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ALCOM Arctic Symposium 2022 (AAS22)

The Horizon Beyond for the
High North

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Symposium Report





Alaskan Command Arctic Symposium 2022 Report: The Horizon Beyond for the High North

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AAS22... the Horizon Beyond for the High North



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FORWARD

19 December 2022

The dynamically changing Arctic and the increasingly complex security and defense dimension of the Arctic create a need for improved understanding and thoughtful discussion in assessing and addressing Arctic challenges and opportunities.

As the U.S. Northern Command Lead for Arctic Affairs, I remain committed to better understanding, planning, and collaborating with our partners on Arctic issues important to our mutual national interests. With increased global interest and activity in the Arctic, there is a particular need to advance our collective understanding of the multi-faceted dynamics across the region...from the physical environment to viewpoints of Indigenous Arctic residents; from commercial interests to an understanding of security and defense concerns; and of course, the impact of climate change across the region.

I would like to thank all who participated in Arctic Symposium 2022, especially the moderators and panelists who provided content for the rich discussions which followed. A special thanks to the new Ted Stevens Center for Arctic Security Studies and their mission partners – the Arctic Domain Awareness Center, the University of Alaska Anchorage, and Advanced Concepts and Technologies, International – for planning and executing this event, and for the behind-the-scenes support required to make this symposium a success.

We hope you found the Alaskan Command Arctic Symposium 2022 informative and insightful, and that it enhanced our efforts to fully assess our collective missions and associated requirements in the region.



DAVID S. NAHOM
Lieutenant General, USAF
Commander, Alaskan NORAD Region,
Alaskan Command and Eleventh Air Force



AAS22... the Horizon Beyond for the High North





Figure 1: AAS22 Group photo, 3 May 2022. Image Source: TSC.

EXECUTIVE SUMMARY

Alaskan Command (ALCOM) Arctic Symposium 2022 (AAS22) took place in Anchorage, Alaska from 2-6 May 2022. Arctic Indigenous leaders, senior government officials from the United States, allies and partners, Alaska government leaders, and other Arctic experts representing a wide array of organizations provided perspectives and participated in significant, diverse, and focused discussions and activities.

AAS22 sought to improve participant understanding of the challenges in the complicated and complex environment that describes the new circumpolar north. Throughout the symposium, moderators and active participants shared their insights on needed solutions to address and potentially reduce defense and security risks. With its motto of “*The Horizon Beyond for the High North*,” AAS22 utilized diverse methods to review the past, address the present, and look to the future of the Arctic, with a particular focus to the emerging defense and security landscape of the region.

AAS22 “Day 0” (2 May) featured an ALCOM-hosted classified tabletop exercise and TSC-hosted Arctic Regional Security Orientation Course Executive Seminar, the TSC Arctic “fundamental’s program.” AAS22 “Day 1” featured seven multidimensional panels with subject matter experts who addressed a broad array of principal issues affecting or influencing the Arctic security environment. AAS22 “Day 2” featured an Arctic Crisis Response Tabletop Exercise and an Academic and Industry Showcase as well as field activities in the local area. AAS22 “Day 3” included several keynote addresses, a U.S. Coast Guard-led Arctic Security Strategic Foresight Exercise, and a speech from an Alaska Native Claims Settlement Act (ANCSA) founding father. Keynote addresses included speeches from the Commanders of U.S. Northern Command and U.S. Strategic Command, the former Commander of Naval Forces Europe, PACAF and ALCOM Senior Enlisted Leaders, and a presentation by the multinational Arctic Security Forces Roundtable. AAS22 “Day 4” featured key discussions from U.S. defense policy leaders and Congressional leaders focused on the Arctic and important addresses from a multinational military leader panel and the National Guard Arctic Interest Council.

A key tool to enable unprecedented participation was the use of a commercial application that allowed each in-person and virtual attendee to offer questions, insights, and recommendations. With the rise of new innovations of audience participation software, leveraging such applications will prove invaluable for conference analytics. This was certainly the case throughout AAS22. Note, while a specific conference participation was used, there is no Federal or DoD endorsement implied.

While the topics, discussions, and the information exchanged during AAS22 covered a broad range of security issues, the major recurring themes which emerged over the course of four days were: *Teamwork in the*



Arctic, Competition across the Arctic, and Emerging Infrastructure Needs to Secure and Protect U.S. Ally and Partner Interests within the Arctic Region.

A requisite to effective teamwork is understanding the culture of the various groups or agencies involved. Also essential to cooperation and collaboration is sharing of information and data. Engaging with local communities is vital to understand, appreciate, and address concerns as highlighted from their unique and insightful perspectives. AAS22 advanced several insights that collectively served to characterize the ever increasing needs to improve awareness of, and aid in responding to, the multifaceted set of safety, security, and defense matters affecting U.S., allied, and partner interests across the Arctic. AAS22 participants sounded a keen sense of urgency in such measures, but participants indicated the need for inclusive collaboration to ensure partners are not left behind.¹

Changing climate conditions across the Arctic are affecting the security environment. Warming in and across the high latitudes is contributing to an Ice-Diminished Arctic (particularly noting the decrease in ice volume of the Arctic sea-ice cryosphere and reductions in the Greenland ice sheet), which continues to weaken access barriers to the region. The resultant access to waterways and resources have energized allies and partners, as well as strategic competitors, all of whom see the importance and potential of the Arctic and seek to be part of the conversation. To that end, it is important to understand the stated goals of our strategic competitors, and how their actions align with their words. Experts have noted while the People’s Republic of China (PRC) might comply with international law, Beijing’s actions signal a lack of respect for the international rules-based order.

Similarly, Russia’s February 2022 invasion of Ukraine, following its prior invasion and annexation of Crimea in 2014 and subsequent fostering hostilities in eastern Ukraine, demonstrates a continued lack of adherence to both international law and compliance to the established rules-based order. Many pondered how this might impact the Arctic and debated whether the Arctic Council should engage with Russia, while others highlighted such policy choices need conditions-based parameters (such as a cessation of Russian hostilities in Ukraine and withdrawal of occupying Russian forces). Rising geopolitical tensions in Europe and in East Asia have also resulted in concerns about access to the Arctic and its considerable resources.

Arctic resources can potentially provide opportunities for industries such as mineral mining, geothermal, space, and shipping. However, it is expensive to operate in this environment, and infrastructure is generally lacking across the Arctic. This not only includes transportation and physical infrastructure – such as lack of housing for the workforce – but also communication infrastructure. Increased connectivity will not only increase domain awareness in both the defense and civilian sectors but will also greatly benefit Indigenous peoples living in remote communities. Similarly, infrastructure development is important not only for industry and community development, but also for research and analysis.

AAS22 was not only an opportunity to share information and increase understanding on a wide variety of issues facing the Arctic and the impacts on the people who live therein, but it also provided a networking opportunity, an opportunity to forge new relationships and to strengthen existing ties between the public and private sector; between defense and security professionals (to include senior leaders); and between key interagency and international leaders, and Arctic subject matter experts.

¹ https://www.slido.com/?experience_id=1



INTRODUCTION



Alaskan Command (ALCOM), in support of United States Northern Command (USNORTHCOM), hosted *Arctic Symposium 2022 (AAS22)*, a symposium about the Arctic, conducted near the Arctic. It was ALCOM's signature Arctic convening and convergence event for fiscal year 2022. An invitation only event with approximately 280 in-person and 180 virtual registered participants, AAS22 included attendees from North America, the Indo-Pacific and European regions. The event generated much interest and provided a remarkable networking opportunity for all.

A principal goal of AAS22 was to support the USNORTHCOM Arctic mission and to sustain Commander, Alaskan Command "USNORTHCOM Lead for Arctic Affairs" responsibilities. To achieve this goal, AAS22 enabled a focused exchange of insights in associated discussion via a select and multidisciplinary panel of experts, oriented on the Arctic.

AAS22 included senior Department of Defense (DoD) leaders and participating leaders from the U.S. interagency, members of the Alaskan Congressional Delegation, State of Alaska senior leaders, members of policy institutes and think tanks, industry representatives, academics, scientists, researchers, and importantly, Arctic Indigenous leaders (to include Alaska Federation of Natives leaders). Security and defense leaders and Arctic experts from Canada and European allies and partners also participated. As an extension of Chatham-House protocols, all AAS22 events were closed to the press and public.

AAS22 took place at the Dena'ina Civic and Convention Center in Anchorage, Alaska from 3-6 May 2022. It was planned principally as an in-person event, with options for virtual participation via Zoom.

Two advance events hosted on Joint Base Elmendorf-Richardson took place on 2 May, considered AAS22 "Day Zero." ALCOM hosted a classified tabletop exercise for invited participants, while the Ted Stevens Center for Arctic Security Studies (TSC), the Department of Defense's newest Regional Center, conducted an Arctic Regional Security Orientation Course Executive Seminar.



AAS22 intentionally sought to connect with two other events which took place in Alaska during the same week:

- ALCOM's 75th Anniversary event, on 6 May with afternoon events at JBER and an evening event in Anchorage.
- The Arctic Security Forces Roundtable (ASFR), an international general/flag officer-level event co-chaired by U.S. European Command (USEUCOM) and the Norwegian Defense staff, executed 3-5 May in Fairbanks; ASFR co-chairs joined AAS22 for a very insightful post-event brief on the afternoon of 5 May at AAS22.

Detailed planning, organizing, execution and support for ALCOM Arctic Symposium 2022 was provided by the TSC and its mission partners – the Arctic Domain Awareness Center (ADAC), hosted at the University of Alaska Anchorage, and Advanced Concepts and Technologies, International LLC (ACT-I).





The AAS22 “Event Hub” on the ADAC website served as the one-stop shop for unclassified materials for the entire series of 2-6 May events.

ADAC hosts the AAS22 information at: <https://arcticdomainawarenesscenter.org/Events>.

Duplicate AAS22 information is available on the Ted Stevens Center website www.tedstevensarcticcenter.org

A key tool to enable unprecedented participant participation (compared to prior Arctic Symposiums) was the use of a commercial application that allowed in-person and virtual attendee to offer questions, insights, and recommendations. For AAS22, The Stevens Center selected the use of “Slido,”² a U.S. based company that offers a subscription service to provide an audience participation application and established a standard contract for use in TSC supported venues. As previously discussed, with the rise of new innovations of audience participation software, leveraging such applications will prove invaluable for conference analytics. This was certainly the case throughout AAS22. Note, while Slido was suitably used in support of AAS22 conference participation, there is no U.S. Federal or DoD endorsement implied.



Figure 2: Mrs. Catherine Stevens, Lt Gen David Krumm, and Randy "Church" Kee. Image Source: TSC

² See <https://slido.com>

BACKGROUND

ALCOM Arctic Symposia and Arctic Senior Leader Summit (ASLS) events are provided in support of USNORTHCOM and serve to help fulfill ALCOM engagement-oriented tasks as the USNORTHCOM Lead for Arctic Affairs. They are focused on the USNORTHCOM Area of Responsibility (the North American Arctic), but inclusive of the USNORTHCOM Area of Interest (the greater pan-Arctic region) and accordingly seek to also gain insights from the USEUCOM and U.S. Indo-Pacific Command areas of responsibility. Participants include a multidisciplinary community of leaders, policymakers, academics, and subject matter experts (SMEs) from the U.S., Canada, other allies, and partners. These ALCOM Arctic events increase understanding and awareness of the Arctic region, enhance cooperation between defense, public, and private sectors, strengthen ties among stakeholders, and establish a sense of “community.” These relationships may prove critical in times of crisis or contingency action.



Figure 3: Day 1 Slido Word Cloud, Participant Locations. Image Source: TSC

Prior to AAS22, ALCOM executed two Arctic Symposia and two Arctic Senior Leader Seminars:

ALCOM conducted its inaugural **Arctic Maritime Symposium (AMS18)** in August 2018 at JBER. Aligned with strategic U.S. National Defense and Security Strategies, and DoD Arctic Strategy, AMS 2018 included U.S. Congressional, Federal, State of Alaska, Tribal, and international leaders, along with Arctic SMEs from across academia and institutions. The principal outcomes of AMS18 were to inform participants on a wide range of defense and security concerns, while establishing a new network of thought leaders to Arctic security and defense matters.



The inaugural ALCOM **Arctic Senior Leader Summit (ASLS19)** was held in January 2019 at National Defense University, Ft. McNair, Washington, D.C. This follow-up meeting from the initial AMS18 provided an important exchange between a select group of senior DoD and interagency leaders, with key Canadian and North Atlantic Treaty Organization (NATO) Nordic ally and partner representatives. ASLS19 continued momentum from AMS18 with specific presentations which identified the overall Arctic security environment, specific state and non-state threats, Service and unified command Arctic capabilities, and a focused look on great power competition within the circumpolar North.



The second **ALCOM Arctic Symposium (AAS19)** was conducted in November 2019 at the University of Alaska Fairbanks (UAF). AAS19 provided a series of discussions in support of future engagements and exercises to advance Arctic joint interoperability across the military Services, to include the U.S. Coast Guard, while also increasing whole of government collaboration to better secure U.S. Arctic interests. Additional AAS19 outcomes included advanced discussions to support multinational cooperation among like-minded Arctic nations, and to increased awareness of the unique challenges faced on the “western Arctic” (oriented to and North of the Bering, Chukchi, and Beaufort Seas) contrasted against the “eastern Arctic,” (oriented to and North of the Greenland, Norwegian and Barents Seas).



The second **Arctic Senior Leader Summit (ASLS21)** was held virtually in March 2021. This follow-up meeting from AAS19 provided an important opportunity for exchange between a select group of senior DoD and interagency leaders, with representatives from key Canadian and NATO Nordic allies and partners. ASLS21 continued momentum from AAS19 with specific presentations designed to better understand challenges, assess risks, and improve partnerships.



Co-planning and participation in the Symposia and Summits by leaders from Indigenous Arctic communities has been a hallmark of these events and has been essential to gaining a broader understanding of the region, its original inhabitants, and their values and interests. The perspectives they bring are invaluable.



Figure 4: Mr. Steve MacLean, Mr. Hugh Patkotak Sr., Ms. Gail R. Schubert, and Ms. Liz Qualluq Cravalho participate in an AAS22 Day 1 Panel. Image Source: TSC



[Summary Review of the Arctic Symposium 2022](#)

3 MAY: AAS22 DAY 1 – PLENARY DAY

AAS22 opening day provided participants with a broad survey of issues affecting or influencing the current Arctic security environment. Panels provided both in-person and virtual presentations.

AAS22 Opening Ceremonies

AAS22 began with opening ceremonies. The ceremonies included the following:

- Honor Guard and Posting of the Colors, JBER Color Guard
- National Anthem, by the 9th U.S. Army Band, JBER
- Opening prayer, Chaplain, Capt. Kristina Norman, 673d Air Base Wing, JBER
- Lighting of a Ceremonial Seal Oil Lamp. Ms. Gail Schubert, President & CEO, Bering Straits Native Corporation, Anchorage, Alaska, supported by Mr. Nagruk Harcharek, Ukpeaġvik Inupiat Cooperation, Utqiagvik, Alaska
- Moment of silence for the conflict in Ukraine
- Short introductory video provided by ADAC, University of Alaska Anchorage
 - Video Link: <https://youtu.be/dj2V0H469fQ>



Figure 5: Traditional Seal Oil Lamp. Image Source: Blogspot.com



Figure 6: AAS22 Opening Video screen shot. Image Source: Arctic Domain Awareness Center, UAA



Figure 7: Mr. Nagruk Harcharek and Ms. Gail Schubert participate in AAS22 Opening Ceremonies. Image Source: TSC

AAS22 Introduction and Welcome Messages

The Ted Stevens Center for Arctic Security Studies (TSC) Senior Advisor for Arctic Security Affairs, Major General USAF (Ret) Randy “Church” Kee moderated the introduction and welcoming remarks panel, with welcoming remarks by:

- Commander ANR, ALCOM, and 11 AF: Lt Gen David Krumm, USAF, the host of AAS22
- Lt Governor Kevin Meyer, State of Alaska
- Chancellor Sean Parnell, University of Alaska System/University of Alaska Anchorage
- The Honorable Mayor Dave Bronson, Municipality of Anchorage, Alaska
- Special Guest Appearance by Mrs. Catherine Stevens, widow of the late Senator Ted Stevens



Figure 8: Arctic Leaders provide welcome messages during AAS22 Day 1. Image Source: TSC

Panel 1 – The emerging Arctic...security trends from the view of 10,000 years.

Following the opening ceremonies and welcoming remarks was the first panel of the day, “*The emerging Arctic... security trends from the view of 10,000 years.*” The panel was designed to be a “fireside chat” with North American Arctic leaders to discuss the range of current security-related challenges and opportunities affecting Arctic residents. Speakers addressed the current landscape of economic, environmental, and traditional security challenges regionally, from an Arctic “local and placed based” knowledge vantage.

Moderated by: Mr. Craig Fleener, Deputy Advisor, Arctic Security Affairs, Ted Stevens Center for Arctic Security Studies

Panelists:

- Ms. Elizabeth “Liz” Qaulluq Cravalho, Commissioner, U.S. Arctic Research Commission; Vice President of Lands, NANA Corporation, Kotzebue, Alaska
- Ms. Vivian Anginran Korthuis, Chief Executive Officer of Association of Village Council Presidents, Bethel, Alaska
- Ms. Gail Schubert, President & CEO, Bering Straits Native Corporation, Anchorage, Alaska
- Mr. Hugh Patkotak Sr., President & CEO, Olgoonik Corporation, Wainwright, Alaska
- Mr. Steve MacLean, Director, U.S. Arctic Program, World Wildlife Fund, Alaska, Anchorage, Alaska
- Mr. Joey Crum, President/CEO of Northern Industrial Training (NIT), Palmer, Alaska

As the panelists discussed the above, a few issues came up important not only to local communities, but for Arctic security as a whole. The first was climate change. Native peoples have lived in and across the Arctic region for over 10,000 years and the way of life in many communities is dependent on the health of the environment. A thriving ocean was of particular concern to several panelists.



Figure 9: AAS22 Opening Video screen shot. Image Source: ADAC, UAA

The second issue that came up was the continuing lack of infrastructure, particularly in and across the North American Arctic. The panel described the sparseness of physical infrastructure presented major hurdles that have not yet been overcome. The final issue raised by the panelists was the persistent need to seek better/more effective communications. It was stressed that communication with and between local communities is vital to security in the Arctic.



Figure 10: Panel 1 – The emerging Arctic...security trends from the view of 10,000 years. Image Source: TSC

Panel 2 – The changing Arctic environment: Arctic research in support of DoD’s Arctic missions.

A panel of Arctic science experts provided insight into their organization’s mission, capacities, capabilities, assets, and expertise that can support DoD-related needs and requirements. These include domain awareness, impacts of climate change on infrastructure and operations, short and long-term planning objectives, and the ever evolving need to identify and address DoD’s growing needs for the development, incorporation, and utilization of unique Arctic S&T throughout its broad range of mission sets.

Moderated by: Dr. Mike Sfraga, Chair, U.S. Arctic Research Commission, and Chair, Polar Institute, Woodrow Wilson Center for Scholars, Washington D.C.

Panelists:

- Dr. Brendan Kelly, Executive Director of the Study of Environmental Arctic Change and Professor of Marine Biology at the International Arctic Research Center, University of Alaska Fairbanks (UAF), Fairbanks, Alaska
- Dr. Hajo Eicken, Director, International Arctic Research Center, UAF, Fairbanks, Alaska
- Dr. John Farrell, Executive Director, U.S. Arctic Research Commission, Washington D.C.
- Dr. Larry Hinzman, Assistant Director of Polar Sciences in the White House Office of Science and Technology Policy and the Executive Director of the Interagency Arctic Research Policy Committee

- Dr. Scott Lindsey, Director, Alaska Region, National Weather Service, Anchorage, Alaska
- Ms. Sheyna Wisdom, Executive Director, Alaska Ocean Observation System (AOOS), Anchorage, Alaska

The panelists began by discussing the need to be able to keep up with the rapidly changing Arctic. According to the panelists, the Arctic must be viewed not as a single cohesive region, but as a complex and constantly changing system of systems. To keep pace, the community must leverage emerging technology to gain situational awareness (such as artificial intelligence, or AI) and both governmental and nongovernmental scientific organizations must place a greater emphasis on collaboration and communication. These partnerships will be the way forward to the quick, innovative solutions needed to properly address Arctic issues.

Following the discussion of the strategic points, panelists took online questions from Slido, the live Q&A, and polling software used throughout the Symposium. The first question was addressed to the entire panel, and it asked the panelists to address the challenge of getting different organizations to work together. The panelists once again stressed the importance of communication and collaboration between organizations. Furthermore, research and science are not useful without ways of applying them (i.e., through organizations). The final question was addressed to Alaska Ocean Observation System, asking members of that organization to elaborate on what their major challenges are in the Arctic. The panelists indicated the main Arctic challenges for the organization are lack of funding, need for more durable equipment, and the need for more data than provided by current satellites.



Figure 11: Panel 2 – The changing Arctic environment: Arctic research in support of DoD Arctic missions. Image Source: TSC

Panel 3 – The changing Arctic economy – what does the future hold?

A panel of experts addressed the factors of the Arctic economy from resource extraction, initiatives to adapt to alternative economic measures, and relooking aspects of entrepreneurship. These experts described the current and developing efforts to access and develop the natural resources of the region, and the potential for economic progress within the Arctic.

Moderated by: Dr. Kathryn Friedman, Emeritus Professor, University at Buffalo, Global Fellow, Woodrow Wilson International Center for Scholars (Canada Institute). University at Buffalo, Buffalo, New York.

Panelists:

- Mr. Bill Patrowicz, CEO, Kaiser Global, Developer, The Reykjavík Institute, Reykjavik, Iceland
- Dr. Tim Gallaudet, RDML, USN (Ret), CEO Ocean STL Consulting / Former Assistant Secretary of Commerce and Deputy NOAA Administrator / Former Oceanographer of the Navy / Fellow at The Explorers Club, Maryland
- Lt. Gov. Mead Treadwell, State of Alaska, and Chair, U.S. Arctic Research Commission. President and CEO, Qilak LNG, LLC, Anchorage Alaska
- Mr. Eric Velte/designated representative, Arctic Slope Regional Corporation (ASRC) Federal Senior Vice President and Chief Technology Officer, ASRC Federal, Moorestown, New Jersey
- Inga Banshchikova, Research Policy Assistant for the WWF US Arctic Program, World Wildlife Fund Arctic Program, Anchorage, Alaska
- Dr. Heather Exner-Pirot, Member of the Saskatchewan Indigenous Economic Development Network and a Senior Consultant with Morris Interactive, Calgary, Alberta



Figure 12: Panel 3 – The changing Arctic economy – what does the future hold? Image Source: TSC

The panelists began by discussing the abundance of Arctic resources. The Arctic fuels, feeds, provisions, and protects the world. The Arctic helps feed the world, via two of the richest fisheries on the planet. It also helps fuel the world with oil, gas, geothermal, wind, solar, and hydroelectric power. The magnetic poles serve to help protect the world from radiation. It connects the world with global aviation, and even limited shipping.

The discussion then moved towards the factors driving the Arctic economy and its potential future. The World Bank suggests global mineral production may be quintupled to realize environmental goals; these resources could come from the Arctic. Hydrocarbon fuel will continue to be used, but LNG can be leveraged as a stepping-stone towards green energy, and it is found in abundance in the Arctic.



Figure 13: Panel 3 virtual panelists. Image Source: TSC

As the overall economy becomes more space-based, the Arctic can be included through its polar orbit satellites. Though more ground station services in Alaska and other locations in the Arctic will be needed to help boost involvement within satellite operating systems. Ocean mapping is another avenue where modeling needs to be improved in order to build sustainable offshore projects. Weather monitoring is also integral to the growing Arctic economy and real-time environmental data is priceless to sustainable

development. Autonomous underwater vehicle (AUV) and drone mapping can also be leveraged to improve economic activity within the Arctic.

Panelists described that industry will likely need to be incentivized through government action to create development in the Arctic. Panelists felt national governments across the Arctic, in many instances, are not doing enough to protect or advance their respective interests in the region. Panelists shared their view that the U.S. continues to lag other nations in critical investments such as infrastructure, transportation, energy development, and communications. Panelists argued that businesses that do arise within the region should be assisted in their efforts towards maintaining environmental and sustainability goals simply to help such initiatives create benefit at lowest practical risk. The implications of poor Arctic development have potential consequences; therefore, traditional industry practices alone will not likely suffice.



Figure 14: Panel 3 – Changing Arctic Economy Slido Word Cloud. Image Source: TSC

The panel closed with the suggestion that the global community must transform our energy needs and use this opportunity to become a place of innovation that will (in part) pioneer a newer, greener, version of our Arctic economy.

Panel 4 – What are our strategic competitors up to...and how should we respond?

A panel of experts highlighted the respective Arctic oriented initiatives and activities of the Russian Federation and the People’s Republic of China (PRC) from an unclassified viewpoint. Panelists sketched the security challenges posed by U.S., Allied and Partner “strategic competitors” in the Arctic and outline approaches to cope/manage the problem.

Moderated by: Matt Bell, RADM, USCG (Ret), Dean, School of Arctic and Climate Studies, Ted Stevens Center for Arctic Security Studies, Kodiak, Alaska.

Panelists:

- Professor Michael (Mike) Burgoyne, Daniel K. Inouye Center for Asia-Pacific Studies, Fort DeRussy Hawaii
- Professor Wade Turvold, Daniel K. Inouye Center for Asia-Pacific Studies, Fort DeRussy, Hawaii
- Ms. Katarina Kertysova, Policy Fellow with the European Leadership Network (ELN) and Global Fellow, Polar Institute, Woodrow Wilson Center
- Ms. Liselotte Odgaard, Senior Fellow, Hudson Institute, and faculty, Norwegian Institute for Defense Studies, Oslo, Norway
- Dr. Robert Huebert, Associate Professor of Political Science, University of Calgary, North American & Arctic Defense and Security (NAADSN) Coordinator
- Dr. Lilian Alessa, Chief Scientist, U.S. Special Operations Command and President’s Professor, University of Idaho, Moscow, Idaho

The panelists began with a discussion of the People’s Republic of China (PRC) and its activities in the Arctic region. The PRC detailed its approach to the Arctic in a 2018 briefing. Panelists surmised the Arctic is a priority for the PRC and the PRC will continue to be persistent in pursuing their interests.

These speakers noted PRC efforts have been blunted due to Coronavirus 2019 (COVID19) and Russia’s second illegal and immoral invasion of Ukraine, and it is not known how or when the PRC will enable their prior Arctic activities to fully resume. Panelists stated the Arctic region requires \$1.3 trillion in development every year till 2030 to meet known/current infrastructure needs. These speakers noted it must be accepted that the PRC is interested in the Arctic, specifically investing, and there are countries that will support those interests financially. The panel then discussed some things that can be done to ensure that PRC activities are fully understood and tracked. First, invest in education in Chinese literature, language, and culture to understand their positions. An enduring expert capability must be developed to decipher open-source material available to use. Second, U.S. and like-minded Allies & partners need to prioritize a rules-based international order and continue to work together. The PRC prefers bilateral negotiations, and a united front is needed when conducting negotiations with the PRC.

The panel then moved on to the topic of Russia. Speakers noted the Russian Federation made a serious geopolitical blunder in Ukraine that might play to PRC advantage in the Arctic. Russia is spending its disposable income on Ukraine, while the EU, U.S., and others are also shifting budgets towards this conflict. This global shift of resources will likely affect the ways in which Russia and the PRC jointly invest to develop the Arctic. The growing prospect that Finland and Sweden join NATO would mean that seven of the eight arctic nations would be under NATO, therefore NATO should strongly consider developing an Arctic Security policy. The panel mentioned that today’s “South China Sea’ may be tomorrow’s “Arctic Ocean.”



Figure 15: Panel 4 – What are our strategic competitors up to...and how should we respond? Image Source: TSC

Panelists shared their views that Russia has been trying to avoid direct conflict with NATO in the Arctic. Their military is overstretched and focused on Ukraine, showing that they are not currently focused on the Arctic. Panelists felt that Russia taking action to conduct military occupation within the Arctic cannot be ruled out, especially because the risk of misinterpretation of Russia's intentions or ambitions potentially have considerable consequences. Panelists noted that Russia cannot be trusted to uphold environmental agreements, international law, or other bilateral or multilateral agreements. Accordingly, speakers argued strong consideration for additional safety measures be put in place for not only military reasons, but also for emergency/crisis response, specifically in environmentally sensitive areas.

The prospect of how a shared Arctic border under NATO with Finland and Sweden joining is complex and requires more thought, study, and planning, especially as the tensions between NATO and Russia change daily. Based on a reasonable assumption of Finland and Sweden becoming NATO allies, the panelists specified NATO's capabilities in the Arctic must be given priority for strengthening in order to defend this shared border. A special note is the relationship between the Nordic and Baltic nations, as Russia has maintained interests to this region formally occupied by the Soviet Union. As smaller nations between Poland and Finland, their sovereignty from any potential Russian aggression remains at elevated risk.

With current sanctions on Russia, panelists estimated that the Kremlin can only afford to operate in the Arctic at the current capacity for another year. Therefore, panelists suggested that the Kremlin's goal to develop the Northern Sea Route (NSR) will be likely be derailed due to funding issues, therefore how they proceed with these efforts should be monitored closely. Russia has an interest in maintaining presence and control in the Arctic and they may (or may likely) turn to the PRC for financial muscle to help them realize such plans.

Panelists felt that Moscow and Beijing share an interest in conducting shipping through the Arctic to the PRC. Despite historical tensions between Russia and the PRC, Beijing can also help Moscow have a stronger presence along the NSR, and digital communication tools developed by the PRC can help strengthen Russians communication presence in the Arctic. PRC investments and technology are necessary to realize the NSR's potential and for Russia to protect their assets in this region. Panelists shared their perspectives that ensuring freedom of navigation will be imperative to deter, dissuade, and prevent NSR from becoming an outlier to the rules-based order of the region.

The panel shifted the discussion to areas where improvement is needed within the Arctic. Improvement is needed in the areas of science, security operations, and the integration between these two disciplines. The panel ended with the recommendation that the U.S. should take an extremely critical look at its own security and defense needs in order to shape a better Arctic security policy.

Panel 5 – Who else is trying to become an Arctic player...and why?

A panel of experts described emerging Arctic interests and associated initiatives from an Indo-Pacific and European national vantage. As a complement and contrast from the prior session, this panel sought to sketch the current and emerging interests of the non-Arctic nations and significant organizations within those regions in the Indo-Pacific, Asian and European theaters to the region from a political, environmental, and economic vantage point.

Moderated by: Randy “Church” Kee, Maj Gen, USAF (Ret), Senior Advisor, Arctic Security Affairs, Ted Stevens Center for Arctic Security Studies

Panelists:

- Dr. Elizabeth Buchanan, Head of Research for the Royal Australian Navy Sea Power Centre, Canberra, Australia
- Maj Gen (Ret) Mats Engman, Sweden Armed Forces, Distinguished Military Fellow, Institute of Security and Development Policy, Stockholm, Sweden
- Dr. Rebecca Pincus, Assistant Professor, Strategic and Operational Research, U.S. Naval War College, Newport, Rhode Island
- Commander Rachael Gosnell, USN, affiliated with George C. Marshall Center for European Security Studies, Garmisch, Germany

The discussions began with the topic of the Arctic from the Indo-Pacific perspective. Thus far, India has not been participating in the Russian sanctions and if that relationship deepens, India could find itself in a comparable situation to that of the PRC.



Figure 16: Panel 5 – Who else is trying to become an Arctic player...and why? Image Source: TSC

The panel touched on the possibility that Russia may provide friendly countries a “good deal” that may allow these nations a chance to buy their way into the Arctic as one way to help generate much needed economic resources to offset the effect of sanctions from a large coalition of countries that seek to deter onward Russian aggressing in Ukraine.

Panelists shared that due to the war in Ukraine and Russia's need for capital, existing and new business ventures may be negotiated to where stakeholder status is sold to one of these financier countries. Currently, the PRC has a virtual monopoly on the harvesting and development of rare Earth minerals, although other nations – to include NATO ally Estonia – are starting to break into this market.

The discussion then moved briefly to the Antarctic, which is quite different from the Arctic, though there is some similarity between them coming from “dual use” infrastructure – i.e., infrastructure that is Antarctic capable is also capable in the Arctic.

The panelists then discussed the need to be aware of the risks of miscalculation in the Arctic. Interest in the Arctic is neither new nor exclusive to Arctic nations. Issues in the Arctic are more likely to come from a mistake or miscommunication rather than a strategic attack. Awareness of the number of states operating in the Arctic is necessary. Knowing exactly how these nations are interacting with Arctic states and each other will increase transparency, thus reducing the risk of problems arising from miscommunication or miscalculation.

From there, the panelists closed with a more in-depth discussion on the perspective from Europe, focusing on the impacts of Russia's invasion of Ukraine. One point made by some panelists was that this presents a new opportunity to remake and redefine the Arctic Council. In their view Russia's actions and belligerence have made fruitful dialogue impossible. This new Arctic Council would also include more perspectives from regional governments. The panel ended by stating their views that the Arctic could become a major geopolitical ground of competition in the future and that what happens in the Arctic will reflect the major geopolitical realities of the rest of the world.

Panel 6 – The closing of the Arctic frontier...every acre is claimed...now what?

A panel of experts analyze the myriad of national claims in and across the Arctic basin and seek to foresee what may happen following the adjudication of claims, particularly with regard to extended continental shelf regions.

Moderated by: Dr. Kathryn Friedman, Emeritus Professor, University at Buffalo, Global Fellow, Woodrow Wilson International Center for Scholars (Canada Institute). University at Buffalo, Buffalo, New York.

Panelists:

- Mr. Mark P. Nevitt, USN (Ret), Associate Professor of Law, Syracuse University College of Law
- Mr. Shannon Jenkins, U.S. Coast Guard Senior Arctic Policy Advisor, HQ USCG, Washington, D.C.
- Mr. Mark Rosen, Senior Vice President, and General Counsel, Center for Naval Analysis.
- RADM (Ret) Lars Saunes, Royal Norwegian Navy, Distinguished International Fellow on the faculty of the U.S. Naval War College, Newport, Rhode Island
- Mr. Sean Moon, CDR, USCG (Ret), Chief, Global Policies, U.S. Department of Homeland Security, Washington, D.C.
- Dr. Dalee Sambo Dorough, International Chair, Inuit Circumpolar Council, Anchorage, Alaska

Discussions commenced on the topic of the Arctic Council, which according to some panelists, will be more relevant than ever. Whether Russia returns or not, panelists noted the Council is a forum based on trust and nations must only be invited to the table if they can be trusted. It is a geopolitical touchpoint based on shared



interest amongst players, through scientific research, transportation, fishing, and other forms of infrastructure development. Other advisory boards such as the Inuit Circumpolar Council could help undertake the multilateral engagements that will occur in the Arctic without the Russian Federation. In terms of issues that are the subject matter of Arctic Council working groups – none of the subject matter has ceased, climate change persists, issues of shipping persist, and economic activity in the Arctic persists.

These speakers noted that alternatives to the Council should not be considered until there is a clearer picture of how things will unfold. Norway is taking over the Council from Russia next year (May 2023) and hopes that much of the day-to-day work of the Council can resume as much as possible.

Panelists noted the Russians in the Arctic are the same Russians in Ukraine, and if Council members do not speak with Russia, new forums outside of the Arctic Council will more than likely arise. Panelists emphasized cooperation and stability in the Arctic cannot be taken for granted and must be constantly strived for in order to enforce the rules-based order of the region.



Figure 17: Panel 6 – *The closing of the Arctic frontier...every acre is claimed...now what?* Image Source: TSC

Discussions then moved on to the topic of Arctic territorial claims. The panel mentioned there are many recent developments in the realm of territorial claims. For example, there is currently a case pending against Norway, stating that oil research and development (R&D) is illegal because mismanagement of these resources has global implications. There was a historic ‘norm’ that the five Arctic coastal nations should have the final say, however it is worth noting – the Arctic is increasingly being addressed by non-Arctic nations as a global asset, and region of the “global commons.”

Such activities put residents at risk, degrade sovereignty of Arctic nations, and increase the chance of damage to a fragile environment. Non-state actors range from groups that illegally harvest marine proteins to groups illegal trafficking vulnerable people to environmental protest groups.

Speakers noted non-state actors have been increasingly asserting influence within and across the region. Such activities put residents at risk, degrade sovereignty of Arctic nations, and increase the chance of damage to a fragile environment. Non-state actors range from groups that illegally harvest marine proteins to groups illegal trafficking vulnerable people to environmental protest groups.

Panelists emphasized non-state actor actions could get very messy, with or without Russian involvement. Furthermore, in the view of some panel members, classifying the Arctic as a ‘global commons’ has terrible implications for tribal groups living there and for the ability to work collaboratively among the Arctic nation-states. The pillars of the United Nations (and the rules-based order) are there to address peace, security, human rights, and development; therefore, the human rights of Arctic residents such as Indigenous communities should be carefully and deliberately considered when asserting who has the right to make decisions in the Arctic.

The panel closed discussions on the topic of the double-edged sword of climate change action and litigation. As climate change increases in importance, the influx of litigation and outside actors asserting governance rights will only continue to muddy the waters and inhibit Arctic development.

Panel 7 – The wired Arctic...assessing the impacts of new commercial investments in communications and situational awareness technologies across the pan-Arctic.

A panel of experts provided a survey of recent technological advances based on commercial investments in ground-based fiber and polar orbiting satellite networks.

Moderated by: Brig Gen (Ret) Dieter Bareihs, ACT-1 Contract Manager, Ted Stevens Center, Crystal City Virginia.

Panelists:

- General (Ret), Charles “Chuck” Jacoby, USA, Senior Strategic Advisor, Quintillion, Anchorage, Alaska
- COL (Ret) Jay Chapman, Director of Government Programs, Iridium Corporation, Washington, D.C.
- CDR Dan Lubin, U.S. Navy Reserve, Lead, Communications Sub Working Group, U.S. Situational Awareness Working Group, International Cooperative Engagement Program for Polar Research (ICE-PPR), Office of Naval Research, Washington, D.C.
- Col (Ret) Paul Curlett, IRSA (Integrated Remote Sensing of the Arctic), Mission Systems Senior Sales Lead, The Boeing Company, St. Louis, MO
- Maj Gen (Ret) Mark “Marshal” Dillon, Director of Business Development, Aurora Flight Sciences, Washington, D.C.



Figure 18: Panel 7 – The wired Arctic...assessing the impacts of new commercial investments in communications and situational awareness technologies across the pan-Arctic. Image Source: TSC

The panelists opened with a conversation on the need for broad partnerships across agencies and intergovernmental organizations operating in the Arctic. Going forward, the requirement to link subsurface, land, aerospace, and space communications infrastructure will grow. Conditions can change rapidly in the Arctic; one is only moments away from incredibly dangerous situations when operating in the region. This reality underscores the need for satellite communication networks as the first line of response, connecting remote users to the grid. Besides end-to-end communication, these satellite networks power sail-operated autonomous underwater vehicles (AUV), providing internet communication in the most inaccessible areas of the world. These networks are being leveraged in many creative ways to bring connectivity to the rural Arctic.

Some panelists then spoke about the many possibilities of unmanned flights. According to these panelists, these can improve our ability to collect data within this region. For example, one flight can carry 140 pounds of cargo without having an active pilot, thus allowing for strategic monitoring of regional activity and the distribution of resources all without the risk of having a pilot at the controls. As AUVs are a possible solution to the difficulty of mapping the oceans, unmanned flights can, too, have similar impacts on subsurface data collection.

DAY 1 – Wrap-up and Closing Remarks.

As the events of the plenary day ended, concluding remarks were provided by the overall host of the event, Commander, ANR, ALCOM, and 11 AF, Lt Gen David A. Krumm. Lt Gen Krumm thanked the lecturers and panelists for their insightful reflections. After General Krumm’s remarks, TSC Senior Advisor Randy “Church” Kee gave a brief preview of the activities to commence the following day.



Figure 19: AAS22 Banner. Image Source: TSC

4 MAY: AAS22 DAY 2 – CHOOSE YOUR ADVENTURE DAY

AAS22 Day 2 began by welcoming speakers and attendees back and a concise overview of the planned events of the day. There were two potential tracks, which participants selected in advance via the AAS22 Registration Site.

Track One: Arctic Crisis Response Tabletop Exercise (TTX) was led by the Ted Stevens Center for Arctic Security Studies and included TSC mission partners and contract support. The crisis TTX was intended to provide participants experience in addressing the dynamics in crisis response actions and activities.

Track Two: Arctic Academic and Industry Showcase. Via a moderated activity, this combined track of academic and industry presenters provided Arctic Symposium 2022 participants a current snapshot of on-going activities and new initiatives that advance science, safety, and/or security for the Arctic region.

AAS22 DAY 2 MORNING EDITION ADVENTURE TRACK 1: Unclassified Arctic Crisis Tabletop Exercise.

A guided three-move tabletop exercise where the participants formed the planning and decision team to think through the challenges of assessing each fictitious situation, determining priorities, planning, and creating a framework of response.

Moderators: Maj Gen, USAF (Ret) Randy “Church” Kee, Ted Stevens Center, Anchorage, Alaska, and Dr. Mike Sfraga, Chair, Polar Institute, Woodrow Wilson Center and Chair, U.S. Arctic Research Commission, Washington, D.C.

Exercise Facilitators: CAPT (Ret) Mike White, USCG, Maritime Advisor, Pacific NW National Laboratories, Walla Walla Washington, and Jason “Olaf” Roe, ACT-1 Media Specialist, Anchorage Alaska.

Exercise Advisors. In addition to the moderators and facilitators mentioned above, a diverse group of principally “operator focused” subject matter experts (SMEs) supported the exercise as commentators and advisors. These SMEs helped “kick start” the discussions following each exercise scenario step. This group included the following:

- Mr. Craig Fleener, Lt Col (ANG), Deputy Advisor, Arctic Security Affairs, Ted Stevens Center, Anchorage, Alaska.
- CDR Frank, “Biff” McBride, USN, Arctic Planner, Alaskan Command, Joint Base Elmendorf-Richardson, Alaska.
- Mr. Conrad Schubert, Canadian Armed Forces, Intergovernmental Affairs Advisor, Joint Task Force North, Yellowknife, Canada.
- CAPT Leanne Lusk, USCG, Commander, U.S. Coast Guard District 17, Sector, Anchorage, Joint Base Elmendorf-Richardson, Alaska.
- Mr. John Murphy, Col (Ret) USAF, Chief of Operations, National Weather Service, Washington, D.C.
- Dr. Lilian Alessa, Chief Scientist, U.S. Special Operations Command and President’s Professor, University of Idaho, Moscow, Idaho.
- Col Paul Curlett, USAF (Ret), the Boeing Company, St Louis Missouri.

EXERCISE 1 – “Attu Reimagined”

The first exercise was titled: “Attu-Reimagined.” This was a fictitious crisis scenario which challenged the participants to think about sovereignty, security, environmental policies, and the ability to logistically respond to the farthest West U.S. Island in the Aleutian chain. TSC Sr Advisor Kee began the activities by presenting directions and goals. Each exercise began with a video that set the stage; from there participants were encouraged to ask questions that exposed existing vulnerabilities as opposed to fighting each fictitious scenario. After remarks were given, the video began. The storyline was one of a crisis in Arctic operations – rescue forces are needed in the furthest reaches of the Aleutians; however, the situation is complicated further by the limited abilities of air support forces to land as well as the attempted cover-up of an oil spill. After the conclusion of the video, the SME board gave their reflections to the group.



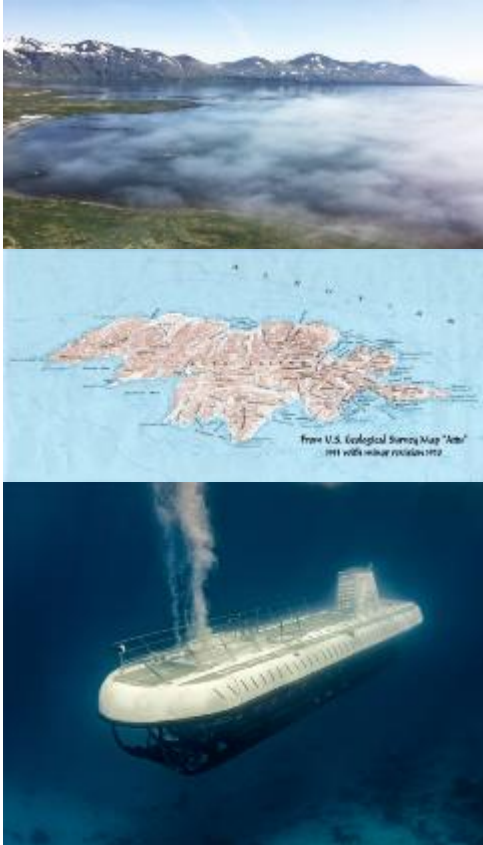


Figure 20: AAS22 TTX Exercise 1 – “Attu Reimagined.” Image Sources USSGS and Pixabay

crucial it is to carefully consider what forces are in the area – for this situation, it was a 12-ship force with additional aircraft and helicopters available.

Several key pieces of advice developed. First, was the necessity to gain situational awareness and as much intelligence as possible in order to paint an accurate picture of the situation prior to response forces rushing in. One SME suggested that this would be a useful area to leverage Indigenous knowledge and support. Second, the Aleutians are a region where multiple U.S. command boundaries overlap, necessitating a joint, coordinated response. Lastly, the difficult geographical location of the Aleutians and the dangers of unpredictable weather were highlighted.

From there, the discussion opened up to the floor, with participants adding their perspectives based on their organizational backgrounds. Again, several prescient points were made. First, the necessity for gathering as much intelligence as possible was reiterated. However, intelligence on its own is not extremely useful here; to apply to the situation it must be fit into the larger picture of what is going on.

For example, was the associated incident an accident or the result of malign foreign influence? The case of a comparable situation in Russia was mentioned and how as a result of their suspicion of foreign operators in Russian territory, rescue was delayed, and the crew perished. Second, once the facts were gathered, it was mentioned that it may be prudent to designate a lead agency for the response and rescue efforts. Third, one participant mentioned how



Figure 21: AAS22 TTX Exercise 1 – “Attu Reimagined” panel. Image Source: TSC

EXERCISE 2 – “Bounty in the Beaufort”

Next, the group moved on to the second scenario: “Bounty in the Beaufort.” This fictitious crisis scenario exposed friction points related to the United Nations Convention for the Law of the Sea in managing a commercial venture in contested waters in the Extended Economic Zone between Canada and the U.S. in the Beaufort Sea. After watching the short video explaining the finer details, discussion commenced.



Figure 22: AAS22 TTX Exercise 2 – Bounty in the Beaufort.” Image Source: Pixabay

As with the previous scenario, discussions began with the SMEs. One major point emphasized was the degree of cooperation between Canada and the U.S. Coast Guard. There are numerous bilateral agreements between the two nations in place geared towards the coordination of Arctic rescue operations.

Another point was the need to assess how quickly the oil is spreading and whether or not it can be retrieved mechanically, burned, or chemically dispersed before reaching shore. Lastly, the possibility of the weather turning against rescue forces was discussed, as this is a constant possibility when operating in the Arctic, especially the North American Arctic.

The importance of viable and ready Oil Spill Recovery Organizations (such as Alaska Clean Seas), experts that are stationed due to legislative and policy changes following the March 1989 Exxon Valdez disaster were stressed. The need to retain such capability in and near oil extraction activities in the Arctic is highly evident.



Figure 23: AAS22 TTX Exercise 2 – Bounty in the Beaufort” panel. Image Source: TSC

When discussions opened to the floor, another variable was added to the scenario: protesters entered the area and multiple boats capsized. Participants seemed to latch onto two points. The first is a reiteration of what the SMEs already stated: the cooperative relationship between American and Canadian search and rescue forces has been successful. Second, was that due to limited communication in the region, one potential way to combat

this would be to rely on smaller private fishing and research vessels in the area in addition to normal methods. Participants noted that although the protestors complicate the mission and pose a potential security risk, its fundamental goal remains the same: search and rescue.

EXERCISE 3 – “Trapped at the North Pole”

The third and final crisis scenario was: “Trapped at the North Pole.” In this fictitious crisis scenario, an exploratory venture of a commercial icebreaker escorting a merchant breakbulk vessel transiting the transpolar route encounters a significant powerplant failure, rendering both vessels trapped in more significant than planned ice conditions in the vicinity of the North Pole.



Figure 25: AAS22 TTX Exercise 3 – “Trapped at the North Pole.” Image Source: Pixabay

As a result of electrical failures, crew members were also trapped without water. After the video, the SMEs stressed the weather dependence of this mission, making it necessary for this to be a joint response with various organizations involved such as NOAA and the Coast Guard. The scenario highlights

the United States’ need for more icebreakers in order to conduct these sorts of rescue operations, especially as the Arctic cryosphere continues to dissipate and more marine traffic find easier access to transit through the region. In the scenario, the response mission would most likely be to assist the crew in repairing the vessels, while also providing fresh supplies. Lastly, it was mentioned that communications are crucial for the response, not only between search and rescue and the crew members, but to the families of the crew as well.



Figure 24: AAS22 TTX Exercise 3 – “Trapped at the North Pole” panel. Image Source: TSC

After opening the scenario discussion for audience participation, an additional variable was added to the scenario: one of the vessels’ ice detection sensors failed, while the vessel superstructure ice continued to harden and thicken as the weather grew increasingly violent. Search and rescue crews were still four hours away, making timing on this first attempt critical. Participants discussed the possibility of recruiting additional

international assistance to speed rescue operations. In addition, participants recommended focusing response on the non-icebreaking vessel, as it was in far more immediate danger than the icebreaker, and accordingly that vessel and its crew should be the near-term priority.

AAS22 MORNING EDITION ADVENTURE TRACK 2: Arctic Academic and Industry Showcase.

Conducted as a series of information briefs from Arctic-oriented academics and industry collaborators

Moderators: Matt Bell, RADM, USCG (Ret), Dean, School of Arctic and Climate Studies, Ted Stevens Center for Arctic Security Studies, Alaska, and Dr. Kathryn Friedman, Emeritus Professor, University at Buffalo, Global Fellow, Woodrow Wilson International Center for Scholars (Canada Institute). University at Buffalo, Buffalo, New York.

Panel 1 – Women, Peace, and Security (WPS)...insights for the Arctic.

An overview of DoD WPS as it may apply to the Arctic.

- Ms. Veronica Clark, Alaskan Command, JBER, Alaska
- Ms. Claire D. Sneed, Women, Peace, and Security Advisor, NORAD & USNORTHCOM
- Ms. Tiffani Phillips, N&NC Command Gender Advisor
- Dr. Holly Peirce, N&NC Deputy POLAD

The panel started with a discussion of national strategies for gender, equity, and equality. The DoD allows for meaningful participation of women in management and employment opportunities. Since there is not a track skill code to call gender focal points into combat, the groups work on a volunteer basis. Clothing, mental health, legal protections, and education opportunities are all ‘follow-up’ services offered to women and children after they have been removed from the crisis at hand.

Panelists mentioned the importance for all organizations to include women, peace, and security (WPS) in all mission planning. Policies, tools, and knowledge of gender analysis should go into training, operations, and follow-up. Working in the Arctic is a team sport. The DoD works with public and private organizations and aims to connect national and international communities to inform gender policy. DoD response should reconcile local



Figure 26: Arctic Academic and Industry Showcase Panel 1 – Women, Peace, and Security...insights for the Arctic. Image Source: TSC

perspectives and perceptions on security with the mission of WPS that is homeland defense. Alaska natives were also pointed out as a critical asset to Arctic security, and they must be included in developing mitigation plans. Panelists touched on the fact that induced migration in the Arctic due to climate change leads to greater

disparity between the movement ability of men versus women. Democracy, sovereignty, and freedom are

possible through women's meaningful contribution to decision-making, rights to safe and healthy existence, and access to education – these are all goals of WPS.

Panel 2 – eLORAN for the Arctic...an alternative for positioning, navigation, and timing (PNT)?

An overview of a new commercial activity potentially useful for Arctic operations.

Speaker: Mr. Trowbridge "Bridge" Littleton, President & Co-Founder, Hellon Systems, Inc., Middleburg, Virginia.

The presentation focused on global positioning systems (GPS), enhanced long-range navigation (eLORAN), as well as position, navigation, and timing in the Arctic. The major point of the discussion was focused on using a combination of eLORAN and GPS in order to combat jamming. It was mentioned that Congress is interested in this technology and has recently approved additional investment funding.

Panel 3 – Research insights to Arctic Pollution Response.

An overview of new investigations to Arctic maritime pollution response.

Speaker: Dr. Nancy Kinner, University of New Hampshire and (research leader, Arctic Domain Awareness Center (ADAC), University of Alaska), Durham, New Hampshire.

The presentation began by pointing out that disaster and pollution response are intertwined, and within the Arctic maritime there exists an additional complicating factor: sea-ice. The 2008 Arctic Disaster Workshop focused on marine accidents and incidents that become cascading crisis situations. The workshop made 17 specific recommendations and some progress has been made (Arctic council EPPR search and rescue/oil spill response/some Arctic response drills but it is expensive to plan/execute). It was pointed out that disaster response has both a temporal scale (how long to return environment to equilibrium?) and a spatial scale (what is the geographic area of the disaster?), which dictate the response process. The incident command system indicated who the responsible responding party is – this is tightly controlled by law.

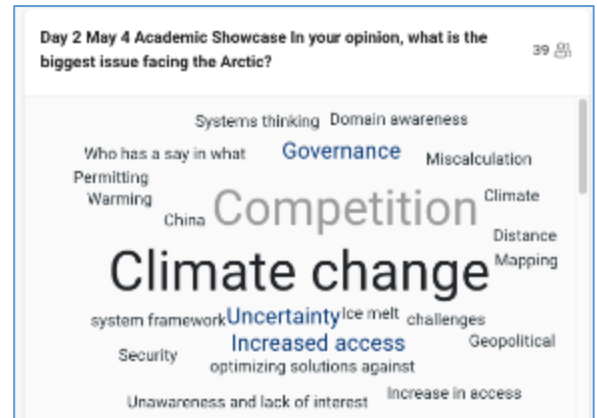


Figure 27: Day 2 Academic Showcase Slido Word Cloud



Figure 28: Arctic Academic and Industry Showcase Panel 3 – Research insights to Arctic Pollution Response. Image Source: TSC

Within the Arctic, many potential entities participate in the incident command system which is further complicated by the huge distances and scarce resources. While there are numerous potential pollution sources, leaks from vessels are the largest threat. Things such as oil and refined products,

LNG, rare earth metals, or marine debris (nurdles are plastic byproduct that are difficult to clean up), are all pollutants that are being found in the Arctic in increasing quantities.

Panel 4 – *Understanding Arctic Environmental Change Through the Parameters of a Decision Risk Index.*

An overview of a new Environmental-change Risk Index to for infrastructure investment decision making.

Speaker: Dr. Craig Tweedie, University of Texas El Paso, El Paso Texas, & Research Leader, ADAC, University of Alaska

Dr. Tweedie’s presentation began by discussing the way in which Arctic infrastructure is impacted because the engineering is outdated, often not designed for this area of the world. The United States Coast Guard (USCG) is acutely aware and responsive to this issue however there are geographic and seasonal challenges in which they must operate. America’s Arctic have USCG-regulated bulk oil facilities and associated infrastructure in Alaska that exist on permafrost.

The knowledge product created through the Environmental-change Risk Index (ERI) process contains a USCG problem statement, case studies, facility and engineering-related vulnerabilities, environmental risks, socio-environmental impact, mitigation, and adaptation as well as a risk assessment and index development. There are significant challenges integrating data/information across agencies/authorities and between the regulatory/reporting domain. Human error is generally considered the probable cause of a foreseeable spill and not environmental change. The environmental risk index includes environmental change/susceptibility, engineering vulnerabilities, impact/spill mitigation, and each factor is scored independently of each other before being combined in the ERI.

Panel 5 – *Successfully succeeding the Navy Arctic Research Laboratory: Ukpeaġvik Inupiat Corporation-Science (UIC Science)*

An overview of UIC-Science endeavors to support exercises and research, including U.S. Navy’s icepack activities known as “ICEX.”

Speaker: Mr. Nagruk Harcharek, Director of Barrow Operations, UIC, Anchorage, Alaska.

Mr. Harcharek described how in 1984, the UIC campus was turned over from the U.S. Government to the Ukpeaġvik Inupiat Corporation Native Cooperation and have since maintained the campus. Directors found that Native contributions to science are both in knowledge and experience. Many scientific expeditions found success collaborating with the people of the Arctic. The talk closed by remarking how sharp observations of Native scientists have made Inuit naturalists into invaluable colleagues. One important milestone in research collaboration between academic science and the Alaska Native community was the 75th Anniversary of the founding of the Navy Arctic Research Laboratory, located near Pt Barrow, Alaska, which was successfully conducted in August 2022.





Figure 29: Arctic Academic and Industry Showcase Panel 5 – Successfully succeeding the Navy Arctic Research Laboratory: Ukpeaġvik Inupiat Corporation-Science. Image Source: TSC

Panel 6 – Alaska: Future outlook as America’s Arctic Research Laboratory.

A survey of current research initiatives from the UAF Geophysical Institute & International Arctic Research Center.

Speakers: Dr. Bob McCoy and Dr. Hajo Eicken, University of Alaska-Fairbanks, Fairbanks, Alaska.

Lack of ground-based data in Alaska has been a long-standing issue and to combat that the Geophysical Institute (GI) recently erected 83 seismic and weather ground stations. (Graphic included in slides showed density of stations). An important GI highlight was the UAF Volcano Center, which constantly monitor’s Alaska’s volcanic regions in Southcentral, Southwestern and Aleutians regions. This provides an important measure of safety, as any one day there are about 70k passengers going over the Aleutians. Additionally, the speakers highlighted the Alaska Center for Unmanned Aircraft System Integration (ACUASI) – where research in small autonomously controlled with automatic landing capabilities which can remain aloft for up to 12 hours and uniquely tailored for northern regions. ACUASI is providing important capability with their fleet to provide affordable sensors on scene. Discussions on the UAF IARC “ALPACA” – Alaskan Layered Pollution & Chemical Analysis project and UAF’s UARC – University Affiliated Research Center (UARC) provided participants with keen insights to these important Arctic related research initiatives.



Figure 30: Arctic Academic & Industry Showcase Panel 6 – Future outlook as America’s Arctic Research Laboratory Industry. Image Source: TSC

Panel 7 – *The Future of Fish in the Arctic?*

A look at the evolving characteristics of fisheries of the Bering Sea.

Speaker: Mr. Taylor Holshouser, Managing Director, Alaska Ocean Cluster, Bering Sea Fishermen’s Association, Anchorage, Alaska.

After WWII, Japanese and Russian fishing and trawling in nearshore Alaskan water increased significantly. In 1976, the Magnuson Act pushed the fishing boundary to the 200-mile EEZ limit to encourage American ownership of fishing ships. Alaska’s seafood industry today is now a \$15 billion industry with 62,200 local jobs and pulls in \$163 million in taxes. Salmon, pollock, cod, and crab are the main target. Bering Sea Fishing vessels are responsible for 17% of total vessel operating hours in the Global Arctic. This is a complex and adaptive rules-based system, including many challenges. The speaker focused on climate and geopolitical relations. With a changing climate, there is now uncertainty of where the fish stocks will be due to changing conditions. Fuel is the biggest cost in the fishing industry. Yukon chum salmon fisheries are seeing huge decrease in salmon stocks.

The US-USSR Maritime Boundary Agreement was established in 1990.

In 2015, after the war in Ukraine began, Russia made its Bering Strait fishing fleet a high priority as cod was identified as a cheap protein to provide to Russian citizens. Average U.S. trawler is 40+ years old and newer Russian vessels will add competition to our U.S. fishing industry. Russians are planning to double their catch of Alaskan Pollock, threatening cooperative management. If this happens, the U.S. may have to cut fishing numbers to preserve a sustainable stock. There is a lack of communication between the fisherman community and the DoD; fishermen are potentially a useful information network because they are capable of operating in difficult areas/conditions that are of interest to DoD operators. The speaker recommends DoD collaborate with fishermen to establish quick networks of communication with skippers. It was recommended that U.S. Government should promote/ deconflict research and work jointly to manage fisheries on either side of the U.S.-Russian shared Extended Economic Zone boundary line and share data accordingly.³ The presenter mentioned while it should be feasible to establish assurances for cooperation, the U.S. needs to remain vigilant to Russia from sending fishing trawlers into U.S. waters. How Iceland dealt with UK fishing in their waters could be a place to look for solutions.

In order to gain improved domain awareness of U.S. maritime EEZ, establishing a mesh network of ISR Sailing Drones, which run Automated Information Systems (AIS), Radar, Visual and Artificial Intelligence driven detection capabilities, and real-time notifications of data. DoD could help support the deployment of these sail drones.

Smart buoys offer real-time tracking and monitoring for deployed fishing gear, as there is a huge loss of fishing infrastructure due to weather or sea ice. These smart buoys are a way to improve fishing efficiency and decrease ocean pollution. A final note by the speaker: fishermen want to fish. DoD should worry about the geopolitical issues and let fishermen support those efforts by doing what they do best: fish.

Panel 8 – *Maslow’s hierarchy in an Arctic context?*

A quick look at solutions to improve water and sanitation in rural regions of Alaska’s Arctic.

Speaker: Dr. Aaron Dotson, Vice Chancellor for Research, University of Alaska Anchorage, Anchorage, Alaska.

³ Note: While joint fisheries management in the Bering and likely Chukchi Seas (due to regional warming) is an important and likely vital interest to sustain these vital waters, TSC Authors respectfully do not concur with U.S.-Russian joint Bering and Chukchi Sea fisheries rapprochement until cessation of hostilities in Ukraine and substantial amends for recent aggression in Europe has been afforded.

Sanitation is a core need of who we are as people, meeting the physiological needs such as food, shelter, and water. Hierarchy of sanitation needs puts drinking water as the highest need, cooking next, hygiene, waste disposal, and non-residential (water uses for commercial need) as the top of the pyramid. There is a mass associated with water, it is a finite resource, and drinking water is the smallest volume of water but the most important. Rural Alaska communities with plumbing showed that 50% of water used in the residence was for flushing the toilet. Because of the diversity of culture and population in Alaska, there are differences in water consumption.

In Anchorage, when water pipes break during winter, steam trucks are needed to thaw ground (buried at an average of 10 ft deep) or repairs are put off until natural thaw. Some communities in Alaska (e.g., Kipnuk, pop. 800+) do not have running water, and wastewater is moved by hand. In some places, river water locked in ice can be harvested for clean water. Rainwater is also collected to supplement clean drinking water, it was found this is a great collection method, but storage of this water can be difficult. Honey buckets and outhouses are typical forms of sanitation collection in Rural Alaska. A pressing question is how we provide adequate sanitation in rural regions when modern sanitation infrastructure is not cheap. Installing significant infrastructure in a community is just as much of a burden as it is a blessing and introducing infrastructure brings questions of upkeep costs and changes in water access.

Sufficient water and sanitation in the Arctic are often an unmet foundational need that typically requires water, environment, community capacity, and energy. These complex infrastructure installments enable healthy and vibrant communities.



Figure 31: Arctic Academic and Industry Showcase Panel 8 – Maslow's hierarchy in an Arctic context? Image Source: TSC

AAS22 DAY 2 AFTERNOON EDITION ADVENTURE TRACKS:

After the completion of both morning tracks, participants then split up into two groups depending on their chosen tracks for the afternoon. The first track included multiple stops beginning at JBER with a flight line orientation of the 11th Air Force Airpower, followed by a visit to the Port of Alaska, and concluding with the Anchorage Museum. The second track was a guided afternoon hike at the Eagle River Nature Center.

Adventure Track 1. *Alaskan Security Orientation Activities*

Overall Guides: Maj Gen, USAF (Ret) Church Kee and Mr. Craig Fleener, Ted Stevens Center.

Adventure Track 2. *Guided Afternoon Hike: Eagle River Nature Center*

Overall guides: CDR Frank “BIFF” McBride and Mr. Shane Holtz, ALCOM J5.



Figure 32: 3rd Wing Airpower. Image Source: JBER PA



Figure 33: Port of Alaska (Anchorage). Image Source: Northstarak.com

AAS22 Day 2 concluded with an evening discussion featuring by Mr. Jim DeHart, the Senior Arctic Coordinator for the U.S. Department of State, addressing the current state of Arctic diplomacy, which has been significantly affected by the pause of the Arctic Council in direct result of Russia’s illegal second invasion of Ukraine. Mr. DeHart reflected on possible pathways to address avenues of collaboration among Arctic and Arctic-minded nations that can continue important and needed work to advance policy, research and industry, that for the present time, does not necessitate Russian participation.



Figure 34: AAS22 Evening Event: “A conversation in advancing Arctic Diplomacy.” Mr. Jim DeHart, Senior Arctic Coordinator, Department of State, Washington D.C., with Dr. Mike Sfraga, Chair, U.S. Arctic Research Commission. Image Source: TSC

5 MAY: AAS22 DAY 3 – LEADERS FORUM AND STRATEGIC FORESIGHT DAY

AAS22 Day 3 was planned in 2 major components, the first activity was an introduction to a hands-on Arctic Security Strategic Foresight exercise oriented to Arctic conditions in the year 2060. Following the futures exercise, the remainder of the day was comprised of an array of distinguished leaders providing a multidimensional set of addresses characterizing the current and emerging attributes of the Arctic Safety, Security, and Defense landscape.

Overview of Strategic Foresight Activity, Targeting the Arctic Region Challenges in the Year 2060.

Moderators: Mr. Zach Schulman, USCG HQ U.S. Coast Guard, Office of Emerging Policy (DCO-X) “Project Evergreen/Futures” team, Washington, D.C., and Ms. Christine Duprow, Ted Steven Center, Anchorage, Alaska.

Panelists:

- Ms. Gail Schubert, President & CEO, Bering Straits Native Corporation, Anchorage, Alaska
- Dr. Robert Huebert, Associate Professor of Political Science, University of Calgary, North American & Arctic Defense and Security (NAADSN) Coordinator
- Dr. Rebecca Pincus, Assistant Professor, Strategic and Operational Research, U.S. Naval War College, Newport, Rhode Island
- LTC Lasse-Tapani Ketola, Assistant Defense, Military, Naval and Air Attaché to the U.S. and Canada, Embassy of Finland, Washington D.C.
- Mr. Phil Thorne Arctic Program Specialist, U.S. Coast Guard, Juneau, Alaska



Figure 35: Overview of Strategic Foresight Activity, Targeting the Arctic Region Challenges in the Year 2060. Image Source: TSC

This session was both a demonstration and opportunity for AAS22 participation. Due to time constraints, AAS22 planners could only afford the time to provide a demonstration activity, and TSC leadership noted that SFA is planned as an important activity the Center will utilize in coming months and years.

This early “Day 3” activity included the use of expert (and purposely contrasting) panelists as a means to catalyze audience participation. The activity included panelist discussions using a causal layered analysis utilizing the methodologies of Strategic Foresight Assessment (SFA). Executing the SFA included delving beneath the surface of an issue to uncover deeper causes, and strategically reposition the view of an existing problem or organizational belief. Attendees participated through the web-based app Slido, which then displayed their findings in the plenary hall (visual to both in-person and virtual participants).

The specific topic selected for evaluation was “A post-Putin Russia will be a positive impact on the rules-based order in the Arctic.” Panelist and participants were taken step-by-step through a series of exercises to describe each layer of facts, values, myths, and metaphors associated with the topic.

Slido analysis of AAS22 participation on the future Arctic in this SFA was surprisingly multidisciplinary and optimistic. Particularly given the current concerns about the potential of “spillover” heightened tensions to the Arctic stemming from Russia’s ongoing illegal conflict against Ukraine (and the associated impact to the rules-based order in Europe), AAS22 participants maintained a statistically significant belief the instruments of maintaining the rules-based order across the Arctic will generally hold and that science and technology and other efforts in innovation will provide solutions to create positive effect to U.S. and Allied national interests across the Arctic.

Contrasting the optimism was the statistically significant belief that a post-Putin Russian Federation may not be a positive force for the Arctic, and even more interesting, was some participants reflecting that perhaps Putin is not the problem for Arctic security and stability.

In sum, the “Arctic 2060” SFA was not designed to create a grounded or substantial discourse for DoD decision making (although the TSC will be conducting follow-up on this matter to so provide such research and analysis), but the exercise illustrated to AAS22 participants the power of SFA to think through future challenges in a unique and uncommon way. A substantial amount of feedback indicated AAS22 participants found the session a useful and interesting venture.

AAS22 Keynote Address: Arctic Now

Speaker: General Glen VanHerck, USAF, Commander, NORAD and USNORTHCOM

General VanHerck acknowledged the critical role the Arctic plays as a strategic location and emphasized the need to protect this vastly important region, which is coming under increasing threat from ambitious adversaries.

General VanHerck pointed out that in his position as the Commander of USNORTHCOM, he is the Department of Defense Arctic advocate, and the mission to protect the region is critical. USNORTHCOM is committed to maintaining a peaceful, stable, and cooperative Arctic. Towards this end, the combatant commands, Services, relevant Interagency partners, allies, and likeminded nations must strive to work together with unity of effort and purpose.

Strategically, the Arctic is an incredibly complex and rapidly changing region, encompassing three distinct U.S. geographic combatant commands and eight sovereign nations with Arctic interests. Russia and the PRC have both openly stated their ambitions in the Arctic region and intent to take advantage of expanded access. Both nations wish to alter the security environment to fit their interests. This cannot be allowed to happen without incurring considerable risk; the rules-based international order must be maintained.



General VanHerck pointed out that the Arctic is incredibly important to Russia – its resources fuel the Russian economy, while its geographic position is key to national defense. In numerous strategic documents, the Russian government has stated its intent to expand military capabilities, strengthen territorial sovereignty in the region, and further develop resources and infrastructure. The Russian fleet of icebreakers has been modernized and some have even been armed. This demonstrates a clear intent on the part of the Russian Federation to project power in the Arctic.

General VanHerck turned to the PRC. As a self-declared “near Arctic nation,” China has increased its maritime presence in the region. The PRC conducted Freedom of Navigation Operations in the Bering Sea, a mere 50 or so nautical miles away from the Aleutian Islands. The PRC seeks to expand its Polar Silk Road, a subset of the larger Belt-and-Road Initiative, with an eye towards extraction and economic exploitation.

General VanHerck argued that the U.S. and its Allies have made progress in counteracting the activities of our adversaries; however, much work remains to be done. Simply put: “to play the game, you’ve got to be on the field.” The joint and combined force must demonstrate the ability to maintain a persistent presence and the ability to conduct the full spectrum of military operations in the High North. To do so, USNORTHCOM requires access to forces which are organized, trained, and equipped to operate in such a harsh environment. If this is not done, decision space and geography are ceded to strategic competitors and in doing so, the risk is accepted in assuming that Russia will not exploit that perceived weakness and will abide by a rules-based order in the Arctic. The same principles and logic apply to China, which USNORTHCOM is also not currently postured to deter.

General VanHerck argued that deterring involves day-to-day campaigning. Operations, activities, exercises, and investments will demonstrate that the U.S. and allies have the will to compete and deter adversaries from militarizing the region. Investments in critical technology to increase all domain awareness, increased funding for critical infrastructure, and cooperative exercises such as ARCTIC EDGE, COLD RESPONSE, and NORTHERN VIKING are examples of how this is being done. These efforts are geared towards the ultimate goal of maintaining competition and deterrence, while avoiding crisis and conflict.

General VanHerck closed by noting that perhaps the greatest advantage that the U.S. possesses is an expansive network of likeminded Allies and partner nations. Relationships are the foundation of success and it is clear that nations are stronger together. Similarly, regional advocate organizations like the Ted Stevens Center build strong and sustainable networks of security leaders, promote research on Arctic security matters, and serve as close partners with the Department of Defense to further Arctic priorities. The recent alignment of the Ted Stevens Center to USNORTHCOM paves the way for future success. The efforts of other organizations such as the Arctic Domain Awareness Center (ADAC) and the University of Alaska have greatly deepened understanding and appreciation for the opportunities and challenges in the Arctic region. Lastly, USNORTHCOM works closely with organizations such as the Alaska Federation of Natives to address Arctic issues while ensuring military activities also protect the heritage and culture of the region.





Figure 36: AAS22 Keynote Address: Arctic Now, General Glen VanHerck, USAF, Commander, NORAD and USNORTHCOM. Image Source: TSC

The Arctic environment continues to evolve. Strategic competitors have the capability and the will to shape the region to suit their needs; doing so will directly challenge a rules-based international order. We cannot and will not allow that to happen. USNORTHCOM and NORAD – along with fellow combatant commanders, allies, and partners – remain committed to a safe, stable, and secure Arctic where like-minded nations work together to ensure strategic stability is maintained and that this beautiful region – with its unique history, stunning landscapes, and rich culture – is protected far into the future.

AAS22 Alaska Officials Address: State of the Arctic from the State of Alaska Viewpoint.

Moderator: Dr. Mike Sfraga, Chair, U.S. Arctic Research Commission, and Chair, Wilson Center Polar Institute.

Speakers:

- Lt Gov Kevin Meyer, State of Alaska, Juneau, Alaska
- COL Matthew Schell, Army National Guard, Arctic Advisor to the Adjutant General, Alaska National Guard, JBER, Alaska
- Ms. Pat Pitney, President, University of Alaska

This panel explored areas of opportunity that should be pursued from an Alaskan vantage that may help improve the overall equation of Arctic Security to benefit of the U.S., allies, and partners as well as areas of

persistent Alaskan concern in advancing Arctic security to be addressed. Lastly these speakers were asked to share some Alaskan success stories in regard to our Arctic interests.

In response, the panelists highlighted the need for the State of Alaska to have the ability to safely develop its natural resources; in particular, the still plentiful petroleum wealth available on the North Slope, as well as other mineral wealth in Arctic Alaska. The need to advance more research to better understand the changing geophysical characteristics of the Arctic region and the impacts of change on Arctic residents remains ever valid. Prioritizing research aligned to national security interests is needed as there are so many research needs compared to the number of available researchers to address those needs.

Alaska remains highly welcoming of U.S. military forces and recognizes the unique challenges placed on young military members who come from lower latitudes when serving in the challenging physical environment of Alaska, and in particular, the Arctic. Alaska's support to the University of the Alaska is a potentially useful approach to extend research needs to other research institutions across the Arctic and should be considered (generally, outside of security-related topics). The University of Alaska Fairbanks (UAF) competencies in science and technology, particularly in areas such as remotely piloted vehicles and sensor integration, can prove useful, (such as the Alaska Center for Unmanned Aircraft Systems Integration (ACUASI)).⁴

Panelists highlighted the unique natural hazard challenges facing residents and the military forces stationed in the state such as volcanos, earthquakes, tsunamis, increasingly volatile weather and more. Work accomplished by the UAF Geophysical Institute can help better characterize these hazards, leading to better prediction over time.

The panelists described how well the State of Alaska is aligned to the U.S. Federal mission for Security and Defense, with Alaskan State partners directly connected with their respective Federal counterparts. Included in this is the State of Alaska's efforts via the Alaska National Guard to not only develop an Arctic Strategy for the Alaska Organized Militia, but also leading the National Guard's Arctic Interest Council in the development of an overall National Guard Arctic Strategy, built to characterize the "ends, ways, and means" of what exists versus what is needed to address security concerns faced by the National Guard in support of State mission needs as well as preparing to support U.S. Federal missions in and across the Arctic.

Lastly, these panelists highlighted the needs for infrastructure development, the opportunity to reduce risk by establishing Arctic prepositioned stocks, need to increase cyber preparedness, persistent presence along Arctic frontiers, adaptation measure aligned to a changing climate across the region, and the value of exercising and wargames to build Arctic competencies.

⁴ Please see: <https://uaf.edu/acuasi/>



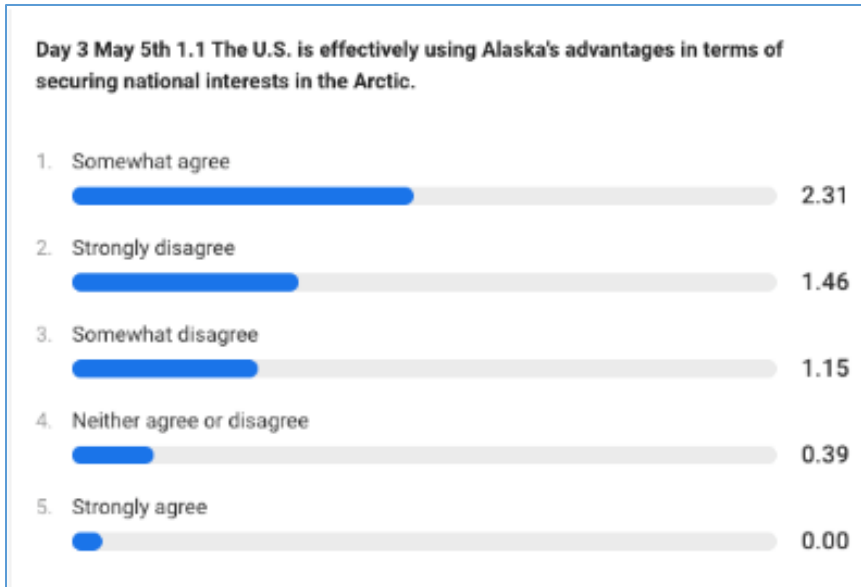


Figure 37: Day 3 Alaska Officials Address: State of the Arctic from the State of Alaska Viewpoint Slido Chart. Image Source: TSC

Arctic Region Political Leaders...A reflection of what is working versus what is missing in considering overall security in the North American Arctic.

Moderator: Mr. Craig Fleener, Deputy Advisor, Arctic Security Affairs, Ted Stevens Center for Arctic Security Studies, Anchorage, Alaska

Panelists:

- Ms. Joy Baker, Director, Port of Nome, Nome, Alaska
- Mr. Jackie Jacobson, Member of the 19th Legislative Assembly of the NWT for Nunakput, Canada
- Former Premier, Tony Penikett, Whitehorse, Yukon Territory, Canada

The panel discussion began with struggles of what is not working, lack of infrastructure, Arctic is not a priority, and it is past time. Panelists described how Alaskans are frustrated with Federal government decisions impacting Alaska without Alaskan input, including the lack of infrastructure other nations have invested in, mainly Russia. There needs to be improvement within the Alaskan military structure, including communication between all players, Federal, State, and local leaders. Panelists flagged positive developments with climate change and food source experimentation, including working with local UAA university locations. Universities are also forging valuable relationships with the DoD, sharing resources of drones, and building research and national security communication relationships.



Figure 38: Arctic Region Political Leaders...A reflection of what is working vs what is missing in considering overall security in the North American Arctic Panel. Image Source: TSC

AAS22 Keynote Address: Arctic Climate Security: Crisis, Concern or...?

Speaker: Deputy Assistant Secretary of Commerce for International Fisheries, Dr. Kelly Kryc,

Introduction: Col (Ret) John Murphy, Chief of Operations, National Weather Service, Washington, D.C.

Dr. Kryc's keynote address began with a brief outline of a long-term plan to support the DoD with risk assessments, forecasting, and weather modeling, including weather research methodology. Dr. Kryc offered warmest greetings from NOAA's Administrator, Dr. Rick Spinrad, and highlighted the agency's commitment to support climate security needs. This is due to the existing and growing need to characterize Arctic region climate change and the impact of a changing climate to the geophysical aspects of the region and the effects to supporting security and defense mission needs (such as infrastructure and operational risks).

Key to NOAA's Arctic mission is the need to advance actionable information and to refine NOAA products to address needs relevant to the Security and Defense user community. Dr. Kryc related the value of the authoritative source of NOAA products and services, which help operational decision makers accurately account for risk.

The goal is critical as climate change accelerates and impacts the weather, patterns, declines in fishing, the addition of animal species moving, and the impact on food sources. Further, the need to translate the data rich environment to meet the needs of research and decision makers is an important task for the agency. NOAA's efforts to contribute critical environmental products is being pursued via the co-production of knowledge, which includes integration of Traditional Ecological Knowledge and other Indigenous derived sources. NOAA's uniformed core provides a unique service to the agency and the user community as they operate systems and capabilities that help bring knowledge of the changing environment direct from the field.

Turning to the U.S. Arctic, Dr. Kryc highlighted the acutely changing conditions of the Bering Sea. The economic drivers of ice dynamics are changing everything in the marine environment. Such changes will cause some species to thrive, and some to lose as they are not capable to cope with the change. Overall, there is

concern about the decline of crab in the Bering and the impact to marine mammals. Further changes such as the loss of the “cold pool” (the Northern reaches of the Bering Sea, just below the Bering Strait) has greatly diminished since 2018, and fish stocks have responded by rapidly moving north into the Chukchi Sea. Long-term effects of these changes to fish stocks in the Central Arctic Ocean remain to be determined.

Dr. Kryc left participants with the challenge of working together at all levels to support the changes in the Arctic...the need to advance partnerships are as important as ever.

AAS22 Keynote Address: The Arctic and Strategic Deterrence: Essential for America and Allied/partner Security.

Speaker: Admiral Charles “Chas” Richard, USN, Commander, United States Strategic Command.

Admiral Richard began with reminders of critical points for a triumphant vision of the U.S. forces in the Arctic. Success includes more than the presence of "stuff," but a totality of a working group of partners and allies that will forecast and focus on integrating deterrence in the Arctic.

Even though the official DoD Arctic advocate is USNORTHCOM, they do not operate alone. Admiral Richards noted that USSTRATCOM also operates in the region and has a significant role to play. Strategic deterrence is the foundation of all national defense policy as well as integrated deterrence. Though on its own, it is not enough; more needs to be done. Reiteration of the key points for the military in the Arctic: it’s not just about acquiring stuff, infrastructure. It’s the totality of collaborating with partners, planning, forecasting, integrating deterrence, deterrence by denial, etc.

The United States is not just near the Arctic, it is an Arctic nation.

Two items of critical importance: U.S. Strategic Command has come to the exact same set of conclusions that U.S. Northern Command has following different logic paths. It is vital that USSTRATCOM remain involved as Arctic activity unfolds. The Command is seeing efforts, short-term and long-term, to undermine rules-based international order.

General Richard noted that the role of USSTRATCOM is to maintain strategic and nuclear deterrence, especially under stress conditions – we have rewritten deterrence theory and practiced it for years for moments like today.

The Admiral highlighted that all nuclear use is strategic, it doesn’t matter where it is or what quantity; you can have strategic effects without nuclear use.

The PRC is in a strategic breakout: their rapid expansion of strategic capabilities is easily the fastest we’ve seen in the country’s history, perhaps the world’s. We do not yet know the end state of this expansion or what it means for the Arctic, though the U.S. must be prepared.

Admiral Richard’s message was clear: military commands need to work together to offset Russia and the PRC's undermining of the rules-based international order. Communication with all Allies and partners is vital to ensure a rules-based Arctic.





Figure 39: AAS22 Keynote Address: *The Arctic and Strategic Deterrence: Essential for America and Allied/partner Security*. Admiral Charles “Chas” Richard, USN, Commander, United States Strategic Command. Image Source: TSC

Reflections from the International Arctic Security Forces Roundtable⁵

Moderated By: Brig Gen (Ret) Dieter Bareihns, ACT-1 Contract Manager, Ted Stevens Center for Arctic Security Studies, Crystal City Virginia.

Chaired by:

- Commodore Solveig Krey, Chief of Staff Operations, Defense Staff, Norway
- Brig Gen Edward “Hertz” Vaughan, USAF, Deputy Director Plans, Strategy and Policies (J5) U.S. European Command, Stuttgart, Germany.⁶

The roundtable conversation included observations of a lack of current aggression from Norway’s perspective and a call for a clear definition based on geopolitical and environmental security standpoint in the Arctic. Moderator and participant questions featured topics about types of spillover events that may affect the Arctic, including regional conflicts.

All agreed that any response should be unilateral and garner support from Arctic experts. The discussion turned to a potential sub-regional Arctic component of NATO; speakers do not foresee this as an upcoming option. The dialogue continued around concerns of how to prevent further escalation and potential miscalculation in the high north with Russia and the PRC.

⁵ <https://www.eucom.mil/pressrelease/41236/military-leaders-address-collective-arctic-security-issues>

⁶ <https://www.eucom.mil/pressrelease/41873/useucom-norway-staff-talks-bolster-mutual-readiness>

AAS22 Keynote Conversation: ANCSA at 50+, Past, Present and Future.

Speakers: Mr. Emil Notti with Mr. Nagruk Harcharek

- Mr. Notti was a founding ANCSA collaborator and original President of Alaska Federation of Natives
- Mr. Harcharek is a member of Ukpeaġvik Inupiat Corporation (UIC), Utqiagvik, Alaska.

The creation of the Alaska Native Claims Settlement Act, or ANCSA, was a historical event but is still contentious as Alaska did not recognize Native ownership; they still selected lands and restricted their use. The panels provided clarifying information about the self-identified roles and responsibilities to shareholders of the Native Corporations. The socioeconomic aspect includes creating jobs, maintaining lands, dividend profits, and community development. Native Corporations attempt to create a profitable business for all of Alaska and keep the profits here in the state. Native Corporations should and want to be included in the discussions with military allies and partners as they play a critical part in the Arctic.



Figure 40: AAS Keynote Conversation: ANCSA at 50+, Past, Present and Future. Image Source: TSC

AAS22 Keynote Conversation: Arctic Perspectives from a Command Chief Vantage.

Moderator: Dr Mike Sfraga, Chair, Wilson Center Polar Institute and U.S. Arctic Research Commission.

Panelists:

- David Wolfe, Command Chief Master Sergeant, USAF, Pacific Air Forces
- Kristopher Berg, Command Chief Master Sergeant, USAF, Eleventh Air Force.

These two Senior Enlisted Leaders (SELs) to the Commander, Pacific Air Forces and 11th Air Force respectively, provided AAS22 each command's SEL vantage of what is needed to better prepare and equip for expected missions across the region.

Chief Wolfe and Chief Berg have individually and collectively greatly advanced "professionalizing Arctic service" for Pacific Air Forces and 11th Air Force over the past several years, responsible for establishing training and practical experience requirements necessary for Airmen to earn the Service "Arctic tab" a symbol of service for Arctic expertise.

Panelists agreed that more work needs funneling into learning the best ways to train successfully and then thrive in the Arctic, not just survive, all while keeping up strategically with capabilities that deter, dissuade in order to prevent the need for further escalation.



Figure 41: Arctic Tab. Image source: Soldiersystems.net



Figure 42: AAS22 Keynote Conversation: Arctic Perspectives from a Command Chief Vantage. Image Source: TSC

DAY 3: Wrap-up and Closing Remarks.

Speaker: Lt Gen David Krumm, Commander, Alaskan NORAD Region, Alaskan Command, and 11th AF, Joint Base Elmendorf-Richardson, AK.

General Krumm reflected on the remarkable and diverse sets of reflections presented throughout the day and the need to continue the momentum of the conference through Day 4.

AAS22 Day 3 Dinner, Alaska Heritage Aviation Museum with special guest lecturer, Admiral Jamie Foggo, USN (Ret), Former Commander, U.S. Naval Forces Europe, moderated by CDR Rachel Gosnell, USN. Admiral Foggo provided a remarkable presentation comparing and contrasting the past 30+ years in Arctic maritime operations from both a geophysical and geostrategic vantage point.



Figure 43: A conversation on Arctic Maritime Security. Admiral Jamie Foggo, USN (Ret), Former Commander, U.S. Naval Forces Europe. Image Source: TSC

FRIDAY, 6 MAY: AAS22 DAY 4 – “BROADENING ARCTIC HORIZONS DAY”

AAS22 Day 4 began with an update on the priorities being worked by the Arctic Executive Steering Committee, Office of Science and Technology Policy, Executive Office of the President, Washington D.C., followed by addresses from U.S. Congressional members with keen Arctic interests. The following three panels included a policy level discussion from North American senior defense and security leaders’ vantage; a pan-Arctic convergence and contrasts on Arctic Security from former ALCOM Commanders (who also served as Commanders of Alaskan NORAD Region and 11th Air Force) who will seek to synthesize risks, opportunities, and recommendations to prepare, plan and operate to meet the challenges, ranging from geopolitical to environmental/climate security of the near to mid-term Arctic, and lastly, insights from the National Guard Arctic Interest Council. The session closed with remarks and final reflections from Commander ANR, ALCOM, and 11th AF.

Update from the Arctic Executive Steering Committee (AESC)

Speaker: Ambassador David Balton, Executive Director, Arctic Executive Steering Committee, Office of Science and Technology Policy, Executive Office of the President, Washington D.C.

The Arctic Executive Steering Committee (AESC) created by then President Obama and was used to coordinate U.S. federal activities for the Arctic. Wanted to create cohesive national policies (2013-2014). The AESC brought Obama to the Arctic for the first time, bringing attention and media to the arctic issues. While dormant in the Trump administration, President Biden reactivated in November 2021. The AESC has begun work on each of the following seven interagency initiatives:

Launched December 2021:

1. Led by Department of Interior to assist communities in AK threatened by environmental change (including relocation) to bring more resources for communities that need more protection.
2. Led by Department of Energy that seeks to promote and facilitate renewable energy and more energy (local nuclear reactors) and other modern technologies to help facilitate move away from fossil fuels
3. EPA deliver water and sanitation services to rural communities lacking services.
4. Office of Science and Technology with mission to advance science, effective communication, fisheries, understand the arctic ocean more broadly, promote understanding
5. DHS and Coast Guard to improve arctic shipping keeping it safe and secure around the circumpolar region.

New initiatives as of March 2022:

6. EPA to speed up clean-up of contaminated lands transferred by ANCSA. Pool various resources and work in common to this goal.
7. Department of State in Arctic 2030, investments in Alaska ought to help us project influence internationally across the Arctic. Any policy in the Arctic should benefit Alaska. Example: Nome Deep Water Port.

Over the next few years, AESC top priority initiatives include the following:

1. U.S. perspective: The energy equation. We are in a time of transition, yet Alaska and parts of the Arctic still depend heavily on fossil fuels for energy and revenue. Finding a way to manage through this process to a more sustainable future is a top imperative.
2. On the international front, hoping we find our way past the conflict we are in now and resume work in the circumpolar arctic that includes a Russia we can work with in some capacity. We must confront the pressing issues facing the arctic and maintain a firm mind in the face of unprecedented aggression. It is in our interest to keep the region, safe, sustainable, and habitable.

Arctic 2022: The View from Congress: An “in-sequence” set of reflections from U.S. Congressional members with significant and consequential Arctic interests.

Moderator: Mr. Craig Fleener, Deputy Advisor, Arctic Security Affairs, Ted Stevens Center for Arctic Security Studies, Anchorage, Alaska.

Panelists:

- Senator Dan Sullivan (R-Alaska)
- Senator Lisa Murkowski (R-Alaska)



Senator Sullivan described “posture season,” where all the commanders and Service chiefs come before the ASC and give their statement of what they are focused on. According to Senator Sullivan, this year’s posture season was big time about Alaska and the Arctic with 7 or 8 senators pushing on the Nome deep-water port; others were pushing about PRC involvement in the Arctic.



Figure 44: Senator Dan Sullivan. Image Source: TSC

The Arctic Security Initiative, Senator Sullivan explained, was the third in a series of initiatives generated by the ASC. The first was the European Security Deterrents, the second was the Pacific Deterrents Initiative, and third is the Arctic Security Initiative. General VanHerck was assigned to do an independent assessment of America’s needs and posture in the Arctic; this will be released soon.

Senator Sullivan applauded the Chief of Staff of the Air Force and the Space Force who brought 50 F-35 aircraft on time and on budget to Alaska. Over 100 F-22 and F-35 aircraft are stationed in Alaska, the largest fleet of stealth supersonic aircraft in the world. Buildup of Alaska Coast Guard is happening and there is a line item in the President’s budget to purchase a commercial icebreaker and convert it to a Coast Guard vessel. The Army posture statement announced a new headquarters (no longer admin). It will be the Army’s second airborne division warfighting and operational headquarters.

Senator Sullivan continued, we are on a positive trajectory; the military is stepping up to bring resources to Alaska and the Arctic. He related that Alaska has a housing shortage in a lot of places in the State especially as it relates to the Interior and is particularly impactful for our military families stationed in/near the Arctic. He related that Alaska needs to meet the needs of U.S. military personnel, and that lack of housing should not be a limited on military expansion within the State. The senator related that he had recently spent two days of listening sessions at JBER and Fort Wainwright; and that the U.S. military has a horrible problem with suicide right now (40 in the last 4 years). Senator Sullivan remarked that we need to work together to surge mental and behavioral health personnel and rally our community to work together to support one another.

Senator Sullivan warned of the new era of authoritative dictatorship lead by Mr. Putin and Mr. Xi Jinping. Alaska can bring so much to this issue, not just our location, lethal military, our communities, but also our minerals and energy. This will be a long struggle with two of the biggest dictators in the world and we must stand up to their aggression.

Senator Sullivan discussed Arctic Governance and the challenge of continuing the Arctic Council following Russia’s invasion of Ukraine.

Senator Sullivan mentioned icebreakers as important for our economy and stability in the Arctic. Two polar security cutters are being built and we have funding for a third, but we have an unacceptable lag time between funding and construction. The first one will not be built until 2028 and it is not scheduled to be in the Arctic, and when the second comes online there is not a guarantee that it will come to Alaska. It is not until the third gets built that it will come to Alaska – this is far too long to wait for an Arctic Icebreaker.

Senator Murkowski applauded the rapid stand-up of the Ted Stevens Center. She reflected on the vision, site location, and current work of the Ted Stevens Center. She remarked that “we’ve long hoped to create “A center that would do good stuff for the Arctic” and here we are, celebrating a center that will convene Arctic minds to discuss, debate, and determine strong Arctic policy.

Senator Murkowski described the current landscape of Arctic Security. The largest (in terms of geography above 66 degrees North) Arctic nation is at war, two Arctic nations are considering joining NATO, the Arctic Council is on pause, and the need for effective and prudent Arctic diplomacy is more important than ever.

Senator Murkowski asserted that we must confront climate change and work to build global energy security, economic security, and human security. The Arctic can remain a place of peace as we have a safe reliable

infrastructure and proper resources to address the issues of maintaining political stability and environmental sustainability in this region.



Figure 45: Senator Lisa Murkowski. Image Source: Senator Murkowski’s Office

AAS22 North American Defense & Security Policy Leaders Chat. A policy level focused discussion from a North American senior defense and security leader’s vantage.

Moderator: Maj Gen, USAF (Ret) Randy “Church” Kee, Ted Stevens Center for Arctic Security Studies, Anchorage, Alaska.

Panelists:

- DASD Dan Erikson, Western Hemisphere Affairs, Office of Secretary of Defense (OSD), Washington D.C.
- BGen, Sean “Kiwi” Boyle, Deputy Director General, Continental Defence Policy, Department of National Defence, Ottawa, Ontario, Canada

- DASD Iris Ferguson, Arctic, and Global Resilience, OSD

Panelists discussed policies and partnerships related to North American security. Panelists focused on bilateral Arctic agreements between Alaska and Canada – the United States/Canada defense relationship is broad, deep, and international in scope. The U.S. and Canada also work closely in the Arctic and will continue to do so as security issues in this region increase. The DoD is committed to maintaining collaboration with Canada through the Permanent Joint Board of Defense, which is one of the longest bilateral defense groups in our nation. Panelists also discussed NORAD modernization, working on national defense strategy, and consultation on strategic documents and other shared challenges such as climate change, economic development, energy security, and Arctic issues. Canadian Department of National Defence forces work regularly in the Arctic and share their intelligence with the U.S. to help combat our strategic competitors. Canada is also working on increased maritime domain awareness through maritime and aerospace presence.



Figure 46: AAS22 North American Defense & Security Policy Leaders Chat. A policy level focused discussion from a North American senior defense and security leader's vantage. Image Source: TSC

Panelists noted the strategic environment continues to evolve, and we know much more is needed in the Arctic. Canada is well placed to contribute to NORAD through their shared geography. One panelist noted that within Canada, 8 billion in defense funding over 5 years has been passed, as well as a review of the current political situation to ensure that this budget is meeting the current needs of the Arctic. There is an opportunity to build stronger more resilient Arctic communities by leveraging new investments and seeking the opinions of Territorial and Tribal governments. Canadian armed forces must work on behalf of all Canadians and ensure that they are meeting their responsibility within NORAD.

Another panelist remarked the creation of the Arctic & Global Resilience Office in the Pentagon is a sign of the importance of putting forward funding towards creating policy recommendations and focusing on climate resilience. Focused on homeland defense, a key priority for the office will be assessing the needs of posturing ourselves correctly in the Arctic. Panelists remarked that nowhere else in the world is there such concrete

collaboration between global military forces as there exists between Allies and partners in the Arctic. Panelists noted the need for the U.S. to further develop armed forces to Arctic Issues and continue to signal to America's advisories that we are training in this region and that we are ready to deploy in the Arctic.

One panelist remarked that from a Canadian policy vantage point, Canada assesses the current conflict level in the Arctic as low, but the situation is not static. To keep things that way, we will need to continue to invest in this region, strengthen NORAD, and monitor the impacts of climate change and how it might change our activity, and therefore risk of conflict, in this region. Canada needs to keep an eye on Russia and the PRC, but more broadly, domain awareness in sea, skies, space, and cyberspace in this region.

A panelist remarked there are four categories of opportunities which it may be useful for Canada to pursue in partnership with Greenland: capability infrastructure, NORAD defense, energy development, and regional security. Maritime, land, air, and space capabilities and are looking to work with Federal and Indigenous leadership and working with subject matter experts in the area. Key technological advancement of helping with over the horizon radar and model the ionosphere to computer beam steer the radar to help our situational awareness by replacing the radar we have in place. Canada needs to continue to invest in commercial detection technologies, like the Pathfinder program, as "you cannot deter what you cannot detect."



Figure 47: AAS22 North American Defense & Security Policy Leaders Chat. A policy level focused discussion from a North American senior defense and security leader's vantage. Image Source: TSC

A panel presenter remarked that with Departmental direction and funds to execute these strategies, successful goals can be achieved. The nuance is in the details of the strategies that lay out a great framework. Within the DoD, the Arctic & Global Resilience Office is hoping to convene the Services together to talk about how each branch is prioritizing their needs. Panelists noted there is need to collectively find a solution, especially Domain Awareness in space funding with unique partnerships with the private sector. It was noted that Space X and One Web are putting low earth orbit satellite that will give Alaska satellite communication by this summer and investments are being made to new weather satellites. These investments are not enough, it is just the beginning.

National defense strategy is helping to get the balance right on homeland defense; there is a strong reliance on the fact that friends border the United States. The Ted Stevens Center might have a role to provide analysis and assessment of U.S. Arctic security posture, and such analysis could help inform future DoD funding.

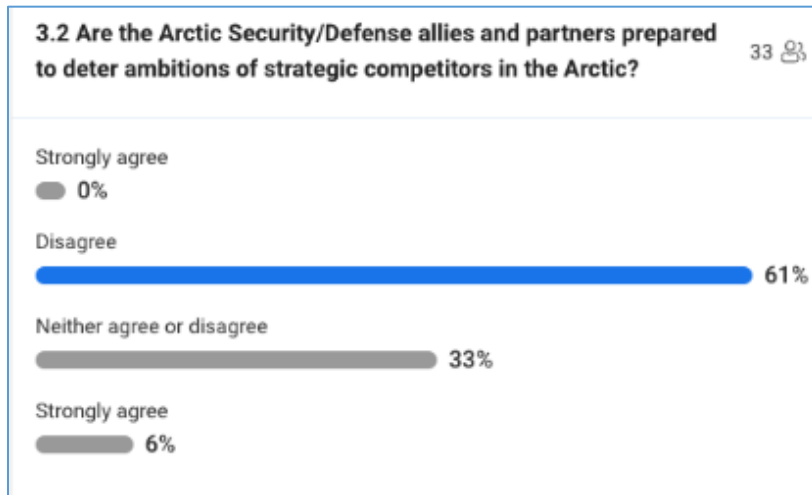


Figure 48: Day 4 0900-0945 North American Defense & Security Policy Leaders Chat Slido Chart. Image Source: TSC

Arctic Security 2022 convergence and contrasts by Defense Practitioners.

A General/Flag and Senior Officer U.S. and international allies and Partners panel from a Pan-Arctic viewpoint, as a complement to Arctic Security Forces Roundtable as previously discussed.

Moderated by: Matt Bell, RADM, USCG (Ret), Dean, School of Arctic and Climate Studies, Ted Stevens Center for Arctic Security Studies

Panelists:

- RADM Dan “Undra” Cheever, USN, Director of Strategy, Policy, and Plans (J5), NORAD and USNORTHCOM, Peterson SFB, Colorado
- Brig Gen Edward “Hertz” Vaughan, Deputy Director, EUCOM Deputy Director for Partnering, Security Cooperation, Policy, and Space Coordination (ECJ5), USEUCOM, Patch Barracks, Stuttgart Germany
- RADM Nathan Moore, USCG, Commander, U.S. Coast Guard District 17, Juneau, Alaska
- BGen Louis M. Lapointe, CAN, Deputy Commander, U.S. Army Alaska, JBER, Alaska
- CAPT Jacob French, Deputy Commander, Canadian Joint Task Force North (JTFN), Yellowknife, Northwest Territories, Canada
- LTC Lasse-Tapani Ketola, Assistant Defense, Military, Naval and Air Attaché to the U.S. and Canada, Embassy of Finland, Washington D.C
- COL (RSwMC) Henrik Rosén, Assistant Defense & Naval Attaché, Embassy of Sweden, Washington D.C.

Panelists noted that having national aligned strategies for the first time in a long time that point north to the Arctic. There is true power in these partnerships because we can share information and move at the speed of relevancy. Panelists agreed that there is a lot of momentum behind Arctic policies, and we [NATO Allies and partners] need deployable forces and continue to train troops against the conditions in these regions. Russia’s

offensive militarization of the Arctic is a concern, and panelists argued Allies and partners must be ready to address spillover in this region. With regards to the PRC, there are great concerns about the unregulated exploitation of the Arctic, and through their history, they have shown a lack of respect for natural preservation through their overfishing off the coast of Africa and the Galapagos. Once again, Allies and partners need to watch closely to make sure they are respecting the environment of the Arctic.

Panelists shared that most of our allies do not believe a conflict will begin in the Arctic. We need to be prepared for spillover and in doing so, become closer to our native partners, and build diversity within the armed forces. When we talk about our alliances, let's talk about it as a democracy of democracies – it is vital to work together in a civil rules-based-order. We must have speed when responding to issues in the Arctic and ensure that we are not steamrolling our partners for the sake of speedy development. We [those who have interest in the Arctic] do not always have balance and we need to focus more on democratic collaboration with our allies. We have shared values, which is more powerful than our shared interest, and all the instruments of power that U.S. wields is reinforced by trust and shared values with our allies.



Figure 49: Arctic Security 2022 convergence and contrasts by Defense Practitioners. Image Source: TSC

Security to the Coast Guard is environmental, human, and food. The U.S. Coast Guard has been present in the Arctic since the sale of Alaska, delivering medical crews, importing Russian caribou for Alaskan northern food security, and emergency support. Today, they are patrolling on the maritime boundary along Russia, engaging with them and pushing them back at the same time. There are still channels of communication with the Russians for mass rescue and oil spill response. Helicopters are deployed above the Arctic Circle; 45 lives were saved last year due to rescue missions. Increased traffic in the Arctic means more threats to the environment and the Coast Guard is actively monitoring and preventing pollution in the Arctic. Polar security cutters [icebreakers] are certainly critical to the Arctic, but the Coast Guard operates through many facets of ground and sea-based stations.

The Canadians have a renewed focus on the Arctic, releasing strategy through all branches of their military and focusing most of their energy on the Arctic. They are expeditionary and are training in places like Alaska and

Finland. The Canadian armed forces are equipped like a normal brigade in the Lower 48, but what they can control is training of personal to be effective at high latitudes. Canada is planning to train 100% of their troops in the Arctic.

Panelists noted a need for finding the best method for communications, logistical presence, incorporating scientific perspectives, and be efficient about generating Arctic strategy. U.S. Allies and partners need to be smart about our corporate memory and we need effective deterrents and switch our strategy when they no longer become a deterrent. The collective network of NATO Allies and partners need to look at what our advisories are doing and not just saying.

One panelist noted that Anchorage is at the same latitude as the most southern point of Finland, and they have about 100K people living north of the Arctic Circle. While Finland is not on the Arctic Ocean, Finish maritime forces combat ice in the Baltic and for that reason have icebreakers. Attention is on China and Russia, as Finland has stakes in the Northern Sea Route for trade and fishing purposes, so it is integral to watch their moves in this region. Most worrying is accidents in the Arctic such as oil spills or other pollutants or disasters such as the crashing of a cruise ship.

Swedish perspective ranges from research project, resource development, shipping route development, and environmental sustainability. As the PRC wants to be seen as an Arctic nation, then too, should an Arctic nation become a Mediterranean nation? We have a responsibility to shape these boundaries as we move forward. These routes in the Arctic connect us for property and we must protect the freedom of these routes. By training and exercising, developing secure communications, and building local knowledge that can be shared with allies. The Swedish participation might not only be through military participation, but through engagements in forums like the Arctic Symposium.

Insights from the National Guard Arctic Interest Council (NGAIC). A closing panel from participating delegations of the Arctic Interest Council of the National Guard.

Moderated by Mr. Craig Fleener, Deputy Advisor, Arctic Security Affairs, Ted Stevens Center for Arctic Security Studies

Panelists:

- Brig Gen Traci Smith, Commander, Alaska Air National Guard, State of Alaska.
- Maj Gen Tim Labarge, Air National Guard, Air Adjutant General, State of New York.
- COL Simon Schaefer, J5 Director Plans & Policy, Minnesota National Guard and Commander, 2/34 IBCT, Iowa Army National Guard
- Col Christopher Domitrovich, Vice Commander, 119th Wing, North Dakota National Guard

The National Guard Arctic Interest Council (NGAIC) is a forum of subject matter experts from eighteen States with interests in wintry weather and Arctic operations. Collectively, delegates seek to identify areas where the National Guard can lead DoD efforts in respect to wintry weather warfare, provide assessments of requirements for wintry weather and Arctic operations, and leverage National Guard expertise to assess existing wintry weather capabilities, evaluate equipment, and develop and refine non-material solutions. After a brief introduction, the moderator noted that the role of the National Guard in the Arctic is often misunderstood. For perspective and context, each panelist was invited to provide an overview relative to their NG affiliation(s).



- NGAIC goal was to establish the National Guard as the premier first responders in the Arctic. Within the context of environmental change, the National Guard has the expertise and capabilities to provide support to this region as changes continue to occur. H-model LC-130 which has skis on it are used primarily for operation deep freeze and other Arctic military training. they have been doing lead wing in the Arctic for over 30 years. The National Guard is the premier service operator in the Arctic.
- Alaska Air National Guard's tanker team are the experts in this region and offer complex support to different co-coms with different priorities.



Figure 50: Insights from the National Guard Arctic Interest Council (NGAIC). A closing panel from participating delegations of the Arctic Interest Council of the National Guard. Image Source: TSC

- Army National Guard makes up 39% of the Army Force around the U.S. Since 1974, the Minnesota Army National Guard has partnered with the Norwegian Army to cross train soldiers. In 2019, the Navy conducted training in the frozen lakes of Minnesota and have done so since. In 2022, the USCG Special Mission Command brought their freezing weather diving to train in Minnesota
- Air National Guard brings enduring relationships to the Arctic. Their soldiers stay stationed in a region for a long time and the capabilities of citizen soldiers improves through joint operations. Persistent engagement is a core strength of the National Guard and should be leveraged by the DoD to provide support in the Nation's Arctic policy.

In Alaska, logistical challenges are an Arctic Security concern. Equipment which is developed may not be Arctic ready. We must relook at our tools and reassess their viability in the Arctic and train/acclimatize soldiers to the conditions of this region. We are under resourced and feel it is imperative to the NGAIC that we advocate for more Arctic resources.

National Guard units are among the most capable Arctic operators and we must continue to utilize hometown knowledge and expertise from people who live in the Arctic

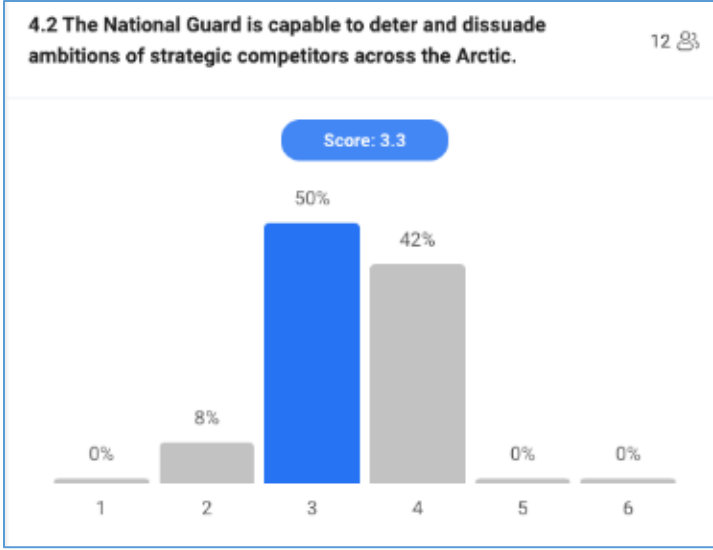


Figure 51: Day 4 National Guard Arctic Interest Council Slido Graph. Image Source: TSC

Closing Reflections.

Speaker: Lt Gen David Krumm, USAF, Commander, Alaskan NORAD Region, Alaskan Command, and 11th Air Force, Joint Base Elmendorf-Richardson, AK.

Lt Gen Krumm concluded that there is broad alignment on where we need to go, we need a safe, secure, peaceful, and prosperous arctic. Arctic nations, Arctic observer states, and even Russia, need to come together to make this happen. There is now knowledge that we need action, and we are often motivated by crisis, but in this case, we need to be proactive. We need to include the native populations as they are an integral part of this conversation. We want to make sure what happens in the Arctic is by choice, not consequence.

The General wisely reflected, “every time you think about the world, remember you should start at the top.”



*Figure 52: Lt Gen David Krumm provides AAS22 closing remarks.
Image Source: TSC*



ANALYSIS: EMERGENT THEMES OF AAS22

The following analysis is provided by the authors listed at the opening of the report and is principally conducted under the auspices of the Ted Stevens Center for Arctic Security Studies at Joint Base Elmendorf-Richardson and the Arctic Domain Awareness Center at the University of Alaska. This analysis is made by evaluating presentations and participant injects at AAS22 and is not intended to be an assessment nor a series of recommendations towards adjusting U.S. Federal Strategy or Policy.

In sum, the following analysis of AAS22 is made by listening and reflecting upon what was presented at the conference.

The Alaskan Command Arctic Symposium 2022 brought together a community of experienced, professional Arctic practitioners with the goal of an exchange of ideas and insights about the changing dynamics of Arctic security.

As discussed, AAS22 utilized a commercially available software application to elicit participant polling and engagement. The ultimate goal for using the polling system was to provide an opportunity for all participants to engage in symposium discussions including those in online attendance.

During the five days, over 1,000 interactions with symposium sessions were recorded, allowing for deeper discussion and interaction with all members in attendance. All participants focused and traded dialogue, ideas, and potential solutions focused on the North American and transatlantic Arctic and the associated security concerns for now and the future.

Experts from a multi-dimensional international viewpoint guided discussions in an attempt to involve all Arctic stakeholders. Passages below correspond to an overarching view of the major themes, ideas presented, and information exchanged during the five-day event including the interactions within commercial polling application.



Figure 53: Worldviews, Values, and Cultures Word Cloud. Image Source: TSC



Figure 54: Word Cloud Russian myths. Image Source: TSC

Theme 1: Teamwork in the Arctic

AAS22 presentations highlighted many facets about the changing contours of the defense and security landscape of the region. In many ways, the Arctic can be thought of as a system of moving parts, with an array of different—legacy and new—entities (state, and non-state).

When discussing Arctic security, participants reflected a growing need to balance between military (or defense) security and other factors such as economic and food security of Indigenous peoples and other Arctic residents; energy and resource security, environment (or climate) security. Overarching, this could be described as a need to retain a balanced focus across all facets to support human security.

The changing climate impacts security practitioners and those that call the region home...across the Arctic.

As sea ice continues to thin and maritime access to resources increases, participants stressed a need for balance between enabling safe access to resources and the region overall with protection of resources and the physical environment. Participants noted the role Arctic is likely to play a crucial role in a resource-hungry world.



Figure 55: Arctic Jump. Image Source: U.S. Navy

Participants and presenters alike stressed the need for policies regarding collaborative management of Arctic resources in order to protect and sustain. Participants noted the particular need to responsibly prevent the excessive extraction of resources and unsustainable levels for harvesting marine life. Overfishing is a prime example, as subsistence hunting and fishing are vital components of food security for Indigenous peoples and other Arctic residents. Extraction of mineral wealth has inherent challenges in the harsh and difficult Arctic region. Pollution from such extraction can greatly impact food security.

Presenters and participants highlighted long standing energy issues, to include the need to advance renewable energy. Presenters noted that many portions of the Arctic still depend heavily on fossil fuels for energy and revenue, while also highlighting new initiatives such as the U.S. Department of Energy's efforts to promote and facilitate the use of renewable energy around the U.S. Arctic, including the microreactor soon to be deployed to Eielson AFB near Fairbanks⁷.

Economic security is also intertwined with those elements mentioned above.

Presenters and participants highlighted the Arctic has vast potential for developing resources and economic initiatives such as minerals, geothermal energy, space, and shipping—but it remains expensive and logistically demanding to operate in the Arctic environment. Furthermore, infrastructure is lacking in Alaska and other Arctic regions (particularly in the North American Arctic) to include the need to provide housing for the workforce required to develop Arctic resources and the need to reduce overcrowded housing for residents.

Presenters argued for the need that consumers and planners to think creatively and utilize innovative ideas and next generation technologies that conserve energy and better adapt energy use to the region. Towards that ends, partnerships are described as essential, including the need to think more about mission accelerators in terms of joint ventures between public and private entities.

Participants and presenters alike noted the Arctic is becoming attractive for environmentally sustainable industry investment, and work should continue to create new funding opportunities to fill gaps in infrastructure and data collection. For example, it was noted the State of Alaska is willing to work with DoD to fill gaps, identify where support is needed, and function as a civil partner as single entities cannot succeed alone. Presenters noted there are mixed messages for extraction of new petrochemical resources between government, industry and Arctic residents, and in particular, from offshore petrochemical extraction, due to risks of pollution in an environment that recovers slowly from any pollution mishap.

Suggestions from presenters included further exploration into creative solutions using expired coal mines to store CO₂ in coal seams or gas reservoirs, proposals for extracting 16.5 million tons of LNG, and finding innovative ways to develop new processes. Volcanic regions such as Iceland was noted as potentially useful for significant CO₂ storage due to advancing modern technologies.

In sum, the AAS22 expert panels stressed the need for continued conversation about ways to identify research opportunities in the Arctic and push the importance of this research to policy makers.

⁷ While Fairbanks is not the Arctic, at approximately 65 Degrees North, it is certainly close to the Arctic.



Understanding the culture of the various groups or agencies involved is essential to this type of cooperation and collaboration. Presenters highlighted the need to keep local communities in the loop on developmental activities. Such information sharing was viewed as critical and beneficial to addressing climate issues – noting the people it will affect the most are the people who live there. Panelists also noted, local expertise and willingness to collaborate with partners for development will better ensure projects are developed sustainably. It was well noted by both panelists and participants that Arctic projects run more smoothly when there is local community buy-in.



Figure 56: AAS22 Video Screen Shot. Image Source: ADAC, UAA

When viewing the need for Arctic teamwork, private, regional, State, Federal, and international groups and agencies all have important roles to play. Arctic teamwork takes on many forms, including sharing information and viewpoints of Indigenous peoples' methods and practices to learn from their generations of experiences. Combining scientists and researchers with other underrepresented groups to work and learn together will aid in making progressive decisions about the Arctic, even in non-traditional areas of such dialogue to include security.

Panelists noted frequently, the Arctic is a difficult place to stage operations. To be done correctly, plans have better chance of success when planning includes collaboration with the people of the Arctic.

Although not as common as it once was, at minus 80F degrees, many items, and including much mechanical equipment will start to break down. Even at more moderate temperatures, such as minus 40 F degrees many mechanical items do not function very well without preparation and conditioning. As such, panelists noted that users should consider preparation and planning, and the associated additional time needed in conducting operations and/or advance technological development to better ensure operational success.

In Arctic operations, panelists noted it is often “trial and error” with each activity, and each time one steps out into Arctic conditions. Several panelists noted that Arctic exercises that include exchanges between military and Arctic Indigenous groups help increase mutual understanding of regional challenges and can help foster better investment for stronger future partnerships between Arctic residents and security practitioners.

Presenters and participants in AAS22, noted the overall message from the symposium stressed the need for integrated deterrence alongside trained experts readily deployable in the Arctic region. The major U.S. unified commands represented at AAS 22 collectively presented on the need for integrated deterrence to include collaborative and meaningful forums to exchange of information that included policy makers and practitioners as regards Arctic matters that include security components/elements. These U.S. unified commands stressed their need to be included in such venues.

Presenters noted the important need for policy makers to consider not only political geography, but also geophysical realities faced with strategic decisions. When reflecting on the symposium's focus—the Arctic in a broad context and the international, national, local, and Tribal engagement in this region—presenters noted there is a ripple effect across these various groups when a strategy/or significant plan or policy is disseminated (such as the Interagency Arctic Research Policy Committee---IARPC plan) that takes significant time resources to reconcile however such investment is essential to achieve improved understanding and unity of effort.

Presenters noted exercise and operational plans will enhance cooperation when they communicate practitioner decisions to both those who need to execute them and those affected. Several panelists noted the key to cooperation and collaboration is understanding what is important to various stakeholders. One example is a particular focus on group disaster response based on extremes and logistics. Geographic range and extreme seasonality are the two significant challenges that drive policy discussions, but so too is the need for cooperative planning and informing the general public in the planning and conduct of military exercises and/or other security practitioner operations.

AAS22 presenters collectively addressed the reality of the Russian illegal and unwarranted invasion of Ukraine has placed Europe, the Arctic and the world in a pivotal historical moment, and the security situation is significantly different from the last 30 years. Presenters noted the U.S. and Allied/partner adversaries' short and long-term game appears to be an attempt to undermine the current rules-based order (or at least, exploit this order to their advantage and the disadvantage of U.S. and America's like-minded friends).

Accordingly, presenters noted, the U.S. and America's Arctic partners should strive earnestly to maintain strategic deterrence to throughout the range of potential contests, from small-scale conflict to nuclear warfare and integrated deterrence measures should advance to dissuade and deter the grave potential of armed conflict in and through the Arctic region. Presenters did stress the issues normally addressed by the Arctic Council are still important and have not gone away just because the Council is not meeting to address matters aligned to the Council's established mandates (e.g., fisheries and regional climate change).

Presenters noted that in the Arctic, there are a number of lessons observed but not necessarily 'learned.' A specific focus and development plan of working together to learn from each other are needed. Several panelists noted that while very good cooperation exists between nations (United States, and America's Arctic Allies &



Figure 57: Arctic Nations. Image Source: U.S. Coast Guard

partners), there is room for improvement to ensure better interoperability among security and defense practitioners.

For example, whereas normalizing sharing of information continues to advance throughout U.S. Departments and Agencies, AAS22 presentations noted weaknesses for such information sharing across the trans-Atlantic Arctic security community and lagging Arctic awareness remains a concern to understand changing conditions ranging from geophysical to geostrategic. Accordingly, several panelists noted now is the time to share and learn collectively from our lessons and insights to collectively advance Arctic awareness and understanding. Ideas and relationships built during the symposium could provide important input to adjusting/updating strategic priorities, to the benefit of improving the whole of defense measures to better achieve integrated deterrence.

While awareness and understanding of many Arctic security-related issues depend on technology and intelligence sharing within the U.S. and with America's Allies and partners, there is still needs to improve measures on processes to inform decision-makers charged with security and defense. Panelists (with participant concurrence noted that in sum "it comes down to data and how it is shared." Accordingly, data sharing needs to continue at an operational level, and it was suggested that such sharing would be better enabled via formal policy agreements. Participants suggested that willingness to experiment in establishing new measures to share data informally, should be considered and as experiments prove successfully, these measures should transition from informal to formal relationships and policies.

Lastly, participants noted a sense of urgency is needed when responding to issues in the Arctic, but with a balance to ensure Allies and partners keep up with the challenges presented by strategic competitors. Allies and partners have many shared values, which are more powerful than a shared interest, built on instruments of power reinforced by trust and shared values.

A diverse number of presenters stated that dealing with the rapidly changing Arctic is too important of an issue to leave anyone out. There was a good discourse—with varying opinions—on whether Russia should continue to be included in the debate over Arctic issues. While several presenters argued the need for finding a constructive way to re-establish some acceptable level of discussion with the Russian Federation on non-defense/security issues, these were met with compelling arguments that trust in any matter with the Russian Federation (as a

result of their hostilities in Ukraine) was for the sake of the near and longer term—evaporated. Panelists noted that with Allies and partners it would take collaboration, commitment, and practice to develop interoperability. With



Figure 58: AAS22 Video Capture. Image Source: ADAC, UAA.

the exclusion of the need to exclude Russian Federation for the foreseeable future, open dialogue and planning among other Arctic stakeholders are crucial to sustainability and maintaining the Arctic as a place of stability, as

is development and adherence to international guidelines. Integrated deterrence is necessary to ensure the rules based order across the Arctic is maintained.

Several panelists noted that currently, emission and environmental lawsuits and extended continental shelf claims under the protocols of the United Nations Convention on the Law of the Sea (UNCLOS) are hindering potential cooperation and gains, observed that Defense Allies & security partners should seek to settle disputes between each other to better focus on challenges from strategic competitors.

Exchanges between panelists and participants suggested the potential value the AAS22 symposium community could more routinely meet/exchange ideas and establish multidiscipline collaborations better ensure that industry, education, military, and Arctic Allies & partners could collectively address and support the full range of security and security informed issues. Internationally, while robust communication is maintained between Allies and partners via diplomatic and defense communities there is less significant multi-discipline sets of conversations that relate to security. As such AAS22 participants suggested further developing these channels which could prove highly beneficial improve understanding, contributing to additional communities to support integrated deterrence and better ensuring stability across a rules-based Arctic. The concluding thoughts by several panelists could be well summarized that while the Arctic may have a bit of a cloudy future in terms of security and stability (principally due to the opaque nature of Russian ambitions and the diverse challenge from China), there is time and space for Allies and partners to assert new measures to support deterrence to keep regional tension at manageable levels. Throughout AAS22 it became clear that America's Allies and partners have important goals to achieve in terms of developing additional measures (and measures of collaboration) that contribute to regional stability. Finally, it was suggested that new measures need to synchronize and not conflict with the existing number of security-related activities.

Theme 2: Competition in the Arctic

AAS22 presenters noted overall, as geopolitical tensions rise in the Arctic, the need for better understand and integrate sub-regional and regional perspectives to the overall national and multi-national framework of security cooperation to counter strategic competition. The asymmetric value of defense alliances such as the North Atlantic Treaty Organization (NATO) and the North American Aerospace Defense Command (NORAD) to secure national interests between the U.S., Allies and security partners to counter strategic competition remains invaluable.

AAS22 panelists and presenters collectively surmised the issues in the Arctic are not new. Americans on Little Diomedede report increased Russian military activity along the ocean border with Alaska and reports from Kotzebue in Northwest Alaska noting Chinese fishing boats operating through U.S. Extended Economic Zones in the Chukchi Sea Alaskan coast with increasing frequency. Such anecdotes that may have once provided only local interest are now part of a more ominous narrative of our adversaries' Arctic intentions. These issues included the Arctic and non-Arctic states, and voices from long-term Arctic advocates are now being heard. Presenters argued in AAS22 that Asian and European states have long sought Arctic opportunities, but now with increased interest as the ice barriers/Arctic cryosphere have continued to diminish. Many states recognize the importance and potential of the Arctic and are therefore beginning to take the Arctic seriously.



In addition to the “Arctic Eight,”⁸ China, Japan, the Republic of Korea, and India all have an Arctic strategy. Many non-Arctic European states, such as the United Kingdom, France, and Germany, have a published strategic plan. There are a number of other nations in Europe and the Indo-Pacific that have signaled (whether through policy or media declarations) some level of Arctic interests.

Panelists noted that U.S., Allies, and partners should examine the stated goals of the strategic competitors—both long-term and short-term—and how their actions align with their words. Understanding the various relationships strategic competitors have with Arctic states is also essential. This, of course, includes the Sino-Russian relationship as regards the Arctic. The governments in Moscow and Beijing have worked around each other in and near the Arctic for a number of years. Panelists concluded Beijing will most likely continue to support Russian efforts to control access to shipping within the Northern Sea Route and agree politically with the Kremlin to maintain a strong Russian military presence in the Arctic. At the same time, Moscow will likely continue to cooperate with Beijing as long as Chinese efforts do not infringe on Russian interests. However, panelists noted the Arctic basin beyond the extended continental shelf regions comprises essentially a quasi “grey zone” and accordingly, potentially ripe for the Chinese government to seek to attempt to stake a claim. Panelists noted that at a minimum, Beijing will likely seek to establish a more continuous visible Arctic presence.

Panelists noted the U.S. is advancing measures to better preserve and protect America’s national interest in and across the Arctic, while also addressing measures to improve collaboration and interoperability with Allies and partners via NATO and NORAD. More efforts in joint experimentation and exercising between U.S., Allies and partners in North America and Europe continue underway and new initiatives such as additional port structure, NORAD’s North Warning System (NWS) modernization, ice breaking platforms, domain awareness investments, a significant number of fifth generation fighters, and establishing a new Army Airborne Division with assigned Arctic missions are collectively advancing hard power solutions to support integrated deterrence against strategic competition. Soft power complements such as the Ted Stevens Center for Arctic Security Studies round out U.S. measures to support regional stability and support for Arctic rules based order.

Participants in the AAS22 offered ideas to improve Arctic governance. As more countries become involved in Arctic affairs and seek to establish a presence in the Arctic, the Arctic States could consider either efforts to amend the charter and scope of the Arctic Council or supporting the establishment of a new regional mechanism to support civil authorities to better enforce international law and agreed-upon policy agreements in and across the Arctic.

Participants noted the opportunity created by Russia’s invasion of Ukraine, while tragic and placing not only Europe, but the Arctic and potentially significant other areas, does provide an opportunity to rethink the Arctic Council. Panelists offered that among the current Arctic Council failings has been a failure to recognize that most of the governing is accomplished by regional governments who have no voice on the Arctic Council. The sentiment expressed at AAS22 was a refocus of the Arctic Council charter and associated policies. Countering a retool of the Arctic council was the underlying sentiment, the Council was formed in and for a different era, where Arctic nations and regional entities (such as the recognized 6 Arctic Indigenous organizations) were largely unified in focus to address environmental concerns and economic development. Since inception, the Arctic Council was not designed, nor corporately sought to address security matters. Following Russia’s 2014 invasion and

⁸ “Arctic Eight” is shorthand for the Eight sovereign nations with territory at/above the Arctic Circle. This includes the Russian Federation, Finland, Sweden, Norway, Iceland, Denmark (via Greenland), Canada and the U.S.



Annexation of Crimea and establishing an active and ongoing conflict in eastern Ukraine, the Arctic Council continued on a steady course of working with Russia, keeping a bifurcated approach between Arctic environmental and economic cooperation with security deterioration in Europe.

As such, while several AAS22 panelists sought to reconcile strong desires to reestablish some sort of useful and measured communications with Russia in matters of mutual interest (such as maritime co-management in the Bering, Beaufort and Barents Seas), there was also measured responses from other panels and participants urging caution that any cooperative measures involving the Kremlin were suspect and should only be accomplished at very senior levels between governments.

Several AAS22 participants noted that if/as Sweden and Finland gain NATO membership, 7 of 8 Arctic nations will be covered under the Washington Treaty. With the Kremlin seeking to continue to challenge NATO, it was suggested that a security cooperative between NATO and Russia that sought to manage tensions and prevent escalation could potentially prove useful.

Presenters carefully noted that if and when Finland and Sweden join NATO, there will be increased pressure to focus on the Arctic and establish a NATO Arctic strategy. These panelists suggested that NATO should strive for practical transparency and careful messaging to prevent political escalation, in light of unpredictable Russian decision making. One AAS22 panelist noted the world cannot trust Russia's choices, but careful work needs to proceed with NATO to prevent a future picture of Russia in the Arctic that resembles than Russia in Ukraine in 2022.

Participants conveyed that cooperation is at a standstill; therefore, the base level of transparency and communication is integral to maintaining peace. A sense of Russian insecurity is brewing in the North because it has historically been a front upon which they have not been challenged. All nations need to be able to focus on security and balance pursuing an avenue of communication and moderate to avoid falling into the dangerous area of non-communication.

Panelists noted that Norway will chair the Arctic Council starting in May 2023 and will likely advance effective means for non-security related work between the 7 cooperative Arctic states in measures for environment and economic development and continue to avoid security matters.

Panelists noted several non-Arctic states—Germany, France, and the U.K. for instance, want to collaborate on projects, particularly in science and the environment. They also want a peaceful Arctic and would like to create a code of conduct that is transparent, but one that all can monitor. Panelists also noted that European nations are concerned about encouraging closer collaboration between Russia and China.

As regards the People's Republic of China (PRC), a number of presenter and participant concerns brought to the forefront were about the PRC's perceived campaign to leverage the existing rules based order in the Arctic to exploit and to dominate. Panelists recommended pursuit of preventative measures which include a continued dialogue with the PRC; without it, miscommunication and misinterpretation may become a higher risk. Presenters suggested efforts that negatively impacted cooperation between Russia and the PRC may prove more helpful to the rules-based-order in the Arctic and globally.

Panelists recommended the rules-based-order may benefit from reforms towards international law. Rules-based order and international law are not the same. Presenters noted the PRC might comply with the international law, but they do not respect a rules-based order. It was suggested that more focus is needed on



teamwork and building relationships, even with competitors like the PRC, to find where possible where U.S., Allies and partners have mutual (even the slightest) interests with the PRC and demonstrate a commitment to make that area of mutual interest a success. Presenters also recommended value of better understanding strategic competition's culture as a basis in order to forge improved relationships.



Figure 59: AAS22 Video Capture. Image Source: ADAC, UAA

In sum, AAS22 presenters generally asserted that some level of acceptable Arctic communication between U.S., Allies and partners, is necessary and finding a suitable measure of conditions-based cooperation could prove useful as a mechanism of escalation management, especially within the international maritime convention. The AAS22 presenters generally agreed to a vision of an Arctic with secure power and energy, onward economic development, and human security. Panelists summarized that via a conditions-based approach and through effective measures of integrated deterrence, the Arctic can remain a place of secure stability with the help of a reliable infrastructure and consistent resources to protect respective national interests, cooperate in areas of mutual agreement, while seeking economic development guided by environmental sustainability.

Theme 3: Infrastructure in the Arctic

AAS22 presenters noted that although many have focused on transportation or physical infrastructure, communication infrastructure cannot be overlooked. Panelists recognized increased connectivity comes with the ability to enable yet more communications and global information sharing. It is essential at all geopolitical levels and to both physical and communication infrastructure. Improved communication infrastructure is critical for the Arctic region's security and all national security levels.

Panelists noted there is a need for broad partnerships across agencies and intergovernmental organizations and a requirement to link subsurface, land, aerospace, and space communications infrastructure. The benefits to the military are readily apparent, but improved communication infrastructure will also benefit civilian users and improve the economic and health security of all Arctic users. This is especially true for those who live or operate in remote areas. Remote villages, for example, will be better connected and able to utilize some of the online activities many of us have become accustomed to in the past few years, such as telehealth, which is not an option today for many Indigenous peoples in the Arctic. Presenters remarked there is still much work to do on

communication within U.S. interagency collaboration for success in the U.S. Arctic. U.S. Allies and partners face similar challenges.

Presenters noted the ability to communicate with others and share information on assorted topics at many levels will lead to increased cooperation, collaboration, and teamwork, as identified in Theme 1. This includes sharing information about weather and natural disasters, disaster response, search and rescue, scientific research, safety, mapping of wildfires, ocean mapping, tracking of fish stocks, environmental change, and so much more. Accordingly, it was suggested accessing more information will lead to greater awareness in these domains. Considering the need for connectivity, Presenters recommended additional measures dedicated towards improving people skills to support satellite systems will help solidify the involvement within the new space ecosystem.



Figure 60: Communications tower. Image Source: Pixabay

All discussions acknowledged the enormous challenge from a technological standpoint when development is conducted in a vacuum. Panelists noted investment in the Arctic is complex; partnering between government and private sector is not easy in at least the U.S., and perhaps that remains the case in Canada and Europe. However, despite challenges, presenters recommended private and public partnerships should continue, especially in the effect of technology in the aerospace industry and ground station infrastructure. Panelist noted the private sector continues to move into the commercial space sector, (SpaceX was one referenced example) and advances in launch platforms, synthetic aperture radar, underwater drones, and remote sensing tools are now weighted more in private industry efforts compared to government spaces.

Panelists carefully noted that facilitating the development of technology that aids the process of data collection, specifically automated data collection, is imperative.

Presenters remarked for alternative energy research and development needs to continue even in the confines of the political stresses within the Arctic (noting that remains with 7, not 8 Arctic nations). Panelists highlighted next generation of wind, solar, geothermal, and ocean tidal energy, is likely to be powered by “big data” and “big computing,” so improving this technological quantum computing and artificial intelligence/deep learning will likely not be accomplished by one single entity. Cooperation between industry and supporting nations should seek to create projects that complement each other rather than compete.

From a U.S. Arctic view, panelists noted when considering specific infrastructure locations, the Port of Alaska in Anchorage was an important discussion topic, as it is a critical lifeline to Alaska's gateway to the Arctic. and serves a majority of shipping needs in the State. However, like much of the infrastructure within the U.S. Arctic, it needs tremendous repairs and upgrades. Panelists noted infrastructure projects in the U.S. Arctic have in the past, gained priorities and funding through national imperatives and crises – that now should be sought in advance of a specific crisis to advance U.S. Arctic leadership. Presenters noted that across the Arctic, lagging and lacking infrastructure limits opportunity to stimulate and advance the Arctic economy. U.S. focused panel discussions centered on developing infrastructure in transportation, resource extraction and manufacturing will

contribute to regional Arctic security, as with such investments, will increase regional residents and support development that helps policy makers and legislative bodies justify investment. Panelists noted that when looking at ways to improve infrastructure within the Arctic, it is necessary for meaningful conversation to lead to creative solutions, and all those affected, including Indigenous groups, must be included in these conversations.

Presenters advanced the view on the vital need to connect, communicate, and have increased domain awareness will not only improve teamwork, but it is also vital to engage with and understand the actions of strategic competitors. Such measures increase transparency and may prevent tactical miscalculations from creating a strategic problem. The increased connectivity that comes with improved Arctic communication infrastructure will lead to improved communication, information sharing, and domain awareness, all requisites to working together to tackle the many issues facing the region and maintaining peace and stability. Accordingly, panelists concluded that communicating between all groups with a stake in the Arctic region is essential.

Further panel discussions about infrastructure included the impacts of multiple layers of Arctic development. Presenters highlighted that research is a vital part of continuing advancement during a time of such rapid environmental and political change. High impact events rely heavily on communication networks such as weather monitoring, television broadcasting, sea ice and temperature monitoring, tsunami warning centers, active volcano monitoring, and much more to ensure resident safety and when needed, achieving a reliable emergency response.

Panelists noted Infrastructure encompasses not only urban development and transportation methods but also environmental analysis forecasting and monitoring for research purposes. Current estimates say roughly 14% of the Arctic Ocean has been mapped using multibeam sonar. This data is used for geological modeling, sustainability planning, and transportation safety, but mapping needs to increase. Presenters and participants alike opined about the Arctic's sparse observations and discussed now is the time to improve technology related to operating stations. In order to advance more sensing efforts, panelists observed that automated low power and reliable infrastructure are necessary due to the remoteness of the rural observation stations.

Presenters concluded the world cannot develop a holistic view geophysical view of the Arctic without in situ observations and collaborative/cooperative science. The implications of poor development are global; therefore, the idea of Arctic expansionism cannot progress with traditional industry practices. Panelists suggested the international community needs to transform energy needs and use this opportunity to make the Arctic a place of innovation that will pioneer a newer, perhaps greener version of an Arctic economy. A popular sentiment from those in attendance was, what happens in the Arctic is by choice and not consequence.



CONCLUSION

ALCOM’s Arctic Symposium 2022 supported the USNORTHCOM Arctic mission as well as the ALCOM Commander’s regional responsibilities. Based on feedback received during and after the four-day symposium, AAS22 proved to be a successful event. It met or, in most cases, exceeded expectations of those who provided feedback.

AAS22 relied on diverse *ways* to focus on the dynamic security issues facing the Arctic—panel discussions, keynote speakers, field activities, exercises and analysis, and networking opportunities. The dialogue was led by senior defense leaders and subject matter experts from around the world who are focused on the Arctic in various disciplines and was supported by a focused staff—the *means*. This combination ensured the *ends* were achieved. Not only did participants walk away with a greater awareness of the present-day Arctic issues and concerns, but also—in keeping with the AAS22 motto “The Horizon Beyond for the Far North”—an understanding of potential future challenges.

Today the Arctic security environment is increasingly complicated and complex. Strategic competitors and friendly states alike are becoming progressively more engaged in the Arctic and in Arctic issues as they come to realize the importance of the region as a strategic location, and its economic potential due to untapped resources. There is broad agreement that we need a safe, secure, peaceful, stable, and prosperous Arctic, yet increased concern. Since the conclusion of the Cold War, the Arctic has been relatively immune from influence by geopolitics and events outside the region. Due to malign Russian actions in Europe, the view of Arctic exceptionalism between nation states is now changed, perhaps for the foreseeable future. The potential for spillover from Europe to the Arctic is a concern following Russia’s continued and escalated hostilities against Ukraine and the Kremlin’s utter disregard for international law and the rules-based order. On one hand, it is not possible to fully address issues in the Arctic without understanding what is/is not happening in the Russian Arctic; but calls for early restoration of cooperative measures with Russia are simply not in alignment to national level policies across the NATO alliance. There is wariness too of the PRC’s intentions and their disregard for the rules-based order. What then is the right balance of engagement with the PRC in the region?

One thing is certain, the dynamics of the region demand cooperation and collaboration among like-minded Allies and Partners—and especially among the Indigenous peoples of the region—to solve or mitigate the most pressing security concerns—whether by actors or actor-less concerns such as climate change. Russia aside, the Arctic strategies, policies, and interests of the remaining Arctic states are – by and large – aligned, which offers terrific opportunity for teamwork.

The summary conclusion of presenters and participants alike at AAS22 is that not only do we need to work together to integrate deterrence across the region, but we also need to invest in the region—not just for defense and security, but for overall economic advancement. The lack of infrastructure presents major hurdles in North America and much of the pan-Arctic region—for example in housing, transportation, and industrial infrastructure. The lack of communication infrastructure, though improving, also presents problems in the military, public, and private sectors. The resultant connectivity of improved communications will assist in the sharing of data and information. This benefits local communities and enables more effective teamwork at all levels and will likely bring heightened domain awareness which is critical for this region in the air, land, sea, subsurface and cyber domains. Incentives to responsibly develop the region—with sustainability and the environment in mind—will contribute and support the Arctic interests of the U.S. and America’s Allies and partners.



To better achieve a safe, secure, stable, and prosperous Arctic, now more than ever, the asymmetric value of the Trans-Atlantic Arctic relationship presents a cooperative and like-minded community of government, industry and citizens, which guided by the principals of mutual interest will foster teamwork and provide a collective bulwark to ensure competition does not lead to conflict, while advancing sustainable development for the region. Such measures require integrated, proactive policy and actions, as reacting and responding to strategic competitors will no longer suffice. As stated by the Commander, Alaskan Command, things that happen in the Arctic should be by choice, not by consequence.

AAS22 continued the momentum started with AMS18 and advanced through ASLS19, AAS19, and ASLS21, setting the stage for the Calendar Year 2023 Arctic Senior Leader Summit.



Figure 61: AAS22 Banner. Image Source: TSC