement with 'partners' considered adversaries in other venues. How do Canada and the U.S. **conceptualize** these dynamics as potential security risks or threats through, to, and in the North American Arctic?

This panel brings together an analytical perspective from strategists, planners and research experts.

Panel Moderator: Church Kee

Panelists:

- NAADSN: Dr. P. Whitney Lackenbauer, "Through / To / In: A Framework for Analysis" Trent University, Peterborough, Ontario (Confirmed).
- U.S. Naval War College: Dr. Rebecca Pincus, Naval War College, Newport Rhode Island (Confirmed).
- NORAD: Cmdre Jamie Clark. Royal Canadian Navy, Colorado Springs, Colorado (Confirmed).
- ALCOM: CAPT Layne McDowell, USN, Director, Strategies and Plans (J5), Joint Base Elmendorf-Richardson, Alaska (Confirmed).
- USNORTHCOM: Dan Torweihe, J5 Colorado Springs, Colorado (Confirmed).
- Ecole nationale d'administration publique : Dr. Stéphane Roussel professor of political science (Confirmed). Note : 'Ecole nationale d'administration publique is the national school for public administration in Montreal & Gatineau, Québec

1040-1050 AKDT/1240-1250 MDT/1440-1450 EDT

Introduction to Strategic Foresight Activity

- 10-minute briefing by Dr. Whitney Lackenbauer and Dr. Nancy Teeple (Fulbright, NAADSN) (Confirmed).
- Goal: to produce a report on the applicability of NATO SFA trends to North American Arctic defence and security futures, to support efforts to develop coordinated strategies to anticipate and respond to potential risks, as well as taking advantage of opportunities that arise from a rapidly changing, complex security environment.

1050-1100 AKDT/1250-1300 MDT/1450-1500 EDT

Break

1100-1200 AKDT/1300-1400 MDT/1500-1600 EDT

Strategic Foresight Activity: Converting Themes and Trends into Indicators of Threat/Risk

- Over the last eight months, the North American and Arctic Defence and Security Network (NAADSN) has applied the NATO Strategic Foresight Analysis (SFA) findings to Canadian Arctic defence and security policy and to help frame a conceptual model that anticipates and conveys an understanding of the future Arctic security environment.
    - In advance of the ACCUSARS workshop, participants will be provided with a short, draft narrative (akin to the NATO SFA theme chapters) describing relationships between NATO SFA trends, and Arctic defence and security implications across various scales (global, regional, national), and, ideally, identifying key indicators that might suggest changing risk or threat levels in the defence and security domains.
    - Do participants agree with the assumptions and projections? Do they apply to the North American Arctic as a whole?

- Based on these observations and discussions, what are the primary indicators of changing risk or threat levels to the North American Arctic?

- In six (6) planned breakout groups, ACCUSARS participants will assess the North American Arctic defence/defense and security implications of one theme described in the 2017 NATO SFA (political, human, economics/resources, and environment) in detail.
- Each breakout group targeting one of the major themes identified by the 2017 NATO Strategic Framework Assessment (SFA) as particularly relevant to defence/defense and security implications in the North American Arctic. Brief descriptions of each theme will be provided by the workshop planners, as well as placemats for each respective theme, which provide a description of the risks, threats, and challenges associated with each theme as they relate to the most recent U.S. documents on Arctic strategy. These placemats provide complementary information to the SFA report, which details the Canadian perspective. The six breakout themes, including the assigned breakout group moderator as listed below.

  - Group 1: Political: International / Governance Challenges - Moderated by Dr. Rob Huebert, University of Calgary, Calgary Alberta. (Confirmed).
  - Group 2: Political: Regional / Circumpolar / North America - Moderated by Troy Bouffard, CASR, University of Alaska Fairbanks. (Confirmed).
  - Group 3: Political: National / North American Arctic - Moderated by Church Kee, ADAC, University of Alaska Anchorage. (Confirmed).
  - Group 4: Human Security - Moderated by Elizabeth "Ellee" Matthews, ADAC, University of Alaska Anchorage. (Confirmed).
  - Group 5: Environmental - Moderated by Dr. Paul Berkman, Tufts University, Medford Massachusetts. (Confirmed).
  - Group 6: Economic / Resources - Moderated by Dr. Whitney Lackenbauer, Trent University, Peterborough, Ontario. (Confirmed).

1200-1220 AKDT/1400-1420 MDT/1600-1620 EDT

Strategic Foresight Activity - reports and discussion

1220-1230 AKDT/1420-1430 MDT/1620-1630 EDT

Daily Wrap-Up and Agenda for Day 2 (Led by Whitney and Church)

Friday, 18 September 2020

0830-1230 AKDT / 1030-1430 MDT/1230-1630 EDT

Workshop Day 2

0830-0840 AKDT/1030-1040 MDT/1230-1240 EDT

Administrative remarks by Dr. Whitney Lackenbauer, Network Lead, North American Arctic Defence and Security Network, Trent University, and Church Kee, Executive Director, Arctic Domain Awareness Center, University of Alaska

0840-0950 AKDT/1040-1150 MDT/1240-1350 EDT

The Homeland is Not a Sanctuary: Capabilities and Strategic Messaging (roundtable)

- The Commander NORAD/USNORTHCOM, in recent testimonies to Congress, has described the North American homeland as no longer a sanctuary owing to evolving threats. How well known are these risks and threats to the Canadian and American populace, politicians, and by policy makers? What is the realistic scope of responsibility that CANUS Defense/Defence and Security focused teams can assume in the Arctic, particularly given resource constraints and competing global demands? What additional resources might be required to meet current and future expectations?

Panel Moderator: by Church Kee

  - University of Manitoba/NAADSN: Dr. Andrea Charron (Confirmed)
  - U.S. Department of Homeland Security reflections: Mr. Sean Moon, DHS Arctic Policy Department of Homeland Security, Washington D.C. (Confirmed).
  - U.S. Coast Guard reflections: Mr. Shannon Jenkins, USCG Senior Arctic Policy Advisor, Headquarters U.S. Coast Guard, Washington D.C. (Confirmed).
  - Canadian Coast Guard Fleet: Capt(N) (ret'd) Derek Moss, Senior Director Ottawa Ontario (Confirmed).
  - Canada Army: BGen Louis Lapointe, Deputy Commander, USARAK Joint Base Elmendorf-Richardson, Alaska (Confirmed).
  - USAF: NORAD J3 Brig Gen Pete "Coach" Fesler Colorado Springs, Colorado (Confirmed).

0950-1040 AKDT/1150-1240 MDT/1350-1440 EDT:

Operational Insights: Gaps, Seams, and Best Practices (roundtable)

- What are the roles of land, sea, air, and/or special operations forces, as well as other government departments/agencies, in demonstrating sovereignty, enforcing laws, and exercising deterrence against activities that undermine or threaten to undermine CANUS interests in the North American Arctic? What forms and level of surveillance are required? How do we operate in this environment to achieve these effects? How can CANUS practitioner's better share "best practices"?

Panel Moderator: Troy Bouffard, Center for Arctic Security and Resilience, UAF, Fairbanks, Alaska.

  - US 2nd Fleet (TBC), RAdm Steve Waddell, RCN, Vice Commander, Norfolk Virginia (Confirmed).
  - International Cooperation Engagement Program for Polar Research (ICE-PPR), Mr. John Woods, Office of Naval Research, Washington D.C. (Confirmed)
  - Department of Defense Advisor, Dr. Lil Alessa, Presidential Professor, University of Idaho, Moscow Idaho (Confirmed).
  - Canadian Defence Research and Development, Adrienne Turnbull, Department of National Defence R&D Center, Ottawa, Ontario (Confirmed).
  - Arctic Domain Awareness Center Maj Gen (Ret), Church Kee, USAF, Executive Director, UAA, Anchorage, Alaska (Confirmed).

1040-1050 AKDT/1240-1250 MDT/1440-1450 EDT

Break

1050-1100 AKDT/1250-1300 MDT/1450-1300 EDT

Introduction to Setting North American Arctic Research *Priorities* Activity

- 10-minute briefing by Dr. Nettie Labelle-Hamer Interim Vice Chancellor for Research and Troy Bouffard Associate Director, Center of Arctic Security and Resilience, UAF, Fairbanks, Alaska (Confirmed).

1100-1200 AKDT/1300-1400 MDT/1300-1400 EDT

Setting North American Arctic Research Priorities: Threats Through and To the North American Arctic

- In four (4) breakout groups, ACCUSARS participants will identify key priorities for North American defence/defense and security collaboration. Given the changing nature of the threats through/to/in the North American Arctic, are we investing in the right capabilities? How can research & development help to identify and develop other capabilities that would support CANUS objectives in the Arctic? Breakout group monitors:
  - Group 1: Aerospace Domain: Dr. Nettie La Belle-Hamer, UAF, Fairbanks, Alaska (Confirmed)
  - Group 2: Maritime Domain: Church Kee/ ADAC, UAA, Anchorage, Alaska (Confirmed).
  - Group 3: Land Domain: Dr. Nancy Teeple, NAADSN, Trent University, Peterborough Ontario (Confirmed)
  - Group 4: Information Domain: Dr. Whitney Lackenbauer, Trent University, Peterborough, Ontario (Confirmed).

1200-1220 AKDT/1400-1420 MDT/1600-1620 EDT

Arctic Research Priorities Activity - reports and discussion

1220-1230 AKDT/1420-1430/1620-1630 EDT

Final workshop wrap-up remarks by Church Kee and Whitney Lackenbauer

Workshop venue - Online via Zoom.

Day 1 (17 Sep 2020)
Join Zoom Meeting

ID: 96674058524
Password: 818472

(US) +1 312-626-6799

96674058524@zoomcrc.com

Passcode: 818472

Day 2 (18 Sep 2020)
Join Zoom Meeting

ID: 98126975611
Password: 331986

(US) +1 929-205-6099

98126975611@zoomcrc.com

Passcode: 331986

Workshop method - Panel presentations followed by breakout group reflections, which is captured and promulgated via a comprehensive report.

Workshop objective - Workshop planners seek insights from workshop participants for their professional and informed perspectives in order to create a report of concerns, opportunities, recommendations and inquiries to address anticipated challenges to the medium and longer term North American Arctic security environment. Notes taken during the meeting will be formed into a summary report, allowing coordination across the community of planners. Once finalized, the report will be provided to the community of CANUS Arctic Security Professionals. The report will also be shared with the workshop planner's respective Arctic Research Community of Interest. A tailored journal article and/or other deliverables may also be suitable follow-on considerations.

Subsequent Workshops:

- January 2021 – ACCUSARS2: Threats to the Approaches to North American Arctic
- May/June 2021 – ACCUSARS3: Threats Through/In the North American Arctic