

Great Power Competition: The Arctic Operating Environment in 2035

A Monograph

by

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Abstract

Great Power Competition: The Arctic Operating Environment in 2035, by MAJ Elizabeth Fields, US Army, 48 pages.

Russia currently has the largest and most capable military force in the Arctic. The Arctic is critical to Russia because of its natural resources and access to both the Atlantic and Pacific Oceans. The Arctic is of strategic importance to the United States because of its proximity to the homeland and Russia's increased military presence. The United States' main objectives in the region are to defend the homeland and ensure waters remain free and open for navigation. While this is currently achievable, it may not be in the future. As Russia continues to advance its military and economic presence, the United States will have to respond if it wants to compete in an era of great power competition.

Contents

Acknowledgments.....	v
Abbreviations.....	vi
Figures.....	vii
Introduction.....	1
The Arctic’s Operational Environment.....	5
Russia’s Arctic Environment in 2020.....	7
Legal Definition of the NSR.....	8
Access to Arctic Resources.....	10
Arctic Military Power.....	14
The US Arctic Environment in 2020.....	19
Legal Definition of the NSR.....	20
Access to Arctic Resources.....	21
Arctic Military Power.....	24
Russia’s Desired Arctic State in 2035.....	30
The US Desired Arctic State in 2035.....	42
Arctic Problem Frame.....	34
Arctic Recommendations.....	38

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Stay motivated!

Abbreviations

DoD	Department of Defense
DHS	Department of Homeland Security
EEZ	Economic Exclusive Zone
EUCOM	European Command
INDOPACOM	Indo-Pacific Command
NSS	National Security Strategy
NATO	North Atlantic Treaty Association
NORTHCOM	Northern Command
NSR	Northern Sea Route
NWP	Northwest Passage
TSR	Transpolar Sea Route
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea

Figures

Figure 1. The Arctic Routes.....	6
Figure 2. Arctic Territorial Claims.....	12
Figure 3. Russian Military Bases Along the Northern Sea Route.....	15
Figure 4. Range of the Tsirkon Missile.....	16
Figure 5. Oil and Gas in the Alaskan Arctic.....	21
Figure 6. Arctic Military Facilities.....	25
Figure 7. Russia's Driving Forces.....	31
Figure 8. Russia's Future Scenarios.....	33
Figure 9. The United States Driving Forces.....	36
Figure 10. The United States' Future Scenarios.....	37

Introduction

Many Americans view the North Pole as a fictional place where Santa Claus lives. The ice-covered region is a distant land that seems of little use to the average American citizen. However, the Arctic is rapidly changing. Rising temperatures are causing the ice caps to melt, opening maritime lanes and access to valuable resources. The three identified maritime routes—the Northwest Passage (NWP), the Northern Sea Route (NSR), and the Transpolar Sea Route—(TSR)—all offer a quicker traverse time compared to the Panama Canal and Suez Canal routes. According to the United States Geological Survey, the Arctic contains thirteen percent of the world's undiscovered oil and thirty percent of undiscovered natural gas.¹ These changes create a new territory for nations to compete for maritime rights and access to lucrative resources.

Russia and the United States are Arctic countries that have expressed competition in their national security strategies. According to the *United States 2017 National Security Strategy* (NSS), the United States has entered a period of Great Power Competition where nations like Russia will challenge American security, prosperity, and global dominance.² Russia's 2015 National Security Strategy asserts that the United States and the North Atlantic Treaty Association (NATO) are the main threat to Russia. However, Russia is willing to cooperate with the United States if the US government respects Russia's national interests.³

The Arctic is the only region in the world where the United States and Russia geographically intersect. Russia encompasses fifty-three percent of the Arctic territory, which gives it a geopolitical advantage. Alaska makes the United States an Arctic nation, but it impinges upon a small Arctic piece when compared to Russia. However, the NATO alliance makes the

¹ Donald L. Gautier, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," *U.S. Geological Survey*, July 23, 2008, accessed September 19, 2020, <https://pubs.usgs.gov/fs/2008/3049/>.

² US Government, *National Security Strategy of the United States of America December 2017* (Washington, DC: Government Printing Office, 2017), 37.

³ Olga Oliker, "Unpacking Russia's New National Security Strategy," *Center for Strategic and International Studies*, January 07, 2016, accessed August 28, 2020, <https://www.csis.org/analysis/unpacking-russias-new-national-security-strategy>

United States allies with the Arctic nations of Norway, Greenland (Denmark), Canada, and Iceland. As the Arctic environment changes to become more permissible, the United States and Russia will have to decide if they want to compete or cooperate.

This monograph uses the Army Design Methodology to define the problem between the United States and Russia in the Arctic and develop approaches for the US government. The Army Design Methodology uses critical and creative thinking to understand, visualize, and describe unfamiliar problems and approaches to solving them. Although there is no prescribed method to conduct the methodology, the activities conducted are framing the operational environment, framing the problem, and framing the solutions.⁴

The monograph first frames the operational environment by analyzing how ongoing climate change will likely impact the Arctic environment. Next, given the changing environment, the monograph compares Russia's current Arctic environment with that of the United States. The current environment for both nations focuses on the legal definition of the NSR, access to Arctic resources, and Arctic military power. This monograph focuses on these three topics because they are where Russia and the United States diverge in their national objectives. The national objectives are found in The *Basic Principles of Russian Federation State Policy in the Arctic to 2035*, the *2017 US NSS*, and the *2013 US National Strategy for the Arctic*.

On March 06, 2020, Russian President Vladimir Putin signed the Basic Principles of Russian Federation State Policy in the Arctic to 2035. In the document, Putin highlighted that by 2035, he wants to make the NSR a globally competitive transport route, advance the Russian economy to become the number one exporter of liquefied natural gas, and use the military to defend the northern border. Currently, Russia maintains laws and regulations over the NSR, is the fourth ranked exporter of liquefied natural gas, and has the largest and most capable military

⁴ US Department of the Army, Army Techniques Publication (ATP) 5-0.1, *Army Design Methodology* (Washington, DC: Government Publishing Officer, 2015), 1-3.

force in the Arctic.⁵ The Russian military possesses seventeen bases, four ports, eleven airports. Additionally, the military owns the world's largest icebreaker in addition to the more than forty non-nuclear icebreakers.⁶

In May 2013, the United States' President Barrack Obama signed the National Strategy for the Arctic. Since 2013, the United States has not signed a new Arctic policy. In the Arctic strategy, the United States focuses on keeping the maritime routes free and open for international use, developing new domestic energy sources, and enhancing sea, air, and space capabilities. The US government currently views the NSR as an international route, currently accesses fifteen percent of domestic oil production in the Arctic, and maintains a minimal military presence. The US military has two bases and eight Air Force bases in the Arctic region. The Coast Guard owns two icebreakers.⁷

The differences between Russia and the United States were then analyzed to determine the future Arctic environment. The year 2035 is used for the future environment because that is when Russia seeks to achieve its objectives as outlined in the *Basic Principles of Russian Federation State Policy in the Arctic*. To build the future scenarios, this monograph used Futurists Lawrence Wilkinson's and Peter Schwartz's methods and models. Wilkinson and Schwartz argue that to build future scenarios, one must determine the critical uncertainties.⁸ For this monograph, the critical uncertainties are the legal definition of the NSR, access to Arctic resources, and Arctic military power. These critical uncertainties were ranked for Russia and the United States. The top

⁵ Ekaterina Klimenko, "Russia's New Arctic Policy Document Signals Continuity Rather Than Change," *Stockholm International Peace Research Institute*, April 06, 2020, accessed November 20, 2020, <https://www.sipri.org/commentary/essay/2020/russias-new-arctic-policy-document-signals-continuity-rather-change>.

⁶ Malte Humpert, "Russian Paratroopers Perform First-Ever High Altitude Jump Over Arctic," *High North News*, April 27, 2020, accessed October 13, 2020, <https://www.highnorthnews.com/en/russian-paratroopers-perform-first-ever-high-altitude-jump-over-arctic-0>.

⁷ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, R41153 (Washington, DC, 2021), 127.

⁸ Wilkinson, "How to Build Scenarios," *Wired*, November 01, 1995, accessed February 24, 2021, <https://www.wired.com/1995/11/how-to-build-scenarios/>; Peter Schwartz, *The Art of the Longview* (New York: Crown Business, 1996), 114-117.

two uncertainties supported the development of four different scenarios. For Russia, the scenarios focused on if the Federation will have a strong or weak economy (access to Arctic resources), and an increase or decrease in Arctic military capabilities (military power). Russia's preferred scenario is where they experience both a strong economy and increase its Arctic military capabilities. The United States scenarios focused on whether Arctic states commit to upholding international law (legal definition of the NSR) and whether the US military increases or decreases its capabilities (military power). The United States' preferred scenario is where Arctic states uphold international law and the United States increases the Arctic military capabilities to protect the homeland.

Based on these scenarios, there are two problems for the United States. The first is Russia possesses the military strength to control the NSR and use military force to access resources outside of the Russian economic zone. Russia currently has the largest Arctic military force and wants to bolster its capabilities over the next fifteen years. Compared to Russia, the United States has a smaller Arctic military footprint and lacks Arctic military equipment. The second problem is the lack of Arctic domain awareness capabilities degrade the US military and Coast Guard's ability to prevent an attack on the homeland from the Arctic. The North Warning System in Canada is outdated and the military has minimal reconnaissance and surveillance assets in the Arctic. For example, in 2019 the US Coast Guard stumbled upon a joint Chinese and Russian Arctic military exercise that the US intelligence community did not know about.⁹

To address the Arctic problems, the United States needs to implement a whole-of-government approach to ensure freedom of the seas and protect the homeland. Diplomatically, the United States can focus on making the TSR an international strait and update the 2013 US National Strategy for the Arctic policy. In the information domain, American politicians must continue to encourage states to uphold international law regarding access to maritime routes and

⁹ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 39.

resources near the North Pole. The United States Department of Defense (DoD) and Department of Homeland Security (DHS) can modernize military equipment for Arctic conditions and declare the United States European Command (EUCOM) the lead combatant command. Through these actions, the United States will be more prepared in the future to compete in the Arctic region.

The Arctic's Operational Environment

Scientists predict the Arctic will have its first ice-free summer sometime between 2035-2050.¹⁰ Since 1979, the average area covered by sea ice has shrunk by forty percent, and the average thickness of the ice by fifty percent. Given data over the past forty-one years, scientists developed climate models to predict when the first ice-free summer will occur. A majority of the models indicate that 2050 will be the first Arctic ice-free summer, but stress that 2035 could be the earliest if global greenhouse gas emissions continue to rise without any effort to make reductions.¹¹

Rising Arctic temperatures will create a new operational environment. The NSR, NWP, and TSR all offer a quicker traverse time than the Panama Canal and the Suez Canal. Shorter routes are beneficial for global corporations and militaries to save money or deploy expeditionary forces more rapidly. Many nations also want to gain access to the region's resources for internal economic growth. While currently only Arctic nations compete for resources, non-Arctic governments may seek access in the future.

Although the Arctic is becoming more permissible, the Arctic climate will still offer challenges between 2035 and 2050. Ice can still form in various locations, making it difficult for ships to traverse the area, even in the summertime. Additionally, the Arctic has long, dark, cold

¹⁰ Daisy Dunne, "Interactive: When Will the Arctic See Its First Ice-Free Summer?," *Carbon Brief*, December 12, 2019, accessed August 30, 2020, <https://interactive.carbonbrief.org/when-will-the-arctic-see-its-first-ice-free-summer/>.

¹¹ Ibid.

winters that require vessels with advanced technologies.¹² Those traversing the Arctic will continue to need technology that identifies the location of icebergs.

As Figure 1 shows, the NWP, NSR, and TSR are three key Arctic maritime routes.

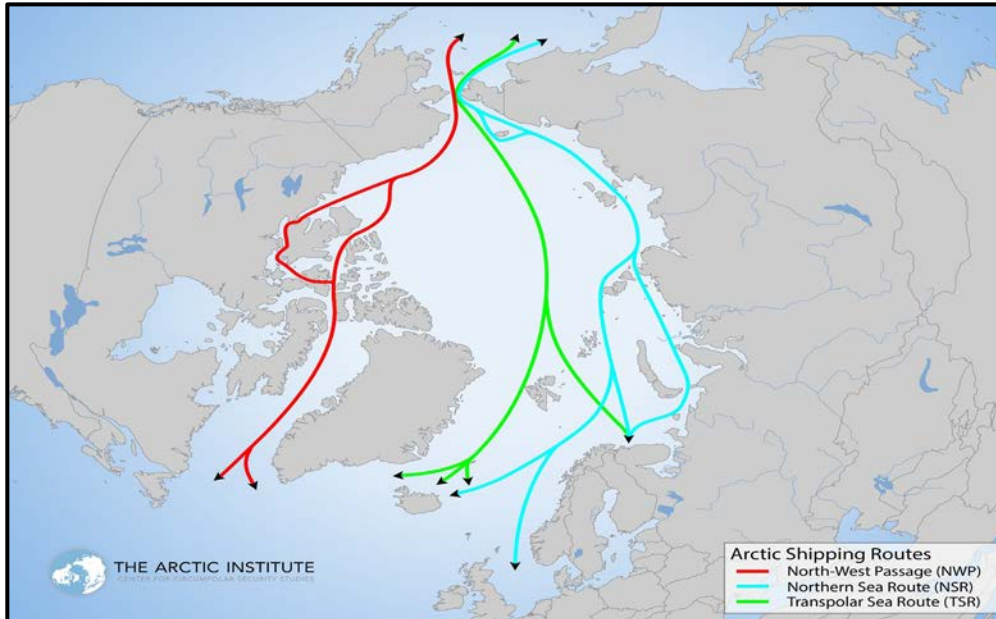


Figure 1. The Arctic Routes. Malte Humpert, “The Future of the Northern Sea Route – A “Golden Waterway” or a Niche Trade Route,” *The Arctic Institute*, September 15, 2011, accessed August 23, 2020, <https://www.thearcticinstitute.org/future-northern-sea-route-golden-waterway-niche/>.

The NWP (in red) connects the Atlantic to the Pacific Ocean through the Bering Canadian Strait. Unlike the commonly used Panama Canal, the NWP offers an alternative route that is ten thousand kilometers shorter.¹³ Additionally, the NWP is mainly ice-free during the summer months. The NSR (in blue) connects far eastern Asia with northern Europe over Russia through the Bering Strait and Russia’s Kamchatka Peninsula. The route is two weeks faster than the Suez Canal route.¹⁴ Similar to the NWP, the NSR is ice-free during the summer months. A third route that is beginning to open is the TSR (in green). The TSR route connects the Atlantic and Pacific Oceans through the center of the Arctic Ocean and is shorter than the NSR. The TSR is not

¹² Lassi Heininen, Alexander Sergunin, and Gleb Yarovoy, *Russian Strategies in the Arctic: Avoiding a New Cold War* (Moscow: Valdai Discussion Club, 2014).

¹³ Parag Khanna, *Connectography* (New York: Random House, 2016), 249.

¹⁴ Ibid.

currently ice-free, but scientists predict by 2050, the route will become completely accessible and render the NSR obsolete.¹⁵

The Arctic contains approximately 90 billion barrels of oil, 1,669 trillion cubic feet of undiscovered natural gas, and multiple untapped resources, such as gold, lead, silver, zinc, copper, nickel, diamonds, uranium, and rare earth minerals.¹⁶ The United Nations Law of the Seas (UNCLOS) is an international agreement on maritime law. The UNCLOS states that all nations who border the Arctic Ocean have a territorial claim up to twelve nautical miles and an Economic Exclusive Zone (EEZ) of 200 nautical miles from the border of their coast. The countries that border the Arctic are Denmark, the United States, Russia, Canada, Finland, Iceland, Norway, and Sweden. All Arctic nations acknowledge the EEZ.

Russia's Arctic Environment in 2020

Since President Putin ascended to power, Russia advanced its diplomatic, economic, and military position in the Arctic. President Putin stated he wants to solve Arctic issues diplomatically and assist Arctic international organizations.¹⁷ In the past, Putin stated that Russia has often worked with Arctic organizations, such as the Arctic Council or Barents Euro-Arctic Council, to promote regional peace and participate in joint nation search and rescue missions. Economically, Putin bolstered the Russian economy by building gas infrastructure in the Arctic. Putin's economic aim is to become the number one exporter in liquefied natural gas exports.¹⁸ Based on scientific estimates of oil and gas reserves, Putin may achieve this goal through the exploitation of Arctic resources. In June 2020, Putin signed a declaration to make the Northern

¹⁵ Mia Moy Bennett et al., "The Opening of the Transpolar Sea Route," *Marine Policy*, no. 121 (2020): 1.

¹⁶ US Department of the Army, Training and Doctrine Command, G-2, *The Arctic Through 2035* (Fort Leavenworth: Government Printing Officer, 2020), 11.

¹⁷ "Vladimir Putin Calls for Arctic Claims to be Resolved Under UN law," *The Guardian*, September 23, 2010, accessed November 21, 2020, <https://www.theguardian.com/world/2010/sep/23/putin-arctic-claims-international-law>.

¹⁸ *International Gas Union, 2020 World LNG Report* (Barcelona: International Gas Union, 2020), 37.

Fleet Joint Strategic Command the fifth military district. He continues to activate more Arctic bases and steadily increase the number of military personnel in the region..¹⁹

On March 6, 2020, President Putin signed the Basic Principles of Russian Federation State Policy in the Arctic to 2035. The policy contains six national interests, which can be grouped into approaches to confront international and military issues, economic goals, and social considerations. There are two international and military objectives. Russia wants to maintain its territorial integrity and sovereignty and preserve the Arctic as a region of peaceful, stable, and mutually beneficial partnerships. Russia's economic objectives are to develop the Arctic as a strategic resource base to accelerate national economic growth and develop the NSR as a globally competitive national transport corridor. Putin's social objectives focus on ensuring a high quality of life and well-being for the Arctic population.²⁰ This monograph will only focus on Russia's international and military issues and economic objectives.

Legal Definition of the NSR

Russia argues that the UNCLOS laws define the NSR as part of its internal waters. Section 2, Article 3 of UNCLOS permits Russia to claim up to twelve nautical miles from their coastline. Russian territory extends twelve nautical miles north from the Kara Gate in the west to the Bering Strait in the east. The Federation also insists that the UNCLOS allows Russia to create laws and regulations to protect the natural environment. According to Article 234, coastal states have the right to adopt rules and regulations to prevent pollution from vessels in ice covered areas within the EEZ limits.²¹ Based on this article, Russia created the "Regulation for Navigation on the Seaway of the Northern Sea Route" in 1991 to govern navigation.²²

¹⁹ Matthew Melino and Heather A. Conley, "The Ice Curtain: Russia's Arctic Military Presence," *Center for Strategic and International Studies*, March 26, 2020, accessed December 07, 2020, <https://www.csis.org/features/ice-curtain-russias-arctic-military-presence>.

²⁰ Klimenko, "Russia's New Arctic Policy Document Signals Continuity Rather Than Change."

²¹ Yoshio Kon, *The Northern Sea Route* (Tokyo: Ship and Ocean Foundation, 2001), accessed December 07, 2020. https://www.spf.org/_opri_media/publication/arctic/pdf/200103_arctic.pdf, 85-86.

²² Ibid.

In 2020, the Regulation for Navigation on the Seaway of the Northern Sea Route was rechristened the Northern Sea Route Administration. The administration enforces Russian laws, including the navigation that ship operators or captains must apply for a navigation permits at least fifteen days in advance.²³ Additionally, the administration requires each vessel to be escorted by a Russian icebreaker. While most operators do not complain about the escort service or complying with Russian law, there is debate over freedom of navigation for military vessels.²⁴ In 2019, the Kremlin mandated that all foreign military vessels must provide forty-five days in advance a notice that they plan to use the NSR. Within the UNCLOS twelve nautical miles rule, warships are required to comply with the coastal state's legal laws and regulations.²⁵

Control of the NSR will enable Russia to make the route a globally competitive national transport corridor. In 2018, Putin announced his goal to increase traffic in the NSR by eighty million tons in 2024.²⁶ Since 2013, the volume of traffic in the NSR has gradually increased. According to the Ministry of Transport of the Russian Federation, the amount of cargo shipped through the NSR rose from four million tons in 2013 to thirty million tons in 2019.²⁷ Given the traffic in 2019, it is unlikely Russia will increase traffic by fifty million tons in the next four years. However, Russia's current focus on improving infrastructure along the NSR will probably attract more consumers.

Russia wants to increase the commercial use of the NSR to improve the Federation's economy. The State Commission for Arctic Development coordinates work between the federal

²³ Maria Smekalova, Alexandr Teslya, and Dmitriy Puminov, "Northern Sea Route," *Russian International Affairs Council*, 2015, accessed January 10, 2021, <https://russiancouncil.ru/en/northernsearoute>.

²⁴ Ibid.

²⁵ The Maritime Executive, "Russia Tightens Control Over Northern Sea Route," *Maritime Executive*, March 08, 2019, accessed January 12, 2021, <https://www.maritime-executive.com/index.php/article/russia-tightens-control-over-northern-sea-route>.

²⁶ Klimenko, "Russia's New Arctic Policy Document Signals Continuity Rather Than Change."

²⁷ Sergey N. Grinyaev, "Integrated Security Issues in the Basic Principles of Russian Federation State Policy in the Arctic to 2035: Experience and Prospects for Implementation," *Center for Arctic Research*, May 12, 2020, accessed September 19, 2020, <http://oaji.net/articles/2020/4398-1595858388.pdf>.

and regional authorities in the Arctic. Yury Trutnev, the Russian Deputy Prime Minister and Presidential Plenipotentiary Envoy to the Far Eastern Federal District, leads the State Commission. At the commission meeting in 2020, Trutnev discussed projects intended to support the development plan for the NSR.²⁸ The NSR infrastructure plan has eighty-four separate initiatives focused on shipbuilding, new infrastructure, and new satellites and meteorological equipment. Some of the projects include building forty new vessels, many of which will be nuclear icebreakers that can break through the thickest ice and open wide shipping lanes year-round. Russia also plans to create new railways that will increase shipping out of the ice-free Barents Sea port, upgrade four regional airports, and improve port facilities.²⁹

Access to Arctic Resources

Russia's Arctic strategy identifies the region as a strategic resource base to accelerate national economic growth. Researchers estimate that the Russian EEZ contains eighty percent of the oil and gas resources in the Arctic.³⁰ The Arctic resources can improve the Russian economy. Russia's primary economic resource comes from oil and gas exports. Russia is the second largest exporter of oil in the world and fourth largest exporter of liquefied natural gas.³¹ A majority of the current oil and gas is in western Siberia. However, western Siberian resources are becoming depleted. From 2009 - 2019, western Siberia experienced a ten percent decrease in oil production

²⁸ "The State Commission for Arctic Development: Regional Development Strategy Until 2035, Expanding the Northern Sea Route and Renovating Norilsk," *The Arctic*, May 13, 2020, accessed October 13, 2020, <https://arctic.ru/infrastructure/20200513/943817.html>.

²⁹ Atle Staalesen, "Moscow Adopts 15-Year Grand Plan for Northern Sea Route," *The Barents Observer*, December 31, 2019, accessed August 26, 2020, <https://thebarentsobserver.com/en/arctic/2019/12/moscow-adopts-15-year-grand-plan-northern-sea-route>.

³⁰ Anna Kireeva, "For All of Russia's Talk About Oil Drilling in the Arctic, Most Arctic Oil Will Likely Go Untouched," *Bellona*, April 24, 2019, accessed August 30, 2020, <https://bellona.org/news/arctic/2019-04-for-all-of-russias-talk-about-oil-drilling-in-the-arctic-most-arctic-oil-will-likely-go-untouched>.

³¹ *International Gas Union, 2020 World LNG Report* (Barcelona: International Gas Union, 2020), 37.

because of depleted reserves.³² By 2035, western Siberia's oil and gas reserves are expected to plunge by forty percent.³³ As Russia seeks to diversify its economy and unshackle its oil production from western Siberia, the Arctic will loom large.

The Arctic may enable Russia to boost its liquefied natural gas exports. President Putin stated he wants to become the number one exporter of liquefied natural gas.³⁴ In 2019, Russia ranked fourth globally for liquefied natural gas exports (29.3 million tons). To become first, Russia will have to out produce Qatar, which yielded 77.8 million tons of liquefied natural gas in 2019. To increase exports, Russia is developing liquefied natural gas facilities in the Far East, the Baltic Region, and the Arctic. Russian Ministry of Defense Alexander Novak stated that Russia will be able to annually produce between 120 and 140 million tons by 2030.³⁵

There are currently three Arctic areas that Russia can use to exploit liquefied natural gas: the Yamal Peninsula, the Gydan Peninsula, and the Verkhnetiuteyskoye and Zapadno-Seyakhinskoye oil fields. The Yamal Peninsula exports 16M tons of liquefied natural gas annually via the Yamal LNG. In the Gydan Peninsula, the Arctic LNG 2 is under construction. Upon completion, estimates project that Russia will produce an annual 37M tons by 2025 and between 55 and 70M in 2030.³⁶ The third pipeline, the Ob LNG in the Verkhnetiuteyskoye and Zapadno-Seyakhinskoye oil fields, will be capable of producing 4.8 million tons of liquefied natural gas annually in 2023.³⁷ Through these pipelines, the Arctic will be able to export 90M

³² Nastassia Astrasheuskaya, "Russia Makes Its Oil Reserves Work Harder as Output Declines," *Financial Times*, November 10, 2019, accessed October 13, 2020, <https://www.ft.com/content/6225ff10-ee9d-11e9-a55a-30afa498db1b>.

³³ Ibid.

³⁴ "Putin Says Russia Will Become World's Top LNG Producer," *Offshore Energy*, March 30, 2017, accessed January 21, 2021, <https://www.offshore-energy.biz/putin-says-russia-will-become-worlds-top-lng-producer/>.

³⁵ *Liquefied Natural Gas in Russia* (Netherlands: Embassy in Moscow, 2020), 1.

³⁶ Marlene Laruelle, *Russia's Arctic Policy: A Power Strategy and Its Limits* (Moscow: Russia/NIS Center, 2020), 13.

³⁷ Atle Staalesen, "Novatek Announces 3rd LNG Project in Arctic," *The Barents Observer*, May 23, 2019, accessed August 26, 2020, <https://thebarentsobserver.com/en/industry-and-energy/2019/05/novatek-announces-3rd-lng-project-arctic>.

tons by 2030. Suppose Qatar continues to export 77.8M tons of liquefied natural gas in 2030. In that case, the Arctic region alone will outproduce Qatar without any drilling in the Baltics or the Far East, and make Putin's goal achievable.

Additionally, according to a 2008 United States Geological Survey, the North Pole region contains roughly 2,500 million metric tons of oil and twenty-seven billion cubic feet of natural gas.³⁸ Moreover, the area may contain estimated ten billion tonnes of hydrocarbons.³⁹ However, according to UNCLOS, no nation currently has rights to the North Pole. Each Arctic nation has an EEZ that extends no more than 200 nautical miles from its territorial sea baseline. As the map below shows, there is no Arctic nation with an EEZ in the North Pole region.

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Figure 2. Arctic Territorial Claims. "Frozen Conflict," *The Economist*, December 20, 2014, accessed August 23, 2020, <https://www.economist.com/international/2014/12/17/frozen-conflict>.

Denmark (via Greenland), Russia, and Canada all claim rights to the Lomonosov Ridge area, but have agreed to let the United Nations Commission on the Limits of the Continental Shelf committee adjudicate the dispute. All three countries assert that the ridge is a continuation

³⁸ Donald L. Gautier, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," *U.S. Geological Survey*, July 23, 2008, accessed September 19, 2020, <https://pubs.usgs.gov/fs/2008/3049/>.

³⁹ Tom Parfitt, "Russia Plants Flag on North Pole Seabed," *The Guardian*, August 02, 2017, accessed September 19, 2020, <https://www.theguardian.com/world/2007/aug/02/russia.arctic>.

of their continental shelf.⁴⁰ According to Article 76, paragraph 8 of UNCLOS, a nation can request to extend its continental shelf beyond the 200 nautical mile zone.⁴¹ Russia claimed territorial rights to UNCLOS in 2001, but was rejected a year later by the Commission due to lack of geological evidence that the ridgeline constitutes part of their continent.⁴² Russia spent the next decade conducting scientific expeditions to prove that the ridgeline possesses the required sedimentation to be considered continental. In 2015, Russia submitted another claim to the UN. Russia's actions followed Denmark, who in 2014 requested that the ridge constitutes part of their territory. Later in 2019, Canada joined the dispute, arguing that the ridgeline is part of its Ellesmere Island.⁴³ Although all three nations agree to let the UN resolve the conflict, the Committee only makes recommendations based on scientific data. It is incumbent upon each government to create their boundary agreement. As of 2021, the UN has not issued a ruling.

Russia insists on a peaceful division of Arctic territory.⁴⁴ However, other nations question President Putin's claim. In 2007, Russia planted a titanium flag at a depth of 4,261 meters near the Lomonosov Ridge. Putin claimed the Federation conducted a scientific expedition to collect seabed samples for the UN Commission.⁴⁵ Russia did not violate any international laws because the territory is not owned by any nation. Canada mocked the incident and stated that Russia could not claim this territory. The United States argued Russia's flag-planting does not

⁴⁰ "Evolution of Arctic Territorial Claims and Agreements," *Stimson Research*, September 15, 2013, accessed October 09, 2020, <https://www.stimson.org/2013/evolution-arctic-territorial-claims-and-agreements-timeline-1903-present/>.

⁴¹ United Nations Convention on the Law of the Sea, *Part IV: Continental Shelf* (United Nations: Oceans and Laws of the Sea, 1982), art. 76.

⁴² Vusala Abbasova, "Russia Appeals to Un Once Again to Extend Its Arctic Border," *Caspian News*, March 02, 2019, accessed October 09, 2020, <https://caspiannews.com/news-detail/russia-appeals-to-un-once-again-to-extend-its-arctic-border-2019-2-28-8/>.

⁴³ Martha Henriques, "The Rush to Claim an Undersea Mountain Range," *BBC News*, July 23, 2019, accessed August 30, 2020, <https://www.bbc.com/future/article/20200722-the-rush-to-claim-an-undersea-mountain-range>.

⁴⁴ Fred Weir, "Russia's Putin Says He Wants Peaceful Division of Arctic," *The Christian Science Monitor*, September 23, 2010, accessed January 21, 2021, <https://www.csmonitor.com/World/Europe/2010/0923/Russia-s-Putin-says-he-wants-peaceful-division-of-Arctic>.

⁴⁵ Guy Faulconbridge, "Russian Sub Plants Flag under North Pole," *Reuters*, August 02, 2007, accessed August 30, 2020, <https://www.reuters.com/article/idINIndia-28784420070802>.

allow the Federation to access the ridge area legally.⁴⁶ Since 2007, Russia has not conducted any aggressive actions or planted other flags in the Arctic.

Arctic Military Power

Russia created the Northern Fleet Joint Strategic Command in 2014 to defend the Federation's Arctic national interests. The Northern Fleet is a joint force organization composed of an air defense division, an Army brigade, a naval infantry brigade, an aircraft carrier, a nuclear heavy cruiser, seven ballistic submarines, and dozens of other naval and surface assets. Russian Special forces are part of the Arctic brigade and have conducted exercises and training in the region.⁴⁷ Additionally, the fleet has the world's largest nuclear icebreaker and more than forty other non-nuclear icebreakers.⁴⁸ These icebreakers allow freedom of movement of military and commercial vessels. In the 2020 Russian Arctic Policy, President Putin's tasks for the Northern Fleet include protecting the sovereignty and territorial integrity of Russia, increasing capabilities to a level that guarantees repelling aggression against Russia and its allies, improving the integrated control over the air, surface, and underwater conditions in the Arctic, and creating and modernizing military infrastructure facilities.⁴⁹

The Northern Fleet Command Headquarters is in Severomorsk, on the Kola Peninsula. From the headquarters, the fleet is responsible for defending Russia's northern border. As Figure 3 depicts, the Northern Command's area of responsibility includes seventeen bases, four ports, and eleven military airports along the NSR.⁵⁰

⁴⁶ Guy Faulconbridge, "Russian Sub Plants Flag under North Pole," *Reuters*, August 02, 2007, accessed August 30, 2020, <https://www.reuters.com/article/idINIndia-28784420070802>.

⁴⁷ Matthew Melino and Heather A. Conley, "The Ice Curtain: Russia's Arctic Military Presence."

⁴⁸ US Army, *The Arctic Through 2035*, 7.

⁴⁹ Nurlan Aliyev, "Development in Difficult Times: Russia's Arctic Policy through 2035," *Russian Analytical Digest*, no. 256 (Zurich: Center for Security Studies), 3-4.

⁵⁰ Malte Humpert, "Russian Paratroopers Perform First-Ever High Altitude Jump Over Arctic," *High North News*, April 27, 2020, accessed October 13, 2020, <https://www.highnorthnews.com/en/russian-paratroopers-perform-first-ever-high-altitude-jump-over-arctic-0>.

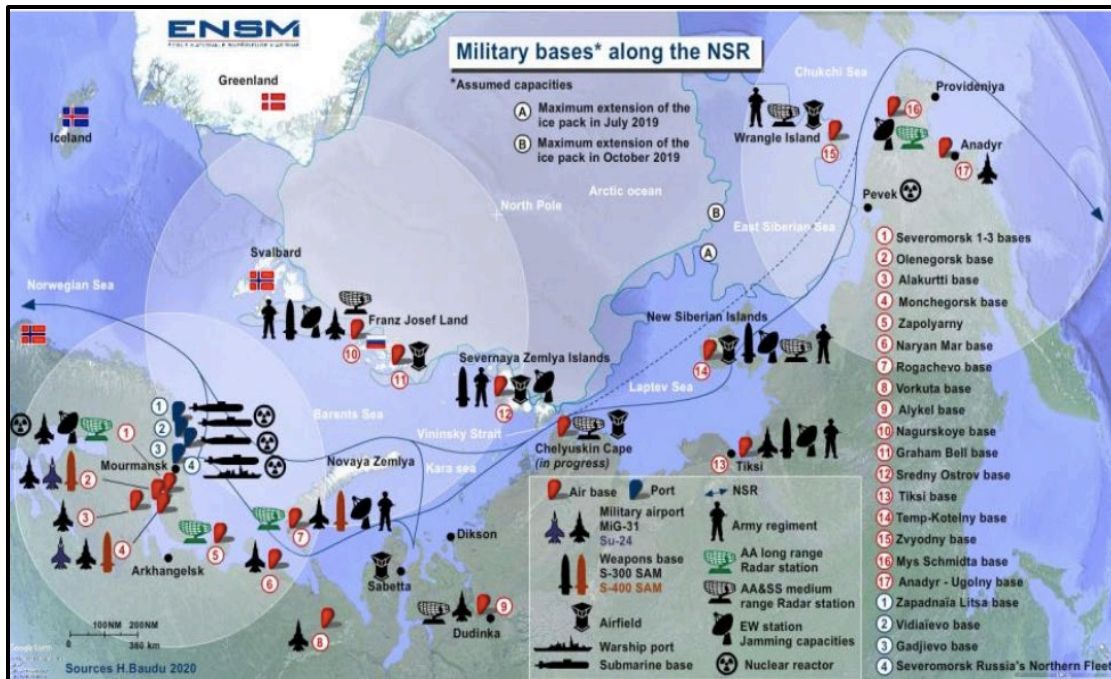


Figure 3. Russian Military Bases Along the Northern Sea Route. Malte Humpert, “Russian Paratroopers Perform First-Ever High Altitude Jump Over Arctic,” *High North News*, April 27, 2020, accessed October 13, 2020, <https://www.highnorthnews.com/en/russian-paratroopers-perform-first-ever-high-altitude-jump-over-arctic-0>.

The Fleet possesses Russia’s most advanced land, air, and naval assets.⁵¹ There are three sectors the military occupies: The eastern sector near Wrangle Island, the central sector near Severnaya Zemlya Island, and the western sector near Murmansk. In the eastern sector, the military has airfields, search and rescue stations, and radars that serve as a protective dome to track vessels and aircraft. The central sector contains air defense systems that can deny aerial, maritime, or land access through the layered coastal defense arrangement. The western area has the most advanced defensive assets, but also potential offensive capabilities. Russia’s defenses in the west focus on safeguarding the nuclear arsenal and second-strike capabilities.⁵²

Russia often tests new Arctic capabilities, such as hypersonic cruise missiles and nuclear-powered undersea drones.⁵³ In October 2020, Russia test fired the 3M22 Tsirkon missile from the frigate Admiral Gorskhov. The missile launched from the White Sea to the Barents Sea at an

⁵¹ Matthew Melino and Heather A. Conley, “The Ice Curtain: Russia’s Arctic Military Presence.”

⁵² Ibid.

⁵³ Ibid.

“enemy ship” target. It took four and a half minutes to reach a range of 450km. The missile flew at Mach 8, making it the Russian Navy’s fastest sea launched cruise missile. The Tsirkon will be added to the new class of Russian frigates and two of Russia’s nuclear-powered battle cruisers. As Figure 4 shows, Russia’s test fire proves that the nation can reach the Norwegian Sea from the Barents Sea.⁵⁴

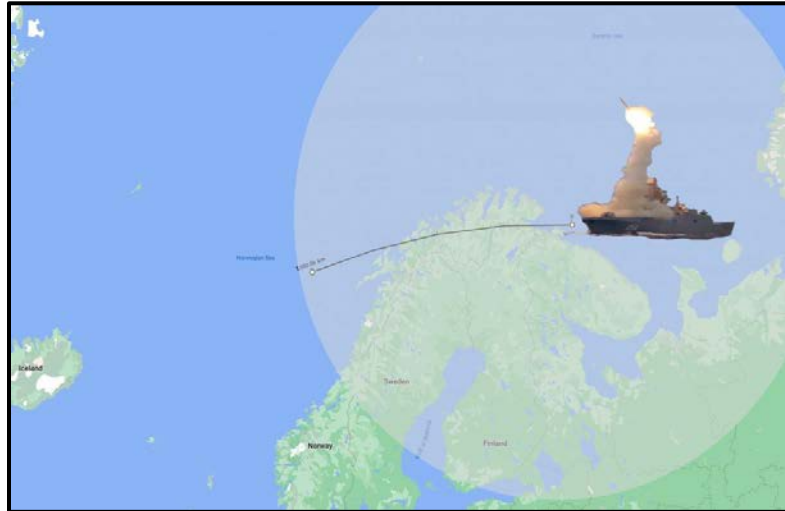


Figure 4. Range of the Tsirkon Missile. Thomas Nilsen, “Russia’s Northern Fleet Prepares for a Long-Range Test of the Tsirkon Hypersonic Missile,” *Arctic Today*, November 03, 2020, accessed January 21, 2021, <https://www.arctictoday.com/russias-northern-fleet-prepares-for-a-long-range-test-of-the-tsirkon-hypersonic-missile/>.

In 2018, Russia also tested a nuclear underwater drone, the Poseidon. The drone can reach a depth of 1,000 meters, speeds up to 100 knots, and a range of 10,000 kilometers. Russia wants to deploy the drones on two Northern Fleet submarines. Each submarine can carry eight drones and be armed with two-megaton nuclear or conventional payloads, which can be detonated thousands of feet below the surface and potentially create a radioactive tsunami.⁵⁵

The Northern Fleet’s capabilities allow Russia to project power in the Arctic. For example, during the 2019 Ocean Shield Exercise, Russia showcased its ability to assert maritime

⁵⁴ Thomas Nilsen, “Russia’s Northern Fleet Prepares for a Long-Range Test of the Tsirkon Hypersonic Missile,” *Arctic Today*, November 03, 2020, accessed January 21, 2021, <https://www.arctictoday.com/russias-northern-fleet-prepares-for-a-long-range-test-of-the-tsirkon-hypersonic-missile/>.

⁵⁵ US Congressional Research Service, *Russia’s Nuclear Weapons: Doctrine, Forces, and Modernization*, R45861 (Washington, DC 2020), 24-25.

power in the Baltic Sea.⁵⁶ The exercise involved twenty surface ships, support vessels and boards, eighteen aircraft and helicopters, and approximately 2,000 personnel.⁵⁷ During the training, the Northern Fleet secured Greenland, Iceland, and the United Kingdom-Norway Gap and blocked the English Channel.⁵⁸

Russia considers the United States and its allies a threat to its sovereignty and territorial integrity. The 2017 Russian Naval Doctrine states, “the ambition the United States of America and its allies, to dominate the high seas, including the Arctic,” poses a danger to Russian security.⁵⁹ From Russia’s perspective, the United States and the North Atlantic Treaty Organization (NATO) continue to increase military activity in the Arctic. In 2018, Russia’s Ministry of Defense, S.K. Shoigu, criticized the following NATO and US military activities: The US Navy recreated the second operational fleet; NATO created two commands – the Atlantic and a joint rear command; a new radar system in Norway that is sixty kilometers from the Russian border; the number of Marine Corps forces deployed doubled; and the execution of exercises with non-NATO countries, such as Sweden and Finland.⁶⁰

Furthermore, on October 15, 2020, Russian Deputy Chairman of the Security Council, Dmitry Medvedev, accused the United States and NATO of restricting Russian activities in the Arctic. Medvedev argued that Russia wants peace, stability, and a mutually beneficial

⁵⁶ Matthew Melino and Heather A. Conley, “The Ice Curtain: Russia’s Arctic Military Presence.”

⁵⁷ Xavier Vavasseur, “Russian Naval Forces Start Ocean Shield 2020 Drills in Baltic Sea,” *Naval News*, August 05, 2020, accessed November 20, 2020, <https://www.navalnews.com/naval-news/2020/08/russian-naval-forces-start-ocean-shield-2020-drills-in-baltic-sea/>.

⁵⁸ Matthew Melino and Heather A. Conley, “The Ice Curtain: Russia’s Arctic Military Presence.”

⁵⁹ Dmitry Gorenburg, “Russia’s New and Unrealistic Naval Doctrine,” *War on the Rocks*, July 26, 2017, accessed January 09, 2021, <https://warontherocks.com/2017/07/russias-new-and-unrealistic-naval-doctrine/>.

⁶⁰ Sergey N. Grinyaev, “Integrated Security Issues in the Basic Principles of Russian Federation State Policy in the Arctic to 2035: Experience and Prospects for Implementation,” *Center for Arctic Research*, May 12, 2020, accessed September 19, 2020, <http://oaji.net/articles/2020/4398-1595858388.pdf>.

partnership, but NATO members do not share that view.⁶¹ According to the Russian Ministry of Defense homepage, US military exercises signal aggression because the United States targets the Federation.⁶² Russia's perception came from a May 2020 military exercise, where the US Navy and the British Royal Navy conducted a maritime security operation in the Barents Sea. The training was the first time US Navy ships operated in the Barents Sea since the 1980s.⁶³

Through an increase in the Northern Fleet's capabilities, Russian military exercises, and advancements in military technology, President Putin seeks to demonstrate that Russia is ready to defend the NSR and protect its territory. Russia is also prepared to deter any attack on their homeland through the multilayered use of aerial, maritime, and ground force networks. The Federation is currently the superpower of the Arctic.

The US Arctic Environment in 2020

The 2017 US NSS states that the United States will ensure that states, businesses, and individuals uphold Arctic rules. Although the strategy does not specify the precise Arctic rules and norms, this monograph defines the laws and regulations based on the 2013 US National Strategy for the Arctic Region. The US Arctic strategy states that existing international law is the set of rules which govern the rights, freedoms, and uses of the Arctic.⁶⁴ The UNCLOS defines these international laws. Despite not being a standing member of UNCLOS, the US Arctic strategy specifies that the United States supports and observes the international law created by the

⁶¹ Atle Staalesen, "Moscow Signals It Will Make National Security a Priority as Russia Prepares to Chair the Arctic Council," *Arctic Today*, October 15, 2020, accessed November 19, 2020, https://www.arctictoday.com/moscow-signals-it-will-make-national-security-a-priority-as-russia-prepares-to-chair-the-arctic-council/?utm_source=rss&utm_medium=rss&utm_campaign=moscow-signals-it-will-make-national-security-a-priori.

⁶² Ministry of Defense of the Russian Federation, *Chief of the Main Operational Directorate of the General Staff of the Russian Armed Forces Held a Briefing on the Level of NATO Activity Near the Borders of Russia* (Moscow: Ministry of Defense, 2020).

⁶³ US Embassy in Norway, U.S., U.K. *Ships Operate in the Barents Sea* (Norway: US Embassy, 2020), accessed November 19, 2020, <https://no.usembassy.gov/u-s-u-k-ships-operate-in-the-barents-sea/>.

⁶⁴ US Government, *National Strategy for the Arctic Region* (Washington, DC: Government Printing Office, 2013), 6.

UN Convention.⁶⁵ The United States argues that UNCLOS defines the Arctic maritime routes as international waterways. The United States also wants to observe the UNCLOS to settle boundary disputes for the Lomonosov Ridge. The US Government desires a peaceful resolution of outstanding claims, and one without conflict.⁶⁶ While diplomatic means are preferred to resolve Arctic issues, the US Arctic strategy outlines America's desire to enhance military sea, air, and space capabilities. Given the 2018 National Defense Strategy, the United States wants a Joint Force that can compete, deter, and win in any environment.⁶⁷ Through the Joint Force, the United States can accomplish the DoD's 2019 Arctic Strategy. The DoD's Arctic strategy nests with the US Arctic Strategy and describes how the military will accomplish the US Arctic objectives. The DoD Arctic objectives are defending the homeland, competing when necessary to maintain favorable regional balances of power, and ensuring common domains remain free and open.⁶⁸

Legal Definition of the NSR

The United States differs from Canada and Russia on its interpretation of UNCLOS. Article 234 in the UNCLOS states that coastal states have the right to enforce non-discriminatory laws to prevent, reduce, and control pollution from vessels in ice-covered areas.⁶⁹ The US Government interprets this to mean that a coastal state can enact regulations, but it cannot impede *transit passage* due to freedom of the high seas.⁷⁰ According to the Law of the Sea, *transit*

⁶⁵ US Government, *National Strategy for the Arctic Region* (Washington, DC: Government Printing Office, 2013), 10.

⁶⁶ Ibid.

⁶⁷ US Government, *Summary of the National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Government Printing Office, 2018), 1.

⁶⁸ Office of the Under Secretary of Defense for Policy, *Report to Congress Department of Defense Arctic Strategy June 2019* (Washington, DC: Government Printing Office, 2019), 6-7.

⁶⁹ United Nations, *United Nations Convention on the Law of the Sea* (United Nations, Law of the Seas, 1982) art. 234, sec. 8, accessed December 07, 2020, https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

⁷⁰ "The Arctic and the LOSC," *Tufts University*, 2021, accessed on January 09, 2021, <https://sites.tufts.edu/lawofthesea/chapter-eight/>.

passage allows a vessel or aircraft freedom of navigation or overflight if moving along a *strait*.

The United States argues that the NSR and NWP are *straits* because they pass through one part of the high sea or EEZ to another part of the high seas or EEZ.⁷¹

In response to the US Government's argument, both Canada and Russia argue that the maritime *straits* are part of their internal waters. Canada and Russia cite Article 8 of UNCLOS, which specifies that internal waters do not have to grant rights for the innocent passage of foreign ships.⁷² Canada argues that the NWP is part of their internal waters based on historical use. The Canadian Inuit's traversed the NWP for hundreds of years, which empowered Canada to assert a straight baseline in 1985, making the NWP an internal water.⁷³ Russia argues similarly to Canada, claiming Russia historically controlled the NSR, making the route part of their historical internal waterway.⁷⁴ The United States has not attempted to transit the NSR or NWP without Canadian or Russian permission.⁷⁵ The rights to the TSR have not been debated amongst Arctic nations because the route is not easily accessible.

Access to Arctic Resources

The 2013 US Arctic Strategy highlights the need for the United States to access Arctic resources.⁷⁶ Energy security is a key component of the 2017 US NSS. In the NSS, the United States highlights the desire to secure access to domestic sources of clean, affordable, and reliable energy.⁷⁷ The Arctic contains multiple resources that could provide sources for the domestic

⁷¹ Rebecca Rowe, "Legal Article: The Northwest Passage - What Is Its Status under the International Law of the Sea?," *UKP&I*, October 2018, accessed January 09, 2021, <https://www.ukpandi.com/news-and-resources/articles/2019/legal-article-the-northwest-passage---what-is-its-status-under-the-international-law-of-the-sea/>.

⁷² *Ibid.*

⁷³ "The Arctic and the LOSC," *Tufts University*, 2021, accessed on January 09, 2021, <https://sites.tufts.edu/lawofthesea/chapter-eight/>.

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*

⁷⁶ US Government, *National Security Strategy of the United States of America* December 2017, 7.

⁷⁷ *Ibid.*, 22.

energy sector. For example, the Trans Alaskan Pipeline carries approximately fifteen percent of the nation's domestic oil production.⁷⁸ The United States is open to exploring the Arctic for access to oil, gas, or other renewable energies.

The US Arctic is estimated to hold thirty-three percent of American oil (29.6 billion barrels) and eighteen percent of American gas (72 billion barrels). As shown in Figure 5, the United States currently accesses oil and gas from the National Petroleum Reserve (in yellow) and Arctic National Wildlife Refuge (in green).⁷⁹

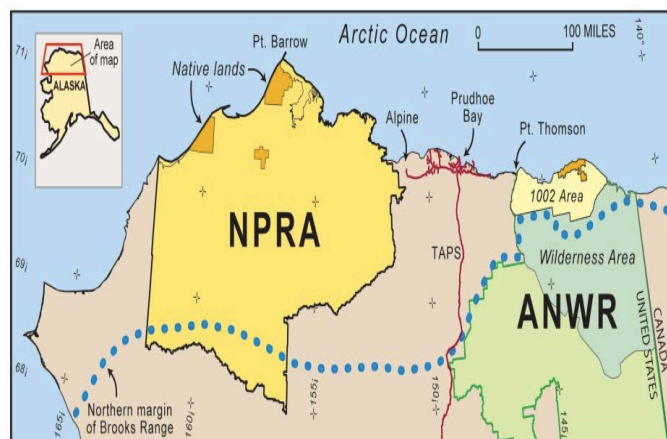


Figure 5. Oil and Gas in the Alaskan Arctic. E. Allison and B. Mandler, “Oil and Gas in the U.S. Arctic,” *American Geosciences Institute*, 2018, accessed January 10, 2021, https://www.american-geosciences.org/sites/default/files/AGI_PE_Arctic_web_final.pdf, 1.

The peak oil production from the American Arctic was in 1988, when twenty-three percent of all US oil production originated from the Northern Slope (north of the blue dotted line in Figure 5).⁸⁰ However, between 1988 and 2015, oil production dropped by over seventy-five percent as oil fields became depleted.⁸¹ Discoveries in the Arctic could change this trend and increase American oil and gas production.

⁷⁸ “The Arctic – America’s Last Energy Frontier,” *American Security Project*, 2021, accessed January 10, 2021, <https://www.americansecurityproject.org/energy-security/the-arctic-americas-last-energy-frontier/>.

⁷⁹ E. Allison and B. Mandler, “Oil and Gas in the U.S. Arctic,” *American Geosciences Institute*, 2018, accessed January 10, 2021, https://www.american-geosciences.org/sites/default/files/AGI_PE_Arctic_web_final.pdf.

⁸⁰ E. Allison and B. Mandler, “Oil and Gas in the U.S. Arctic.”

⁸¹ *Ibid.*

The United States is also pursuing resources outside of its Arctic EEZ. Canada and the United States share overlapping regions of the extended continental shelf in the Beaufort Sea. Since the United States is not a party member of the UNCLOS, it cannot submit continental shelf data. Therefore, the United States initiated the Extended Continental Shelf Project. The US Government coordinated the project and adhered to the UNCLOS. There is a US task force responsible for collecting and analyzing data to establish the continental shelf's outer limits.⁸² The task force must collect and analyze data describing the seabed and sub-sea floor's depth, shape, and geophysical characteristics.⁸³ Since the United States cannot submit the data to the Convention, the Extended Continental Shelf project will analyze it to determine rights. Both Canada and the United States continue to collect samples.

Russia and the United States also have an overlapping extended shelf in the Bering Sea that is divided by a maritime boundary. In 1990, both nations signed *The Agreement between the United States and the Union of the Soviet Socialist Republics on the Maritime Boundary*.⁸⁴ The agreement defines the limits that each nation may exercise jurisdiction in the North Pacific Ocean, Bering, and Chukchi Seas.⁸⁵ The US Senate approved the agreement, while the Russian Duma did not. Both countries have respected the maritime boundary since the collapse of the Soviet Union.⁸⁶ However, some Russian politicians want the treaty renegotiated because they feel

⁸² US Department of State, *About the U.S. Extended Continental Shelf Project*, Office of Ocean and Polar Affairs (Washington, DC, 2021), accessed December 07, 2020, <https://www.state.gov/about-the-u-s-extended-continental-shelf-project/>.

⁸³ The Arctic Institute, *Continental Shelf Claims in the Arctic* (Washington, DC, 2017), accessed December 20, 2020, <https://www.thearcticinstitute.org/wp-content/uploads/2017/06/TAI-InfographicContinentalShelfClaims.pdf?x62767>.

⁸⁴ US Department of State, *U.S. Maritime Boundaries: Agreements and Treaties*, Office of Ocean and Polar Affairs (Washington, DC, 2021), accessed December 20, 2020, <https://www.state.gov/u-s-maritime-boundaries-agreements-and-treaties/>.

⁸⁵ US Department of State, *U.S. Maritime Boundaries: Agreements and Treaties*, Office of Ocean and Polar Affairs (Washington, DC, 2021), accessed December 20, 2020, <https://www.state.gov/u-s-maritime-boundaries-agreements-and-treaties/>.

⁸⁶ Ibid.

it is unfair and ratified when Russia was weak.⁸⁷ Russia has not asserted any claim to the shelf in this area.⁸⁸

Arctic Military Power

Russia's Arctic military capabilities have many US officials concerned about the Arctic becoming a region of military tension and competition.⁸⁹ Since 2008, Russia established the Northern Fleet, reactivated and modernized military bases, and increased military exercises and training operations in the region.⁹⁰ Many US officials view Russia's actions as a return to Arctic Cold War tactics.⁹¹ During the Cold War, both the United States and Russia based nuclear-powered submarines, long-range bombers, and combat aircraft in the region. When the Cold War ended, Russia drew down its Arctic forces and closed several military installations.

US officials interpret President Putin's renewed Arctic focus as a challenge to the United States.⁹² In 2019, US Secretary of State Michael Pompeo stated that Russia's military buildup, large icebreaker fleet, new military sites, air-defense systems, and anti-ship missiles constitute Russian aggression.⁹³ One year later, Russia conducted one of its largest military exercises since the Cold War. Russia's naval chief, Admiral Nikolai Yevmenov, stated there were forty aircraft and fifty warships around the Bering Sea participating in an exercise to boost their presence in the

⁸⁷ Dmitry Gorenburg, "Russian Interests and Policies in the Arctic," *War on the Rocks*, August 07, 2014, accessed February 07, 2021, <https://warontherocks.com/2014/08/russian-interests-and-policies-in-the-arctic/>.

⁸⁸ US Department of State, *About the U.S. Extended Continental Shelf Project*, Office of Ocean and Polar Affairs (Washington, DC, 2021), accessed December 07, 2020, <https://www.state.gov/about-the-u-s-extended-continental-shelf-project/>.

⁸⁹ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 37.

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² Ibid., 14.

⁹³ Ibid.

Arctic and protect the resources.⁹⁴ During the training, the Russian military stayed within international boundaries, but came close to American territory. The United States Northern Command (NORTHCOM) stated that a Russian Tu-142 aircraft hovered within fifty nautical miles of Alaska for five hours.⁹⁵

The United States Arctic military infrastructure is relatively sparse. There are eight Air Force installations and two Army bases in Alaska. As Figure 6 shows, the Air Force installations are: Joint Base Elmendorf-Richardson (AK), Eielson AFB (AK), Clear Air Force Station (AK), Joint Pacific Alaska Range Complex (AK), Barrow and North Warning System (Canada), North Warning System (Canada), Thule AFB (Greenland), and Raven Camp (Greenland). The Army owns Fort Wainwright and Fort Greely. These are strategic bases that allow the United States to defend the homeland and share security and regional stability. The bases in Alaska allow the Air Force to maintain a free and open domain in the Arctic.⁹⁶ Warning systems in Canada allow the DoD to detect threats from competitors and gain an understanding of the operational environment. Thule Air Base is used by the United States Air Force Space Command and the North American Aerospace Defense Command to monitor space for defense purposes.⁹⁷ Lastly, Raven Camp trains pilots how to operate in the austere Arctic environment.⁹⁸

⁹⁴ Vladimir Isachenkov, “Russian Navy Conducts Major Maneuvers Near Alaska,” *AP News*, August 28, 2020, accessed November 10, 2020, <https://apnews.com/article/1f6c6dceba65e893aeeee9dfa814ef8f>.

⁹⁵ Ibid.

⁹⁶ Amy McCullough, “Air Force, Space Force Release Department’s First-Ever Arctic Strategy,” *Air Force Magazine*, July 21, 2020, accessed November 10, 2020, <https://www.airforcemag.com/air-force-space-force-release-departments-first-ever-arctic-strategy/>.

⁹⁷ Talal Hussein, “Thule Air Base: Inside the US’s Northernmost Military Base in Greenland,” *Airforce Technology*, June 05, 2019, accessed November 10, 2020, <https://www.airforce-technology.com/features/thule-military-base-in-greenland/>.

⁹⁸ Catherine Schmidt, “LC-130 Skibird Aircrews Train for Polar Operations,” *US Department of Defense*, August 02, 2017, accessed November 10, 2020, <https://www.defense.gov/Explore/News/Article/Article/1264863/lc-130-skibird-aircrews-train-for-polar-operations/>.

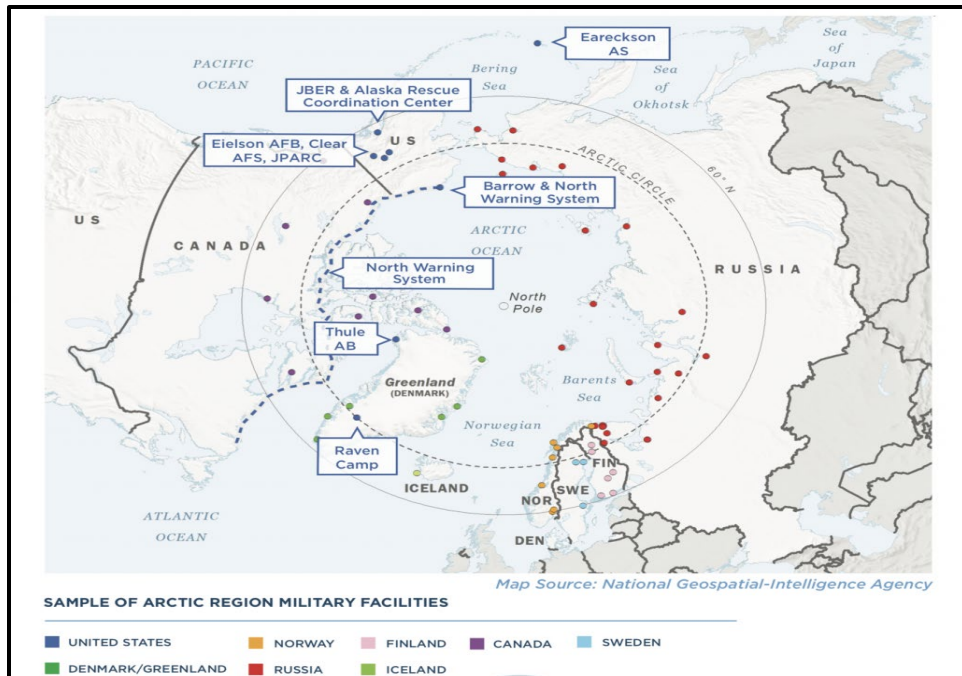


Figure 6. Arctic Military Facilities. Doug Messier, “U.S. Air Force Introduces Arctic Strategy,” *Parabolic Arc*, July 22, 2020, accessed November 04, 2020, <http://www.parabolicarc.com/2020/07/22/u-s-air-force-introduces-arctic-strategy/>.

Despite the small military footprint, the DoD and the Coast Guard are devoting more attention to Arctic planning and operations. In recent years, the Navy, Marine Corps, the Air Force, and the Coast Guard have individually released new Arctic strategies. The Army plans to publish a new strategy soon.⁹⁹ All strategies emphasize the changing environment and growing competition in the Arctic. All of the objectives align with the DoD Arctic Strategy, even the Coast Guard who falls under the Department of Homeland Security. The objectives focus on peace and prosperity in the Arctic, the need to maintain an enhanced presence, partnership, and lethality.

In January 2021, the Department of the Navy released its Arctic strategy. In the strategy, the Navy plans to maintain an enhanced presence in the Arctic by posturing their forces, conducting training exercises, and integrating Navy, Marine, and Coast Guard capabilities.¹⁰⁰ The

⁹⁹ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 38.

¹⁰⁰ *Ibid.*, 125.

Navy's reactivation of the 2nd Fleet in May 2018 shows its dedication to an enhanced presence. The fleet's mission is to counter Russian naval forces in the North Atlantic and Arctic regions.¹⁰¹ These maritime forces are responsible for defending sea lines of communication and the homeland from seaborne attacks, maintaining maritime domain awareness, supporting the Coast Guard, and ensuring the Arctic remains free and open through submarines and aircraft deployments. Additionally, the Navy assists with search and rescue missions and defense support of civil authorities. The Marine Corps stands ready to support Naval operations. Elements of the Marine Corps often deploy Marine Air Ground Task Forces to conduct cold weather training to support Arctic operations.¹⁰²

In July 2020, the Department of the Air Force released its Arctic strategy. The strategy specifies that, given the Arctic's increasing strategic importance, the Air Force must ensure the Air and Space Force can compete and defend in the region.¹⁰³ The Air Force's enhanced presence focuses on using bases, such as in Greenland and Alaska, to project combat-credible power.¹⁰⁴ To increase Arctic situational understanding and awareness, the Air Force will invest in missile warning and defense, and command, control, communications, intelligence, surveillance, and reconnaissance capabilities.¹⁰⁵ Additionally, the Air Force will work closely with regional and joint partners through exercises.

The Air Force owns seventy-nine percent of Arctic assets, which are vital to cover the region's vast distances. Air Force missions range from missile defense and space situational awareness to search and rescue.¹⁰⁶ Additionally, more than fifty radars cover the North Warning

¹⁰¹ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 45.

¹⁰² US Government, *National Strategy for the Arctic Region*, 6-7.

¹⁰³ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 126.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ US Government, *National Strategy for the Arctic Region*, 15-16.

System in Canada.¹⁰⁷ These radars were put in place in 1980 and cover an expanse that is 3,000 miles long and fourteen miles wide. The system's purpose is to provide early warning to Canada and the United States against ballistic missiles and air-launched cruise missiles. However, due to Russian military modernization, the warning system requires upgrading. According to Commodore Jamie Clarke, deputy director of strategy at the North American Aerospace Defense Command, the North warning system cannot currently identify and track Russian long-range bombers before their missile launch points.¹⁰⁸ The US military wants modifications to create a multi-purpose sensor that can monitor hostile aircraft over extended distances and track cruise and ballistic missiles. Canada slightly differs in the upgraded capabilities because they want to focus more on Arctic domain awareness, such as search and rescue missions and border patrol.¹⁰⁹

In 2021, the US Army released its Arctic Strategy, "Regaining Arctic Dominance." The objectives nest with the Department of Defense Arctic objectives of improving Arctic capability, competing in the Arctic and globally, defending the far north in crisis and conflict, and building Arctic multi-domain operations.¹¹⁰ The US Army endstate is to rapidly project multi-domain forces trained, equipped, and sustained to win in extreme cold weather and rugged mountainous conditions.¹¹¹ To achieve these objectives, the US Army will establish an operational two-star level command to lead combat brigades trained and equipped to operate in the Arctic.¹¹²

¹⁰⁷ US Government, *National Strategy for the Arctic Region*, 15-16.

¹⁰⁸ The Canadian Press, "Aging Norad Warning System Can't Detect Russian Bombers in Time, Canadian Officer Warns," *Global News*, February 02, 2020, accessed February 04, 2021. <https://globalnews.ca/news/6480258/norad-system-russian-bombers-outdated/>.

¹⁰⁹ The Canadian Press, "Aging Norad Warning System Can't Detect Russian Bombers in Time, Canadian Officer Warns."

¹¹⁰ US Department of the Army Headquarters, *Regaining Arctic Dominance* (Washington, DC, 2021), 29.

¹¹¹ Ibid.

¹¹² Meredith Roaten, "Breaking: Army Releases New Arctic Strategy," *National Defense*, March 16, 2021, accessed March 21, 2021, <https://www.nationaldefensemagazine.org/articles/2021/3/16/breaking-army-releases-new-arctic-strategy>.

Currently, the US Army has approximately 11,000 forces at Fort Wainwright, Joint Base Elmendorf-Richardson, and Fort Greely. The US Army Alaska has an Arctic Support Command, two Brigade Combat Teams, a Combat Sustainment Support Battalion, and two aviation battalions based in the Arctic. The mission is to provide trained and ready forces to support worldwide unified land operations and support the US Indo-Pacific Command (INDOPACOM).¹¹³ The US Army also has the Army Space and Missile Defense/Army Strategic Command to defend the homeland from long-range missile attacks. The US Army Corps of Engineers monitors Arctic weather conditions on infrastructure and operations, and the performance of sensors in the region.¹¹⁴

In April 2019, the US Coast Guard released its Arctic strategy. The strategy emphasizes Great Power Competition from China and Russia.¹¹⁵ The Coast Guard argues that since it has military and civilian authorities, it is uniquely situated to address inter-jurisdictional challenges in the Arctic.¹¹⁶ To meet these Arctic issues, the Coast Guard cites the need for rapid maritime technological advancements. For partnership, the Coast Guard will partner with the Arctic nations and provide resources to the Arctic Council when requested.¹¹⁷ The Coast Guard currently has one heavy polar icebreaker and one medium polar icebreaker to conduct Arctic operations.¹¹⁸ In 2013, the DHS approved the Coast Guard request to procure six polar icebreakers (three heavy and three medium).¹¹⁹

¹¹³ “Mission and Vision,” *U.S. Army Alaska*, March 16, 2021, accessed March 21, 2021, <https://home.army.mil/alaska/index.php/USARAK-mission-vision>.

¹¹⁴ US Government, *National Strategy for the Arctic Region*, 17.

¹¹⁵ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 127.

¹¹⁶ *Ibid.*, 128.

¹¹⁷ *Ibid.*, 128.

¹¹⁸ *Ibid.*, 48.

¹¹⁹ *Ibid.*, 49.

All of the US military services have increased training exercises and operations in the Arctic. Each service aims to reacquaint forces with operating conditions in the Arctic, recover Arctic warfighting skills, and signal resolve and commitment.¹²⁰ In 2018, NATO conducted exercise Trident Juncture in the Baltic and the Norwegian Sea. Twenty-nine NATO members, as well as Sweden and Finland, participated in the exercise. Trident Juncture was the largest NATO held exercise since the Cold War in the Arctic. Then, in 2019, the US Air Force conducted air-to-air operations with Sweden, Norway, and Finland; conducted air policing missions with Iceland; and hosted Arctic Edge to train with Canadian forces on homeland defense.¹²¹

Another objective for the US military and the Coast Guard is to identify military capability gaps and test equipment.¹²² The US military recently revealed the need to improve capabilities for conducting surveillance and reconnaissance in the region. The US Coast Guard Commandant Admiral Paul Zukunft told the 2020 Defense News Conference that the United States suffers from domain awareness shortcomings.¹²³ When a national security cutter was patrolling in a relatively ice-free area, they stumbled upon a joint exercise between Russia and China. The US intelligence community did not have awareness of the exercise.¹²⁴

The 2017 US NSS states that the United States has entered a period of Great Power Competition. Russia and China are near-peer competitors. Although the NSS only mentions the Arctic once, given that Russia is a major US competitor, Russian activity in the Arctic is crucial to US national security. The 2013 US Arctic Strategy highlights the need for the United States to uphold existing international laws. The United States remains committed to adhering to the UN

¹²⁰ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 39.

¹²¹ Barbra Bennett, Dave Goldfein, and John W. Raymond, "Us Air Force, Space Force: Here Is Your New Arctic Strategy," *Defense One*, July 21, 2020, accessed January 10, 2021, <https://www.defenseone.com/ideas/2020/07/us-air-force-space-force-introduce-new-arctic-strategy/167088/>.

¹²² US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 39.

¹²³ *Ibid.*, 43.

¹²⁴ *Ibid.*

Laws of the Sea, even if it is not a party member. Based on these rules, the United States argues that the NSR and NWP are international straits that all countries can access. The United States also believes that scientific data should determine the North Pole region's boundaries and the Lomonosov Ridge area. For the military in the Arctic, the DoD addresses the need in the Arctic strategy for each military service to increase Arctic awareness, conduct training exercises and operations, and identify military equipment capability gaps. A major contemporary gap is the need for more reconnaissance and surveillance in the region. The Coast Guard shares this view. The DHS approves the Coast Guard's emphasis on the need to increase polar icebreakers.

Russia's Desired Arctic State in 2035

In the *Basic Principles of Russian Federation State Policy in the Arctic to 2035*, President Putin prioritized international and military issues, economic goals, and social considerations. This monograph focused solely on Russia's international and military issues and economic objectives. Russia currently has the largest Arctic military and is beginning to access Arctic resources that strengthen its economy. Ideally, in the next fifteen years, Russia wants to maintain military supremacy in the region and become the number one exporter of liquefied natural gas. However, given that the future is unknown, scenario planning assists with forecasting.

Futurists Peter Schwartz and Lawrence Wilkinson argue that scenario planning helps create an effective strategy or decision that plays out well across several possible futures. The purpose is not to pinpoint future events, but to highlight forces that push the future in different directions.¹²⁵ To begin scenario planning, one must identify the focal point.¹²⁶ The focal issue is "What will be Russia's Arctic composition in 2035?"

¹²⁵ Wilkinson, "How to Build Scenarios," *Wired*, November 01, 1995, accessed February 24, 2021, <https://www.wired.com/1995/11/how-to-build-scenarios/>; Schwartz, *The Art of the Longview* (New York: Crown Business, 1996), 241-242.

¹²⁶ Wilkinson, "How to Build Scenarios," *Wired*, November 01, 1995, accessed February 24, 2021, <https://www.wired.com/1995/11/how-to-build-scenarios/>.

The next step is to list the driving forces. Driving forces are the forces that influence the outcome of events.¹²⁷ When identifying the driving factors, a technique is to consider the social, technological, economic, political, and environmental factors.¹²⁸ For Russia, the driving forces are shown in Figure 7.

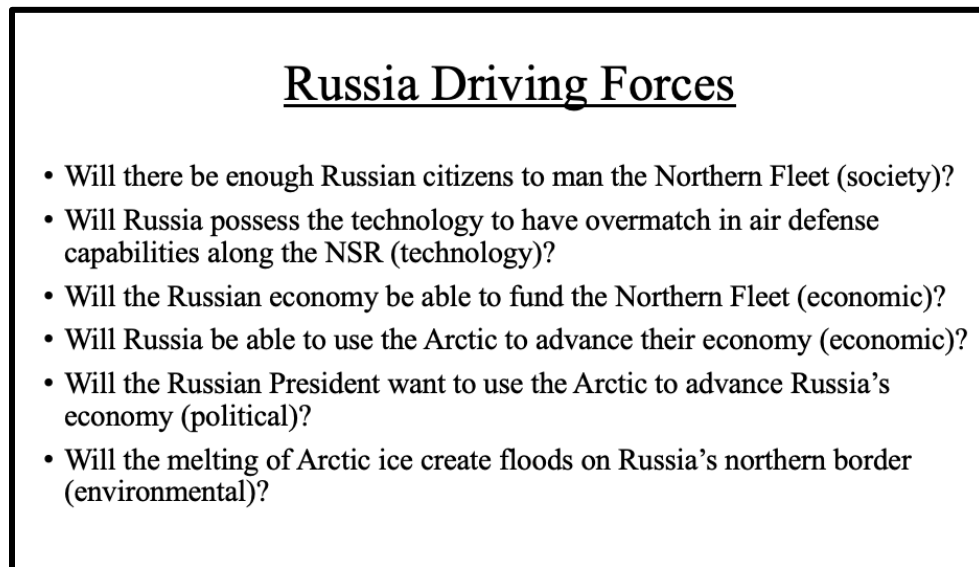


Figure 7. Russian Driving Forces. Created by author.

Next, the driving forces are broken into the categories of predetermined elements or critical uncertainties. Predetermined elements are the forces that ‘we know we know.’¹²⁹ Futurist Wilkinson cites a predetermined element as the number of high school students in California in ten years. The answer is identified based on the current number of elementary school children.¹³⁰ For Russia, the predetermined elements are the demographics and environmental driving forces categories. One can use recent Russian demographics to predict the amount of eligible military personnel in 2035 and use data from rising sea levels along the NSR to determine the possible flood effects.

¹²⁷ Peter Schwartz, *The Art of the Long View* (New York: Random House, 1996), 101.

¹²⁸ Ibid., 105.

¹²⁹ Ibid., 109.

¹³⁰ Wilkinson, “How to Build Scenarios,” *Wired*, November 01, 1995, accessed February 24, 2021, <https://www.wired.com/1995/11/how-to-build-scenarios/>

A critical uncertainty is key to the focal issue.¹³¹ Given that the predetermined elements were identified, the critical uncertainties are the technological, two economic, and political driving force categories. From the critical uncertainties, Wilkinson and Schwartz state one must rank them by degree of importance to the focal issue.¹³² This monograph argues that the two economic driving force categories are the most important critical uncertainties for what will drive Russia's Arctic composition.

Russia's critical uncertainties are portrayed in Figure 8. The horizontal axis shows, "Will Russia be able to fund the Northern Fleet," and the vertical axis portrays, "Will Russia be able to advance their economy." If Russia is able to fund the Northern Fleet, there will be an increase in capabilities. Currently, most of the Northern Fleet's air defense and offensive assets exist in the western sector, near the Kola Peninsula. The further east from the Kola Peninsula, the sparser the Northern Fleet's capabilities become. An increase in the Northern Fleet capabilities means the eastern sector has the same capabilities as the western sector. A decrease means the military capabilities become scarcer in the western sector.

If Russia can use the Arctic resources to advance their economy, the Federation experiences a strong economy. The measurement for the economy is based upon the world gross domestic product ranking. Russia currently ranks eleventh in the world. A strong economy is where Russia ranks in the top of the world gross domestic product ranking, and a weak economy would see Russia fall to a ranking of twenty or greater.

¹³¹ Wilkinson, "How to Build Scenarios," *Wired*, November 01, 1995, accessed February 24, 2021, <https://www.wired.com/1995/11/how-to-build-scenarios/>; Schwartz, *The Art of the Longview* (New York: Crown Business, 1996), 115.

¹³² *Ibid.*, 243.

<u>Superman Falls</u> • Maintain control of the NSR • Become the #1 exporter of liquified natural gas • If the UNCLOS vote for Lomonosov Ridge does not go in their favor, lack the means to access the resources • Northern Fleet concentrates in western sector to protect nuclear submarines; decrease in east and central sector	Strong economy <u>Ideal World</u> • Maintain control of the NSR • Become the #1 exporter of liquified natural gas • If the UNCLOS vote for Lomonosov Ridge does not go in their favor, use military force to access resources • Increase Northern Fleet assets in the eastern sector of the Arctic
Decrease in Northern Fleet capabilities <u>Doomsday</u> • Maintain control of the NSR • Struggle to build Arctic infrastructure that supports liquified natural gas exports • If the UNCLOS vote for Lomonosov Ridge does not go in their favor, lack the means to access the resources • Northern Fleet concentrates in western sector to protect nuclear submarines; decrease in east and central sector	Economic Struggle Increase in Northern Fleet capabilities • Maintain control of the NSR • Struggle to build Arctic infrastructure that supports liquified natural gas exports • If the UNCLOS vote for Lomonosov Ridge does not go in their favor, use military to access resources • Increase Northern Fleet assets in the eastern sector of the Arctic, which causes other military districts to have a decreased budget Weak economy

Figure 8. Russia's Future Scenarios. Created by author.

In Russia's ideal world scenario, the Federation accomplishes all of its objectives outlined in the *Basic Principles of Russian Federation State Policy in the Arctic to 2035*. In 2035, Russia has a strong economy and increases the Northern Fleet's amount of capabilities. Russia maintains control of the NSR and enforces rules and regulations on which country's commercial and military vessels can traverse it. Putin's current focus on infrastructure along the NSR causes the nation to become the number one exporter of liquefied natural gas. A majority of these exports go to Asia and Europe. Despite having enough resources in the Russian Arctic EEZ, the Federation wants access to the Lomonosov Ridge resources. If the UN does not rule in their favor, Russia uses military force to access these resources. Russia claims the Lomonosov resources because they were the first nation to plant a Russian flag in 2007. The military continues to be the Arctic military superpower. The Northern Fleet's mission remains to defend the northern border. In 2035, Russia increases the central and eastern sector's military capabilities to match those in the west. There is an increase in air defense systems that can deny aerial, maritime, and land access. Forces are capable of conducting both offensive and defensive actions.

The economic struggle scenario is where Russia increases the Northern Fleet's capabilities, but is hamstrung by a weak economy. Similar to the preferred environment, Russia remains the strongest military in the Arctic. The federation's military superiority allows it to maintain control of the NSR and increase the eastern sector's capabilities. However, due to the weak economy, Russia needs to draw funds from the other four military districts to finance improvements to the Northern Fleet. The Federation cannot support new regional infrastructure projects, hampering Russia's ability to transport liquefied gas out of the region. Russia will likely not become the number one exporter of liquefied natural gas. Given Russia's weak economy, it becomes more aggressive in procuring resources in the Lomonosov Ridge area. Russia waits for the UN to decide, but should the scientific data not rule in Russia's favor, Russia uses military force to access the resources. Russia claims the territory because they were the first nation to plant a flag.

Russia's worst-case scenario is doomsday. Russia experiences a decrease in their Northern Fleet capabilities and suffers from a weak economy. These conditions make it difficult for Russia to achieve the objectives outlined in Putin's 2035 Arctic policy. The only goal Russia can pursue is the ability to maintain control of the NSR. As the NSR becomes more traversable, Russia wants to have a buffer zone to protect its territorial integrity and sovereignty. To achieve this, Russia maintains its air defensive posture along the NSR to prevent aerial, maritime, and land access. The Russian border guard enforces laws and regulations. The minimal size of the Northern Fleet in the western sector can defend the NSR should a military conflict arise. The Northern Fleet decreases forces in the eastern and central sectors and concentrates in the west to protect the nuclear submarines. The downside to Russia's military strength is if the UNCLOS does not rule in Russia's favor for the Lomonosov Ridge, Russia does not have the military capabilities to pursue these resources. Additionally, Russia does not become the number one exporter of liquefied natural gas. The Federation also cannot afford to build new infrastructure in the Arctic to transport the gas.

In the superman falls scenario, Russia has a strong economy and decreases the Northern Fleet's capabilities. Similar to the other three scenarios, Russia maintains control of the NSR through layered air defense assets. Russia's economy enables the Federation to focus on liquefied natural gas export infrastructure. The infrastructure allows Russia to become the number one exporter of liquefied natural gas in the world. Despite a wealthy economy, either the decrease in population or military matters elsewhere in the world cause Russia to decrease the size of its Northern Fleet. If the UN does not rule in Russia's favor for the Lomonosov Ridge, Russia can only use diplomatic means to claim unfairness. Russia's military will be unable to use force to access the resources.

There are multiple driving forces which effect Russia's future in the Arctic. This monograph addressed Russia's ability to fund the Northern Fleet and access Arctic resources to advance its economy. Although Russia seeks the ideal world scenario, changes in Russia's economy or Northern Fleet posture will influence the future operational and strategic environments.

The United States' Desired Arctic State in 2035

Unlike Russia, the United States does not have an Arctic strategy that extends until 2035. The United States updates its NSS approximately every four years. The NSS reflects the US President's priorities and addresses global trends. In the next fifteen years, the United States will have a new President and may no longer face Great Power Competition. These changes mean that the future NSS could have a different focus from the 2017 NSS. However, the United States will likely maintain the homeland objectives of upholding international rules within the Arctic and protecting the US homeland.

As discussed in 'Russia's Desired Arctic State in 2035' section of this monograph, scenario planning helps create an effective strategy or decision that plays out across several possible futures. The focal issue is, "What will be the United States Arctic composition in 2035?" The

United States Driving Forces

- Will the US population be interested in supporting Arctic initiatives (society)?
- Will the United States military be able to advance in Arctic surveillance and reconnaissance capabilities (technology)?
- Will the US government increase Arctic military defense capabilities (economic)?
- Will the US President want to increase Arctic domain awareness (political)?
- Will the United States be able to influence other nations to adhere to international law (political)?
- Will the Arctic ice cap melting create floods in Alaska (environmental)?

Figure 9. US Driving Forces. Created by author.

From the driving forces, the predetermined element is the environmental consideration. Like Russia, the United States can use data from rising sea levels near Alaska to determine the possible future flood effects. The remaining forces are critical uncertainties. This monograph uses the US government's ability to increase Arctic military defense capabilities and influence other nations to adhere to international law as the top two critical uncertainties. In Figure 10, the horizontal axis shows a strong or weak US Arctic military based on US government funding. The vertical axis shows other nations' willingness to uphold international law.

<u>Diplomatic Arctic</u> States uphold international law • Russia and Canada recognize the NSR and NWP as international straits • All nations adhere to the UNCLOS decision for Lomonosov Ridge • Russia does not violate US-Russia maritime boundary in Beaufort Sea • US military unable to compete against other nations in the Arctic	<u>Team USA</u> • Russia and Canada recognize the NSR and NWP as international straits • All nations adhere to the UNCLOS decision for Lomonosov Ridge • Russia does not violate US-Russia maritime boundary in Beaufort Sea • US military and Coast Guard prevent other states from attacking the homeland via the Arctic
Weak Arctic military <u>No Ground</u> • Canada and Russia recognize the NSR and NWP as internal waterways; US denies claim • Nations do not adhere to the UNCLOS decision for rights to the Lomonosov Ridge • Russia violates US-Russia maritime boundary in Beaufort Sea; INDO-PACOM shift focus to Alaska • US military unable to compete against other nations in the Arctic States violate international law	<u>Brute Force</u> Strong Arctic military • Canada and Russia recognize the NSR and NWP as internal waterways; US military enters the NSR • Nations do not adhere to the UNCLOS decision for rights to the Lomonosov Ridge • Russia violates US-Russia maritime boundary in Beaufort Sea; US military responds with a show of force • US military and Coast Guard prevent other states from attacking the homeland via the Arctic

Figure 10. The United States' Future Scenarios. Created by author.

The measurement for international law is the maintenance of a norms based international order. States that uphold international law recognize the NSR and NWP as international straits and respect the UNCLOS decision for Lomonosov Ridge's rights. Additionally, Russia respects the maritime boundary in the Beaufort Sea. The defense measurement is the US military and Coast Guard's ability to meet or overmatch Russia's Arctic capabilities. Currently, the North Warning System in Canada cannot always detect some of Russia's modernization equipment, the reconnaissance and surveillance systems need upgrading, and the Coast Guard possesses two icebreakers. A strong Arctic military can detect Russia's new equipment, take advantage of new surveillance and detection systems, and increase the Coast Guard icebreaker fleet to twenty. A weak Arctic military means the Navy's 2nd Fleet becomes de-activated, military forces fail to conduct Arctic domain awareness, and the United States does not modernize the North Warning System or Arctic reconnaissance and surveillance capabilities.

The preferred scenario for the United States is the Team USA scenario. In it, all states uphold international law, and the United States can overmatch Russia's Arctic capabilities. Canada and Russia agree to recognize the NSR and NWP as international waterways. When the

UN determines rights to the Lomonosov Ridge, Denmark, Canada, and Russia agree to the terms and no conflict occurs. Russia continues to respect the 1991 US-Russia maritime agreement in the Beaufort Sea. The US military and Coast Guard increase their Arctic capabilities and can deter any state from attacking the homeland via the Arctic.

In the brute force scenario, the United States has a strong military and Coast Guard, but states violate international laws. Robust military and Coast Guard allow the United States to confront Russian Arctic activities. Russia claims the NSR as part of their internal waterway and denies foreign access. The US military responds by sending a vessel to the NSR as a show of force that the United States disagrees with Russia's actions. However, for Canada's claim on the NWP, the United States only responds diplomatically. The United States does not send a military vessel because Canada is a NATO ally and allows US military vessels access. For the Lomonosov Ridge, if any nation violates the UN decision, the United States will not militarily engage unless Article five of NATO is invoked. Another international law that may be violated is the US—Russia maritime boundary in the Beaufort Sea. Russia would claim that the agreement is unfair and since the Duma did not sign, the Federation does not have to uphold the agreement. The United States initially responds with a military show of force to persuade Russia to sign a maritime agreement. Sanctions on Russian oil also coerce Russia to negotiate. If both sanctions and a military show of force fail, the United States escalates to military action.

The no ground scenario is the worst case for the United States. The US military and Coast Guard are weak and nations flagrantly violate international law. Similar to the brute force scenario, Russia violates international law, claims the NSR as part of its internal waterways, violates the UNCLOS decision if not in the Federation's favor, and disregards the US-Russian maritime border in the Beaufort Sea. The United States must rely on diplomatic, economic, and information means to confront Russia over the NSR and Lomonosov Ridge. The United States publicly disputes Russia's claims and cites the Federation for not adhering to international law. Additionally, the United States works within diplomatic realms, such as the Arctic Council or NATO, to convince Russia to adhere to international law. For the Beaufort Sea dispute,

INDOPACOM shifts focus from China to Russia to defend Alaska and the American homeland. For Canada's claim of the NWP, the United States only diplomatically disputes the claim because Canada allows America access. If Canada or Denmark violates the UN decision for the Lomonosov Ridge, the US will publicly criticize the move.

For the diplomatic Arctic scenario, all states uphold the international law, but the United States has a weak Arctic military and Coast Guard. The United States cannot offensively compete against Russia or other competitors in the Arctic. However, the United States does not need offensive military capabilities in this scenario because nations do not violate international rules. Instead, the United States military relies on defensive assets positions in Alaska and the Canadian Border to protect the homeland should an attack occur via the Arctic.

Multiple driving forces affect the United States' future in the Arctic. This monograph addresses two forces based on the *2017 NSS*, the *2013 US National Strategy for the Arctic Region*, and the *DoD 2019 Arctic Strategy*. The United States wants all states to adhere to international law and to have a Joint Force capable of fighting in any domain. However, not all states interpret international law in a similar manner as the United States. The United States is not the strongest Arctic military power. In the next fifteen years, the defense budget and the US governments view on the Arctic will affect the military and Coast Guard budgets. These factors influence which future scenario the United States will compete in.

Arctic Problem Frame

Based on the future scenarios, the United States desires an environment where nations uphold international law and the US military possesses sufficient Arctic military capabilities to protect the homeland. Although other scenarios are possible, to define the Arctic problem, this monograph uses the United States ideal future. From Russia's scenarios, the biggest problem for the United States is if the Federation is capable of maintaining a strong economy and increasing the Northern Fleet's military capabilities. The monograph will use Russia's worst-case scenario to define the problem.

Given the scenarios, there are two Arctic problems for the United States government in 2035. The first is Russia possesses the military strength to control the NSR and use military force to access resources outside of the Russian economic zone. Russia is currently the largest and most capable Arctic military force. The Federation continues to increase the Northern Fleet's capabilities. The Northern Fleet's composition and disposition will allow the Federation to maintain control of the NSR in the next fifteen years. Russia's military superiority also allows them to control resources in the Lomonosov Ridge if needed. Russia currently states it will wait for the UN decision. However, if the UN does not rule in Russia's favor, the Federation can use military force for access.

The second problem is the lack of Arctic domain awareness capabilities degrade the US military and Coast Guard's ability to prevent an attack on the homeland. The North Warning System in Canada is outdated and the US military possesses minimal reconnaissance and surveillance assets in the Arctic. Although a strike from the Arctic onto the US homeland is unlikely, it is not out of the realm of possibilities as the Arctic becomes more accessible. A keen understanding of the changing environment keeps the United States prepared for any event.

Arctic Recommendations

By 2035, the United States desires an environment where states adhere to international law and the US military can protect the homeland. To achieve this end state, the United States must adopt a whole of government approach. In 2016, President Barack Obama assigned the US federal executive departments lines of effort to achieve the 2013 National Strategy for the Arctic Region objectives. These lines of effort are in the *Implementation Framework for the National Strategy for the Arctic Region*.¹³³

Given the problem between the United States and Russia identified in this monograph, all of the lines of effort identified in the *US Implementation Framework* are valid. However, there

¹³³ US Government, *National Strategy for the Arctic Region*, 2-3.

are additional approaches the US government needs to consider. The following seven lines of effort are recommendations for actions the Department of State, the DHS, and the DoD can take.

1) Advocate for the TSR to become an international strait: The United States will not prevent Russia from maintaining control of the NSR unless it is willing to shift military resources to the region. Another option, however, is to advocate that the TSR becomes an international strait. The TSR offers nations an alternate route to the NSR and could become ice-free by 2035. The State Department can spearhead this effort by orchestrating an agreement with Arctic nations for the TSR to become a free and open international maritime route. If Russia and Canada can agree that the TSR is international, the United States will achieve free and open seas, and Russia and Canada can maintain control over the NSR and NWP.

2) Encourage a maritime boundary agreement for rights to the Lomonosov Ridge: The United States wants Canada, Denmark, and Russia to adhere to the UN decision to access resources in the Lomonosov Ridge. All three nations have advocated that they will abide by the UN ruling. However, there is a possibility that Russia could ignore the decision if UNCLOS does not rule in its favor. An option for the United States is to encourage all three nations to create a maritime agreement based on the UNCLOS decision. Since the United Nations only advises on the ridgeline's rights, an agreement is necessary to ensure that all three nations respect the UNCLOS decision. The US State Department should be the lead agency to work with Canada, Denmark, and Russia.

3) Update the 2013 National Strategy for the Arctic Region: One of the tenets in the *2013 US National Arctic Policy* is to achieve Arctic domain awareness. However, it is difficult for the United States to achieve awareness if the national policy is almost a decade old. The US Arctic Policy Group, which the State Department chairs, needs to update the strategy. The lines of effort in the *2013 US National Arctic Policy* need to be updated to incorporate alternate maritime routes, maritime boundary agreements, and military modernization.

4) EUCOM takes the lead on the Arctic: Currently, EUCOM, INDOPACOM, and the NORTHCOM operate in the Arctic. There is not a lead combatant command, which can cause

different Arctic policies. In the future, the EUCOM should take the lead on the policy because most Arctic issues deal with Russia or events near the Russian border. The INDOPACOM and NORTHCOM can then nest their Arctic strategy with the EUCOM.

5) Approve the US Coast Guard's \$555 Million Fiscal Year 2021 Request: The Coast Guard's proposed fiscal year 2021 request for the Polar Security Program is \$555 million. In fiscal year 2020, Congress approved enough funding for the Coast Guard to begin procurement of the first Polar Security Cutter. The Coast Guard now requires \$555 million in procurement funding for the second Polar Security Cutter.¹³⁴ The US DHS needs to continue to advocate for funding. A 2013 US DHS Mission Needs Statement cited that the Coast Guard requires six icebreakers to meet mission needs.¹³⁵ The Coast Guard currently has two ice breakers, and enough funding to create a third. Although the Arctic is becoming more ice-free, ice can form in various locations, indicating that icebreakers are necessary for the future. To compete in the Arctic by 2035, the Coast Guard needs at least three more icebreakers.

6) Upgrade the North Warning System: The lifespan of the North Warning System expires in 2025.¹³⁶ The US military wants modifications to create a multi-purpose sensor that can monitor hostile aircraft over extended distances and track cruise and ballistic missiles. Canada slightly differs in the upgraded capabilities because they want to focus more on Arctic domain awareness, such as search and rescue missions and border patrol.¹³⁷ For the US Northern Command and North American Aerospace Defense Command, an option is to advocate that the sensors deny probing, denial of service, and cyber-attacks from adversaries.¹³⁸ These new

¹³⁴ US Congressional Research Service, *Coast Guard Polar Security Cutter (Polar Icebreaker) Program*, RL34391 (Washington, DC, 2021), 1, accessed February 20, 2021, <https://fas.org/sgp/crs/weapons/RL34391.pdf>.

¹³⁵ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 49.

¹³⁶ Jim Bell, "Defence Expert Slams Ottawa for Ignoring North Warning System Upgrade," *Nunatsiaq News*, January 20, 2020, accessed January 10, 2021, <https://nunatsiaq.com/stories/article/defence-expert-slams-ottawa-for-ignoring-north-warning-system-upgrade/>.

¹³⁷ Ibid.

modernizations appease both Canada and the United States because the sensors operate in all domains. Canada can still assist with search and rescue missions. The United States can monitor hostile aircraft over extended distances and track cruise and ballistic missiles.

7) Improve Arctic reconnaissance and surveillance platforms: The US military requires additional intelligence platforms to identify high threat locations in the Arctic and use assets capable of operating in polar conditions.¹³⁹ According to the US intelligence community, the US government lacks adequate surveillance and intelligence capabilities in the Arctic.¹⁴⁰ An option is for the DoD to request additional funding from Congress for improved Arctic capabilities. The DoD cannot protect the homeland if the US government does not provide adequate Arctic reconnaissance and surveillance platforms.

¹³⁸ Andrea Charron, "Beyond the North Warning System," *War on the Rocks*, September 07, 2020, accessed January 10, 2021, <https://warontherocks.com/2020/09/beyond-the-north-warning-system/>.

¹³⁹ US Congressional Research Service, *Changes in the Arctic: Background and Issues for Congress*, 43.

¹⁴⁰ Ibid.

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