The Polar Power Play: Revitalizing the United States' Arctic Presence through Strategic Cooperation

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Introduction

Marked by the Arctic Circle at 66° N, the Arctic region expands across various social, economic, and cultural differences. The entire region, as defined by the Arctic Human Development Report, spans across the northern territories of Canada, Greenland, Iceland, Norway, Sweden, Finland, Russia, and the United States.[1] Today, around four million people live permanently in the Arctic region, 10% of whom are indigenous.[2]

The Arctic has witnessed significant transformations in the past several decades, making it a focal point of geopolitical competition. As the shortest route for intercontinental ballistic missiles, the United States and Soviet Union invested in submarine operations and early warning radar systems during the Cold War.[3] Mikhail Gorbachev's famous call for the Arctic to become a "zone of peace" set in motion the new normative structure for Artic cooperation.[4] As such, the post-Cold War period saw decreased military tensions and the establishment of cooperative frameworks, principally the Arctic Council in 1996, which emphasized environmental protection and sustainable development.[5] However, since the mid-2000s, changes in the Arctic have been influencing the strategic landscape due to decreasing sea ice coverage, increased accessibility to shipping routes, and previously inaccessible natural resources.

The following analysis lays the groundwork for understanding the current Arctic security landscape and aims to show how the U.S. approach in the Arctic can focus both on unilateral efforts and collaboration with allies and partners. The main metric of Arctic presence studied is physical infrastructure because infrastructure provides productivity and security to a landscape. Thus, by assessing the changing landscape of the environmental and human needs of the region, infrastructure is "a means through which to explore the dynamics of foreign policy, political intentions, strategic investment, financial innovations," and so much more.[6] The paper contains

[1] Intergovernmental Panel on Climate Change. "Summary for Policymakers — Special Report on the Ocean and Cryosphere in a Changing Climate," https://www.ipcc.ch/srocc/chapter/summary-for-policymakers/. Accessed September 19, 2024.
[2] Joan Nymand Larsen and Gail Fondahl, *Arctic Human Development Report: Regional Processes and Global Linkages* (Copenhagen, Nordic Council of Ministers, 2015), pp. 85.
[3] Rolf Tamnes and Kristine Offerdal. *Geopolitics and Security in the Arctic: Regional Dynamics in a Global World*. Routledge Global Security Studies (Abingdon, Oxon: Routledge, 2014), pp. 3.
[4] Kristian Åtland, "Mikhail Gorbachev, the Murmansk Initiative, and the Desecuritization of Interstate: Relations in the Arctic," Cooperation and Conflict 43, no. 3 (September 2008), pp. 290. https://journals.sagepub.com/doi/abs/10.1177/0010836708092838. Accessed May 23, 2025.
[5] Oran Young. "Arctic Politics in an Era of Global Change," *The Brown Journal of World Affairs* (Fall, 2012), pp. 165-178. https://www.jstor.org/stable/24590936. Accessed May 23,2025.
[6] Olivia Wynne Houck. "Infrastructure in the Arctic: The Arctic Institute Infrastructure Series". The Arctic Institute - Center for Circumpolar Security Studies (March 22, 2022). https://www.thearcticinstitute.org/infrastructure-arctic-the-arctic-institute-infrastructure-series/. Accessed May 20, 2025.

three main sections: (I) a brief background of U.S. priorities in the region along with the geopolitical context within each part of the Arctic, (II) metrics demonstrating Arctic power and the key strategic gaps in the U.S. Arctic posture, and (III) a set of options for how the United States can align three interconnected investment efforts that prioritize selective presence, force multiplying, and defense industrial cooperation to help improve overall U.S. presence in the Arctic. The conclusion contains further considerations crucial to the success of these endeavors and long-term regional stability.

Section I: Overview of Great Power Competition in the Arctic

U.S. Priorities in the Arctic

U.S. priorities in the Arctic include economic competitiveness related to critical minerals and maritime navigability, domain awareness and security, and maintaining a stable and secure region free of conflict.

Critical Minerals and Energy Resources

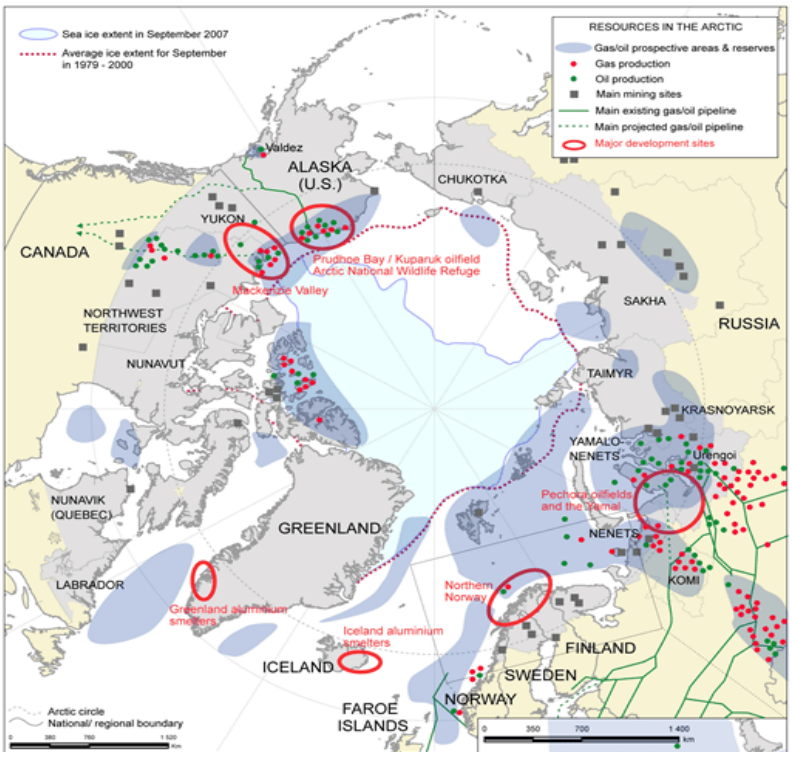

Figure 1: Resources in the Arctic. Source: The Arctic Institute

While the Arctic encompasses about 6% of the world's surface, its seabed contains an estimated 22% of the world's untapped fossil fuel resources and significant deposits of valuable metals and precious stones, as seen in Figure 1.[7] Any nation that can effectively mine, process, and refine these hard to obtain resources is at a strategic advantage because they are used for developing military, communications, and energy technologies.[8] The North American region of the Arctic generally tends to possess more oil resources, while the Eurasian regions tend to be

[7] Kenneth J. Bird, Ronald R. Charpentier, Donald L. Gautier, David W. Houseknecht, Timothy R. Klett, Janet K. Pitman, Thomas E. Moore, Christopher J. Schenk, Marilyn E. Tennyson, and Craig J. Wandrey. "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle." U.S. Geological Survey (July 23, 2008). https://pubs.usgs.gov/fs/2008/3049/. Accessed May 23, 2025.

[8] Andreas Raspotnik, "The Future Battlefield Is Melting: An Argument for Why the U.S. Must Adopt a More Proactive Arctic Strategy," The Arctic Institute - Center for Circumpolar Security Studies (December 3, 2024), https://www.thearcticinstitute.org/future-battlefield-melting-argument-us-must-adopt-more-proactive-arctic-strategy/. Accessed May 23, 2025.

more gas-rich.[9] Therefore, the United States seeks to maintain economic competitiveness and national defense in the Arctic at large in order to capitalize on these resources and have influence on how resource governance and extraction develops within the region.

Shipping and Navigability

Receding ice will allow for more navigable, consistent routes. While no route is completely developed, there have already been increases in ship activity in the region.[10] The Northern Sea Route (NSR), as explained in more detail below, lies close to U.S. territory through the Bering Strait.[11] This contributes to why the U.S. Federal Maritime Commission is conducting research on how the NSR could reshape global trade patterns as an emerging and critical choke point in international shipping.[12] Heavier transit activity can also impact ocean related commercial sectors like fisheries and others parts of the blue economy. Beyond the commercial implications, Russia and China have taken advantage of the new sea routes to project their naval power by carrying out regional deployments and patrols, such as the October 2024 spotting of two Chinese maritime enforcement vessels operating alongside Russian patrol boats in the Bering Sea.[13]

[9] "Arctic Oil and Natural Gas Potential," Today in Energy Archive, U.S. Energy Information Administration (December 21, 2011), https://www.eia.gov/petroleum/weekly/archive/111221/twipprint.html. Accessed May 23, 2025.
[10] Arctic Council Working Group on the Protection of the Arctic Marine Environment, "Arctic Shipping Update: 37% Increase in Ships in the Arctic Over 10 Years," Arctic Council (January 31, 2024), https://arctic-council.org/news/increase-in-arctic-shipping/. Accessed May 23, 2025.
[11] Björn Gunnarsson and Arild Moe. "Ten Years of International Shipping on the Northern Sea Route: Trends and Challenges." *Arctic Review on Law and Politics* 12 (2021), pp. 4–30. https://www.jstor.org/stable/48710640. Accessed May 23, 2025.
[12] "FMC Launching Examination of Global Maritime Chokepoints," Federal Maritime Commission (March 17, 2025), https://www.fmc.gov/articles/fmc-launching-examination-of-global-maritime-chokepoints/. Accessed May 23, 2025.
[13] Todd Prince, "US Eyes Aleutian Military Revival as Russia, China Expand Operations near Alaska," Alaska Beacon (May 6, 2025), https://alaskabeacon.com/2025/05/05/us-eyes-aleutian-military-revival-as-russia-china-expand-operations-near-alaska/. Accessed May 23, 2025.

U.S. Defense Interests

For the United States, the strategic imperatives extend well beyond the economic opportunities or emerging shipping lanes. Sovereign U.S. territory in Alaska holds important U.S. defense infrastructure (Figure 2).[14] The 2024 Department of Defense (DOD) Arctic Strategy also notes that the North American Arctic is critical to Indo-Pacific security because the northern flank can project military force from the United States homeland in this region. The overlap between the Arctic and Indo-Pacific missions, such as the Alaska rotation of the Joint Pacific Command's Joint Pacific Multinational Readiness Center, highlights the various opportunities to build capacity with Indo-Pacific partners in the North Pacific Arctic.[15]

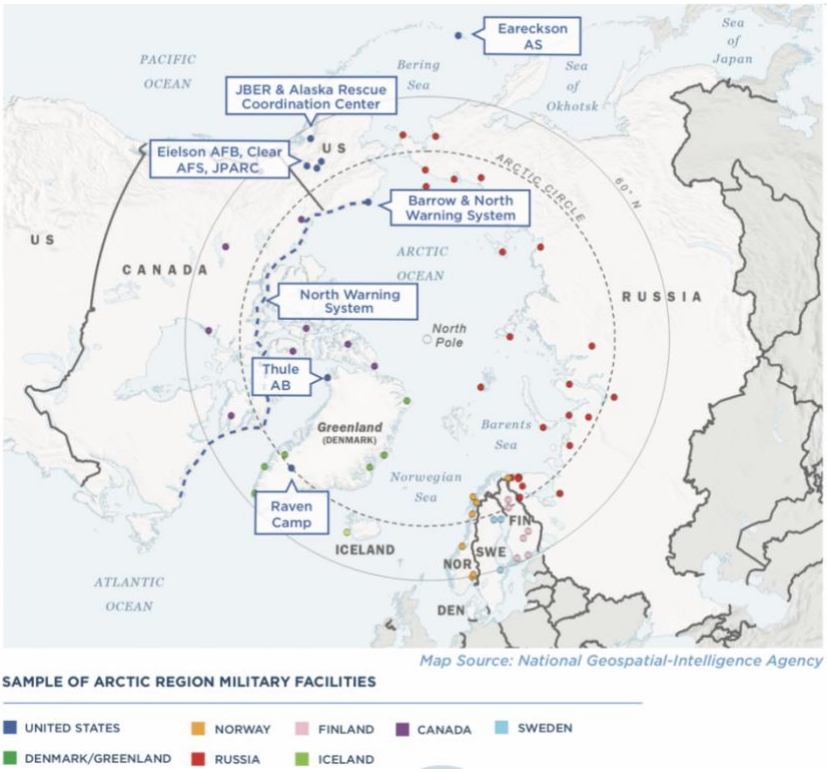

Figure 2: Arctic military bases and facilities. Source: Department of Air Force

International Governance and Stability

Finally, the United States prioritizes the stability of the entire Arctic region, aiming to maintain a secure and stable environment for U.S. interests and homeland defense. The DOD strategy also focuses on partnerships with allies and partners to deter threats and increase shared maritime domain awareness. Amanda Dory, former acting undersecretary of defense for policy has stated, "Canada, Norway, Denmark, Iceland and the two newest NATO allies, Finland and Sweden, all bring substantial regional know-how and capability that strengthens our collective efforts to monitor and respond in the Arctic."[16] Therefore, maintaining a stable environment for the U.S

[14] U.S. Department of Defense, *2024 Arctic Strategy* (June 2024), https://media.defense.gov/2024/Jul/22/2003507411/-1/-1/0/DOD-ARCTIC-STRATEGY-2024.PDF. Accessed May 23, 2025.
[15] Elizabeth Wishnick, "Indo-Pacific Lens on the Arctic: How US Partners in Asia View Arctic Security and Governance," East-West Center (August 26, 2024), https://www.eastwestcenter.org/publications/indo-pacific-lens-arctic-how-us-partners-asia-view-arctic-security-and-governance. Accessed May 23, 2025.
[16] Jim Garamone, "Now the Hard Part: Implementing Arctic Strategy," U.S. Department of Defense (July 30, 2024), https://www.defense.gov/News/News-Stories/Article/Article/3855787/now-the-hard-part-implementing-arctic-strategy/. Accessed May 23, 2025.

network of allies, along with cooperation in the Arctic, allows the United States to maintain its greatest asymmetric advantage: like-minded and highly capable allies.

One Arctic, Three Unique Geographic and Political Environments

North American Arctic

The North American Arctic, encompassing Alaska, northern Canada, and Greenland, is largely peaceful although vulnerabilities include sparse critical infrastructure and aging populations.[17] This region has some of the most severe weather and is the most sparsely inhabited, making operations much more specialized because nearly everything, from supplies to infrastructure, must be brought in.[18] The United States and Canada act as close partners to protect North America from external threats, as demonstrated through many joint security pacts like the North American Aerospace and Defense Command (NORAD).[19] NORAD, a bi-national organization aimed at aerospace and maritime warning and aerospace control for North America, includes the detection, validation, and warning of aircraft, missiles, and/or space vehicles through mutual support with other military commands.[20] Both countries also routinely participate in Arctic joint exercises, including Vigilant Shield, Arctic Edge, the Arctic Collaborative Workshop, and more in order to display air-land-sea USNORTHCOM and NORAD's capabilities against threats from adversaries.[21] These ongoing collaborations underscore the importance of a unified North American defense posture in the Arctic. Strengthening and modernizing this partnership will be essential to safeguarding the region amid evolving security challenges.

European Arctic

The European Arctic, including Norway, Finland, Sweden, and Iceland, has more moderate weather and sea mobility during a larger part of the year than the North American region.[22] Compared to other parts of the Arctic, this region is more populated and has a relatively well-developed

[17] Jason C. Moyer, Daniel S. Hamilton, and Kristina Spohr. "Chapter 11. The U.S.-Canada Northwest Passage Disagreement: Why Agreeing to Disagree Is More Important Than Ever." in *The Arctic and World Order,* Brookings Institution Press (2021), pp. 267–94. https://transatlanticrelations.org/wp-content/uploads/2020/12/The-Arctic-and-World-Order-ch11.pdf. Accessed May 23, 2025.

[18] J.P Clark, "Chapter 6: The Arctic Dilemma: Force Generation Considerations for Land Forces," in Michael E. Lynch and Howard G. Coombs, ed. *International Competition in the High North: Kingston Conference on International Security 2022* (Carlisle, PA: US Army War College Press, 2024), pp.69. https://press.armywarcollege.edu/monographs/965. Accessed May 23, 2025.

[19] Kate Friedman. 'What Does Security Cooperation in the Arctic Look like? The Case of the United States and Canada'. *Ted Stevens Center for Arctic Security Studies*, pp. 2. https://tedstevensarcticcenter.org/document/what-does-security-cooperation-in-the-arctic-look-like-the-case-of-the-united-states-and-canada/. Accessed 5 May 2025.

[20] U.S. Air Force Western Air Defense Sector, "North American Aerospace Defense Command,"https://www.wads.ang.af.mil/About-Us/Fact-Sheets/Article/1175459/north-american-aerospace-defense-command/. Accessed May 20, 2025.

[21] Friedman, 'What Does Security Cooperation in the Arctic Look like? The Case of the United States and Canada', pp. 2.

[22] Clark, "Chapter 6: The Arctic Dilemma: Force Generation Considerations for Land Forces", pp. 68.

transport and connectivity infrastructure.[23] Having experienced increased NATO presence and military exercises, European High North partners enjoy the benefit of growing up in an Arctic or sub-Arctic environment and therefore consciously designing their training and equipping structures to meet the needs of the environments in which they operate.[24] In particular, Norway and Finland play an increasingly important role in surveillance of Russian naval activities both in the Barents Sea and beyond because of their shared borders with Russia.[25] Since 2022, there have been at least three prominent incidents resulting in damage to undersea infrastructure, including undersea cables, which highlight the potential threat against critical undersea infrastructure (CUI).[26] The security of this infrastructure and maritime domain awareness in the European Arctic directly impacts transatlantic communication, NATO interoperability, and strategic deterrence. Strengthening cooperation with European Arctic allies enhances the United States' ability to monitor and respond to hybrid threats that could undermine both regional and global security.

Russian Arctic

The Russian Arctic is critical for the nation's future economic growth and international standing. Russia has maintained three major goals in the Arctic since the early 2000s: to ensure Russia's sovereignty over its exclusive economic zone and continental shelf in the region; to protect its economic interests in its Arctic zone; and to demonstrate world-class military capabilities.[27] Oil and gas accounts for between 30% to 40% of its federal budget and even more of the country's export revenues, so developing Russia's Arctic oil and gas resources would allow for greater market and geopolitical influence.[28] Comprising nearly half of the Arctic coastline, the Russian Arctic has witnessed the most dramatic militarization with the reopening of Soviet-era bases and development of infrastructure developments along the NSR.[29] The NSR, shown in Figure 3, represents a shortcut for transferring goods between Europe and Asia, suggesting significant cost savings for shipping companies. Some estimates place distance savings along the NSR as high as

[23] InfraNorth - Building Arctic Futures, "European Arctic - InfraNorth" (June 14, 2021), https://infranorth.eu/project/european-arctic/. Accessed May 20, 2025.
[24] Barrett Martin, Michael Tovo, and Devin Kirkwood, "The Unconventional Approach to Arctic Security: Increasing Domain Awareness through the US" (Journal of Indo-Pacific Affairs, October 3, 2022), https://www.airuniversity.af.edu/JIPA/Display/Article/3171599/the-unconventional-approach-to-arctic-security-increasing-domain-awareness-thro/. Accessed May 23, 2025.
[25] Andreas Østhagen. "High North, Low Politics—Maritime Cooperation with Russia in the Arctic." *Arctic Review on Law and Politics* 7, no. 1 (2016): 83–100. https://www.jstor.org/stable/48710411. Accessed May 23, 2025.
[26] Heather A. Conley, Sophie Arts, Kristine Berzina, and Frida Rintakumpu, *Protecting Undersea Infrastructure in the North American Arctic: Lessons from Incidents in the Baltic Sea and High North*, German Marshall Fund (May 2024), https://www.gmfus.org/news/protecting-undersea-infrastructure-north-american-arctic. Accessed May 22, 2025.
[27] Marlene Laruelle, *Russia's Arctic Strategies and the Future of the Far North* (Routledge, 2015).
[28] Eugene Rumer and Richard Sokolsky, and Paul Stronski, *Russia in the Arctic—A Critical Examination*, Carnegie Endowment for International Peace (Washington D.C., March 29, 2021). https://carnegieendowment.org/research/2021/03/russia-in-the-arctica-critical-examination?lang=en. Accessed May 20, 2025.
[29] Wilfrid Greaves. "Arctic break up: Climate change, geopolitics, and the fragmenting Arctic security region." Arctic Yearbook (2019). pp. 1-17 https://www.arcticyearbook.com/images/yearbook/2019/Scholarly-Papers/9_AY2019_Greaves.pdf. Accessed May 23, 2025.

50% compared to shipping lanes via Suez or Panama.[30] Projections prior to Russia's invasion of Ukraine indicated that NSR traffic could reach 150 million tons by 2030 and 220 million tons by 2035, with the total 2024 volume reaching 37.9 million tons.[31]

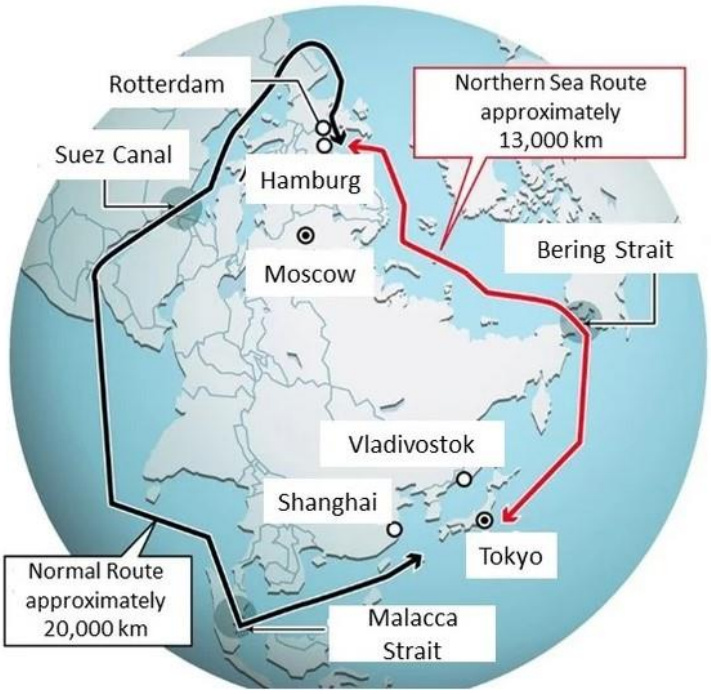

Figure 3: The Northern Sea Route. Source: Mitsui O.S.L Lines

However, there are clear gaps in ambitions versus reality even as Russia seeks to increase its global trade and influence through the militarization of the Arctic and growing control over the NSR. High costs, logistical complexities in operating in difficult climatic conditions, and Western sanctions have all made the development and use of the NSR fall below expectations.[32] As Russia deepens its economic and military presence, the United States must work with allies to ensure freedom of navigation, safeguard undersea infrastructure, and prevent the Arctic from becoming a sphere of unilateral influence.

Historically, the Arctic represented a model of cooperation among the eight circumpolar nations. However, there have been no in-person Arctic Council meetings since March 2022 when Canada, Denmark, Finland, Iceland, Norway, Sweden and the United States issued a joint statement announcing the suspension of their cooperation with Russia, following Russia's invasion of Ukraine in February 2022.[33] Some working-level meetings have resumed but addressing greater policy concerns are restricted due to strain on collaboration in multilateral forums like the Arctic Council. The Barents Euro-Arctic Council, another multilateral institution between the Nordics and Russia,

[30] Captain Lawson W. Brigham, "Russia's National Arctic Waterway: Challenging Future," *Proceedings | U.S. Naval Institute* (May 2025). https://www.usni.org/magazines/proceedings/2025/may/russias-national-arctic-waterway-challenging-future. Accessed May 23, 2025.
[31] Arman Sidhu, "The Northern Sea Route: Russia's Bet on Arctic Shipping," Geopolitical Monitor (March 19, 2025). https://www.geopoliticalmonitor.com/the-northern-sea-route-russias-bet-on-arctic-shipping/. Accessed May 23, 2025.
[32] Atle Staalesen, "Shipping on Northern Sea Route Lags Far behind Plans," The Barents Observer (January 10, 2025). https://www.thebarentsobserver.com/news/shipping-on-northern-sea-route-lags-far-behind-plans/422886. Accessed May 23, 2025.
[33] Jennifer Spence and Hannah Chenok. "The Future of Arctic Council Innovation: Charting a Course for Working-Level Cooperation" The Belfer Center for Science and International Affairs at Harvard University (February 20, 2024). https://www.belfercenter.org/publication/future-arctic-council-innovation-charting-course-working-level-cooperation Accessed May 23, 2025.

similarly faces setbacks as Finland plans to leave BEAC by the end of 2025, citing the cooperation is "no longer meeting today's needs" post Russian invasion of Ukraine.[34] New opportunities and tensions in the High North continue to develop as Finland's and Sweden's membership into NATO further alters the Arctic security architecture. As the former foreign minister of Sweden remarked during their ascension to NATO, the North Atlantic, High North, and Baltic Sea are now tied together from a geopolitical standpoint.[35] These developments renewed American interest, as seen by the 2024 Department of Defense Arctic Strategy, 2022 White House National Strategy for the Arctic Region, and continuous annual exercises by the U.S. and NATO allies.

China in the Arctic

While Russia's invasion of Ukraine has hampered domestic resources dedicated to developing its Arctic infrastructure, Moscow has strengthened relationships with partners like China to provide economic and technological investments.[36]China, despite its non-Arctic geography, has declared itself a "near-Arctic state" and is an observer in the Arctic Council. As a non-Arctic state, China depends on the states in the region for access to pursue its interests there, using economic incentives to secure this access.[37] It has heavily invested in resource extraction projects and scientific initiatives, particularly in the Russian and European sectors.[38] In 2023, China invested in titanium mining in the Komi Republic in Russia, which will help to bolster China's standing as the world's largest manufacturer and exporter of titanium.[39] Other infrastructure projects, such as the Moscow-Kazan high-speed railroad, are aimed at enhancing collaboration in trade, investment, energy, and manufacturing.[40] In Sweden, Hutchison Ports, a Hong Kong-based company, operates the container terminal at Stockholm Norvik Port, a "vital node in the region's logistics network," while in Finland, the China Investment Corporation manages more than 1 million square meters of

[34] Astri Edvardsen, "Finland Withdraws From the Barents Euro-Arctic Council," High North News (November 21, 2024). https://www.highnorthnews.com/en/finland-withdraws-barents-euro-arctic-council. Accessed May 23, 2025.
[35] Jack Detsch, "NATO's New Map," *Foreign Policy* (July 27, 2024). https://foreignpolicy.com/2024/07/27/nato-arctic-circle-nordic-countries-map-alliance-integration/. Accessed May 23, 2025.
[36] Colin Wall and Njord Wegge. *The Russian Arctic Threat: Consequences of the Ukraine War*. Center for Strategic and International Studies (January 25, 2023). https://www.csis.org/analysis/russian-arctic-threat-consequences-ukraine-war.\ Accessed May 23, 2025.
[37] Heidi Holz Andrew Taffer, Anthony Miller, and Benjamin DeThomas, *Exploring the Relationship between China's Investment in the Arctic and Its National Strategy,* Center for Naval Analyses (January 2022), pp. ii. https://www.cna.org/reports/2022/01/exploring-the-relationship-beween-chinas-arctic-investment-and-its-national-strategy.pdf. Accessed May 23, 2025.
[38] Olga Alexeeva and Frederic Lasserre. "An analysis on Sino-Russian cooperation in the Arctic in the BRI era." *Advances in Polar Sciences* 29, no. 4 (2018), pg. 269-282. https://pairault.fr/sinaf/doc/fl2.pdf. Accessed May 23, 2025.
[39] Nicolas Jouan, Zdenek Rod, and Martin Ruzicka, "Russia and China in the Arctic: Less Than Meets the Eye," *The Diplomat* (September 19, 2024). https://thediplomat.com/2024/09/russia-and-china-in-the-arctic-less-than-meets-the-eye/. Accessed May 23, 2025.
[40] "Russia Begins Construction of First High-Speed Line," International Railway Journal (March 15, 2024). https://www.railjournal.com/passenger/high-speed/russia-begins-construction-of-first-high-speed-line/. Accessed May 23, 2025.

logistics property, including facilities in Helsinki's Vuosaari harbor area and the Helsinki-Vantaa Airport.[41]

China's emergence as a maritime and shipping power is important for the country's goal of global economic leadership. A key driver of China's ambitious port investments in the Arctic is the proximity to critical resources located in surrounding regions.[42] Many of the minerals in the Arctic can aid in strengthening China's tech industry. Furthermore, while these investments seem mostly market oriented, ports can also serve a dual function and act as gateways to support Chinese military logistics.[43] The People's Liberation Army's 2020 edition of *Science of Military Strategy* serves as an important document on China's current military strategy and points to how other countries use "military-civilian mixing," whether through scientific research or commercial industries, as the main way for "great powers to achieve a polar presence."[44] China can therefore justify current and future investments as following the behavior of other Arctic and non-Arctic states.

Despite China's wide-ranging efforts in the region, there continues to be pushback in investments from Arctic states over security concerns and domestic political considerations, such as the blocked bid proposal for an airport in Greenland from a Chinese state-owned company in 2019.[45] Even Russia, the Arctic state arguably working the closest with China, holds reservations in how involved China should be in the region. Previously, Moscow maintained its preference for only Arctic nations engaging in Arctic governance. It only agreed to include non-Arctic states, including China, in the Arctic Council as observers in 2013 after "strong reassurances that the privileges of the Arctic states would be upheld and the non-Arctic states would respect the existing Arctic governance structure."[46] But given Western sanctions against Russia and China's gas demand, it has accepted China has an investment partner in its LNG projects in the Arctic. However, this does

[41] Alex Wooley, Sheng Zhang, Rory Fedorochko, and Sarina Patterson. *Harboring Global Ambitions: China's Ports Footprint and Implications for Future Overseas Naval Bases*. AidData at William & Mary (July 25, 2023). https://www.aiddata.org/publications/harboring-global-ambitions (Accessed May 23, 2025); Oscar Almén and Christopher Weidacher Hsiung, "China's Economic Influence in the Arctic Region: The Nordic and Russian Cases," Swedish Defence Research Agency, FOI-R--5326--SE (June 20, 2022). https://www.foi.se/en/foi/reports/report-summary.html?reportNo=FOI-R--5326--SE. (Accessed May 23, 2025).

[42] Mark E. Rosen and Cara B. Thuringer. 'Unconstrained Foreign Direct Investment: An Emerging Challenge to Arctic Security,' Center for Naval Analyses Occasional Paper (November 2017). https://www.cna.org/reports/2017/unconstrained-fdi-arctic-security. Accessed April 20, 2025.

[43] Zongyuan Zoe Lui, "Tracking China's Control of Overseas Ports," Council on Foreign Relations (August 26, 2024). https://www.cfr.org/tracker/china-overseas-ports. Accessed April 19, 2025

[44] China Aerospace Studies Institute, *The Science of Military Strategy 2020* (January 2022) pp 165. https://www.airuniversity.af.edu/Portals/10/CASI/documents/Translations/2022-01-26%202020%20Science%20of%20Military%20Strategy.pdf. Accessed May 20, 2025.

[45] Holz, Taffer, Miller, and DeThomas, *Exploring the Relationship between China's Investment in the Arctic and Its National Strategy,* pp. lii.

[46] Camilla T. N. Sorensen, "Chapter 12: The Evolving Chinese Strategic Approach in the Arctic Following the Russian Invasion of Ukraine," in Michael E. Lynch and Howard G. Coombs, ed. *International Competition in the High North: Kingston Conference on International Security 2022* (Carlisle, PA: US Army War College Press, 2024), pp.159. https://press.armywarcollege.edu/monographs/965. Accessed May 23, 2025.

not mean that Russia would embrace expanded Chinese involvement in governance or policymaking beyond the considerations of the Arctic Council.

Section II: Key Observations to U.S. Strategic Gaps in the North American Arctic

Physical capabilities, such as infrastructure that expand access to the Arctic, are foundational in ensuring security and economic interests are protected. The following section focuses on U.S. underdevelopment in infrastructure in the region, which prevents the United States from having the appropriate communications, domain awareness, and other capabilities.[47] Addressing these issues provides more pathways to engage with other policy priorities.

Insufficient Investments Impeding Greater Arctic Access and Operations

Navigational Tools

Arctic positioning, navigation, and timing (PNT) and Earth observation infrastructure are currently insufficient to ensure U.S. military and commercial operational readiness in the region. Additionally, the National Oceanic and Atmospheric Administration's National Ocean Service acknowledges that many of the tools that maritime vessels depend on, such as navigational charts and books, are unavailable or outdated for many areas in the Arctic. Not only is conducting surveys difficult due to extreme weather and limited by unavailable ice breaking vessels, but dynamic ice, seasonal variability, and unstable shorelines due to coastal erosion all contribute to low confidence in the region's nautical charts.[48]

Deepwater Port Access

The absence of a fully operational deepwater port similarly hinders U.S. access to the region at large. Without a deepwater port in the U.S. Arctic, particularly in Alaska, the U.S. lacks the logistical infrastructure necessary to support sustained operations by larger Coast Guard, Navy, or commercial vessels. This limits the country's ability to respond to emergencies, conduct maritime domain awareness operations, or assert sovereignty in contested Arctic waters.[49] The U.S. Army Corps of Engineers has approved a plan to expand the port in Nome, Alaska into a deepwater port

[47] Abbie Tingstad, "Enhancing Security in a Changing Arctic," RAND (January 1, 2023). https://www.rand.org/pubs/testimonies/CTA3097-1.html. Accessed May 23, 2025.
[48] US Department of Commerce, National Oceanic and Atmospheric Administration. "Arctic Navigation - NOAA's National Ocean Service," https://oceanservice.noaa.gov/economy/arctic/. Accessed December 6, 2024.
[49] Captain Lawson W. Brigham, "The United States Needs a Deep-water Arctic Port," *Proceedings | U.S. Naval Institute* (September 2019). https://www.usni.org/magazines/proceedings/2019/september/united-states-needs-deep-water-arctic-port . Accessed May 23, 2025.

capable of supporting large vessels, including any national security fleet operating in the region. However, the project is still under development and has faced funding and bureaucratic delays.[50]

Icebreaker Quantity and Quality

U.S. Coast Guard (USCG) leaders have affirmed the need to expand the domestic icebreaking fleet beyond the current two ships, both of which are approaching the end of their operational lifespans.[51] Icebreakers act to expand access to ice-covered areas and support accessing ports, supporting scientific research, conducting search and rescue missions, and enabling activities like fishing and resource extraction.[52] They are also critical to patrolling and policing the U.S. exclusive economic zone. The USCG has been working to expand the icebreaker fleet through the Polar Security Cutter (PSC) program, but the program has been delayed by more than five years and has doubled in cost from initial estimates.[53] To address the operational needs while the PSC program is developing, the Coast Guard purchased the *Aiviq*, a commercial U.S. polar icebreaker meant for oil exploration in 2024, allowing a second operational medium icebreaker within the fleet for patrolling purposes after necessary modifications are complete.[54]

Connectivity and Critical Undersea Infrastructure

Both operational and geopolitical obstacles continue to prevent the installation of submarine cables that are important for modern connectivity. Submarine cables are critical to security because the vast majority of military communication goes through the transatlantic and transpacific cable network.[55] The 2023 Implementation Plan for the 2022 National Strategy for the Arctic Region recognizes that a key component to defending against external threats involves predicting and assessing risk to CUI in the Arctic region.[56] Damaging underwater cables offers clear strategic and tactical military outcomes because it would delay military decisions, obstruct

[50] Tim Newcomb, "Port of Nome Modification Project Returns With Scaled Down Phasing," Engineering News-Record (March 17, 2025). https://www.enr.com/articles/60466-port-of-nome-modification-project-returns-with-scaled-down-phasing. Accessed May 23, 2025.
[51] Heather Mongilio, "Coast Guard Commandant Fagan Highlights Polar Security Cutters, Indo-Pacom Expansion," USNI News (March 21, 2024). https://news.usni.org/2024/03/20/coast-guard-commandant-fagan-highlights-polar-security-cutters-indo-pacom-expansion. Accessed May 23, 2025.
[52] Juliana Wheeler, "How Icebreakers Are Becoming the Litmus Test for the U.S. Arctic Strategy," ArcticToday (November 13, 2024). https://www.arctictoday.com/how-icebreakers-are-becoming-the-litmus-test-for-the-u-s-arctic-strategy/. Accessed May 23, 2025.
[53] U.S. Government Accountability Office, *COAST GUARD: Arctic Risks Assessed, but Information Gaps and Numerous Challenges Threaten Operations*, GAO-25-107910 (November 14, 2024). https://www.gao.gov/assets/gao-25-107910.pdf. Accessed May 12, 2025.
[54] Congressional Research Service, *Coast Guard Polar Security Cutter (PSC) and Arctic Security Cutter (ASC) Icebreaker Programs: Background and Issues for Congress* (April 21, 2025). https://crsreports.congress.gov/product/pdf/RL/RL34391. Accessed May 20, 2025.
[55] Mathieu Boulègue, *Arctic Seabed Warfare Against Data Cables: Risks and Impact for US Critical Undersea Infrastructure*, Wilson Center (July 30, 2024), pp. 1. https://www.wilsoncenter.org/publication/arctic-seabed-warfare-against-data-cables-risks-and-impact-us-critical-undersea. Accessed May 12, 2025
[56] White House, *Implementation Plan for the 2022 National Strategy for the Arctic Region* (October 18, 2023) pp. 40. https://bidenwhitehouse.archives.gov/wp-content/uploads/2023/10/NSAR-Implementation-Plan.pdf Accessed May 20, 2025.

operations that rely on the cable network, compromise industrial and military infrastructure, and disrupt effective communication in contested environments.[57] Although CUI in the North Atlantic Arctic is limited, previous plans for installing an Arctic communication cable required Western-Russian partnership mainly due to the transboundary nature of many of these cables. Strained relations with Russia and harsh working conditions left High North countries to work on their own.[58] Yet, the demand and opportunities to expand these subsea cables have prompted potential cable projects with investment backing, such as Polar Connect and Far North Fiber.[59]

Aging Infrastructure

Finally, existing infrastructure, such as early-warning radar sites, air domain sensors, and traditional fighter interceptors, face threats due to aging, coastal erosion, and thawing permafrost.[60] The modernization of these systems compete with other defense priorities, resulting in incremental rather than transformative improvements. The current systems lack integration between space-based, aerial, surface, and undersea sensors, creating potential blind spots.[61] Finally, recruiting and retaining qualified personnel for these remote Arctic postings remains difficult, further impacting maintenance and operational readiness. Even if some of the most important systems, such as the NORAD operated North Warning System, is primarily land-based, the lack of deepwater port access hampers the U.S. military's ability to maintain, supply, and upgrade these facilities, especially in times of crisis or rapid deployment.

Therefore, the United States must pursue a comprehensive, multi-dimensional Arctic strategy that leverages American strengths to offset significant infrastructural disadvantages in the region. In order to strengthen its Arctic presence, cooperation with allies and private companies can ensure critical military infrastructure investments are made while addressing hindrances to economic and military development in the Arctic. The next section articulates a vision outlining a set of policy options for the United States and its allies.

Section III: Policy Options to Achieve U.S. Regional Objectives

Unlike Russia with its extensive Arctic coastline and decades of continuous operational experience, or even China's "Polar Silk Road" investment strategy, the United States faces

[57] Boulègue, *Arctic Seabed Warfare Against Data Cables: Risks and Impact for US Critical Undersea Infrastructure*, pp. 10.
[58] Alexandra Middleton, "Race for Arctic Cables by 2030," High North News (March 18, 2025). https://www.highnorthnews.com/en/race-arctic-cables-2030. Accessed May 20, 2025.
[59] Matthew Gooding, "Poles Apart: Building the Arctic's First Subsea Cable," Data Center Dynamics (February 20, 2025). https://www.datacenterdynamics.com/en/analysis/poles-apart-building-the-arctics-first-subsea-cable/. Accessed May 21, 2025.
[60] U.S. Department of Defense, *2024 Arctic Strategy*, pp. 5; Gosnell, David Palmer, Rachael. "An Evolution in Arctic Collective Defense." The Arctic Institute - Center for Circumpolar Security Studies (November 7, 2024). https://www.thearcticinstitute.org/evolution-arctic-collective-defense/. (Accessed May 23, 2025).
[61] Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress* (October 01, 2024). https://www.congress.gov/crs-product/R41153. Accessed May 20, 2025.

substantial asymmetries in geography, presence, and capabilities that compels a differentiated approach. A viable U.S. Arctic strategy requires synchronizing three interconnected investment efforts:

- **Selective strategic investments:** focus on strategic locations rather than matching Russia's extensive Arctic footprint
- **Force multiplier investment strategy:** leverage NATO's expanded Arctic membership, particularly integrating Finland and Sweden's cold-weather expertise and Norway's maritime domain awareness infrastructure and Indo-Pacific partners
- **Defense industrial cooperation investments:** support transnational policies that incentivize innovative market power among ally nations

Selective Strategic Investments

Critical infrastructure investments, whether navigational aids or communication cables, that serve dual civilian-military purposes represent the most cost-effective mechanism for establishing persistent Arctic presence while addressing security vulnerabilities. Repeated calls for the United States to support dual-use port development—such as the proposed deepwater facilities in Nome, Alaska near the Bering Strait —addresses both commercial shipping and defense logistics, reinforcing its presence in the Arctic and reducing reliance on limited Coast Guard assets.[62] This installation can serve as an anchor for broader economic development while providing crucial logistics support for monitoring Russia's Northern Fleet.[63] By transforming the port of Nome into a deepwater facility near the chokepoint of the Bering Strait, the United States will achieve a "selective presence" that prioritizes strategic locations rather than excessive and costly new projects.

Force Multiplier Investments

The United States can implement a "force multiplier" alliance strategy that integrates capabilities across NATO's expanded Arctic membership and Indo-Pacific partners. Investments in Arctic communications infrastructure, including fiber optic networks and satellite systems with enhanced Arctic coverage, simultaneously enable economic growth while strengthening command, control, and communications (NC3) resilience against threats.[64] The 2024 DOD strategy focuses on satellite communications investments but fails to acknowledge how undersea infrastructure investments would similarly improve tactical and strategic communications that

[62] Homeland Security Operational Analysis Center, *Report on the Arctic Capabilities of the U.S. Armed Forces*, RAND Corporation (2023) pp. xi. https://www.rand.org/content/dam/rand/pubs/research_reports/RRA1600/RRA1638-1/RAND_RRA1638-1.pdf. Accessed May 15, 2025.

[63] Brandon M. Boylan and Jeremy S. Speight, *Alaska's Arctic Security Complex and Evolving Dynamics in Nome*, Center for Arctic Policy Studies (October 2021). https://www.uaf.edu/caps/our-work/CAPS-alaskas-arctic-security-complex-and-evolving-dynamics-in-nome-20Oct2021.pdf . Accessed May 19, 2025.

[64] Jonas Vidhammer Berge and Max Bergmann, *Addressing Arctic Vulnerabilities*, Center for Strategic and International Studies (December 17, 2024). https://www.csis.org/analysis/addressing-arctic-vulnerabilities. Accessed May 20, 2025.

enhance DOD capabilities.[65] Collaboration with non-Arctic allies, such as Japan and the Republic of Korea (ROK), also offers multifaceted benefits for addressing U.S. navigability priorities for the North American Arctic.

The Far North Fiber project established in 2022 to connect an undersea cable from Japan to northern Europe via the Northwest Passage is one example of such collaboration. Carried out as an international joint venture between Finnish Cinia Oy Finland, American Far North Digital, and ARTERIA Networks Corporation from Japan, the planned cable system supports public-private partnership investments while combining expertise from all three national industries.[66] Additionally, Japan has its own satellite network while ROK plans to create its own, thus potentially opening up new opportunities for cooperation in polar navigation and information-gathering.[67]

Defense Industrial Cooperation Investments

Defense industrial cooperation with U.S. allies is a critical strategic enabler for improving icebreaker capabilities and port infrastructure in the Arctic. The Icebreaker Collaboration Effort (ICE Pact) is a trilateral initiative involving the United States, Canada, and Finland and exemplifies how joint investments in shipbuilding, maintenance, and training can lower costs and improve interoperability among Arctic allies. By pooling technical expertise and industrial capacity, the ICE Pact aims to address the West's icebreaker shortfall in comparison to Russia's fleet of over 40 icebreakers, including several nuclear-powered vessels.[68] The Pact also encourages standardized design and modular construction and enables allies to share components and repair facilities while boosting domestic shipbuilding industries and labor forces. As of March 2025, a heavy icebreaker construction agreement between Canada and Finland was signed, and construction will start in Helsinki and be completed at the Canadian-owned Davie shipyard in Canada by 2030.[69] Thus, while the Pact is non-binding, the momentum to encourage this collaboration has so far yielded results.

Additionally, ICE Pact members are exploring joint procurement and maintenance agreements, enabling bulk purchasing of parts and long-term sustainment contracts that reduce per-unit costs and increase lifecycle efficiency. These efforts align with broader U.S. strategies to strengthen the Arctic industrial base through the National Defense Authorization Act, encourage transatlantic defense-industrial cooperation, and enhance NATO readiness through the Defence Innovation

[65] U.S. Department of Defense, *2024 Arctic Strategy*, pp. 9.
[66] Trine Jonassen, "Far North Fiber One Step Closer to Pan-Arctic Connectivity," High North News (April 12, 2023). https://www.highnorthnews.com/en/far-north-fiber-one-step-closer-pan-arctic-connectivity. Accessed May 20, 2025.
[67] Wishnick," Indo-Pacific Lens on the Arctic: How US Partners in Asia View Arctic Security and Governance," pp. 9.
[68] Congressional Research Service, *Coast Guard Polar Security Cutter (PSC) and Arctic Security Cutter (ASC) Icebreaker Programs: Background and Issues for Congress*
[69] "Davie and Canadian Government Agree on Heavy Icebreaker Construction – Work to Begin at Helsinki Shipyard," Helsinki Shipyard (March 8, 2025). https://helsinkishipyard.fi/davie-and-canadian-government-agree-on-heavy-icebreaker-construction-work-to-begin-at-helsinki-shipyard/. Accessed May 17, 2025.

Accelerator for the North Atlantic (DIANA).[70] Ultimately, ICE Pact collaboration supports integrated domain awareness, emergency response capacity, and strategic deterrence capabilities essential for countering Russia's militarization and China's growing interest in the region.[71]

Japanese and South Korean shipbuilding expertise should also not be ignored. While China dominates 50% of the global shipbuilding market, ROK holds about 29% and Japan accounts for 13%.[72] Prior to the Russian invasion into Ukraine, ROK's development of the NSR included developing the Russian port of Murmansk as an Arctic shipping hub and developing tankers and icebreakers for use.[73] The existing ICE Pact jointly formed to produce icebreakers can act as a model for potential collaboration with Indo-Pacific partners with expertise in shipbuilding and port infrastructure.

Other Factors to Consider

Finite Defense Spending and Competing Priorities

Policymakers must consider the competing defense spending commitments that allies face, including Finland's and Sweden's need to focus on security in the Baltic Sea region, and Denmark's defense priorities of Greenland and the Faroe Islands, among other priorities.[74] The 2024 DOD Arctic strategy highlights why cooperation with NATO's Arctic allies is essential to catch up with both Russia's and China's presence in the region. Investments that ultimately lead to significant developments in connectivity, navigation, human security, diplomacy, and tourism all need policy environments that invite private sector engagement. At the same time, it is important for DOD to diversify its supplier base and adopt more flexible acquisition strategies to help expand the availability and competition of commercial companies.[75] More research is needed, but these steps are key considerations that can allow for eases on certain components of defense spending constraints.

[70] "Sullivan Secures $790 Million+ in Military Projects for Alaska in FY 2025 Defense Authorization," (June 14, 2024) https://www.sullivan.senate.gov/newsroom/press-releases/sullivan-secures-790-million-in-military-projects-for-alaska-in-fy-2025-defense-authorization. Accessed May 25, 2025.
[71] Mark Kennedy, Rebecca Pincus, Jason C. Moyer, Heather Exner-Pirot, Klaus Larres, and Prashanth Parameswaran, "360° View of America's 'ICE Pact' Polar Icebreaker Partnership with Canada and Finland," Wilson Center (July 16, 2024). https://www.wilsoncenter.org/article/360deg-view-americas-ice-pact-polar-icebreaker-partnership-canada-and-finland. Accessed May 17, 2025.
[72] Matthew P. Funaiole, Brian Hart, and Aidan Powers-Riggs, "China Dominates the Shipbuilding Industry," Center for Strategic and International Studies (March 25, 2024). https://www.csis.org/analysis/china-dominates-shipbuilding-industry. Accessed May 20, 2025.
[73] Wishnick, "Indo-Pacific Lens on the Arctic: How US Partners in Asia View Arctic Security and Governance," pp. 9.
[74] Liselotte Odgaard, "Russia and China's Cooperation in the Arctic Is a Rising Nuclear Threat," Hudson Institute (October 3, 2024). https://www.hudson.org/arms-control-nonproliferation/russia-chinas-cooperation-arctic-rising-nuclear-threat-liselotte-odgaard. Accessed May 17, 2025.
[75] Michael Sion, John Wenzel, and Blaine Pellicore, "Rethinking Defense: The Role of Private Capital," Bain (December 31, 2024). https://www.bain.com/insights/rethinking-defense-the-role-of-private-capital/. Accessed May 20, 2025.

Social and Economic Development in Local Communities

Preserving the security of domestic Arctic territory must have robust local partners that contribute to the successful implementation of strategic objectives. Alaskan citizens have been moving in recent decades from less populated, northern towns to larger places more southern.[76] The limited or lack of access to education, livelihoods, and inferior access to basic infrastructure, such as utilities and transportation, are all reasons that contribute to these demographic shifts. Addressing declining populations across the Arctic and how their presence affects the ability for other security professionals to do their work is an important consideration.[77] Therefore, any increase in military activity in places populated across the North American Arctic should correspond with policies that invest in the local communities.

Long-term Russia Engagement

Finally, the West at some point must address the Russia problem. While Russia has largely been excluded from governance as punishment for its invasion of Ukraine, effective pan-Arctic governance will require Russian cooperation. Russia is about half of the entire Arctic's land area, population, and coastline within its undisputed sovereignty. Shared mutual interests, such as "military transparency, environmental and scientific diplomacy, fisheries and shipping, and other resource extraction" can chart a path between Russia and the West towards a normalized political relationship within the region.[78] The current hostile actions from Russia limiting direct cooperation makes it more imperative for the other Arctic countries to work towards collaborative regional relations. The European reintegration of France post Napoleon and the lack of integration of Germany post-World War 1 underscores important lessons. A politically and economically unstable Germany ostracized by the Entente powers resulted in the breeding grounds for fascism that ultimately resulted in World War II.[79] On the other hand, representatives from the European powers came together during the 1814 Congress of Vienna to establish long-term peace for Europe while acknowledging a weakened France's role as an aggressor in the region.[80] A post-Ukraine war Russia willing to participate in international collaboration can either be met with more resistance, potentially leading to more grievances, or with cautious acceptance based on realistic expectations. U.S. policymakers and allies should think critically about how this possible engagement with Russia will look like and how to work towards maintaining a peaceful and stable region.

[76] Marlene Laruelle, "The Three Waves of Arctic Urbanisation. Drivers, Evolutions, Prospects," *Polar Record* 55, no. 1 (August 25, 2019) pp. 1–12. https://doi.org/10.1017/S0032247419000081. Accessed May 12, 2025.
[77] Tingstad, "Enhancing Security in a Changing Arctic." 2023.
[78] Wilfrid Greaves, "Chapter 8: When Great Power Fails: Russia, Ukraine, and the New Arctic Geopolitics," in Michael E. Lynch and Howard G. Coombs, ed. *International Competition in the High North: Kingston Conference on International Security 2022* (Carlisle, PA: US Army War College Press, 2024), pp.105. https://press.armywarcollege.edu/monographs/965. Accessed May 23, 2025.
[79] Mark Cartwright, "The Causes of WWII," World History Encyclopedia (March 26, 2024). https://www.worldhistory.org/article/2409/the-causes-of-wwii/. Accessed May 23, 2025.
[80] Greaves, "Chapter 8: When Great Power Fails: Russia, Ukraine, and the New Arctic Geopolitics," pp. 105.

Conclusion

The Arctic is vital for the United States' national security and economic prosperity. Placed at the intersections of two critical theatres, Europe and the Info-Pacific, the Arctic's stability has both domestic and regional considerations. U.S. access to the Arctic is currently hindered by insufficient navigational tools ranging from icebreakers to subsea cables, a nonexistent deepwater port, and aging defense systems. The United States needs to improve its investments both for strategic flexibility and to improve defense of assets in the Arctic.[81] An interconnected investment strategy includes the following:

- **Selective strategic investments:** invest in strategic locations, such as the proposed deepwater Port of Nome expansion near the Bering Strait, for cost effective and dual-use military and civilian infrastructure
- **Force multiplier investment strategy:** integrate capabilities across NATO's expanded Arctic membership and Indo-Pacific partners to expand burden sharing for communications infrastructure, including fiber optic networks and satellite systems with enhanced Arctic coverage
- **Defense industrial cooperation investments:** strengthen the Arctic industrial base across nations through transatlantic defense-industrial cooperation such as the ICE Pact

This multifaceted strategy acknowledges the reality of gaps in U.S. Arctic development and capitalizes on unique U.S. and allied advantages in technology, partnerships, and economic capacity. By accepting calculated risk in areas of lesser strategic significance, the United States can improve its influence and presence in the Arctic, not by matching Russia or China's economic and geographic investments, but rather through collaborative engagements with various stakeholders.

[81] Eric Brewer, Rebecca Hersman, and Maxwell Simon, *Deep Dive Debrief: Strategic Stability and Competition in the Arctic*, Center for Strategic and International Studies (January 6, 2024). https://www.csis.org/analysis/deep-dive-debrief-strategic-stability-and-competition-arctic. Accessed May 20, 2025.