GEORGE C. MARSHALL
EUROPEAN CENTER FOR SECURITY STUDIES
PERSPECTIVES

Emerging Challenges in Arctic Security and Recommendations for the Future: Perspectives from the European Security Seminar-North

By Rachael Gosnell, CDR Andreas Hildenbrand, and Elizabete Aunina

The George C. Marshall European Center for Security Studies hosted mid-level and senior security practitioners, policymakers, and academics from Europe and North America in the first iteration of a new program: the European Security Seminar-North. This seminar, which ran from 9-13 July 2018, provided an opportunity for participants to discuss emerging challenges in the Arctic region and to assess their impact on European and North American security. In addition, participants developed strategic recommendations to address contemporary and future security challenges of the Arctic region.[1]

The Arctic is a fast evolving region that is the focus of renewed global interest spurred by an increasingly accessible High North. International scientific research indicates that the Arctic is unquestionably experiencing a warming trend. The globally recognized Arctic Report Card notes that Arctic air temperatures are warming at double the rate of global average increases. Arctic ice coverage in March 2017 was the lowest winter maximum since data was first recorded in 1979. Regional sea ice is becoming thinner and younger, as well; this is problematic as young ice is more likely to melt quickly or break free and potentially disrupt shipping lanes. The Arctic Report Card further notes that the "magnitude and pace of the 21st century sea ice decline and surface ocean warming is unprecedented in at least the last 1,500 years and likely much longer."[2] Arctic tundra is also warming, resulting in decreased permafrost and increased greenness. Thawing permafrost presents significant concerns ranging from the release of potential toxins – such as greenhouse gases (particularly methane), mercury, and bacteria – to the collapse of infrastructure as the ground softens. Pollution, such as black carbon and plastics, further negatively impact the Arctic environment. The warming of the Arctic region is not merely a concern for Arctic states, but also has the potential to strongly influence the global climate. Sea level rise resulting from ice melt, amplification of weather phenomena, shifting currents, and warming seas already have global consequences.

[1] Although the term "Arctic" is used in this paper to discuss the region, it must be noted that there are a number of definitions for this word. The most commonly accepted definition is the land north of the Arctic Circle (66 degrees 34 minutes North). Scientific definitions of the term are based upon temperatures, tree lines, and permafrost. Other definitions of the word focus on traditional indigenous communities or maritime activity. The International Maritime Organization's Polar Code adopts a more robust boundary and some note the similarities of the Northern Baltic Sea to the Arctic. The Arctic region is quite diverse in terms of population, economic activity, accessibility, and geopolitical concerns. The Arctic of the European High North is vastly different than the North American Arctic. For simplicity in this report, the term will apply to the entire region; we will clarify, as appropriate, if specifically discussing a smaller subset of the Arctic.

[2] "Arctic Report Card," National Oceanic and Atmospheric Administration, December 2017, accessed September 12, 2018, https://www.arctic.noaa.gov/Report-Card/Report-Card-2017.

While there are significant negative effects of a warming Arctic, there is also an increase in primary productivity in the Arctic that forms the basis of the marine food chain. Ashore, tundra greenness has increased substantially and vegetation is expanding. With this increase of plant growth at sea and on land, the ecosystem is evolving as migratory patterns of fish and animals shift. Changing migratory patterns and thawing tundra significantly affect local indigenous communities dependent upon hunting and fishing. Indigenous communities are also struggling with warming's effect on their infrastructure, which formerly depended upon solid permafrost to ensure structural integrity of buildings and roads.

The region has significant reserves of natural resources, to include oil and gas reserves as well as rare earth minerals, fisheries, and forests. The U.S. Geological Survey (USGS) estimated that the Arctic has over ninety billion barrels of oil, 1,700 trillion cubic feet of natural gas and forty-four billion barrels of liquid natural gas.[3] This amounts to nearly thirty percent of the world's conventional (unconventional resources such as oil shale, tar sand, gas hydrate, et cetera, were excluded) natural gas supply and thirteen percent of undiscovered global oil reserves.[4] Russia estimates that it has thirty-three oil and gas deposits on its Arctic shelf, with initial recoverable reserves between 100-120 billion tons of oil equivalent.[5]

Melting ice and warming temperatures has sparked interest in the maritime potential of the region. The International Maritime Organization has identified four Arctic shipping routes: the Northern Sea Route, Northwest Passage, Transpolar Route, and the Arctic Bridge.[6] These changes potentially mean vastly shorter shipping routes between key markets. The East Asia to Northern Europe shipping route is 11,200 nautical miles through the Suez Canal, but only 6,500 nautical miles (nm) through the Arctic, a difference that can decrease transit time by twelve to fifteen days on the Rotterdam to Yokohama route. Yet out of the three potential polar shipping routes, only the Northern Sea Route is currently accessible, albeit for a very limited period. The Northern Sea Route will see extended opening by 2025, the Trans-Polar Route by 2030, and the Northwest Passage will open last, with limited summer and fall transits by 2030.[7] Yet shipping traffic will primarily take the form of destination shipping, the transport of extracted resources to markets. Transit shipping, the movement of goods through the region, is deemed unlikely by the commercial sector in the near future due to the harsh operating environment, tonnage limitations, and the demands of a "just in time" shipping model.

The region is witnessing increased interest by the tourism industry, with Arctic cruises rising in popularity. Adventurers in private sailing and motor vessels are beginning to explore the region as well. The rising maritime activity has spurred concern over the lack of search and rescue infrastructure, though the Arctic Council is working to address concerns through the 2011

---

[3] "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," U.S. Geological Survey Fact Sheet 2008:3049, https://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf.

[4] Harri Mikkola, and Juha Kapyla, "Arctic Economic Potential: The Need for a Comprehensive and Risk-Aware Understanding of Arctic Dynamics," Finnish Institute of International Affairs. April 23, 2013, https://www.fiia.fi/en/publication/arctic-economic-potential.

[5] Kiril Molodtsov, Deputy Energy Minister of the Russian Federation, «Полюс на минус: Минэнерго: Геологоразведка в Арктике может стать в два раза выгоднее» ["The pole on the minus: Energy Ministry: Geological exploration in the Arctic can become twice as profitable"], *Российской газеты [Russian Gazette]*, March 27, 2018, https://rg.ru/2018/03/27/minenergo-geologorazvedka-v-arktike-mozhet-stat-v-dva-raza-vygodnee.html.

[6] "IMO Polar Code Advisory," American Bureau of Shipping, January, 2016, 5, https://ww2.eagle.org/content/dam/eagle/advisories-and-debriefs/ABS_Polar_Code_Advisory_15239.pdf.

[7] "The United States Navy Arctic Roadmap for 2014-2030," Chief of Naval Operations, (Navy Task Force Climate Change), February, 2014, 11, http://www.navy.mil/navydata/documents/USN_artic_roadmap.pdf.

Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic and the establishment of the Arctic Coast Guard Forum in 2015 to allow additional coordination and cooperation in exercises. [8]

Harsh weather as well as poor infrastructure mean that transits through the region are particularly challenging. Significant parts of the Arctic face poor communications, satellite coverage, hydrographic surveys, and navigation aids. There is also a lack of deep-water ports and emergency response units.

The increased activity in the Arctic has given rise to security concerns for a region that has long avoided major tensions between states and international organizations. Key Arctic stakeholders remain committed to ensuring a peaceful, stable region that remains cooperative. The Arctic Council remains the leading intergovernmental organization for the Arctic, but its mandate specifically excludes security. As states increasingly seek to exploit Arctic resources, it is important to consider security implications for the Arctic.

Given this complex and evolving region, the European Security Seminar-North sought to bring together practitioners and experts to further explore the geostrategic importance of the Arctic, identify key challenges, and develop a wider framework of cooperation and strategic recommendations. The participants analyzed and evaluated geopolitical, economic, and environmental risks, challenges, and opportunities in the Arctic region, while also considering the governance and legal framework of the Arctic. In addition, participants discussed risk mitigation strategies and areas of cooperation for Arctic stakeholders in order to detail strategic recommendations for the region.

Arctic Trends

The Arctic region is experiencing change across many facets that are relevant to security, particularly in regards to the region's economic, population, and environmental trends. The participants of ESS-N combined their expertise into working group sessions that identified both key issues and regional trends in order to better understand the Arctic security environment. Key economic, environmental, and geopolitical issues—all of which often overlap—could affect the future Arctic security environment. While participants identified numerous challenges and opportunities for the Arctic, there was general consensus that there will be enduring interest in the exploration and extraction of natural resources in the Arctic. This will have significant implications for Arctic economies, and indigenous and local communities as the region undergoes development. Increased regional activity will drive improved infrastructure and connectivity, as well as the need to improve data collection and forecasting of the environment. This further highlighted the need for scientific research to monitor the environment in a collaborative and transparent manner. The sharing of regional data and knowledge by all stakeholders is critical to establishing a scientific baseline and informing policies. As stakeholder interests in the region grow, there will also be a rising importance for governance and adherence to the international legal framework. Regional activity will stress cooperative structures, logistical infrastructure, and security mechanisms.

The warming of the Arctic is having an unquestionable impact across the region, affecting all stakeholders. While the Arctic has long held significant geostrategic importance, from early explorers and whaling expeditions up through the Cold War, the environmental warming trends

[8] "Arctic Search and Rescue Agreement," *Arctic Portal*, May 23, 2011, https://arcticportal.org/yar-features/421-arctic-search-and-rescue-agreement.

combined with improved technology have permitted increased exploration and exploitation of the region's natural resources. Demands of a rising global population, particularly energy needs, will likely drive further Arctic development.

Economically, there is a general consensus that the region will continue to see development. Many businesses, specifically those in the European region, remain cautious, however, about whether to engage in the Arctic due to environmental sensitivities and the potential for negative publicity and perceptions amongst the broader consumer base if environmental damage were to occur. The enduring image of starving polar bears can unnerve potential investors. This seems to be less of a concern for the energy sector, which traces its Arctic history to the first Norwegian oil discoveries in 1969.

One concern for enabling economic success is a population with which to sustain businesses. Currently, the Arctic has about four million inhabitants, with about half living in the Russian Arctic. The population density varies dramatically; the North American Arctic, for example, is sparsely populated. Indeed, the largest North American population center north of the Arctic Circle is Sisimiut, Greenland, with just 5,598 residents.[9] Yet the European Arctic is more populous, with the largest Arctic community being Murmansk, Russia, with a population just below 300,000.[10] Tromso, Norway is home to nearly 73,000 inhabitants.[11] Overall, Arctic population has held relatively constant since 2000, witnessing some migratory shifts towards economic centers. Yet some areas, such as the Russian Kola Peninsula, are seeing population declines.[12] Governments are attempting to reverse the present trends of gender imbalance and migration of younger inhabitants from the region, but these trends will likely persist in the near future. Increased development due to the exploration of natural resources will likely continue to spur moderate population growth, with the overall Arctic population predicted to rise by 4 percent by 2030.[13] When compared to the global predicted rise of 29 percent during the same period, it is clear that the region will continue to be a unique one.

The internal Arctic markets remain tenuous, as socio-economic inequality can cause the local populations to be more susceptible to the demands of external investment. Limited competition in the market can result in the creation of dependencies. Tariffs and regulatory obstacles pose challenges to integrated markets. With the rising importance of pan-Arctic trade, it becomes increasingly important to offset these challenges. Governments are trying to attract more businesses, particularly those in the technology sector, to the European Arctic, however it is likely that the broader Arctic economy will continue to be fueled by the extraction of natural resources.

Connectivity remains a challenge for the region, although the Finnish Chair of the Arctic Council has listed this as a priority. Even the most populous regions of the Arctic lack sufficient data connectivity. A broadband speed of at least 100 Mbps can be sufficient for small and medium

---

[9] *World Population Review,* accessed July 16, 2018, http://worldpopulationreview.com/countries/greenland-population/cities/.
[10] City Population, "Murmansk," accessed July 27, 2018, https://www.citypopulation.de/php/russia-northwestern-admin.php?adm2id=47701.
[11] "Tromso Population," accessed September 6, 2018, http://population.city/norway/tromso/.
[12] Thomas Nilsen, "Murmansk and Arkhangelsk population continues to decline," *Eye on the Arctic,* September 29, 2017, accessed July 27, 2018, http://www.rcinet.ca/eye-on-the-arctic/2017/09/29/murmansk-and-arkhangelsk-population-continues-to-decline/.
[13] Timothy Heleniak, "Arctic Populations and Migration: Taking the Temperature on the Arctic," Nordic Council of Ministers, October 7, 2015, accessed September 6, 2018, https://www.norden.org/en/nordic-council-of-ministers/ministers-for-co-operation-mr-sam/the-nordic-region-in-focus/norden-i-fokus-i-koebenhavn-1/201ctaking-the-temperature-on-the-arctic201d/heleniak-ahdr-presentation-to-ncm-october-7-2015.pdf.

enterprises (SMEs), but large organizations and research centers require higher speeds. Yet robust fixed broadband speed is not guaranteed in the Arctic, limiting economic potential.[14]Foreign Direct Investment has already made a substantial impact on the Arctic, with China and other East Asian countries investing heavily throughout the region. It is estimated that China alone has invested nearly $1.4 trillion in the economies of Arctic nations from 2005-2017; of this, $89.2 billion was for infrastructure, assets, financing, cooperative agreements, or other projects (primarily energy and mineral resources) located at or above 60 degrees north.[15] The table below depicts Chinese investments in the Arctic states from 2012-2017.

Chinese Investments in the Arctic littoral states (not limited to Arctic region), 2012-2017

	GDP	**Number of Transactions**	**Avg. Transaction Size (Million USD)**	**Total Value (Billions USD)**	**% of GDP**
Canada	$1.53 trillion	107	$442.1	$47.3	2.4%
Greenland	$1.06 billion	6	$33.4	$2.00	11.6%
Iceland	$20.05 billion	5	$30.8	$1.2	5.7%
Norway	$370.60 billion	17	$147.9	$2.5	0.9%
Russia	$1.28 trillion	281	$691.7	$194.4	2.8%
USA	$18.62 trillion	557	$340.6	$189.7	1.2%
Total	**-**	**884**	**$508.66**	**$449.66**	**-**

Source: Center for Naval Analyses[16]

The maritime shipping industry is becoming more viable in the Arctic as well. Although there is a long history of fishing in Arctic waters, maritime activity was largely limited by ice coverage. As the ice diminishes, it is likely that traffic will increase, particularly destination shipping, in support of resource exploration and movement to markets, and the tourism industry. A remarkable example of cooperation between states, industry, and nongovernmental organizations, the International Maritime Organization's Polar Code, took effect in January 2017. Although there are still some gaps, particularly with enforcement, the Polar Code seeks to improve maritime safety in the increasingly active polar regions.

While there has been an increase in maritime activity, transit shipping—the movement of goods between markets, such as the Asian to Northern Europe market—remains controversial. Though Russia and China have made statements regarding the potential for the Arctic to become a major shipping route, this will not likely occur in the immediate future. Indeed, only twenty-four vessels with just under two hundred thousand tons of cargo transited the Northern Sea Route in

[14] *Business Index North 2018,* Issue #2, (April 2018): 70-73. http://businessindexnorth.com/reports/?Article=61.
[15] Mark E. Rosen and Cara B. Thuringer, "Unconstrained Foreign Direct Investment: An Emerging Challenge to Arctic Security," *CNA*, November 2017, 54, accessed September 6, 2018, https://www.cna.org/cna_files/pdf/COP-2017-U-015944-1Rev.pdf.
[16]Mark E. Rosen and Cara B. Thuringer, "Unconstrained Foreign Direct Investment: An Emerging Challenge to Arctic Security," *CNA*, November 2017, 54, https://www.cna.org/cna_files/pdf/COP-2017-U-015944-1Rev.pdf.

2017, compared to the 17,600 vessels carrying more than 1.04 billion tons of cargo that transited the Suez Canal.[17] Operating challenges – to include harsh weather conditions and draft limitations – will continue to plague the region even if ice diminishes. The demands of the "just-in-time" shipping model and high insurance costs make the Arctic routes too unpredictable for the near term, though this may change in the mid to long term. Furthermore, Russia has adopted recent legislation proposing further restrictions on the usage of the Northern Sea Route, requiring the use of Russian flagged vessels for the transit of hydrocarbons along the Northern Sea Route, in an effort to protect its shipbuilding industry.[18]

However, there will unquestionably be a rise in destination shipping, particularly from the Yamal peninsula. With the new *Christophe de Margerie* icebreaking class of LNG carriers, it is anticipated that year-round shipping will occur, with LNG (liquefied natural gas) transported to Asia during the summer/fall and to Northern Europe the remainder of the year when ice limits travel eastward. China, Japan, and South Korea are all looking northward for LNG, bringing global interest into the Arctic.

With increased activity in the region, both ashore and at sea, there are increasing concerns regarding the impact on the fragile Arctic environment. The 1991 Arctic Environment Protection Strategy (AEPS), signed by all eight Arctic states, highlighted the need for a special approach to the region. The Arctic Council has continued the work of the AEPS since its founding in 1996.[19] Protection of this unique environment is high on the agenda of both national and intergovernmental organizations such as the Arctic Council. Many Arctic stakeholders have sought to focus on protecting the environment through such venues as the Arctic Council Working Groups and the European Union. The maritime environment is often viewed as well suited for cooperative comprehensive action due to the principles of the global commons and need for collaborative action.

The Arctic environment faces many pollutants that can disrupt the ecosystem and may further increase global warming. High levels of black carbon, a major pollutant derived from incomplete combustion or burning of fossil fuels, and methane are affecting the Arctic and expediting warming trends. At the 2017 Arctic Council meeting, the eight Arctic states signed the Fairbanks Declaration aiming to reduce "short-lived climate pollutants."[20] While the European Union, the Arctic Council, and additional intergovernmental organizations are aiming to assess policies and reduce black carbon and methane emissions, it will require further international commitment. Plastics are also particularly problematic in the Arctic, as micro-fibers have been detected throughout its delicate ecosystem. For example, the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) has set an Ecological Quality Objective for the monitored fulmar seabird population. Nearly a quarter of the monitored seabirds in Iceland and

[17] Atle Staalesen, "Arctic Seaports bustle as Northern Sea Route reaches new high," *The Barents Observer,* January 19, 2018, accessed July 16, 2018, https://thebarentsobserver.com/en/arctic/2018/01/arctic-seaports-bustle-shipping-northern-sea-route-reaches-new-high and Suez Canal Transit Authority, "Navigation Statistics," accessed July 16, 2018, https://www.suezcanal.gov.eg/English/Navigation/Pages/NavigationStatistics.aspx.

[18] Atle Staalesen, "New restrictions coming up in Russian Arctic shipping," *The Barents Observer,* March 28, 2018, accessed July 28, 2018, https://thebarentsobserver.com/en/industry-and-energy/2018/03/new-restrictions-coming-russian-arctic-shipping.

[19] Arctic Environmental Protection Strategy, June 14, 1991, accessed July 16, 2018, http://library.arcticportal.org/1542/1/artic_envionment.pdf and "Declaration on the Establishment of the Arctic Council," Ottawa, Canada, September 19, 1996, accessed September 10, 2018, http://library.arcticportal.org/1270/1/ottawa_decl_1996-3..pdf.

[20] CCAC Secretariat, "Arctic Countries Commit to Reduce Black Carbon Emissions by as Much as a Third," Climate & Clean Air Coalition, May 12, 2017, accessed September 10, 2018, http://www.ccacoalition.org/en/news/arctic-countries-commit-reduce-black-carbon-emissions-much-third.

Svalbard had excessive amounts of plastic in their stomachs; while lower than the North Sea observations, which documented nearly two-thirds of the birds with high amounts of plastics in their stomachs, the numbers are still alarming. Most birds tested positive for the presence of plastics in their stomachs. Water samples in the Arctic reveal similarly startling trends.[21]

There has been significant discussion on both prevention and response to environmental disasters such as a major oil spill. Given the challenging environment, which consists of extreme conditions as well as few response units to cover an immense region, it is critical to develop appropriate protocols before an incident. Prevention of such a disaster is obviously preferred, but this requires strict regulations, compliance, and enforcement. The Arctic Council's 2013 *Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic* has sought to outline guidelines for the region.[22] The European Maritime Safety Agency is also actively examining emergency response in the region. Table-top exercises on oil spill response help to develop appropriate communication channels and give responders familiarity with potential disasters, yet more can still be done. Organizations such as the International Association of Oil and Gas Producers and the Global Oil and Gas Industry Association for Environmental and Social Issues are further examining the issues and establishing international cooperation structures amongst global oil and gas companies.

Crisis response is an increasingly important issue, and one that lends itself well to cooperation amongst Arctic stakeholders. In addition to environmental disasters, Arctic states will need to be ready to conduct more Search and Rescue missions. The Arctic Coast Guard Forum (ACGF) has offered a coordination mechanism for Arctic states and has allowed participants to collaborate through table-top exercises, meetings, and exercises in an effort to better prepare for emergent situations. Prior to the foundation of the ACGF, the North Atlantic Coast Guard Forum met regularly to discuss Arctic issues.

Yet there remains a concern for the impact of spillover of outside conflicts into the Arctic. While a unique region, the Arctic is not isolated from global influence across a wide spectrum, to include environmental, economics, and geopolitics. The illegal annexation of Crimea of 2014 and subsequent restrictive measures imposed on Russia have resulted in limited communications between Arctic states. Russian participation in the Arctic Coast Guard Forum (ACGF) has been low and they have been disinvited from participating in the Arctic Security Forces Roundtable (ASFR). This year's ASFR was hosted in North America for the first time since its establishment in 2011, with participants from all Arctic states (except Russia) as well as France, Germany, the Netherlands, and the United Kingdom. The ASFR offers an exceptional forum to discuss regional security challenges and improve security cooperation and coordination, but the absence of Russian participation results in no representation for a country that comprises nearly half of both the Arctic's population and coastline. The resultant lack of communication and cooperation between emergency responders and military forces could be problematic for future Arctic scenarios.

[21] Ingeborg G. Hallanger and Geir W. Gabrielsen, "Plastic in the European Arctic," Norwegian Polar Institute, 2018, accessed September 10, 2018, https://tinyurl.com/y8979trq.

[22] Arctic Council, "Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic – Procedures for updating the Operating Guidelines," Arctic Council Open Access Repository, September 20, 2013, accessed September 11, 2018, https://oaarchive.arctic-council.org/bitstream/handle/11374/1260/AC_SAO_CA01_Doc6-5-1_EPPR_Updating_the_Operational_Guidelines_Arctic_Oil_Spill_Agreement.pdf?sequence=1&isAllowed=y.

Arctic Security Environment

The Arctic has long been known as a peaceful and stable region, yet the evolving economic, environmental, and geopolitical environments will undoubtedly impact the security environment. While militaries of the Arctic have operated in the region for decades – albeit primarily in the underwater and air domains – there are indications that military activity may rise. Russia has invested heavily in improving military infrastructure in the High North, reactivating old Soviet facilities and building new infrastructure. The Northern Fleet is home to forty-one submarines and thirty-seven ships; it the largest Russian Navy fleet.[23] Although the Arctic is mentioned only three times in the 2015 Russian Federation National Security Strategy, it clearly holds strategic and economic importance.[24]

In response to increased Russian activities, NATO is increasingly active in the High North. The re-establishment of the NATO Atlantic Command denotes increased strategic concern for the North Atlantic. NATO forces are increasingly active in the North Atlantic and European Arctic region for presence operations and to develop capabilities. Both the frequency and scale of exercises are on the rise in an attempt to regain cold weather proficiencies and interoperability with northern partners.

The increase of NATO interest in the region – a direct response to increased Russian military activities – has resulted in Russian apprehension. Channels for deconfliction and dialogue are severely limited following the Crimea annexation. Russia views further NATO presence as increasing the potential for conflict, but NATO member states emphasize the need for NATO presence as a confidence building measure to prevent conflict.

Yet there are also nascent cooperative efforts occurring in the region designed to reduce tensions and improve interoperability in a crisis. Norway and Russia recently completed an annual Barents Sea exercise designed to improve regional Search and Rescue response, based on a bilateral agreement signed in 1995.[25] Additionally, under the Barents Cooperation framework of the Barents Euro-Arctic Council (BEAC), there have been ongoing multilateral exercises since 2001.[26] Sweden will host the upcoming 2019 rescue exercise, which will be organized by the Swedish Civil Contingencies Agency.

Although stakeholders are carefully examining their economic and geopolitical interests in the region, it must be noted that the Arctic has an impressive record of cooperation. Participation in the Arctic Council by both member states and observers is robust and has resulted in three important, legally-binding agreements on Search and Rescue, Oil Pollution Preparedness and Response, and Scientific Cooperation. The forum provides an opportunity for all Arctic stakeholders to interact, promoting dialogue and cooperation. Other organizations, such as the International Maritime Organization and the Arctic Economic Council, have further enabled discussion and cooperation on Arctic matters.

---

[23] *RT.com,* accessed October 02, 2018, https://www.rt.com/news/428510-russian-northern-fleet-anniversary/

[24] Mario Laborie Iglesias, "Russian National Security Strategy, Full-text Translation," *Instituto Espanol de Estudios Estrategicos*, (December 2015), accessed September 12, 2018, http://www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf.

[25] Thomas Nilsen, "After Weeks with Separate War Games, Norway and Russia Again Meet at Sea for Joint SAR Exercise," *The Barents Observer*, June 2, 2018, accessed September 12, 2018, https://thebarentsobserver.com/en/node/4006.

[26] "Barents-2018 Russia-Norway Exercise to Take Place at the End of May," *The Arctic*, May 16, 2018, accessed September 12, 2018, https://arctic.ru/ecology/20180516/741703.html.

What Does the Future Hold for the Arctic?

It is clear that current environmental, economic, and geopolitical trends will result in a changing Arctic. In order to develop appropriate strategic recommendations to guide policymakers, Program participants envisioned a range of future scenarios. Certain assumptions were made about the future Arctic environment based upon the continuation of current trends in global warming, population, economic markets, and geopolitics. While it is impossible to precisely predict the future, it was assessed that there is a reasonable degree of confidence that current trends will continue into the near (five years) to mid (15-25 years) term.

If these Arctic trends continue, it is clear that in the future the Arctic will face greater challenges. Maritime domain awareness will become a critical component of maritime security and improved surveillance and monitoring as well as data-sharing amongst regional partners will be necessary to ensure safety and prevent illicit activities such as illegal fishing, smuggling, and narco-trafficking. Maritime domain awareness will also be critical to enable effective search and rescue operations, which will likely increase as maritime traffic increases. As the Arctic waters warm, fishing stocks will migrate northward. Although the 2017 *Agreement to Prevent Unregulated High Seas Fisheries on the Central Arctic Ocean* is to be in effect for sixteen years, Arctic coastal states will see an increase in fishing traffic as the global demand for protein rises.[27]

Destination shipping will continue to rise as more nations – particularly East Asian states – seek to import energy resources extracted from the Arctic. Technological advances should decrease the production costs in the Arctic, though demand will also be dependent upon global market fluctuations. Oil and gas resources will still be in high demand due to the rising global population and subsequent energy needs, despite increased technological advancements that will enable greater reliance on renewable resources. It is further assessed that transit shipping will only moderately increase due to the challenges of operating in the region and the unique requirements for vessels, even with the anticipated improvement of hydrographic surveys, navigation, and ice and weather forecasting. Future technological advancements, such as 3-D printing, may also alter the character of the global shipping industry. Yet it must be noted that a conflict that inhibits the usage of the Suez Canal may have an impact on this assessment.

Global warming will adversely affect infrastructure in the Arctic; particularly damaging effects include erosion, sea level rise, and permafrost melt. Increased economic activity and climate changes will increasingly affect indigenous communities and their traditional lifestyles. There will be a greater reliance on maritime transport as ice roads and land infrastructure become increasingly unstable; new technologies and construction methods must be developed to counter these environmental changes. Further, port infrastructure will increase to meet demands of maritime shipping and the tourism industry, which will continue to rise (though remain a very small percent of overall global tourism). The investment in infrastructure will extend to natural resource exploration and development, with an increasing demand for foreign direct investment as countries seek to develop natural resources.

Connectivity will likely improve in the region, but it will remain a challenge in the near term. As the regional data connectivity improves, there will be an increased potential for cyber attacks warranting further investments in this area. While communications and navigation remain

[27] Catherine Benson Wahlen, "Countries Agree to Prevent Unregulated Fishing in Central Arctic Ocean," International Institute for Sustainable Development, December 7, 2017, accessed September 12, 2018, http://sdg.iisd.org/news/countries-agree-to-prevent-unregulated-fishing-in-central-arctic-ocean/.

challenging in the Arctic today and into the near term, new technologies should improve capabilities in the mid-term, but investment will be critical to enable this technology to become a reality.

Security related activities in the Arctic will likely rise slightly in the near and mid-term, as countries increase law enforcement and policing activities. Russia will continue its expansion of military activities in the Arctic, while other Arctic states will similarly test their capabilities to operate in the region. Arctic stakeholders are likely to invest in vessels capable of operating or facilitating operations in the region, such as new icebreakers and Arctic capable patrol vessels. Strategic assets such as nuclear ballistic missile submarines will remain present in the region, with other non-Arctic states, such as China, also increasing patrol frequency by the mid- to long-term. Further, there will likely be increased investment in surveillance capabilities for the region. Singularly-focused economic or environmental crises, such as a large-scale oil spill, nuclear accident, or maritime catastrophe, were considered to be moderate in terms of impact due to enduring regional economic interests and resilient governance structures.

While the group assessed the potential for conflict in the near and mid-term to be low, they noted that potential conflicts could arise from resource competition, unresolved maritime claims, or a perceived national obligation to protect citizens (such as Svalbard or Russia's Far East). There is a greater potential for spillover conflict in the region. An Arctic Grey Zone conflict was deemed to hold significant disruptive potential, particularly if this were to stem from a spillover conflict between major stakeholders in the Arctic.

Strategic Recommendations

The Arctic is a complex region of vast global importance in the strategic, economic, and environmental realms. Solid mechanisms exist to guide further cooperation and coordination in the region, but there is still much that can be done to ensure the Arctic remains peaceful and stable. While this working group discussed numerous potential scenarios and mitigation strategies, the intent of this paper is to highlight those most executable by today's policymakers to improve the future security environment. The recommendations reflect the diverse perspectives of the group and enabled significant discussion. The following recommendations were not unanimously supported by all participants, but reflect thoughtful discussions with the intent to offer actionable recommendations.

Governance will continue to be an important issue for the Arctic, particularly as regional activity rises. This affects many facets of the region, from economic activity to environmental protection to search and rescue protocol. The Arctic Council has been the leading intergovernmental forum to promote cooperation, coordination, and interaction among Arctic stakeholders on common Arctic issues, particularly environmental protection and sustainable development. In permitting non-Arctic states to be admitted as observers, the Arctic Council recognizes the important role that all Arctic stakeholders will have in the region. Yet observers often note the lack of opportunity for them to express their views and proposals in Arctic Council sessions where speaking abilities are limited to the eight Arctic states; as such, observers advocate an enhanced role in the Council. Given the increasing activity by Arctic stakeholders – both Arctic and non-Arctic states, as well as intergovernmental and nongovernmental organizations – it must be determined if the role of observers should be strengthened within the Council. Further consideration should be given to the criteria for state and organizational representatives. As the Arctic becomes increasingly important to global interests, it is important for the Council to understand perspectives from all stakeholders. This extends to the Arctic Coast Guard Forum; Arctic stakeholders should be invited to participate in exercises in order to strengthen the response capabilities and improve coordination before a disaster occurs.

Respecting international rule of law will continue to be critical for the region, though there is a long history of adherence to the United Nations Convention on the Law of the Sea (UNCLOS) and existing agreements in the Arctic. Thus far, territorial disputes have remained peaceful and resolved in a cooperative manner through established legal dispute mechanisms. States should continue adherence to these mechanisms to ensure continued peace and security.

Investment in science and research will remain critical for the future, yet current research and resource allocations are often uncoordinated between states, businesses, and non-governmental organizations. Further efforts should be made to improve the ability to share research in an effort to better understand the Arctic environment. Similarly, technology will continue to play a driving role in the Arctic. New technologies that aid in environmental protection should be used in a collaborative manner, with the Arctic Council and Arctic Economic Council working together to ensure appropriate usage.

The European Union has already allocated around €80 billion euros to research and scientific innovation under the Horizon 2020 financial initiative (2014-2020), some of which will be allotted specifically for Arctic research.[28] Central to these efforts is the EU-PolarNet Initiative, a project that involves cooperation with research organizations from Canada, Russia, and the USA.[29] The PolarNet Initiative is an existing cooperative mechanism that could be further utilized for additional research funding allocation.

Regulation of Foreign Direct Investment (FDI) will be increasingly necessary as regional investment and development rises. The Arctic will continue to see a growth of foreign direct investment, particularly with the expected intensification in natural resource exploration and development. It will be important to carefully regulate such investment to ensure adherence to environmental standards, stringent development standards, and protection of Arctic states' economic interests. This could be accomplished through a cooperative effort between the World Economic Forum and the Arctic Investment Protocol. Though not legally binding, doing so could establish acceptable practices and enforcement mechanisms on multinational and regional levels. Similar binding measures could be further developed via the Arctic Economic Council.

Lines of Communication must continue to be opened as activity rises in the Arctic. This affects a range of Arctic activities, from economic to scientific information sharing. Currently, Norway and Russia encourage companies to share environmental, climate and development information in order to better understand the environment and to adopt best practices. Doing so allows for improved environmental precautions, but also increases trust though the establishment of cross-border relationships. This should be extended beyond this bilateral approach to include Arctic stakeholders. Further, the scope of information sharing should incorporate additional aspects of environmental research as well as maritime domain awareness and security awareness. This may be achieved through the use of current governance bodies as relevant, such as the Arctic Council, the Arctic Economic Council, the Arctic Science Ministerial, the Arctic Coast Guard Forum, the Arctic Security Forces Roundtable, and the EU-PolarNet Initiative.

[28] "What is Horizon 2020," European Commission, accessed September 12, 2018, https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020.

[29] "Joint Communication to the European Parliament and the Council: An integrated European Union policy for the Arctic". High Representative of the Union for Foreign Affairs and Security Policy, April 27, 2016, 6, http://eeas.europa.eu/archives/docs/arctic_region/docs/160427_joint-communication-an-integrated-european-union-policy-for-the-arctic_en.pdf.

Improved Maritime Domain Awareness will be increasingly important as Arctic maritime activity rises. All Arctic states have mutual interests in monitoring the region for illicit activity, such as illegal fishing and narco-trafficking. Improved communications through the previously listed measures can help promote data-sharing of suspicious activity, building upon current regional cooperation channels. Further, consideration should be given to establishing a regional maritime security data-sharing center, similar to the Regional Cooperation Agreement on Combating Piracy and Armed Robbery (ReCAAP) Information Sharing Centre that was launched in 2006 and currently includes twenty member states.

Such a data center would be well suited to assist in ensuring safety of the maritime environment, an increasingly critical function. The future will see higher demand for safety and policing assets as the need increases for search and rescue and international law enforcement. These units must be trained now to operate in the demanding Arctic environment. The Arctic Coast Guard Forum is well suited to provide collaborative training and host multinational exercises to improve response capabilities. All Arctic states should be active participants in this forum and consider adding additional exercises that integrate other regional stakeholders.

Another opportunity for transparency and improved awareness may come from restructuring the maritime security environment. Data sharing and incorporating best practices from the International Civil Aviation Organization (ICAO) could help improve maritime domain awareness and be particularly valuable for crisis response. The United Nations International Maritime Organization integrated Arctic stakeholders for the development and 2017 implementation of the Polar Code. Future updates to the Polar Code could be opportunities to align the maritime sector with best practices from the aviation sector.

Confidence Building Measures will be critical to ensure a peaceful Arctic region. This includes encouraging increased stakeholder participation in intergovernmental organizations and cooperative exercises, such as those conducted through the Arctic Coast Guard Forum or the Arctic Security Forces Roundtable. Dialogue and the building of relationships will be critical in establishing trust and transparency in order to prevent a misperception or misunderstanding from sparking an unintentional conflict. Maintaining these channels – particularly during a crisis – can aid in crisis management and more easily diffuse tensions.

The Arctic Council should also work to ensure improved coordination with nongovernmental organizations (NGOs). The Council's working groups are well suited to incorporate NGOs perspectives and develop solutions acceptable to states and businesses. Building relationships between intergovernmental organizations (IGOs), NGOs, states, and the business community can improve stakeholder cooperation in the Arctic.

Security cooperation measures will become increasingly important as Arctic activity increases. Confidence building measures must begin now to build trust and partnerships in order to ensure stakeholders are able to reduce misunderstandings and misperceptions and ensure military safety. While some Arctic states conduct a high degree of information sharing, there must be a thoughtful approach to including all Arctic stakeholders. While restrictive measures placed upon Russia have limited communications, Norway and Russia continue to share information necessary for safety.

The Arctic Security Forces Roundtable (ASFR) offers an existing cooperative mechanism to increase dialogue and Arctic capabilities of regional stakeholders. The Roundtable includes the Arctic states (although Russia has been disinvited) as well as France, Germany, the Netherlands, and the United Kingdom. This presents a unique opportunity for stakeholders to work together, particularly for regional maritime security and emergency response capacity building.

Consideration should be given to inviting Russia to participate in future ASFR in order to better support security cooperation. Military to military exchanges present an opportunity to share operational best practices and further develop relationships and transparencies.

Overall, the cooperative spirit of the Arctic must be enabled to endure well into the future. The region has a long history of cooperation and recent examples such as the precautionary moratorium on fishing in the high seas – signed by Arctic and non-Arctic states – indicates that stakeholders have the ability to proactively ensure the Arctic remains a peaceful and stable region. Yet this will require constructive action by stakeholders to improve governance, information-sharing, investments, technological advancements, as well as security cooperation and confidence-building measures. As global awareness about the Arctic increases (because of interest in accessing its natural resources and as a result of the global impact of climate change), it may be necessary to reconsider whether the Arctic can remain an isolated "Arctic for the Arctic states" or if a global commons approach, integrating stakeholders, should be implemented to ensure peaceful solutions for the future.

Way Ahead

The European Security Seminar-North participants identified significant challenges and opportunities for the Arctic region. The structure of the program allowed for an extensive exchange of ideas and perspectives while participants worked to develop strategic recommendations to address the contemporary security challenges of the Arctic. The collaborative nature of the seminar ensured the inclusion of innovative ideas from Arctic experts and practitioners, yet it is recognized that there is more to be done. The first in a series of five events to be held over the next five years, the George C. Marshall European Center for Security Studies has challenged attendees to continue dialogue and exchange of insights to form the foundation of the next event.

Future seminars will feature greater participation of Arctic stakeholders, reflecting the diverse region. The inclusion of commercial perspectives, international organizations such as the International Maritime Organization, and indigenous communities will allow an even broader range of insights at future seminars. While the future seminars will remain grounded in examining strategies to explore security challenges of the Arctic, it is critical to consider the interests of the region's numerous stakeholders as well as the interest of global actors and organizations.

About the Authors

LCDR Rachael Gosnell

Rachael Gosnell is pursuing doctoral studies in International Security and Economic Policy at the University of Maryland, with a focus on maritime security in the Arctic. She holds a MA in International Security Studies from Georgetown University, a Masters in Engineering Management from Old Dominion University, and a Bachelor of Science in Political Science from the U.S. Naval Academy. She currently teaches Political Science at the U.S. Naval Academy. All views expressed are her own and do not reflect the U.S. Department of Defense or the U.S. Naval Academy.

CDR Andreas Hildenbrand

Andreas Hildenbrand is the Program Director of the European Security Seminar North at the George C. Marshall Center. In this function, his professional focus is Arctic security policy, security implications of climate and environmental changes. During his career Commander Hildenbrand was the Executive Officer to the Deputy Chief of Staff at NATO Headquarters Allied Forces Northwestern Europe in High Wycombe, Great Britain. His responsibilities included the analyses of activities in the Arctic and Europe's Northern Flank and the presentation of the Headquarters in related working groups. He studied aeronautical engineering at the University of the Armed Forces in Munich and earned a diploma (Master's degree) as a Diplom-Ingenieur.

Ms. Elizabete Aunina

Elizabete Aunina, a native of Latvia, was an intern at the George C. Marshall European Center for Security Studies, assisting Commander Andreas Hildenbrand with the European Security Seminar North. She holds two master's degrees, one in MSc Human Rights from the London School of Economics and another from the University of St. Andrews in Middle East and Central Asian Security Studies. Previously, she has worked on various academic research projects and her main research interests are in armed conflicts and arms control.