

2020 ARCTIC IMPLICATIONS

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MASTER OF MILITARY ART AND SCIENCE
General Studies

by

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2020

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ABSTRACT

2020 ARCTIC IMPLICATIONS, by Captain Eric Alan Engstrom, 101 pages.

This thesis examines implications within the Arctic, which could require U.S. Northern Command to generate military options. The review of the literature includes the potential intentions of several critical countries within the region. The research design employs a qualitative research methodology to identify themes that illuminate challenges or opportunities regarding U.S. national security and interests. The analysis identifies several military operations that future DoD efforts could use within the Arctic to address those challenges and opportunities. The conclusion expands upon those military operations to provide focus regarding future Arctic military efforts.

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ACRONYMS

CDRUSNORTHCOM	Commander U.S. Northern Command
DIME	Diplomatic, Informational, Military, and Economic
DoD	Department of Defense
GIUK-N	Greenland, Iceland, the United Kingdom and Norwegian
NATO	North Atlantic Treaty Organization
NDS	National Defense Strategy
USNORTHCOM	United States Northern Command
NORAD	North American Aerospace Defense Command
NEP	Northeast Passage
NSR	Northern Sea Route
NSS	National Security Strategy
NWP	Northwest Passage
SAR	Search and rescue
U.S.	United States
UNCLOS	United Nations Convention on the Law of the Sea
USG	United States Government

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CHAPTER 1

INTRODUCTION

Overview

The Arctic continues to evolve based on environmental implications due to climate change.¹ In response, nations bordering the Arctic, as well as several who do not, are attempting to assert various forms of influence across the diplomatic, information, military, and economic (DIME) aspects of national power.² As such, the United States (U.S.) Department of Defense (DoD), through its United States Northern Command (USNORTHCOM), must be prepared to understand the complexities. The ability for USNORTHCOM to have a continual understanding of the Arctic will enable it to manage its resources effectively, generate military responses appropriately, and avoid conflicts, which could result in the potential for future military miscalculation.

USNORTHCOM is the U.S.'s military command component for securing the nation.³ It is because of this responsibility that its primary focus is “command and control of Department of Defense homeland defense efforts and to coordinate defense support to civil authorities.”⁴ To execute these efforts, USNORTHCOM establishes deterrence measures and engages in the detection and the defeat of threats, which would otherwise jeopardize the U.S.'s national security posture.⁵ USNORTHCOM is responsible for conducting these activities across a vast amount of geography, which is defined by the:

Air, land and sea approaches and encompasses the continental United States, Alaska, Canada, Mexico and the surrounding water out to approximately 500 nautical miles. It also includes the Gulf of Mexico, the Straits of Florida, portions of the Caribbean region to include The Bahamas, Puerto Rico, and the U.S. Virgin Islands. The commander of USNORTHCOM is responsible for theater security cooperation with Canada, Mexico, and The Bahamas.⁶

Since the boundaries of USNORTHCOM include areas within the Arctic, this research will use the U.S.'s definition of the region.⁷ This definition exists in section 112 of the Arctic Research and Policy Act of 1984 (amended in 1990).⁸ This policy defines the Arctic as:

All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain.⁹

With these boundaries identified, this research will examine USNORTHCOM's evolving role within the Arctic. As the environmental conditions in the Arctic will likely change over time, USNORTHCOM must remain capable of generating military options in the region. By understanding the current environmental problem and examining stakeholders who are seeking to expand influence in the Arctic, USNORTHCOM can best posture its finite resources to ensure it remains able to proactively manage the region.

Statement of the Problem

Before examining the Arctic from the standpoint of USNORTHCOM, the problem firstly begins with an evolution of the region based on climate change.¹⁰ Rising Arctic air temperatures over the past six years have led to the rapid thawing of older ice, and given rise to more seasonal ice, which is considerably more fragile and susceptible to dissipating during the summer months.¹¹ The loss of older ice causes the region to melt more rapidly and prevents ice from forming as far south as it has previously.¹² The amount of sea ice within the Arctic during September has drastically been diminishing since 1975 and is now at seventy-five percent of what it was at that time.¹³ As rising

temperatures are a contributing factor to ice-melt and recession, the increases in Arctic average temperatures are expected to continue to play a role in the further decline of ice within the region.¹⁴

As changes in temperatures contribute to the rapid decay of ice in the Arctic, those reductions have given rise to more landmasses on the Arctic's surface.¹⁵ As the sun warms those landmasses, "solar warming" has increased the ground temperatures in areas that are typically ice-free during the summer and then, in turn, disrupts the seasonal freezing process.¹⁶ The disruption to the seasonal freezing process is best highlighted in the Bering Sea, as Arctic ice in the past two years has receded so significantly that it was at historic lows.¹⁷

The second aspect of the problem pertains to natural resources.¹⁸ As the Arctic snow and ice continue to melt, this reduction will inevitably allow more access to maritime passageways and the cultivation of the various natural resources the Arctic has to offer.¹⁹ Of significance, the Arctic remains one of the last locations for the discovery of large amounts of fossil fuels and other natural resources.²⁰ It has an estimated "90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids."²¹ As most of these resources are presiding in offshore areas, an interest in the region to cultivate these natural resources has the potential to exponentially increase.²²

The third aspect of the current problem exists based on both environmental changes and the natural resources within the Arctic.²³ That problem is inherently the convergence of numerous stakeholders seeking to expand economic activities, and their influence, in the Arctic.²⁴ As sea ice is becoming less of an impediment on maritime sea

routes, the ability to transit the Arctic to areas that were previously inaccessible will soon exist and continue to develop.²⁵ It is because of this, coinciding with the abundance of natural resources in the region, that there is the potential for numerous areas of competition within the Arctic.²⁶

Purpose of the Study

The purpose of this research is to understand potential friction points for USNORTHCOM so that it can effectively align military resources in the Arctic. This research will attempt to do this by understanding the perspective of several of the key Arctic stakeholders in the region and analyze their proposed intentions through the methodology in chapter three. These efforts will strive to prioritize these issues and provide findings and recommendations in chapter five to support USNORTHCOM's ability to generate military options. Furthermore, this research will attempt to construct a framework to support future military research in the Arctic by identifying relevant underlying themes amongst the nations in the literature review. Both efforts are arguably critical to USNORTHCOM, as the continual evolution of the Arctic will require varying degrees of responses to address the influences of numerous stakeholders within the region. The ability to illuminate how stakeholders, who have a potential stake in the Arctic, will assert their influence across the DIME instruments of national power is equally as essential.²⁷

Primary Research Question

This thesis will attempt to answer the following research question, "Should USNORTHCOM generate military options in the Arctic based on various nations and

non-governmental entities attempting to seek influence in the region, in a frigid climate, in a timely fashion, with the requirement to work in conjunction with U.S. interagency organizations?

Secondary Research Question

Subsequently, this thesis will attempt to answer, “What type of military activities should USNORTHCOM conduct, and where, if it needs to generate military options in the Arctic?”

Tertiary Research Question

Also, this thesis will attempt to answer, "What additional capabilities will USNORTHCOM require to ensure it is capable of generating an appropriate military response in the Arctic if required?"

Assumptions

If the Arctic continues to maintain a perpetual state of environmental changes, then there is the potential for an increasing convergence of numerous non-Arctic bordering nations, non-governmental, and international governing entities. This existence could lead to an expanding amount of complexity as those entities desire to take an active role in shaping the region. It is because of these issues that the following assumptions exist within this research.

1. Nations will continue to seek influence in the Arctic, which includes China and Russia evolving their current policies, intentions, and national strategies.
2. Time will continue to play a role in the evolution of the Arctic as aspects of climate change increase access.

3. New policy changes from international governing entities could emerge, which could drastically alter the research data and result in findings that are no longer relevant.
4. New non-Arctic bordering nations will have an interest in the region, and their intentions could have an impact on the findings and recommendations in chapter five.
5. USNORTHCOM will remain the U.S. DoD's focal point for Arctic-related issues. The adoption of a new military entity, which solely focuses on the Arctic, would nullify any recommendations found central to the primary research question.
6. Certain aspects of a nation's DIME intentions might not be publicly available, or current, which could hinder the precision of their "true" interests in the Arctic.

Scope

This research will examine the perspectives of the U.S., Canada, the Kingdom of Denmark, Russia, and China. The intentions of other nations and non-state entities that preside or are seeking influence in the region are not the sole focus of this research, and fully understanding them will not be a part of the literature review. Addressing these entities in the data set will be from the standpoint of only providing contextual knowledge to better shape answers to the research questions. The research model will use a framework across the DIME, which will guide the analysis of the data collection. By abiding by these parameters, the study intends to identify friction points to provide focus in the answering of the research questions and to guide future Arctic research.

Limitations and Delimitations

This research will only examine a few specific Arctic bordering and non-Arctic bordering countries that either have a territorial claim or are seeking to expand influence into the region. This research will not include the Arctic interests of every sovereign nation, non-governmental organization, or political entity that has a role in the Arctic. The region remains dynamic, and the interests of additional nations could arise during this study; therefore, understanding and assessing those intentions will not be a part of this research. While these limitations bind the literature to focus on specific stakeholders, it will also bind research to publicly available documents. Additionally, as the intentions of those stakeholders could likely develop throughout this research, political amendments or revisions to the initial data collection will not be done. Furthermore, the research and the respective models should not be entirely generalized to regions outside of the Arctic. While adopting certain aspects of this study and its framework can support future research efforts outside of the Arctic, the development of the models within this research was inherently to answer the foundational research questions.

Significance of the Study

This study is essential as the 2017 National Security Strategy (NSS) identifies the Arctic as a “common domain” that must remain uncontested.²⁸ The NSS recognizes that a failure to do this has U.S. national security implications, which could also translate into an inability to shape the current and future environment.²⁹ Through the guidance within the NSS, the U.S. DoD amended its Arctic Strategy in June of 2019.³⁰ The revised Arctic strategy factors in priorities outlined in the 2018 U.S. National Defense Strategy (NDS) and specifically highlights that “competition with China and Russia as the principal

challenge to long-term U.S. security and prosperity.”³¹ As both of these near-peer adversaries have access to the region, there is a significant potential for military miscalculation. Equally as problematic is that their interests could differ over time drastically and may or may not include a forward application of their militaries. These challenges have direct implications for USNORTHCOM as it would be required to address the intentions of two near-peer adversaries simultaneously while still being able to conduct its currently defined mission, which is centralized around defending the homeland.³² Both Russia and China have the potential to have varying degrees of influence in the Arctic across DIME; therefore, USNORTHCOM would also be in a position to synchronize amongst multiple defense department entities. Those challenges would leave USNORTHCOM in a position to synchronize global efforts for all things that are Arctic related with a finite amount of resources at its disposal. As these aspects relate to the research study, there is an inherent requirement to evolve a framework for analysis that can easily be modified, replicated, and adopted as the Arctic develops. As the pool of nations drawing interest in the Arctic grows, these increases in influence will fundamentally add to an already complex environment.

Chapter Conclusion

Based on the potential for numerous stakeholders to converge on the Arctic, there is a reason from a military standpoint, to continually pursue research of the region. It is because of this convergence that the purpose and significance of the study are essential due to the respective military implications. The miscalculation of intentions and the inability to adequately define thresholds that will require a military response will become increasingly challenging as areas of the Arctic become congested. The desire for non-

Arctic bordering states and non-governmental entities to increase their presence in the Arctic will only further exacerbate an already complicated situation. Due to the complex nature of the Arctic and the uniqueness of the intentions of all stakeholders, these aspects could hinder USNORTHCOM's ability to generate a meaningful military response.

¹ J. Richter-Menge, M. L. Druckenmiller, and M. Jeffries, eds., "2019: Arctic Report Card," NOAA's Arctic Program, accessed 28 March 2020, <https://www.arctic.noaa.gov/Report-Card>, 2-4.

² Joint Chiefs of Staff (JCS), Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), I-12 - I-14.

³ U.S. Northern Command (USNORTHCOM), "About USNORTHCOM," accessed March 31, 2020, <https://www.northcom.mil/About-USNORTHCOM>.

⁴ Ibid.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

⁸ National Science Foundation, Arctic Research and Policy Act of 1984, as amended, Public Law 98-373 - July 31, 1984; amended as Public Law 101-609 - November 16, 1990, accessed 29 March 2020, https://www.nsf.gov/geo/opp/arctic/iarpc/arc_res_pol_act.jsp, section 112.

⁹ Ibid.

¹⁰ Richter-Menge, Druckenmiller, and Jeffries, "2019: Arctic Report Card," 2-4.

¹¹ Ibid., 2-3.

¹² Ibid.

¹³ Arctic Monitoring and Assessment Programme (AMAP), *Arctic Climate Change Update 2019: An Update to Key Findings of Snow, Water, Ice, and Permafrost in the Arctic (SWIPA) 2017* (Tromsø, Norway: AMAP Secretariat, 2019), accessed 26 March 2020, <https://www.amap.no/documents/download/3295/inline> 5.

¹⁴ U.S. Global Change Research Program (USGCRP), *Fourth National Climate Assessment*, vol. 2, *Impacts, Risks, and Adaptation in the United States*, eds. D. R. Reidmiller, C. W. Avery, D. R. Easterling, K. E. Kunkel, K.L.M. Lewis, T. K. Maycock, and B. C. Stewart (Washington, DC: USGCRP, 2018), doi:10.7930/NCA4.2018, 91.

¹⁵ Richter-Menge, Druckenmiller, and Jeffries, “2019: Arctic Report Card,” 3.

¹⁶ Ibid.3.

¹⁷ Ibid.

¹⁸ AMAP, *Arctic Climate Change Update 2019*, 9.

¹⁹ Ibid.

²⁰ Peter Stauffer, ed., “Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle,” (Fact Sheet, U.S. Department of Interior, U.S. Geological Survey, 2008), accessed 6 April 2020, <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

²¹ Ibid.

²² Ibid.

²³ AMAP, *Arctic Climate Change Update 2019*, 5-9.

²⁴ Ibid., 5.

²⁵ Ibid.

²⁶ Ibid., 9-10.

²⁷ JCS, JP 1-0, I-12 - I-14.

²⁸ U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, December 2017), 40.

²⁹ Ibid., 40.

³⁰ Office of the Under Secretary of Defense for Policy, *Report to Congress Department of Defense Arctic Strategy June 2019* (Washington, DC: Department of Defense, June 2019), 2.

³¹ Ibid., 2.

³² USNORTHCOM, “About USNORTHCOM.”

CHAPTER 2

LITERATURE REVIEW

Chapter Introduction

The review of the literature will attempt to seek an understanding of the primary research question. That question is, "Should USNORTHCOM generate military options in the Arctic based on various nations and non-governmental entities attempting to seek influence in the region, in a frigid climate, in a timely fashion, and with the requirement to work in conjunction with U.S. interagency organizations?" The literature review is broken down by five countries: the U.S., Canada, the Kingdom of Denmark, Russia, and China. The sections for each country will focus on their Arctic intentions and attempt to answer the secondary and tertiary research questions. The literature review will do this by focusing on the aspects of DIME for each of the countries to identify friction points and potential capabilities gaps.

The United States of America

The United States Department of Defense Arctic Strategy 2019

The Arctic security environment has direct implications for U.S. national security interests.

— Office of the Under Secretary of Defense for Policy,
Report to Congress: Department of Defense Arctic Strategy

The 2017 U.S. NSS mentions the Arctic, and it recognizes that it is imperative to keep this “common domain open and free.”¹ It is because of this view that the U.S. DoD revised its position on the Arctic in June 2019 with a new policy and recognizes that there are inherent challenges to executing it.² The revised policy incorporates guidance from

the 2018 U.S. NDS and outlines the U.S. DoD's initial assessment of the Arctic, defines its interests and associated risks, defines its objectives, and the ways it will execute its strategy.^{3,4}

The U.S.'s initial assessment of the Arctic has four considerations, and the first consideration begins with an acknowledgment that it "is an Arctic nation."⁵ Inherent to this claim, the Arctic has national security implications, and it is vital to minimize those within the region.⁶ As part of security implications, the U.S. DoD understands that it may need to focus on two geographical areas that could specifically be used "for attacks on the homeland and for U.S. power projection."⁷ The first area is the Bering Strait, which encompasses all of the land, air, and maritime geography between the U.S. and Russia.⁸ This location resides off of the Alaskan coast, and the U.S. DoD views this area as the western approach that threats against the U.S. could consider using.⁹ The second area resides on the eastern coast of the North American continent and is "the Greenland, Iceland, United Kingdom – Norwegian (GIUK-N) gap."¹⁰ The GIUK-N gap is of strategic maritime importance, as having unimpeded access to it allows "for naval operations between the Arctic and the North Atlantic."¹¹ The figure below illustrates these areas and an overview of several critical maritime passages within the Arctic (Figure 1. An Arctic Overview).¹²

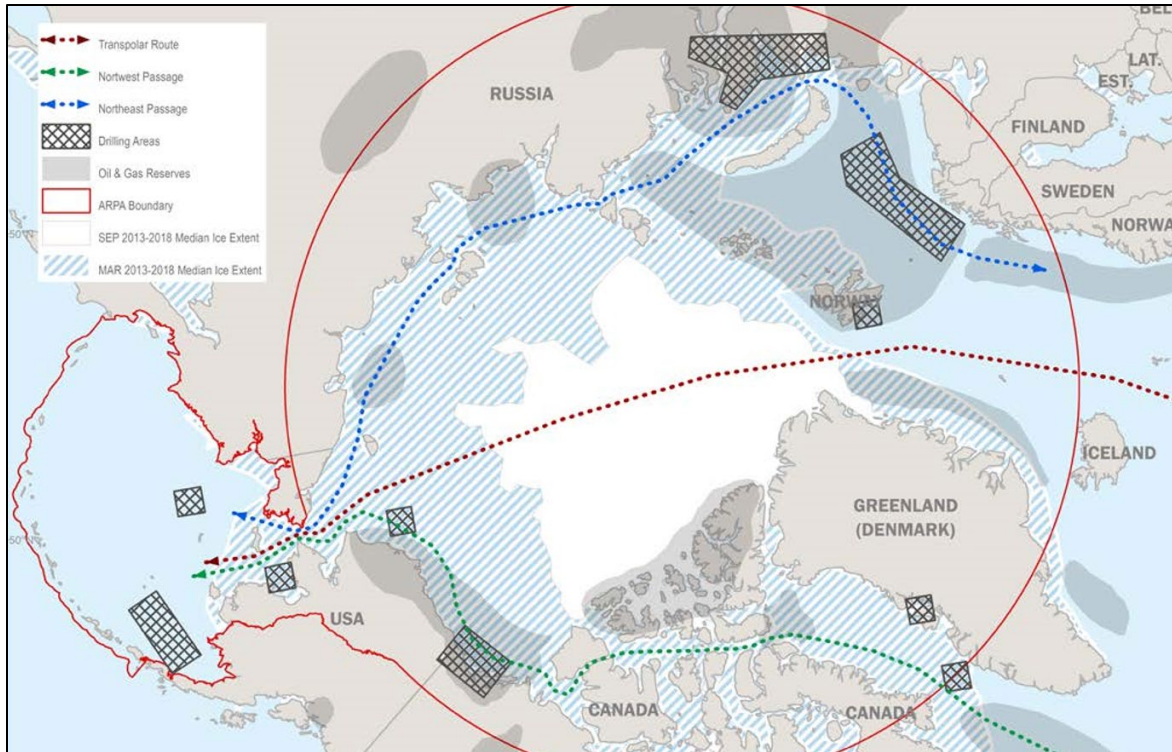


Figure 1. An Arctic Overview

Source: United States Coast Guard, *The United States Coast Guard Arctic Strategic Outlook* (Washington, DC: U.S. Department of Homeland Security, 2019), 11.

The second aspect of the U.S. DoD’s initial Arctic assessment is a focus on current partnerships, and it recognizes that it already has significant partnerships with six of the countries that border the Arctic and that have territorial claims.¹³ Of those nations, the NATO alliance affords the U.S. enduring relationships with four of those countries, which are “Canada, the Kingdom of Denmark (including Greenland), Iceland and Norway.”¹⁴ With the inclusion of strong relationships with two additional countries, Finland and Sweden, the U.S. has a strong network of partners which it can draw upon to manage Arctic related issues.¹⁵ Of significance, the U.S.’s view of the Arctic, which also

includes itself and Russia, “does not recognize any other claims to Arctic status by any State other than these eight nations.”¹⁶

The third aspect of the U.S. DoD’s initial assessment is the understanding of the current regulation of two of the significant passages within the Arctic, which are the Northern Sea Route (NSR) and the Northwest Passage (NWP).¹⁷ As these two passages predominantly border two of the eight Arctic nations, “Russia and Canada claim the right to regulate Arctic waters in excess of the authority permitted under international law.”¹⁸ For Russia and the NSR, maritime traffic requesting to use this route must seek approval and then have Russian naval vessels accompany them.¹⁹ For Canada and the NWP, this passage also succumbs to Canadian laws and regulations, and maritime traffic transiting it must abide by those policies.²⁰

The fourth aspect of the U.S. DoD’s initial assessment regards militarization within the Arctic with a focus on Russian and Chinese influence.²¹ Russia’s military investments within the Arctic began with the establishment of “the Northern Fleet Joint Strategic Command in December 2014.”²² Since that time, Russia’s “renewed emphasis on the Arctic” has brought about the modernization of its military in several critical ways.²³ These ways include the creation of “new Arctic units, refurbishing old airfields and infrastructure in the Arctic, and establishing new military bases along its Arctic coastline.”²⁴ With an emphasis around the NSR, this modernization has brought about a military focus “to establish a network of air defense and coastal defense systems, early warning systems, rescue centers, and a variety of sensors.”²⁵ To support these military efforts, Russia also emphasizes its commercial investments, which coincide with its military modernization and afford it unimpeded influence over the NSR.²⁶

Unlike Russia, China's ability to militarize the Arctic is limited due to its maritime capabilities; however, China does have two icebreaking vessels and the ability to employ submarines within the region.^{27,28} Absent of a robust military presence within the Arctic, the U.S. DoD's initial assessment acknowledges that China does have economic interests within the region.²⁹ Those interests are chiefly focused on shipping lanes and the cultivating of various natural resources that the region provides.³⁰ To support these interests, China has also made energy investments within the nations of Iceland, Norway, and Russia, which affords China direct access to the Arctic and the ability to pursue scientific research.³¹

The basis for the U.S. DoD's security interests within the Arctic resides amongst three aspects.³² The first aspect is that as an "Arctic nation with sovereign territory," it has a responsibility to conduct a territorial defense within the region.³³ The second aspect is that the region's security should emphasize "regional cooperation" among the Arctic nations.³⁴ The third aspect, and most significant, is the recognition of "the Arctic as a potential corridor for strategic competition" with a convergence of influence from the European and Asian continents.³⁵

The U.S. DoD's associated security interests have three inherent risks, and the first risk directly relates to the homeland itself.³⁶ While near-peer nations pose a threat to the region, natural disasters, or unforeseeable civilian casualties within and around Alaska, could result in the U.S. DoD providing types of Arctic humanitarian support.³⁷ As these events could require military resources, that commitment would inadvertently "inhibit DoD's ability to project power from the homeland."³⁸ The second risk within the U.S.'s security interests is the potential for an erosion of international laws and

regulations within the Arctic.³⁹ This risk is inherent to either Russian or Chinese infringement in the region either through the use of military force or by “predatory economic behavior.”⁴⁰ The last risk to the U.S.’s security interests relates to the U.S. DoD’s ability to project its forces along the maritime routes within the Arctic.⁴¹ The identified maritime “strategic corridors” could become contested; if this was to happen, there could be implications on the “ability to flow forces globally.”⁴²

The U.S. DoD has three Arctic objectives, which it intends to use for its future vision of its role within the Arctic.⁴³ The first objective is the defense of the homeland, which has priority ahead of its other two Arctic objectives.⁴⁴ The second objective is to “compete when necessary to maintain favorable balances of power,” and this relates to its national security interests that identify the convergence of nations within the Arctic from separate geographic areas.⁴⁵ The third objective is to “ensure common domains remain free and open,” and it recognizes that this objective inherently expands outside of solely relying upon the military.⁴⁶

The U.S. DoD has three critical ways it intends to execute its objectives for the Arctic.⁴⁷ The first way is “Building Arctic Awareness,” which encompasses the “DoD’s ability to detect threats in the Arctic.”⁴⁸ The second way is “Enhancing Arctic Operations,” which encompasses the “DoD’s ability to provide a combat-credible deterrent for the Arctic region.”⁴⁹ The third way is “Strengthening the Rules-Based Order in the Arctic,” which charters the DoD to “continue to work with allies and partners to strengthen the existing, international rules-based order in the Arctic.”⁵⁰ To implement the ways within its Arctic strategy, the U.S. DoD directs:

Commander U.S. Northern Command (CDRUSNORTHCOM) is designated as DoD's Arctic Capability Advocate. This designation recognizes the unique challenges posed by the Arctic environment, as well as the Arctic geography, which spans across multiple Combatant Command's Areas of Responsibility. Arctic capabilities advocacy comes in many forms. In the role of DoD Arctic Capability Advocate, CDRUSNORTHCOM will coordinate with other Combatant Commands, the Military Departments, and Defense Agencies to ensure that Arctic capability gaps are identified and prioritized, and that appropriate means of advocacy are emplace to effectively communicate associated risk.⁵¹

A critical component of the U.S.'s Arctic strategy is the use of the U.S. Coast Guard, which has a responsibility to address security challenges and support awareness within the region.⁵² As a critical component of the U.S.'s Arctic strategy, however, the U.S. Coast Guard's current Arctic capabilities will need future investments to deal with supporting the region's challenges.^{53,54} Firstly, improvements to the U.S. Coast Guard's operational capabilities are underway through the Polar Security Cutter program, which is increasing the current operational ship capacity of one heavy icebreaker and one medium icebreaker for the region.⁵⁵ Through this initiative, a new fleet of icebreaker vessels will begin construction in 2021 with the completion date of the first vessel to arrive tentatively in 2024.⁵⁶ Secondly, the U.S. Coast Guard is striving to invest in technologies to better respond to the increase of personnel within the region.⁵⁷ These technologies will focus on the ability to conduct search and rescue (SAR), if required, for the various seasonal workers and law enforcement officials within the region.⁵⁸ Also, they enhance the ability to conduct this activity within the remote regions of the Arctic.⁵⁹ Lastly, the U.S. Coast Guard will seek to improve relationships with stakeholders in the region to improve regional awareness.⁶⁰ These relationships will include stakeholders who have an interest in Arctic affairs and include the Arctic Council and other international governing bodies.⁶¹

The following illustration provides a visual depiction of the U.S. DoD’s Arctic Strategy, highlighting the ends and ways it intends to execute its future Arctic vision (Figure 2. The U.S. Department of Defense Arctic Strategy).⁶²

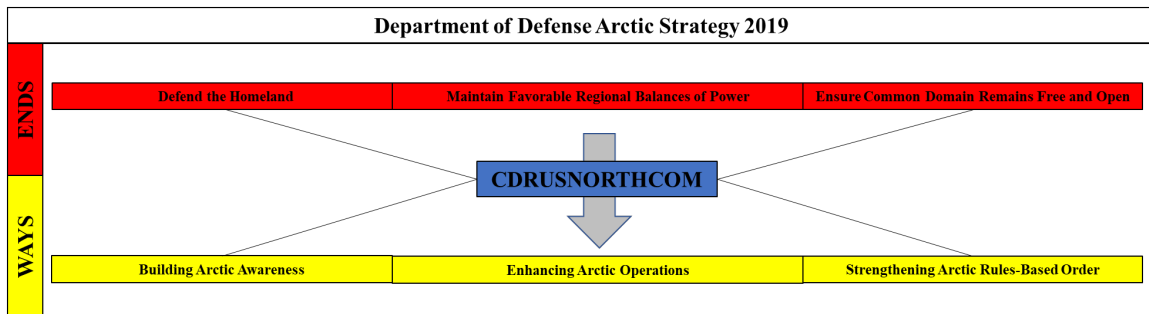


Figure 2. The U.S. Department of Defense Arctic Strategy

Source: Created by author using information from Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy* (Washington DC: Department of Defense, 2019), 1-14; Joint Chiefs of Staff, Joint Publication 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 17 January 2017, incorporating Change 1, 22 October 2018), II-4.

Canada

Canada’s Arctic and Northern Policy Framework

As the region undergoes rapid environmental change and international interest surges, Canada must demonstrate renewed Arctic leadership.

— Government of Canada,
Canada's Arctic and Northern Policy Framework

Canada recently revised its Arctic policy, set goals to be used through 2030, and recognizes that its Arctic “shared vision” must unite the entirety of its citizens.⁶³ As part of this, much of its approach emphasizes the indigenous populations in northern Canada and creating inclusive policy-making decisions.⁶⁴ Canada recognizes that there are inherent socioeconomic factors that have created inequality gaps amongst its residences,

and its framework can overcome these through a more unifying Arctic strategy.⁶⁵ Canada also recognizes that “climate change and technology are making the region more accessible.”⁶⁶ It is because of these impacts that Canada desires to begin taking a more active role in leading on the international stage and by adopting a new Arctic strategy.⁶⁷ That strategy is based on its vision, acknowledging the past, understanding the present, and defining eight goals to achieve its Arctic strategy.⁶⁸

Canada’s Arctic vision presides amongst eight guiding priorities with the intent to ensure the “Arctic people are thriving, strong, and safe.”⁶⁹ These priorities focus on health, energy, jobs, research, environmental considerations, security, leadership, and reconciliation.⁷⁰ As part of its revised vision, Canada also acknowledges that there have been challenges with its previous Arctic policies.⁷¹ Due to these challenges, Canada’s ability to execute its vision emphasizes the incorporation of all Canadian stakeholders so that it can overcome its past.⁷²

By acknowledging its past, Canada recognizes that there have been numerous land claims over the last fifty years throughout its regions with indigenous populations.⁷³ As part of its strategy for the future, Canada understands it must “acknowledge the damaging aspects” that these issues created so that it can move forward.⁷⁴ To overcome these challenges, Canada must include its indigenous populations into all aspects of future Arctic developments in addition to understanding other current Arctic challenges.⁷⁵

Canada’s understanding of the present includes a diverse array of social and economic factors, climate impacts, and security considerations.⁷⁶ Firstly, there remain socioeconomic “disadvantages” within the Arctic regarding the ability to access and

provide essential services within Canada's northern regions.⁷⁷ Also, there remain infrastructure challenges within these regions regarding communications capabilities, specifically in some of the more remote Canadian areas.⁷⁸ As part of overcoming these challenges, Canada seeks to enhance the involvement of "the people of the Arctic and the North" to establish beneficial future development mechanisms.⁷⁹ As part of these efforts, future developments must consider the impacts on Canada's northern areas, which have a blend of traditional employment with hunting and fishing industries.⁸⁰ As these industries develop in the future, Canada recognizes that there are also environmental factors within the Arctic that it must consider.⁸¹

The second factor Canada attributes to its understanding of the current Arctic state regards impacts due to climate change.⁸² Canada recognizes that changes to the Arctic climate are sparking international interest, are making natural resources more accessible, and are enabling increases in commercial maritime traffic within the region.⁸³ Due to these environmental impacts, there is a reevaluation of the Arctic taking place, as it has the potential to have "increasing strategic and military importance."⁸⁴ As part of this reevaluation, there has been the recent addition of new "Arctic policies or strategies" from nations not considered to be Arctic coastal states.⁸⁵ Of significance, Canada recognizes that the NWP, and its use, is one such area that continues to draw an interest regarding future importance.⁸⁶ As this passage is within Canadian sovereign boundaries, Canada emphasizes that they must be able to monitor the maritime traffic of vessels transiting the NWP with a focus on regulation.⁸⁷ To do this, Canada intends to use international laws, regulations, governing bodies to include the Arctic Council and the United Nations Convention on the Law of the Sea (UNCLOS).⁸⁸ Also, a critical

component to Canada's Arctic regulation is the ability to have "legally-binding agreements," whether those be international in construct or bilaterally with other nations.⁸⁹

The third aspect of Canada's understanding of the present Arctic state is current security implications and Canada's ability to defend its sovereignty.⁹⁰ From a defense perspective, Canada understands that it has several vital military components to manage its Arctic security challenges.⁹¹ Canada intends to rely on its "Joint Task Force" in the Northwest Territories, in addition to its airbase in Labrador, which it identifies as both being critical components to its approach to security.⁹² Another critical component is the use of "the Canadian Rangers," which can access and engage with the "remote and northern communities."⁹³ By leveraging these defense resources, Canada also understands that military exercises, its relationship with the North American Aerospace Defense Command (NORAD), conducting SAR, and its governmental relationships are all equally vital components to its security posture.⁹⁴ While these components are primarily Canadian defense aspects, Canada also understands that Arctic security challenges will ultimately require "a-whole-of-government."⁹⁵

For the future, Canada seeks to pursue "a rules-based international order" within the Arctic to ensure the protection of its people and the environment through security.⁹⁶ While part of this is through "reconciliation with Indigenous peoples," Canada also desires to convey strong leadership on the international stage "to promote Canadian values and interests."^{97, 98} Also, it intends to adopt several goals, which will guide its future Arctic strategy.⁹⁹

Canada's future Arctic vision presides on eight goals and several subsequent objectives.¹⁰⁰ The first goal focuses on bridging socioeconomic inequalities between its Indigenous populations and with the rest of its population to keep them "resilient and healthy."¹⁰¹ The second goal is a focus on strengthening Arctic infrastructure by addressing current shortfalls, which includes an array of transportation and communication challenges.¹⁰² Of significance, this goal acknowledges that certain Canadian regions are only accessible at certain times of the year due to current infrastructure challenges.¹⁰³ The third goal is ensuring the strengthening and sustainability of industries within the Arctic region, which accounts for the impacts that increases in civilian traffic will have on those respective industries.¹⁰⁴ With potential increases in tourism and its commercial hunting and fishing industries, Canada seeks to improve "economic development and environmental development while ensuring Canada's national security interests."¹⁰⁵ Canada's fourth goal is to enhance Arctic understanding through research "domestically and internationally" so that it can better address Arctic developments and their residual economic and societal impacts writ large.¹⁰⁶ This goal coincides with Canada's fifth, which emphasizes a focus on "climate change" and ensuring the preservation of the health of the environment.¹⁰⁷ Canada's sixth goal recognizes that the "international order" is continually evolving, and it is because of this that it desires to take a leadership role in the development of governing laws and regulations.¹⁰⁸ Canada's seventh goal is to ensure the Arctic region remains safe and secure, through the utilization of its military and local municipalities.¹⁰⁹ As part of its security posture, Canada recognizes a convergence of maritime traffic within the NWP will be an area that has the potential to have future security challenges.¹¹⁰ As part of

overcoming potential security challenges, Canada recognizes that NORAD and enhancing real-time understanding are part of the solution.¹¹¹ Canada’s last Arctic goal is to overcome it’s past through a “reconciliation” with its Arctic peoples who have previously been impacted by Arctic policies.¹¹²

With the components of Canada’s Arctic vision and goals in mind, the below graphic is a visual depiction of Canada’s Arctic and Northern policy framework (Figure 3. Canada’s Arctic Policy and Northern Framework).¹¹³

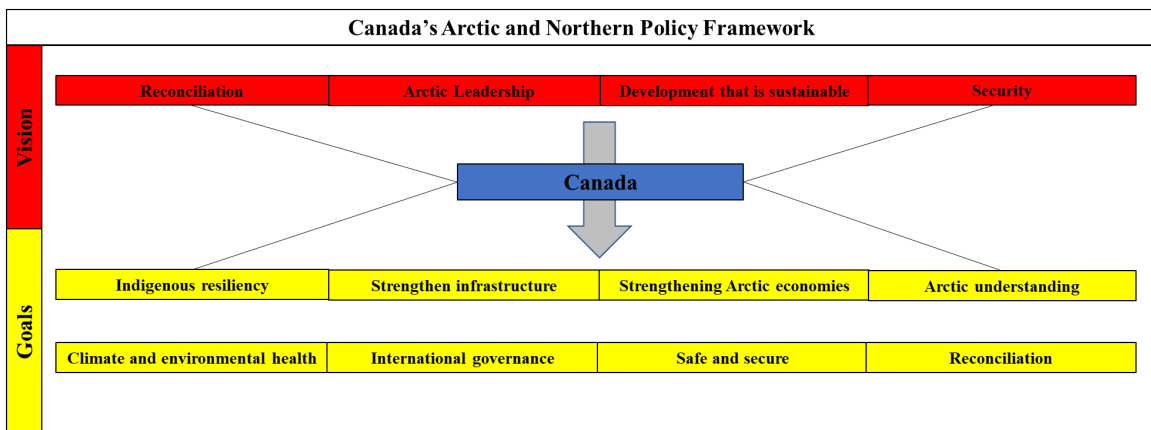


Figure 3. Canada’s Arctic Policy and Northern Framework

Source: Created by author using “Foreward from the minister” through “Annex: Principles for the Arctic and Northern Policy Framework,” in Government of Canada, *Canada's Arctic and Northern Policy Framework* (Ottawa: Government of Canada, 2019), accessed 5 April 2020), <https://www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587>.

The Kingdom of Denmark

The Kingdom of Denmark's Strategy for the Arctic 2011-2020

Maritime safety is a fundamental priority. The extreme Arctic conditions require preventive measures including training and ship safety, as well as regional cooperation on search and rescue.

— The Kingdom of Denmark, *Denmark, Greenland, and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020*

The Kingdom of Denmark's policy regarding the Arctic resides on joint policies that are established by Denmark, Greenland, and the Faroe Islands.¹¹⁴ Based on Greenland and the Faroe Islands having self-regulation governing bodies, the Kingdom of Denmark emphasizes cooperation and that there should be a unification of policies concerning Arctic issues.¹¹⁵ While there is unification in overarching policy, certain aspects, however, to include mineral exploration relating to Greenland, are governed by Greenland and not the broader Kingdom.¹¹⁶ The Kingdom of Denmark seeks to prevent a "militarization of the Arctic," and paramount to this is the ability to create relationships, which are mutually beneficial.¹¹⁷ In doing this, it seeks an active role in developing the region to pursue its overarching strategy and intends to do so through four overarching priorities.¹¹⁸ These four priorities include security, sustainability, protection of the environment, and ensuring cooperation with regional stakeholders within the Arctic.¹¹⁹

The Kingdom of Denmark's first priority, regarding security, has four aspects, and the first emphasizes that nations adhere to already preestablished international documents.¹²⁰ Of significance, adhering to these documents within the Northeast Passage (NEP) and NWP will help regulate these passages as they could have future security challenges.¹²¹ Due to these potential challenges, the Kingdom of Denmark has endorsed the UNCLOS, which they view as a legislative "foundation."¹²² By using the UNCLOS

as an Arctic governing document, issues regarding preexisting and future security challenges, in addition to territorial disputes, can be resolved, as several have been longstanding.¹²³ Such examples include ownership over the continental shelf and a longstanding dispute with Canada over the sovereignty of Hans Island.¹²⁴

The second aspect of the Kingdom of Denmark's security priority focuses on the ability to improve "maritime safety."¹²⁵ As a part of this focus, it recognizes that the fundamental Arctic changes due to climate are giving way to increases in civilian shipping traffic and tourism, which will only grow as ice within the Arctic dissipates.¹²⁶ As these environmental changes continue, the Kingdom of Denmark emphasizes that Arctic maritime traffic must be self-reliant in managing accidents, particularly within the NEP and NWP.¹²⁷ To support safety within these passages, the Kingdom of Denmark intends to use technology to improve the "enhanced surveillance of maritime traffic."¹²⁸

The third aspect of the Kingdom of Denmark's Arctic security focus is the "exercising of sovereignty and surveillance."¹²⁹ As part of securing its sovereignty, it acknowledges that NATO has a role and that alliance could support security related issues through "the NATO treaty Article 5 regarding collective defense."¹³⁰ Also, as part of the security challenges that impact sovereignty, the Kingdom directs its armed forces and charters them with four critical tasks.¹³¹ The first task is a consolidation "of the Greenland Command and the Faroe Command into a joint service Arctic Command."¹³² The second task is the creation of an as required "Arctic Response Force," which can act as an augmentation force to bolster the security challenges and minimize impacts to sovereignty.¹³³ The third task is improving upon the understanding of the associated risks that are inherent to an increase in Arctic activity.¹³⁴ The last task is the ability to enhance

“opportunities and potential for closer cooperation” with the understanding that Thule Air Base could be more critical in the future.¹³⁵

To also support this security aspect, the use of the private sector is also vital as it can augment certain security-related activities, specifically SAR, around Greenland.¹³⁶ As part of supporting Arctic SAR efforts, the company Air Greenland conducts them “in cooperation with the Arctic Command” and other local emergency response agencies.¹³⁷ Air Greenland provides this support through the use of its two helicopters and is continuing to modernize its capabilities with the recent purchase of two EC225 helicopters in 2020.^{138,}

The second priority of the Kingdom of Denmark’s Arctic strategy is a focus on six aspects of sustainability, of which four are critical.¹³⁹ The first aspect is the continuing adherence to high standards when attempting to harvest Arctic natural resources to reduce the impacts on the surrounding Arctic populations.¹⁴⁰ The Kingdom of Denmark understands within its Arctic strategy that, “Approximately 97% of oil and gas resources are believed to lie within the Arctic States’ economic exclusive zones.”¹⁴¹ As this relates to the Kingdom of Denmark, there is the potential that there are “31 billion barrels of oil and natural gas off the coast of Northeast Greenland and 17 billion barrels of oil and gas in areas east of Greenland and east of Canada.”¹⁴² As these resources potentially exist, the Kingdom of Denmark recognizes that infrastructure within the region must be able to be developed to support these activities.¹⁴³ Additionally, infrastructure developments should not only support certain harvesting of natural resources, but they must also consider all of the economic sectors.¹⁴⁴

The second critical aspect of the Kingdom's priority of sustainability, includes a focus on certain "living resources" within the Arctic, with specific emphasis on preservation of the fishing and hunting industries.¹⁴⁵ Critical to protecting these industries is regulation, particularly within "the Denmark Strait and the David Strait," as a majority of the Kingdom of Denmark's fishing industry takes place around Greenland's periphery.¹⁴⁶ As climate change within the Arctic continues to provide more access to the region, ensuring the protection of these economic activities will become increasingly more important in the future.¹⁴⁷

The third critical aspect of the Kingdom of Denmark's priority of sustainability focuses on "stronger integration in international trade."¹⁴⁸ As Greenland is between both the U.S. and Europe, the Kingdom of Denmark is in a position to be a key stakeholder in the development of the Arctic's international economic benefits.¹⁴⁹ Due to this potential growth, the Kingdom of Denmark understands that the NEP could have a vital role in future Arctic economic expansion.¹⁵⁰

The fourth critical aspect of the Kingdom of Denmark's sustainability approach is an emphasis on "knowledge-based growth and development."¹⁵¹ As the Kingdom of Denmark recognizes that "Arctic research has been increasing rapidly in recent years," it is in a position to uniquely expand academic pursuits for those who have a vested interest in the region's environmental considerations.¹⁵² Critical to this is Greenland, which is geographically in a position to monitor the increasing climate developments within the region.¹⁵³ Greenland offers not only prospective researchers to study climate changes writ large, but also environmental impacts on the indigenous populations and the respective fishing and hunting industries.¹⁵⁴ Also, other critical components to its

international research efforts are various Nordic and European institutions, and research partnerships with the U.S. and Canada, which will remain critical.¹⁵⁵

The third priority of the Kingdom of Denmark's Arctic policy relates to the protection of the environment.¹⁵⁶ As part of its focus, it emphasizes that future Arctic scientific research should address climate change and the implications it will have on populations who reside within the Arctic.¹⁵⁷ Also, to protect the Arctic environment, the Kingdom of Denmark seeks a firm understanding of the effects that increases in economic activities will have on the natural habitats within the region.¹⁵⁸

The fourth priority of the Kingdom of Denmark's Arctic policy pertains to cooperation amongst Arctic stakeholders.¹⁵⁹ The Kingdom of Denmark seeks to emphasize that "the Arctic Council must be reinforced as the only relevant political organization."¹⁶⁰ Also, and concurrently, this organization needs to "cooperate with all relevant countries and organizations with interest in the Arctic."¹⁶¹ As the Arctic Council is one way the Kingdom of Denmark desires to influence Arctic affairs, it also understands that they share several critical bilateral relationships with many of the Arctic coastal nations.¹⁶² The U.S., Canada, Norway, and Iceland are Arctic partners, which the Kingdom of Denmark identifies as having close future cooperation with regarding Arctic related matters.¹⁶³ The Kingdom of Denmark also recognizes that it must enhance its Arctic relationship with Russia, as it is a coastal state and is expanding its influence within the region.¹⁶⁴

The illustration below is a visual summation of the Kingdom of Denmark's Arctic Strategy (Figure 4. The Kingdom of Denmark's Strategy for the Arctic 2011-2020).¹⁶⁵

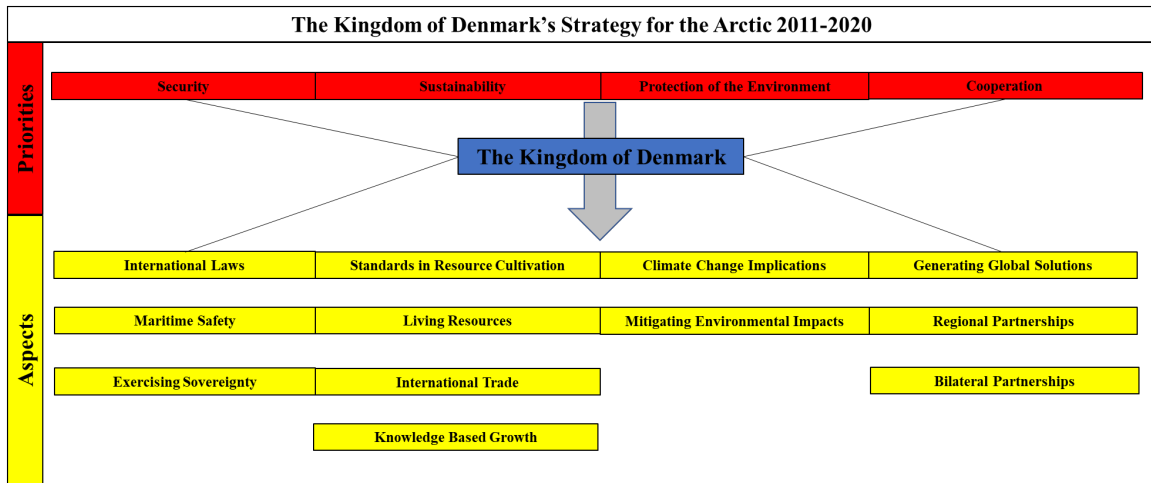


Figure 4. The Kingdom of Denmark’s Strategy for the Arctic 2011-2020

Source: Created by author using information from The Kingdom of Denmark, *Denmark, Greenland, and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020* (Copenhagen: Ministry of Foreign Affairs; Nuuk: Department of Foreign Affairs; Torshavn: Ministry of Foreign Affairs, 2011), 1-58.

Russia

Russia’s Arctic Strategy

Russia seeks to restore its great power status and establish spheres of influence near its borders.

— U.S. President, *National Security Strategy of the United States of America December 2017*

The basis for Russia’s Arctic strategy resides within its “*Russian Federation Marine Doctrine*,” which emphasizes six critical geographic regions and includes “the Arctic and the Atlantic.”¹⁶⁶ Russia understands that issues within the Arctic do not solely begin within the region; they are, in fact, a convergence of issues from separate geographic areas, which prevents the Arctic from being “a separate area of operations.”¹⁶⁷ Due to this, Russia’s Arctic focus has four critical priorities for its future

vision of the region.^{168, 169} Those four priorities include access to both the Atlantic and Pacific oceans, the NSR, security, and natural resources.¹⁷⁰

Within Russia's first Arctic priority is the NEP, including a part of Russia's northern border, which has traditionally offered maritime traffic the ability to transit the region.^{171, 172} For Russia, it has adopted a portion of the NEP that is within its borders, as the NSR, which follows the "Kara and Bering straits."¹⁷³ As this route can significantly decrease ocean to ocean transit time for those wishing to utilize it, there is the potential that this route will be more significant in the future.¹⁷⁴ Because of these reasons, it remains a critical component of Russia's approach to the Arctic.^{175, 176}

Russia's second Arctic priority is the NSR, and its approach regarding the passage, and its investments, have been aligned toward three common objectives.^{177, 178} The first objective is to provide "ice navigation, convoy escort, salvage and search-and-rescue capability."¹⁷⁹ The second objective is "expanding the largest icebreaker fleet to include six NSR-dedicated nuclear icebreakers."¹⁸⁰ The third objective is "constructing a super-heavy nuclear icebreaker that can break 10 feet of ice at 10 knots."¹⁸¹ As part of its NSR efforts, Russia's investment in "Yamalmax LNG carriers" will soon provide the potential to offer an option for commercial cargos that primarily rely upon the Suez Canal.¹⁸² The Yamalmax is "a new vessel class of icebreaking tankers not normally requiring icebreaker escorts."¹⁸³

Also, the NSR remains critical to Russia's military strategy because it affords them the ability to quickly project naval forces to and from the Atlantic and Pacific oceans with minimal constraints.¹⁸⁴ Russia, in addition to forty other countries, has a presence on the "Norwegian Svalbard archipelago," which has the potential to lead to

future conflicts due to Norway being a NATO member.¹⁸⁵ The potential for an increase in NATO's Arctic presence is justification for Russia to strategically align its military forces within the region to minimize security challenges.¹⁸⁶

Also, as the NSR directly relates to Russia's third priority, security, Russia's President Vladimir Putin is emphasizing its military to align its bases along the NSR to support the development of the passage.^{187, 188} Part of this emphasis is also to guarantee Russia's Arctic military forces can provide "the survivability of second-strike nuclear assets."¹⁸⁹ Russia also ensures this through the creation of aligning numerous forces and capabilities, predominantly around the Kola Peninsula.¹⁹⁰ As Russia is an Arctic-bordering nation, it views the Arctic as being a region that either belongs to Russia, or in the areas outside of its boundaries, it considers as NATO controlled.¹⁹¹ It is because of this viewpoint that the creation of military conflicts within the region, should they arise, would need to be displaced away from the Kola peninsula and toward the eastern or western passages of the NSR.¹⁹² To prepare for such an event challenging security, and based on the sheer size of the Arctic and Russia's territorial land within it, its military has been focusing on the "strategic mobility" of its forces through routine military exercises to build its capacity.¹⁹³

Russia's fourth Arctic priority relates to natural resources within the region.¹⁹⁴ This priority coincides with Russia's other priorities as the Arctic has perceived strategic vulnerabilities due to a lack of development and the potential for increases in international interest.¹⁹⁵ While Russia is seeking to actively monetize the NSR and recover all of its investments through the tariffing of cargos transiting the passage, it is also working to develop natural resource infrastructure.¹⁹⁶ To do this, Russia is seeking

alternatives, which consequently aligns substantially with China’s Arctic strategy.¹⁹⁷ Due to this alignment, the Chinese have “invested in the Yamal LNG Project, holding a total 30 percent share of Novatek, the Russian owner of the project.”¹⁹⁸

The figure below illustrates Russia’s priorities within its vision for the Arctic (Figure 5. Russia’s Arctic Priorities).¹⁹⁹

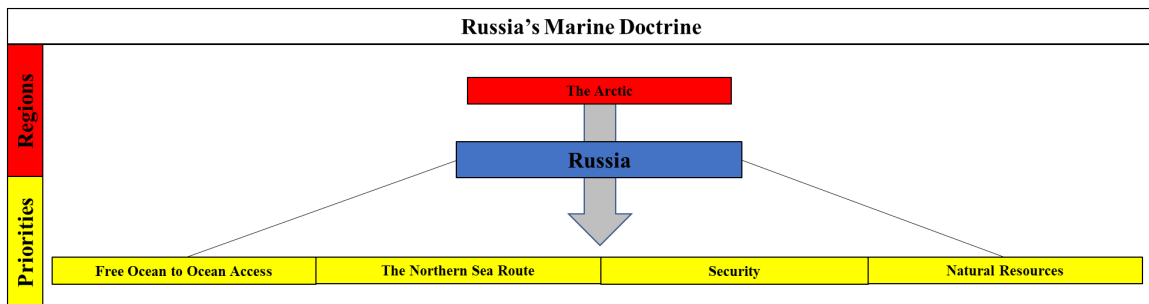


Figure 5. Russia’s Arctic Priorities

Source: Created by author using information from President of Russian Federation, *Marine Doctrine of the Russian Federation 2015*, trans. Anna Davis (Moscow: The Russian Federation, July 2015), 22-25.

China

China’s Arctic Policy

China is an active participant, builder and contributor in Arctic affairs who has spared no efforts to contribute its wisdom to the development of the Arctic region.

— The People’s Republic of China, *China’s Arctic Policy*

China recognizes that environmental developments within the Arctic are creating more international attention within the region.²⁰⁰ It is because of these impacts, predominantly due to climate change, that there is the potential for the region’s maritime passages to be more accessible in addition to the increasing accessibility of natural

resources.”²⁰¹ China recognizes that these Arctic economic developments have “international impacts,” and it is because of this that China has a role in its future development.²⁰² Also, as a “Near-Arctic State,” China emphasizes that controlling the Arctic no longer solely resides with the “inter-Arctic States” to reinforce its position.²⁰³ These worldviews are the basis for China’s Arctic strategy, which considers the current state of the Arctic and presides among several principles, goals, and positions for the future.²⁰⁴

China recognizes that there is not a single binding document that exists to comprehensively control the current state of international affairs within the Arctic.²⁰⁵ Due to the absence of a unifying document, China recognizes that the Arctic is regulated by “the United Nations Convention on the Law of the Sea (UNCLOS), the Spitsbergen Treaty, and other treaties and international law.”²⁰⁶ While nations outside of the region might not have territorial rights within the Arctic, these international documents afford China the ability to pursue economic and scientific endeavors within the region.²⁰⁷ As such, since 2004, China has had direct access to the Arctic through its experimental research facility on the island of Svalbard, Norway, and it continues to build off this initiative by establishing its version of a “Polar Silk Road” in the Arctic.²⁰⁸

China enjoys the freedom or rights of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas, the Area and other relevant sea areas, and certain special areas in the Arctic Ocean, as stipulated in treaties such as the UNCLOS and the Spitsbergen Treaty, and general international law.²⁰⁹

Also, as part of the current state of the Arctic, China recognizes that as a member of the United Nations security council, it has oversight on how the region will develop in the future.²¹⁰ Part of this viewpoint is due to the position that as a “Near-Arctic State,”

environmental changes in the region directly impact Chinese economic industries.²¹¹ Additionally, as China is a “major trading nation,” understanding environmental conditions within the Arctic could be beneficial in developing shipping lanes and accessing resources critical to future economic developments.²¹² These developments do not solely include China, as opportunities within the Arctic have global implications, and “China has shared interests with Arctic States” to expand the region for economic benefits.²¹³

To execute its Arctic strategy, China inherently has four specific policy goals, which are “to understand, protect, develop, and participate in governance.”²¹⁴ As part of its strategy, China adopts the views that it must “safeguard the common interests” of everyone that has a role in the Arctic, as well as ensure the ability to “promote sustainable development.”²¹⁵ Before examining its goals, China also has several principles, which it intends to incorporate throughout its strategy.²¹⁶

China takes the view that to accomplish its prescribed goals, it must also focus on the inherent principles of respect, cooperation, win-win results, and sustainability.²¹⁷ Respect within the region for China is multi-faceted, and predominantly includes all nations abiding by international laws and regulations in the region to ensure non-Arctic bordering nations have access to the region.²¹⁸ Cooperation presides on the philosophy that there are holistic engagements with every stakeholder who has a vested interest in the Arctic.²¹⁹ Those engagements should not hinder the advancement of the economic aspects the Arctic provides, nor those that the Chinese are seeking to develop.²²⁰ China’s efforts to pursue “win-win results” are not only for itself, but should also promote and account for the various state and non-state organizations pursuing or having influence.²²¹

To do this, China recognizes the importance of acting in the best interests of the “local residents including the indigenous peoples.”²²² China’s emphasis on sustainability is that the various development efforts should not be to the detriment of the Arctic environment.²²³ These four guiding principles are the basis China intends to implement in executing its Arctic goals.²²⁴

The basis for China’s first Arctic goal presides upon an ability to understand the Arctic through cooperation within the region, which includes all key stakeholders.²²⁵ China recognizes that while non-bordering Arctic nations have no territorial sovereignty to the Arctic, current international governing documents do allow for scientific research and the pursuit of economic interests to enhance Arctic understanding.²²⁶ It is because of its emphasis on pursuing scientific research within the region that China’s ability, “To explore and understand the Arctic serves as the priority and focus.”²²⁷ Also, in increasing its understanding of the region, China encourages scientists to focus on the Arctic within their studies and expand their academic influence in the pursuit of intellectual cooperation.²²⁸ Through its Arctic outreach efforts regarding cooperation, China has agreements with the Arctic bordering nations of Iceland and Russia.²²⁹ Additionally, it has held engagements with other non-Arctic bordering nations, which include the United Kingdom, France, Japan, and the Republic of Korea.²³⁰

China’s second Arctic goal focuses on protecting the Arctic environment with an emphasis on three positions.²³¹ The first and second positions are to increase emphasis on the enforcement of environmental protections to prevent indiscriminate damage to the ecosystem.²³² The third position is a concerted focus on instituting mechanisms to mitigate the impacts of climate change within the region.²³³

The basis for China's third Arctic goal presides upon developing the region and emphasizes several critical positions.²³⁴ Of significance, four of those positions are critical to its strategy, and they include the development of shipping routes, exploration of natural resources, conservation of fisheries, and the development of tourism-based resources.²³⁵

China's position on shipping routes identifies three vital maritime corridors within the Arctic, which are "the Northeast Passage, Northwest Passage, and the Central passage," as part of its Arctic Policy.²³⁶ It understands that due to the environmental factors that these three passages will inherently be critical to international trade in the future.²³⁷ To regulate these routes, and in order to advance its "Polar Silk Road" concept, China emphasizes that it is the responsibility for everyone that has an interest in the Arctic to abide by the UNCLOS and other pre-established international policies.²³⁸

Also, another part of development is China's position on the exploration of natural resources, which focuses on protecting the environment in the pursuance of oil and gas resources.²³⁹ China also understands that the clean-energies the Arctic provides, which include wind and geothermal, are also part of cultivating the resources in the region.²⁴⁰ To support this understanding, China is seeking to exchange technologies and experiences with other nations who have similar interests in the region so that they both can benefit.²⁴¹

China's position on fishery conservation understands that climate change is directly impacting this portion of its economy as it is sensitive to environmental considerations.²⁴² It is because of the evolving climate changes that China recognizes that the harvesting of fish will likely shift into the Arctic.²⁴³ China supports the

development of Arctic legislation that is specific to protecting fish resources in the Arctic, and that expands from current international documents.²⁴⁴

China's last position regarding development focuses on tourism, which it recognizes has the potential to grow in the future exponentially.²⁴⁵ For tourists to transit the region, however, there needs to be a level of security and an increase in capabilities that can respond to disasters as they arise.²⁴⁶ These capabilities should pertain to the search and recovery of personnel transiting the region to mitigate humanitarian incidents, which could arise.²⁴⁷ If such capabilities were present, tourism in itself is a factor that allows individuals to have a firsthand understanding of the links between climate change and the Arctic environment.²⁴⁸ The ability to allow individuals to have a better understanding of the Arctic through tourism, in turn, indirectly helps support the development of infrastructure within the region.²⁴⁹ This aspect is equally beneficial for the indigenous people in the Arctic, as building tourist resources would result in improving the medical and infrastructure services in the Arctic.²⁵⁰

China's fourth goal, as part of its Arctic strategy, is to conduct its form of outreach to participate in "Arctic governance."²⁵¹ To execute this goal, China intends to rely heavily on cooperation and leverage its diplomatic positions, in addition to those who have similar economic aspirations within the Arctic.²⁵² China believes that these aspects provide it with an opportunity to shape the region, in addition to being a leader in addressing security challenges and managing Arctic civilian crises that could arise.²⁵³

The figure below illustrates how China seeks to execute its vision for the Arctic, and it corresponds specifically with the principles and goals within its strategy (Figure 6. China's Arctic Policy).²⁵⁴

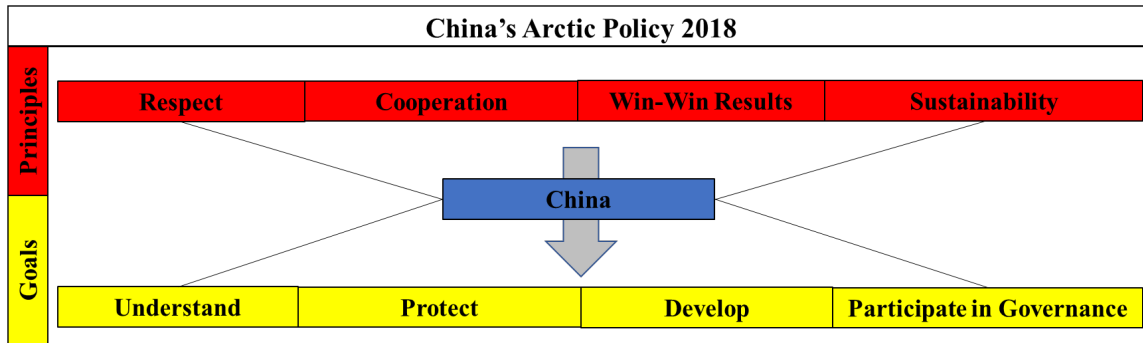


Figure 6. China's Arctic Policy

Source: Created by author using information from The People's Republic of China, *China's Arctic Policy* (State Council Information Office, January 2018), accessed 25 March 2020, <http://www.scio.gov.cn/zfbps/32832/Document/1618243/1618243.htm>, 1-15.

Chapter Conclusion

The literature review has identified several commonalities among the countries within the region as they pertain to the initial research questions. The first commonality is from a security standpoint and highlights security challenges within the more remote areas along the NWP. The second commonality is the requirement to conduct search and rescue missions within the region. While this requirement includes supporting the indigenous peoples, it also accounts for the potential increases in economic expansion and tourism within the region. The third commonality is an emphasis on cooperation, which has the potential to be problematic. As each country recognizes some form of sovereignty or legitimacy for its intentions in the Arctic, the execution of how they intend to “cooperate” varies drastically. The fourth commonality relates to the convergence of multiple actors across multiple military geographic combatant commands. As this corresponds to USNORTHCOM, handling this convergence over time and potentially on the two identified northern maritime passages is problematic. The fifth commonality is

the approaches of each country on how they intend to address the Arctic developments. While each country has a general framework for how to proceed, once again, their views differ drastically. Upon conclusion of the literature review, this data is enough to begin utilizing the research methodology. The preceding research design within the next chapter will begin to analyze the data to answer the research questions.

¹ U.S. President, *National Security Strategy of the United States of America December 2017*, 40.

² Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy*, 1.

³ Office of the Secretary of Defense (SecDef), *Summary of the National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington, DC: Department of Defense, 2018), 1-11.

⁴ Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy*, 2-14.

⁵ *Ibid.*, 3.

⁶ *Ibid.*, 3.

⁷ *Ibid.*, 3.

⁸ *Ibid.*, 3.

⁹ *Ibid.*, 3.

¹⁰ *Ibid.*, 3.

¹¹ *Ibid.*, 3.

¹² United States Coast Guard (USCG), *United States Coast Guard Arctic Strategic Outlook* (Washington, DC: U.S. Department of Homeland Security, April 2019), 11.

¹³ Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy*, 3.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ Ibid.

¹⁷ Ibid., 4.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Office of the Secretary of Defense (SecDef), *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019* (Washington, DC: Department of Defense, May 2019), 114.

²⁹ Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy*, 4-5.

³⁰ Ibid.

³¹ Ibid.

³² Ibid., 5.

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid., 6.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid., 6-7.

⁴⁶ Ibid., 7.

⁴⁷ Ibid., 8-13.

⁴⁸ Ibid., 8-9.

⁴⁹ Ibid., 11.

⁵⁰ Ibid., 12.

⁵¹ Ibid., 9.

⁵² Ibid., 10-11.

⁵³ USCG, *The United States Coast Guard Arctic Strategic Outlook*, 6.

⁵⁴ Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy*, 10-11.

⁵⁵ United States Coast Guard (USCCG) Acquisition Directorate, “Polar Security Cutter” (Factsheet, U.S. Department of Homeland Security, March 2020), accessed 13 April 2020. <https://www.dcms.uscg.mil/Portals/10/CG-9/Acquisition%20PDFs/Factsheets/POLAR.pdf?ver=2019-05-22-082731-003>.

⁵⁶ Ibid.

⁵⁷ USCG, *The United States Coast Guard Arctic Strategic Outlook*, 6.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Office of the Under Secretary of Defense for Policy, *Report to Congress: Department of Defense Arctic Strategy*, 6-13.

⁶³ Government of Canada, *Canada's Arctic and Northern Policy Framework* (Ottawa: Government of Canada, 2019), accessed 5 April 2020), <https://www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587>, “a shared vision.”

⁶⁴ Ibid.

⁶⁵ Ibid., “foreword from the minister.”

⁶⁶ Ibid., “on the front lines of climate change.”

⁶⁷ Ibid., “a shared vision” through “and a changing world.”

⁶⁸ Ibid., “a shared vision” through “Annex: Principles for the Arctic and Northern Policy Framework.”

⁶⁹ Ibid., “a shared vision.”

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid., “our past.”

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid., “our present.”

⁷⁷ Ibid.

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² Ibid.

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- ⁸³ Ibid.
- ⁸⁴ Ibid.
- ⁸⁵ Ibid.
- ⁸⁶ Ibid.
- ⁸⁷ Ibid.
- ⁸⁸ Ibid.
- ⁸⁹ Ibid.
- ⁹⁰ Ibid.
- ⁹¹ Ibid.
- ⁹² Ibid.
- ⁹³ Ibid.
- ⁹⁴ Ibid.
- ⁹⁵ Ibid., “safety, security and defence.”
- ⁹⁶ Ibid., “Our future.”
- ⁹⁷ Ibid., “Reconciliation with Indigenous peoples.”
- ⁹⁸ Ibid., “Assuming global leadership.”
- ⁹⁹ Ibid., “Goals and objectives.”
- ¹⁰⁰ Ibid.
- ¹⁰¹ Ibid., “Goals 1.”
- ¹⁰² Ibid., “Goals 2.”
- ¹⁰³ Ibid.
- ¹⁰⁴ Ibid., “Goals 3.”
- ¹⁰⁵ Ibid.
- ¹⁰⁶ Ibid., “Goals 4.”
- ¹⁰⁷ Ibid., “Goals 5.”

¹⁰⁸ Ibid., “Goals 6.”

¹⁰⁹ Ibid., “Goals 7.”

¹¹⁰ Ibid.

¹¹¹ Ibid.

¹¹² Ibid., “Goals 8.”

¹¹³ Ibid., “Foreword from the minister” through “Annex: Principles for the Arctic and Northern Policy Framework.”

¹¹⁴ The Kingdom of Denmark, *Denmark, Greenland, and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020* (Copenhagen: Ministry of Foreign Affairs; Nuuk: Department of Foreign Affairs; Torshavn: Ministry of Foreign Affairs, 2011), 10.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ Ibid., 11.

¹¹⁹ Ibid.

¹²⁰ Ibid., 13.

¹²¹ Ibid.

¹²² Ibid., 13-14.

¹²³ Ibid., 15.

¹²⁴ Ibid.

¹²⁵ Ibid.

¹²⁶ Ibid., 16.

¹²⁷ Ibid., 17.

¹²⁸ Ibid.

¹²⁹ Ibid., 20.

¹³⁰ Ibid.

¹³¹ Ibid.

¹³² Ibid.

¹³³ Ibid.

¹³⁴ Ibid.

¹³⁵ Ibid.

¹³⁶ Air Greenland, “Search and Rescue,” accessed 21 April 2020, <https://www.airgreenland.com/charter/products/search-and-rescue>.

¹³⁷ Ibid..

¹³⁸ Air Greenland, “Search and Rescue,”; Rotortrade, “Air Greenland Partners with Rotortrade to Purchase 2xEC225 Helicopters for SAR Operations,” February 2020), accessed 21 April 2020, https://www.rotortrade.com/en/rotortrade_airgreenland.

¹³⁹ The Kingdom of Denmark, *Denmark, Greenland, and the Faroe Islands*, 23.

¹⁴⁰ Ibid., 24-25.

¹⁴¹ Ibid., 24.

¹⁴² Ibid.

¹⁴³ Ibid., 23-24.

¹⁴⁴ Ibid., 24.

¹⁴⁵ Ibid., 30-31.

¹⁴⁶ Ibid., 31.

¹⁴⁷ Ibid.

¹⁴⁸ Ibid., 33.

¹⁴⁹ Ibid.

¹⁵⁰ Ibid.

¹⁵¹ Ibid., 35.

¹⁵² Ibid.

¹⁵³ Ibid.

¹⁵⁴ Ibid.

¹⁵⁵ Ibid.

¹⁵⁶ Ibid., 43.

¹⁵⁷ Ibid., 43-44.

¹⁵⁸ Ibid., 45-46.

¹⁵⁹ Ibid., 49.

¹⁶⁰ Ibid., 52.

¹⁶¹ Ibid.

¹⁶² Ibid., 54.

¹⁶³ Ibid.

¹⁶⁴ Ibid.

¹⁶⁵ Ibid., 1-58.

¹⁶⁶ President of Russia, “Russian Federation Marine Doctrine: Vladimir Putin held a meeting to discuss the new draft of Russia’s Marine Doctrine,” 26 July 2015, accessed 17 April 2020, <http://en.kremlin.ru/events/president/news/50060>.

¹⁶⁷ Mathieu Boulègue, *Russia’s Military Posture in the Arctic: Managing Hard Power in a Low Tension Environment* (London, UK: Chatham House, 2019), accessed 16 April 2020, <https://www.chathamhouse.org/publication/russia-s-military-posture-arctic-managing-hard-power-low-tension-environment#>, 24.

¹⁶⁸ Ibid.

¹⁶⁹ President of Russian Federation, *Marine Doctrine of the Russian Federation 2015*, trans. Anna Davis (Moscow: The Russian Federation, July 2015), 22.

¹⁷⁰ Ibid.

¹⁷¹ Kells Boland, “The Russian Northern Sea Route and a Canadian Arctic Seaway,” in *Canada’s Arctic Agenda: Into the Vortex*, eds. John Higginbotham and Jennifer Spence (Waterloo, Ontario: Centre for International Governance Innovation, January 2019), accessed 29 March 2020, www.jstor.org/stable/resrep21105.8, 33.

¹⁷² President of Russian Federation, *Marine Doctrine of the Russian Federation 2015*, 22.

¹⁷³ Kenneth Pletcher, “Northeast Passage,” *Britannica*, 2013, accessed 16 May 2020, <https://www.britannica.com/topic/Northeast-Passage>.

¹⁷⁴ Boland, “The Russian Northern Sea Route and a Canadian Arctic Seaway,” 33.

¹⁷⁵ *Ibid.*, 38.

¹⁷⁶ President of Russia, “Russian Federation Marine Doctrine.”

¹⁷⁷ Boland, “The Russian Northern Sea Route and a Canadian Arctic Seaway,” 35-36.

¹⁷⁸ President of Russian Federation, *Marine Doctrine of the Russian Federation 2015*, 22.

¹⁷⁹ Boland, “The Russian Northern Sea Route and a Canadian Arctic Seaway,” 35.

¹⁸⁰ *Ibid.*, 36.

¹⁸¹ *Ibid.*

¹⁸² *Ibid.*, 34.

¹⁸³ *Ibid.*

¹⁸⁴ President of Russia, “Russian Federation Marine Doctrine,” cited in Katarzyna Zysk, “Russia’s Strategic Underbelly: Military Strategy, Capabilities, and Operations in the Arctic,” in *The Russian Military in Contemporary Perspective*, ed. Stephen J. Blank, (Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, September 2019), accessed 29 March 2020, www.jstor.org/stable/resrep20098.18, 691.

¹⁸⁵ Katarzyna Zysk, “Russia’s Strategic Underbelly: Military Strategy, Capabilities, and Operations in the Arctic,” in *The Russian Military in Contemporary Perspective*, ed. Stephen J. Blank, (Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, September 2019), accessed 29 March 2020, www.jstor.org/stable/resrep20098.18, 695.

¹⁸⁶ Katarzyna Zysk. “Russia and the High North: Security and Defense Perspective,” in *Security Prospects in the High North: Geostrategic Thaw or Freeze?* eds. Sven G. Holtsmark and Brooke A. Smith-Windsor (Rome, Italy: NATO Defense College, 2009), 112-116, cited in Katarzyna Zysk, “Russia’s Strategic Underbelly: Military Strategy, Capabilities, and Operations in the Arctic,” in *The Russian Military in Contemporary Perspective*, ed. Stephen J. Blank (Carlisle Barracks, PA: Strategic Studies

Institute, US Army War College, September 2019), accessed 29 March 2020, www.jstor.org/stable/resrep20098.18, 695.

¹⁸⁷ Boland, “The Russian Northern Sea Route and a Canadian Arctic Seaway,” 36.

¹⁸⁸ President of Russian Federation, *Marine Doctrine of the Russian Federation 2015*, 22-23.

¹⁸⁹ Boulègue, *Russia’s Military Posture in the Arctic*, 6.

¹⁹⁰ Stephen J. Blank, *Russia in the Arctic* (Carlisle: Strategic Studies Institute, 2011), cited in Mathieu Boulègue. *Russia’s Military Posture in the Arctic: Managing Hard Power in a ‘Low Tension’ Environment* (London, UK: Chatham House, 2019), accessed 16 April 2020, <https://www.chathamhouse.org/publication/russia-s-military-posture-arctic-managing-hard-power-low-tension-environment#>, 6.

¹⁹¹ Boulègue, *Russia’s Military Posture in the Arctic*, 24.

¹⁹² Ibid.

¹⁹³ Zysk, “Russia’s Strategic Underbelly,” 704.

¹⁹⁴ President of Russian Federation, *Marine Doctrine of the Russian Federation 2015*, 22-23.

¹⁹⁵ Zysk, “Russia’s Strategic Underbelly,” 689.

¹⁹⁶ Boland, “The Russian Northern Sea Route and a Canadian Arctic Seaway,” 37.

¹⁹⁷ Ibid.

¹⁹⁸ Ibid.

¹⁹⁹ President of Russian Federation. *Marine Doctrine of the Russian Federation 2015*, 22-25.

²⁰⁰ The People’s Republic of China, *China’s Arctic Policy*, State Council Information Office, January 2018, accessed 25 March 2020, <http://www.scio.gov.cn/zfbps/32832/Document/1618243/1618243.htm>, 2.

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ Ibid., 2-4.

²⁰⁴ Ibid., 1-15.

²⁰⁵ Ibid., 2-3.

²⁰⁶ Ibid., 3.

²⁰⁷ Ibid.

²⁰⁸ Ibid., 5.

²⁰⁹ Ibid., 4.

²¹⁰ Ibid.

²¹¹ Ibid.

²¹² Ibid.

²¹³ Ibid.

²¹⁴ Ibid., 5.

²¹⁵ Ibid.

²¹⁶ Ibid., 6-7.

²¹⁷ Ibid.

²¹⁸ Ibid., 6.

²¹⁹ Ibid., 7.

²²⁰ Ibid.

²²¹ Ibid.

²²² Ibid.

²²³ Ibid.

²²⁴ Ibid., 6-7.

²²⁵ Ibid., 7-8.

²²⁶ Ibid., 7.

²²⁷ Ibid.

²²⁸ Ibid., 8.

²²⁹ Ibid., 14-15.

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- ²³⁰ Ibid., 14.
- ²³¹ Ibid., 9.
- ²³² Ibid.
- ²³³ Ibid.
- ²³⁴ Ibid., 10-12.
- ²³⁵ Ibid.
- ²³⁶ Ibid., 10.
- ²³⁷ Ibid.
- ²³⁸ Ibid., 10-11.
- ²³⁹ Ibid., 11.
- ²⁴⁰ Ibid.
- ²⁴¹ Ibid.
- ²⁴² Ibid., 11-12.
- ²⁴³ Ibid.
- ²⁴⁴ Ibid., 12.
- ²⁴⁵ Ibid., 10-12.
- ²⁴⁶ Ibid., 12.
- ²⁴⁷ Ibid.
- ²⁴⁸ Ibid.
- ²⁴⁹ Ibid.
- ²⁵⁰ Ibid.
- ²⁵¹ Ibid., 12-13.
- ²⁵² Ibid.
- ²⁵³ Ibid.
- ²⁵⁴ Ibid., 1-15.

CHAPTER 3

RESEARCH METHODOLOGY

Chapter Introduction

The purpose of this research is to identify potential friction points for USNORTHCOM so that it can effectively align military resources in the Arctic. This research will attempt to do so by understanding the perspective of several of the key Arctic stakeholders in the region and analyze their proposed intentions through the identification of themes. The methodology used for this case study will attempt to answer the following primary research question, which is: “Should USNORTHCOM generate military options in the Arctic based on various nations and non-governmental entities attempting to seek influence in the region, in a frigid climate, in a timely fashion, and with the requirement to work in conjunction with U.S. interagency organizations?” Also, the outlining research methodology will attempt to answer the second research question to address if USNORTHCOM should generate a response, where those efforts should that take place, and with what type of military activity. Furthermore, the methodology will support the answering of the third research question to identify capabilities gaps USNORTHCOM may have in generating a response within the Arctic. Lastly, the preceding methodology will explain how the data will be analyzed and how the identification of themes will support the conclusions and recommendations within chapter five.

Methodology

This study will utilize a qualitative research design in the form of a collective case study to answer the research questions.¹ As this design pertains to multiple cases, each country identified in chapter two will correspond to a respective “case” within this model.^{2,3} Also, the collection of data and the corresponding analysis will utilize a linear process, which will prevent a continual retrieval of information and streamline the research process.^{4,5} By using a linear process, the research design will focus on the relevancy of the data at the time it was collected, and will not deviate in an attempt to explain the other factors that attributed to each of the countries being in their present state.⁶ As the research design progresses from data collection to analysis of the countries, it will do so through inductive analysis to illuminate themes.⁷ Once the analysis identifies those themes, they will then be categorized across DIME as a lens to identify opportunities or challenges to U.S. national security and interests.⁸ Once this is complete, the analysis will then incorporate ten military operations to support the answering of the research questions.⁹ The following illustration represents the entirety of this process (Figure 7. The Research Process).

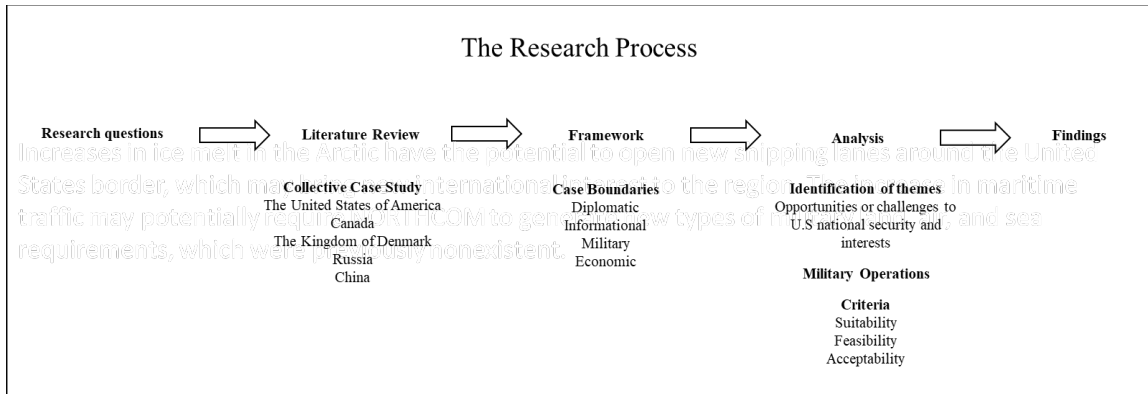


Figure 7. The Research Process

Source: Created by author using information from Uwe Flick, *An Introduction to Qualitative Research*, 6th ed. (Thousand Oaks, CA: Sage Publications, 2018), 85, 125-129; Robert K. Yin, *Case Study Research and Applications: Design and Methods*, 6th ed. (Thousand Oaks, CA: Sage Publications, 2018), 101-108; Michael Q. Patton, *Qualitative Research and Evaluation Methods*, 4th ed. (Thousand Oaks, CA: Sage Publications, 2015), 541; Joint Chiefs of Staff, Joint Doctrine Note 1-18, *Strategy* (Washington, DC: Government Printing Office, 25 April 2018), IV-2 – IV-3.

Collection and Analysis

The data will be collected amongst multiple types of documents to find relevant information to answer the research questions.¹⁰ There will be no collection of information regarding living persons, and the data collection will adhere to the limitations and delimitations outlined within chapter one.¹¹ Additionally, the collection of data will adhere to the previously identified research process, to prevent a continual retrieval of information even if the research questions remain unanswered.¹²

The analysis of the data within the cases will examine their content to find future friction points within each of the cases to support the answering of the research questions.^{13, 14} These friction points will be the basis for the identification of themes, and interpreting them will take place within chapter four.¹⁵ This analysis will lead to

inductively identifying potential themes and patterns across each of the cases.¹⁶ Once this process is complete, a deductive analysis of those themes will occur in identifying potential opportunities or challenges to U.S. national security and interests.¹⁷ The analysis will then identify if these opportunities or challenges are the basis for answering the research questions.

There are two inherent challenges to the collection of data within this research design. This first is the completeness of the cases, as the intentions of each country could be different, and may weigh its type of influence in the region differently.¹⁸ For example, China may have no interest in ever utilizing military force, and its indicators for militarization may be non-existent. China may be solely focused on the economic benefits of the region, which would cause issues of accurately weighing those indicators to identify if USNORTHCOM should generate a military response. The second challenge to the collection of data within this research design is that the situation within the Arctic remains dynamic.¹⁹ As countries could revise aspects of their policies or employ their strategies based on the current global environment, they may quickly use different instruments of national power. While both of these challenges do exist, there are also strengths in employing this type of research methodology.

The first strength of the data collection and analysis process is that future Arctic researchers can quickly replicate and modify these approaches.²⁰ Secondly, as this process is linear, it streamlines the ability to collect, analyze, and report findings and recommendations of the cases.²¹

Framework

The framework for analyzing the data will begin with an already pre-existing model that exists within the U.S. Department of Defense's Joint Publication 1 titled, "*Doctrine for the Armed Forces of the United States*" on measuring instruments of national power.²² As this study focuses on USNORTHCOM's ability to generate military operations within the Arctic, this model is appropriate to measure the influences of the associated countries within this study. The model includes the four DIME instruments of national power, which will be the criteria for identifying potential opportunities and challenges among the countries.²³

The diplomatic instrument of national power will follow the below guideline:

Diplomacy is the principal instrument for engaging with other states and foreign groups to advance US values, interests, and objectives, and to solicit foreign support for US military operations. Diplomacy is a principal means of organizing coalitions and alliances, which may include states and non-state entities, as partners, allies, surrogates, and/or proxies.²⁴

The informational aspect of national power will also be a part of this process.²⁵ While the extent of its use among the cases regarding the Arctic could be minimal, this framework will consider its use under the corresponding U.S. DoD's guideline:

DOD makes every effort to synchronize, align, and coordinate communication activities to facilitate an understanding of how the planning and execution of DOD strategies, plans, operations, and activities will be received or understood by key audiences. This effort is undertaken to improve the efficacy of these actions and create, strengthen, or preserve conditions favorable to advancing defense and military objectives.²⁶

The use of the military instrument of national power is the most applicable criteria to address the research questions and will be an instrumental component to the analysis within chapter four.²⁷ The framework will adopt the following U.S. DoD's guideline:

The US employs the military instrument of national power at home and abroad in support of its national security goals. The ultimate purpose of the US Armed Forces is to fight and win the Nation's wars. Fundamentally, the military instrument is coercive in nature, to include the integral aspect of military capability that opposes external coercion.²⁸

While USNORTHCOM is not the principal owner of economic issues, it is required to be “integrated with the other instruments of national power to advance and defend US values, interests and objectives.”²⁹ As this requirement pertains to the research questions, and USNORTHCOM's coordination amongst the interagency, the economic instrument of national power will adhere to the following U.S. DoD's guideline:

A strong US economy with free access to global markets and resources is a fundamental engine of the general welfare, the enabler of a strong national defense. In the international area, the Department of the Treasury works with other USG agencies, the governments of other nations, and the international financial institutions to encourage economic growth, raise standards of living, and predict and prevent, to the extent possible, economic and financial crises.³⁰

The below table will incorporate the themes within the cases, and will include DIME, to illuminate opportunities or challenges to U.S. national security and interests (Table 1. Categorization of Themes). Within this table, the themes within the cases of the Kingdom of Denmark and Canada will highlight if there are opportunities to enhance both U.S. national security and interests. Also, within the table, the themes will highlight if there are Russian or Chinese challenges to U.S. national security and interests.

*The U.S. national security aspect of the below table will adhere to the DoD's guidelines, which states:

Encompassing both national defense and foreign relations of the United States with the purpose of gaining: a. A military or defense advantage over any foreign nation or group of nations; b. A favorable foreign relations position; or c. A defense posture capable of successfully resisting hostile or destructive action from within or without, overt or covert.³¹

**The U.S. national interests’ aspect of the below table will adhere to the four aspects within the U.S.’s NSS, which are the defense of the homeland, prosperity, preservation of peace, and influence.³²

Table 1. Opportunities and Challenges Table

Opportunities and Challenges Table				
	**Threatens National Interests (Russia/China)	*Threatens National Security (Russia/China)	**Opportunities to Enhance National Interests (Canada/Denmark)	*Opportunities to Enhance National Security (Canada/Denmark)
Diplomatic				
Information				
Military				
Economic				

Source: Created by author using information from, U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13.

Subjective interpretation of the themes within the cases will dictate if the activities within the themes do or do not meet a threshold for being an opportunity or a challenge (Table 1. Opportunities and Challenges Table). If it is unclear if the activities within the themes meet a threshold, the findings will account for this and recommend that these activities are areas that future researchers should consider. If the activities do meet the threshold, the analysis will identify prospective categories of “joint operations” across the cases that USNORTHCOM could explore in the future.³³ As there is currently not an active military conflict in the Arctic, the types of joint operations that will be a part of this research will come from the DoD’s *Joint Publication 3-0 Operations* on, “Military engagement, security cooperation, and deterrence.”³⁴ The document states that:

Military engagement, security cooperation, and deterrence missions, tasks, and actions encompass a wide range of actions where the military instrument of national power is tasked to support other instruments of national power as represented by interagency partners, as well as cooperate with international organizations (e.g., UN, NATO) and other countries to protect and enhance national security interests, deter conflict and set conditions for future contingency operations. This may also involve domestic operations that influence supporting civil authorities. These activities generally occur continuously in all GCC'S AORs regardless of other ongoing joint operations. Military engagement, security cooperation, and deterrence activities usually involve a coordination of military forces and capabilities separate integrated with the efforts of interorganizational participants.³⁵

Also, as the three categories of military engagement, security cooperation, and deterrence have numerous military operations within them, ten will be selected for consideration.³⁶ Those include military engagement activities, emergency preparedness, freedom of navigation and overflight, sanctions enforcement, enforcement of exclusion zones, foreign assistance, protection of shipping, show of force operations, interagency coordination, and information sharing.³⁷ The ability for USNORTHCOM to generate one of these ten military operations will also take into consideration the preceding evaluation criteria.

Evaluation Criteria

The ability to answer the research questions with specific military operations will include several criteria. The first will be the use of “suitability” in the application of military options.³⁸ This criterion will examine if the military response supports the U.S.’s overarching Arctic policies and objectives.³⁹ Also, it will also consider the impacts and implications of generating that response pertinent to the cases and their respective policies, which could differ drastically.⁴⁰ The second criterion to assess the generation of military operations will be “feasibility.”⁴¹ This criterion will examine if the resources

needed to generate a response would not be at a detriment to other national interests, and that the resources can be sustainable in their application.⁴² The last criterion will be the use of “acceptability.”⁴³ This criterion will examine if the military operation is proportional to the associated risks and ensures that the response does not create additional political implications.⁴⁴ The following table illustrates the evaluation criteria for assessing military operations (Table 2. Evaluation Criteria).

Table 2. Evaluation Criteria

Evaluation Criteria		
Criteria	Criteria Definition	Measure
Suitability	Are the military operations inline with Arctic objectives and support national interests?	Yes or No
Feasibility	Are the resources capable of performing the function without risking other priorities?	Yes or No
Acceptability	Do the military operations outweigh the associated political risks?	Yes or No

Source: Created by author using information from Joint Chiefs of Staff, Joint Doctrine Note 1-18, *Strategy* (Washington, DC: Government Printing Office, 25 April 2018), IV-2 – IV-3.

Chapter Conclusion

The proposed methodology, data collection and analysis, framework, and evaluation criteria within the research design are appropriate for analyzing the countries within this research. Also, the use of DIME within the research framework will illuminate potential opportunities and challenges to U.S. national security and interests to best support recommendations in generating joint operations. The identification of these specific joint operations is critical so that the recommendations can focus USNORTHCOM to align its resources effectively. The concluding illustration is a visual

depiction of the entirety of the research design, which will drive the analysis in the next chapter (Figure 8. U.S. DoD’s Generation of Military Options).

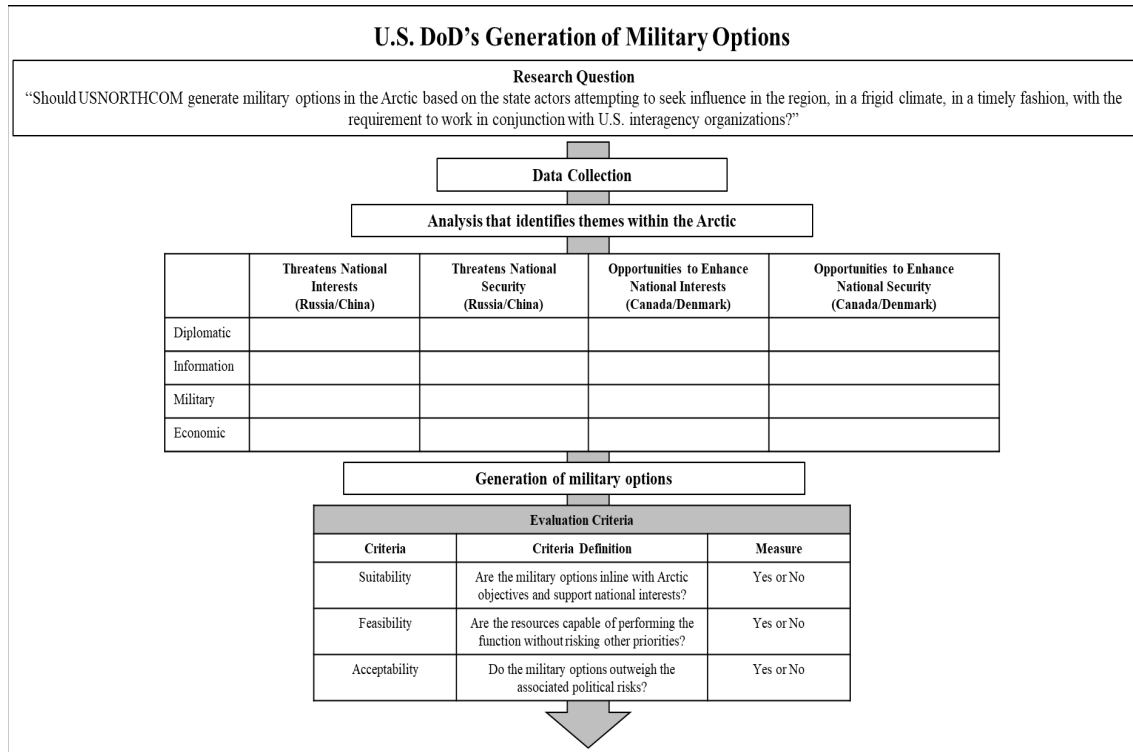


Figure 8. U.S. DoD’s Generation of Military Options

Source: Created by author using information from U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13; Joint Chiefs of Staff, Joint Doctrine Note 1-18, *Strategy* (Washington, DC: Government Printing Office, 25 April 2018), IV-2 – IV-3.

¹ John W. Creswell. *Qualitative Inquiry & Research Design: Choosing among Five Approaches* (Thousand Oaks, CA: Sage Publications, 2013), 99.

² *Ibid.*, 100-101.

³ Robert K. Yin. *Case Study Research and Applications: Design and Methods*, 6th ed. (Thousand Oaks, CA: Sage Publications, 2018), 72-73.

⁴ Creswell, *Qualitative Inquiry & Research Design*, 98.

⁵ Uwe Flick, *An Introduction to Qualitative Research*, 6th ed. (Thousand Oaks, CA: Sage Publications, 2018), 125.

⁶ Ibid.

⁷ Michael Q. Patton. *Qualitative Research and Evaluation Methods*, 4th ed. (Thousand Oaks, CA: Sage Publications, 2015), 542.

⁸ Flick, *An Introduction to Qualitative Research*, 85.

⁹ Patton, *Qualitative Research and Evaluation Methods*, 522.

¹⁰ Creswell, *Qualitative Inquiry & Research Design*, 97-99.

¹¹ Flick, *An Introduction to Qualitative Research*, 205-207.

¹² Ibid., 124-125.

¹³ Creswell, *Qualitative Inquiry & Research Design*, 100.

¹⁴ Patton, *Qualitative Research and Evaluation Methods*, 541.

¹⁵ Ibid., 541.

¹⁶ Anselm Strauss and Juliet Corbin, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 2nd ed. (Thousand Oaks, CA: Sage Publications, 1998), cited in Michael Q. Patton, *Qualitative Research and Evaluation Methods*, 4th ed. (Thousand Oaks, CA: Sage Publications, 2015), 541-542.

¹⁷ Ibid.

¹⁸ Creswell, *Qualitative Inquiry & Research Design*, 101.

¹⁹ Ibid.

²⁰ Patton, *Qualitative Research and Evaluation Methods*, 189-190.

²¹ Flick, *An Introduction to Qualitative Research*, 125.

²² JCS, JP 1-0, I-12 - I-14.

²³ Ibid.

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- ²⁴ Ibid., I-12.
- ²⁵ Ibid.
- ²⁶ Ibid.
- ²⁷ Ibid., I-13.
- ²⁸ Ibid.
- ²⁹ Ibid., I-14.
- ³⁰ Ibid., I-13 - I-14.
- ³¹ Ibid., GL-9 - GL-10.
- ³² U.S. President, *National Security Strategy of the United States of America*, 4.
- ³³ JCS, JP 1-0, I-16 - I-17.
- ³⁴ Joint Chiefs of Staff (JCS), Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: Government Printing Office, January 2017, incorporating Change 1, October 2018), VI-I.
- ³⁵ Ibid.
- ³⁶ Ibid., VI-5 -VI-13.
- ³⁷ Ibid.
- ³⁸ Joint Chiefs of Staff (JCS), Joint Doctrine Note (JDN) 1-18, *Strategy* (Washington, DC: Government Printing Office, April 2018), IV-2.
- ³⁹ Ibid., IV-2.
- ⁴⁰ Ibid.
- ⁴¹ Ibid., IV-3.
- ⁴² Ibid.
- ⁴³ Ibid.
- ⁴⁴ Ibid.

CHAPTER 4

DATA FINDINGS AND ANALYSIS

Chapter Introduction

The purpose of this research is to identify potential friction points for USNORTHCOM so that it can effectively align military resources, and as required, generate military options in the Arctic. The analysis will use the initial data set in an attempt to answer the following primary research question which is: “Should USNORTHCOM generate military options in the Arctic based on the state actors attempting to seek influence in the region, in a frigid climate, in a timely fashion, and with the requirement to work in conjunction with U.S. interagency organizations?” This chapter will analyze the data within each one of the countries, corresponding to the research methodology, to identify themes within them. The identification of those themes will then be used as a basis to determine if the activities within them pose challenges to U.S. national security and national interests or highlight future opportunities. After the case analysis, the themes will then be applied to the evaluation criteria for generating military options to support the answering of the primary and secondary research questions. If capabilities gaps are identified within the themes, addressing them will take place within chapter five.

Data Findings and Analysis

This section will focus on the identification of themes within each case. That analysis will follow the structure of chapter two and adhere to the research methodology.

Also, each case will conclude with a table that identifies potential opportunities or challenges to U.S. national security and interests as identified within the themes.

The United States of America

The analysis of the United States of America illuminates three specific themes regarding the Arctic. While the case predominantly outlines that USNORTHCOM is the U.S. DoD's proponent for executing military operations within the Arctic, the case also illuminates numerous challenges and potential opportunities within the region across DIME. Additionally, the case emphasizes directly responding to Chinese and Russian challenges within the Arctic, which could be opportunities to work with partners to enhance U.S. national security and interests.

The first theme within the DoD's Arctic approach illuminates an opportunity to enhance Arctic diplomacy. This aspect begins with improving diplomatic partnerships with regional Arctic partners that the U.S. already has. These relationships predominantly include countries that are also bordering the Arctic, specifically identifying the Kingdom of Denmark and Canada, and with whom the U.S. already has formal defense relationships with through NATO.

A part of enhancing Arctic diplomacy is also the ability to establish international regulation of the Arctic as the U.S. identifies that failure to do so is a risk toward its national interests. While the U.S. emphasizes international regulation of the Arctic, there is an absence of clarity on how this will take place. Absent of this, the ability to revise current Arctic governing regulations to create a unifying document is an area that could be a significant opportunity to work with regional Arctic partners.

The second theme in the U.S. case is security, and specifically addressing Russian and Chinese influence in the region. As part of this theme, the case illustrates that both countries are, and have the potential to be, expanding their Arctic influence in quite direct forms. For Russia, its investments in both the commercial sector and the modernization of its Arctic military capabilities have given it the ability to establish control of the NSR. For China, its Arctic influence focuses on economic investments, which allows it the ability to have direct access to the region. By developing their Arctic influence in diverse ways, countering these efforts would likely need more than just military involvement. These efforts would also likely need to consider that Russian and Chinese Arctic activities are not always within the boundaries of USNORTHCOM.

Another aspect of the U.S.'s security theme is that Arctic convergence, by a diverse array of stakeholders, is at times generated outside of USNORTHCOM's area of responsibility or straddles its boundaries. The challenge to managing this is that there is the potential to have activities moving in and out of USNORTHCOM's borders, and the ability to generate a military response would either be reactive or would no longer be required. As part of this, the case highlights that the Bering Strait and GIUK-N gap are essential maritime passages in the future and establishing mitigation mechanisms to address challenges in these areas will be essential. They would also be significant opportunities to enhance both U.S. national security and interests with regional stakeholders.

The third theme within the U.S. case is crisis response and the ability to invest in capabilities that can continually monitor Arctic activities. Of significance, the ability to appropriately respond to humanitarian events within the Arctic, and conducting SAR are

two of the activities evident in the U.S. DoD’s Arctic strategy and the U.S. Coast Guard’s intent for the future. As part of this, the modernization of the U.S. Coast Guards’ Arctic fleet and overcoming communications issues are a part of increasing capability within the region.

The below table illustrates how the analysis of the themes within this case across DIME equates to opportunities to enhance U.S. national security and interests (Table 3. The United States of America Evaluation Table). The table highlights that Arctic diplomatic, military, and economic opportunities currently exist. Also, while informational opportunities may exist, they were determined to enhance the other opportunities and not necessarily a standalone opportunity relevant to the research questions at this time.

Table 3. The United States of America Evaluation Table

	Opportunities to Enhance National Interests	Opportunities to Enhance National Security
Diplomatic	X	X
Informational	-	-
Military	X	X
Economic	X	X

Source: Created by author using information from U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13.

Canada

The analysis of Canada’s Arctic approach illuminates several themes across DIME that could be opportunities to enhance U.S. national security and interests. Before

addressing these, however, it is worth noting that a vast majority of Canada's Arctic policy pertains to overcoming internal challenges. Specifically, reconciling historical issues with its indigenous populations. While internal reconciliation could be a separate theme, in the analysis below, this aspect will be a part of other themes as this better supports the answering of the research questions.

The first theme within Canada's Arctic Policy pertains to security and the ability to defend sovereignty. Critical to this effort is Canada's armed forces, Arctic military command structure, and its relationship with NORAD. These capabilities provide and perform inherent functions, such as SAR, which could support security challenges that Canada addresses throughout its Arctic policy. Also, a part of security challenges, Canada recognizes that these capabilities afford them the ability to respond to humanitarian assistance type events within the more remote areas along the NWP, which includes support to Canada's indigenous populations. Furthermore, these capabilities allow Canada to mitigate security challenges that may arise from the convergence of tourism and increases in maritime traffic from its hunting and fishing industries.

The second theme within this case illuminates Canada's intent to re-establish itself as an Arctic leader and emphasizes that the region adheres to standard governing rules and regulations. This emphasis is primarily due to the recognition that the NWP continues to garner a diverse array of international interests and that there must be a recommitment to regulation, as this passage resides within Canadian territorial boundaries. The UNCLOS and the Arctic Council support Canada's efforts, and will likely be the mediums they intend to use to articulate their positions.

The third theme within this case pertains to the development of Arctic infrastructure to improve upon current transportation and communications capabilities. This theme is significant as it allows Canada to achieve its vision of uniting its indigenous population, expanding economic development, and strengthening its security posture. While the entirety of Canada’s military capabilities was not part of the data set, improving Arctic infrastructure is critical to minimizing future security challenges, as the use of future technologies is dependent on the civilian infrastructure within those areas.

The below table illustrates how the analysis of the themes within this case across DIME equates to opportunities to enhance U.S. national security and interests (Table 4. Canada Evaluation Table).

Table 4. Canada Evaluation Table

	Opportunities to Enhance National Interests	Opportunities to Enhance National Security
Diplomatic	X	X
Informational	-	-
Military	X	X
Economic	X	X

Source: Created by author using information from U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13.

The Kingdom of Denmark

The data analysis of the Kingdom of Denmark highlights several themes as potential future opportunities to expand military partnerships, diplomatic efforts, and

economic cooperation. As they pertain to USNORTHCOM, generating some form of military options within these three areas would support enhancing U.S. national security and interests within the Arctic. While committing U.S. resources against these themes does not have to fall to USNORTHCOM entirely, these areas could undoubtedly have indirect impacts.

The first theme within the Kingdom of Denmark's case highlights an emphasis on Arctic security. Of significance, the Kingdom of Denmark's emphasis on security within the Arctic places its military at the forefront, which is an opportunity to strengthen military partnerships. Also, it recognizes that NATO, and countries within the alliance, are also a part of its overarching Arctic security strategy. While most of the use of NATO forces within this case mainly addresses security regarding defense and territorial sovereignty, there are undoubtedly other avenues to utilize these forces within the Arctic.

Also significant within this theme of security is the Kingdom of Denmark's use of the private sector, which allows it to diversify certain military-like operations. These operations include SAR and afford the Kingdom of Denmark to incorporate commercial aerial capabilities to perform this activity. This utilization provides for the potential preservation of military resources, an increase in internal cooperation, and expansion of interoperability amongst defense and commercial entities. While this case illustrates that these capabilities predominantly support efforts around Greenland, these internal relationships highlight a close defense and civil approach to managing security challenges in the region.

The second theme illuminated within this case is an opportunity to expand diplomatic efforts. This theme remains significant from the standpoint that the Kingdom

of Denmark views diplomacy as a part of addressing security challenges within the region. Through an increase in diplomatic efforts, regulation of the Arctic can prevent a forward military approach, develop guiding rules that entities seeking Arctic influence can adhere to, and address potential maritime safety issues. The ability to use diplomacy to address these challenges will also remain critical, specifically in the NWP and NEP, as the Kingdom of Denmark views these passages as areas of potential friction.

Also, as part of its diplomatic efforts, the Kingdom of Denmark recognizes that critical partnerships with specific nations will remain vital in the Arctic. While it identifies the U.S. as one, it also supports governing documents such as the UNCLOS and the Arctic Council as mechanisms to influence and enforce Arctic-related issues. With an emphasis on partnerships within the case, this remains an opportunity to enhance U.S. national security and interests with the Kingdom of Denmark.

The third theme within this case highlights an opportunity to expand economic cooperation, which also considers increasing access to the region due to climate change and environmental considerations. With its understanding that there is the potential for a vast array of oil and gas natural resources that exist within the Arctic, the Kingdom of Denmark places emphasis on managing several economic aspects. These aspects pertain to the regulation of commercial activities tied to hunting, fishing, and tourism as the growth of these economic sectors has the potential to further add to security challenges. Again, the case identifies Greenland as having a critical role in Arctic economic developments and emphasizes the use of technology to maintain continual awareness of regional activities.

The below table illustrates how the analysis of the themes within this case across DIME equates to opportunities to enhance U.S. national security and interests (Table 5. The Kingdom of Denmark Evaluation Table).

Table 5. The Kingdom of Denmark Evaluation Table

	Opportunities to Enhance National Interests	Opportunities to Enhance National Security
Diplomatic	X	X
Informational	-	-
Military	X	X
Economic	X	X

Source: Created by author using information from U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13.

Russia

Russia’s approach to the Arctic focuses on the utilization of numerous DIME aspects with emphasis on building capability within the NSR. Of the cases, Russia’s Arctic strategy has significant military contributions and investments to support its future development and utilization of the region. The case analysis highlights this emphasis through the preceding three themes.

The first theme within the Russian case is an emphasis on controlling the NSR with a mix of both commercial and military investments. This commitment provides Russia with several favorable aspects that directly support its Arctic strategy. The first aspect is that establishing control over the NSR provides Russia with the ability to

economically develop the corridor and control commercial traffic along its northern periphery. This aspect also affords Russia the ability to execute its Arctic strategy by obtaining primacy over the NSR, as it is a significant Arctic maritime passage. The second aspect of controlling the NSR is that it allows Russia the ability to project military forces from the Atlantic, Pacific, and Arctic Oceans with virtually little impediment. Also, Russia's military buildup within the NSR region creates a complicated defense of its northern border, which has the potential to blend civilian, commercial, military, and international cargos transiting the region. While these are not necessarily direct challenges to U.S. national security and interests, they have the potential to have indirect implications.

The second theme within the Russian case is a challenge to Arctic diplomacy. Russia's view that the Arctic is either controlled by itself or by NATO inevitability hinders the ability to establish a unified international regulation of the Arctic. With no area specified, this view from an Arctic bordering nation will inevitably divide the region and challenge any attempts to establish new Arctic governance. As this pertains to the U.S., this challenge certainly impacts national interests and could also have later national security challenges if not addressed.

The third theme within the case is Russia's ability to develop the region for economic benefits. This theme includes Russia's view that its Arctic investments can be recovered based on its ability to monetize the region. While its ability to monetize is part of its NSR strategy, it also relies on foreign investments with nations who also seek Arctic development. For example, Chinese investments within Russia not only support China's strategic goals for the Arctic, but they also give Russia the ability to support its

Arctic endeavors financially, and a way to internationally justify its Arctic strategy. As the U.S. identifies Russia and China as potential threats to future national security, this theme illustrates a potentially significant economic relationship amongst these two nations.

The below table illustrates how the analysis of the themes within this case across DIME equates to challenges to U.S. national security and interests (Table 6. Russia Evaluation Table).

Table 6. Russia Evaluation Table

	Threatens National Interests	Threatens National Security
Diplomatic	X	-
Informational	-	-
Military	X	X
Economic	X	X

Source: Created by author using information from U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13.

China

China’s approach to Arctic influence and development is heavily dependent on the utilization of non-military efforts. While China’s military may provide support to its Arctic efforts, within its framework, and in this case, this aspect is absent from inclusion. China’s vision, however, does illustrate three themes within the Arctic that emphasize expanding economic and diplomatic influence.

The first theme highlights China's economic forward approach to Arctic development. This approach begins with China's ability to have relationships with Arctic bordering countries as part of its future Arctic developments. These relations inherently give China direct access to the region and could further support China's justification for being a part of Arctic developments. Examples of these relationships include the countries of Norway, Russia, and Iceland.

Also, as part of future economic expansion, China's focus will likely include the three significant maritime passages, which are the Central Passage, NWP, and NEP. This consideration is due to its view that these passages will be critical components to future international trade transiting the Arctic. Also, China's focus on these passages coincides with its strategy for developing the Arctic commercial industries, tourism, and international trade, which relates to its economic intentions.

Another aspect of Chinese economic expansion within the region is a concerted focus on increasing Arctic scientific research. This focus inherently relates to climate change and environmental considerations, which could directly impact Arctic economic developments within the commercial industries. While these academic pursuits enable China's Arctic strategy, they also provide China with an opportunity to increase partnerships with entities, which also have similar Arctic interests. By garnering these relationships through academic outreach, this effort gives China another justification for its presence in the region. While scientific research is an aspect that was not considered detrimental to U.S. interests or security at this time, it does highlight another form of Arctic outreach that provides China justification for its involvement.

The second theme that illustrates China's Arctic intentions pertains to a focus on diplomacy. That emphasis focuses on cooperation and adhering to pre-existing international Arctic governing documents. Absent of a unifying document that regulates the Arctic, China's pressing adherence to the UNCLOS gives it a diplomatic justification to expand its presence. As its position as a member of the United Nations security council supports this effort, China can also use language in the UNCLOS to justify its activities.

Worth noting, China's belief that it has a role in shaping the Arctic has the potential to conflict with the U.S. DoD's Arctic policy. This potential friction is simply due to the U.S. DoD's position on Arctic claims by countries that do not border the region. While there is undoubtedly a delineation between a claim of "use" vice "territorial claims," the discrepancy within policies deserves acknowledgment.

The third theme within the case illustrates China's intentions to conduct a form of outreach to anyone that has an interest in Arctic affairs. While this is present in the other themes regarding economic and diplomatic intentions, China also seeks infrastructure and economic developments that could be beneficial for the Arctic indigenous populations. With no specific mention of where those efforts will focus, its inclusion of Arctic humanitarian support could be another opportunity to gain more direct access to the region.

The below table illustrates how the analysis of the themes within this case across DIME equates to challenges to U.S. national security and interests (Table 7. China Evaluation Table).

Table 7. China Evaluation Table

	Threatens National Interests	Threatens National Security
Diplomatic	X	X
Informational	X	-
Military	-	-
Economic	X	X

Source: Created by author using information from U.S. President, *National Security Strategy of the United States of America December 2017* (Washington, DC: The White House, 2017), 4; Joint Chiefs of Staff, Joint Publication 1-0, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, July 2017), GL-9 - GL-10, I-12 - I-13.

Similarities and Differences

The U.S., the Kingdom of Denmark, and Canada have several similarities among them in enhancing U.S. national security and interests. The first is through diplomacy, which is a reoccurring theme among the countries. This theme tends to highlight that overcoming current diplomatic challenges will then better support two other similarities. Those similarities are security challenges and managing future economic growth within the region.

Russia and China have similar challenges to U.S. national security and interests relating to diplomacy and economics. While for Russia, these challenges are more central to the NSR, China's challenges are much broader across the Arctic. These challenges are likely due to China not having direct access to the Arctic and attempting to gain closeness. Also, China remains an outlier within the use of its military and its use of informational outreach. This use of outreach through scientific research and supporting

Arctic indigenous populations is likely another attempt to gain closeness to the region and justify its role in future Arctic developments.

Generating Options

This section includes the themes within the countries and applies the evaluation criteria for generating options across the ten joint operations that were within chapter three. The inclusion of that evaluation criteria (Table 2. Evaluation Criteria) identifies six of the ten categories of military options that are worth consideration, and that support the research questions. Of the ten categories, all met the threshold for suitability as their execution would support U.S. national security and interests.

The introduction of feasibility began to reduce some of the military operations, which included sanctions enforcement, enforcement of exclusion zones, and show of force operations. The reduction of sanctions enforcement and the enforcement of exclusion zones was primarily due to the ability to maintain these specific activities for a duration and considered the U.S. Coast Guard's modernization efforts regarding capabilities. These military activities were also removed as they inherently contradict U.S. national interests by constricting the region. For similar reasons, show of force was removed because without a current conflict, the ability to conduct this activity has the potential to have minimal effect, and may require resources that could be better placed elsewhere.

After applying acceptability across the military operations, freedom of navigation and overflight was also removed from consideration. This removal was due to the potential creation of additional political risk, specifically in areas where multiple

countries may be converging. While freedom of navigation and overflight may attempt to respond to one country exclusively, there could also be unforeseen diplomatic impacts.

Six activities remain to support the recommendations within the preceding chapter after using the evaluation criteria for generating military operations. While the military options that were removed may have future use within the Arctic, the ones that remain provide more current focus to address the research questions.

The following table represents the application of the evaluation criteria across the ten joint military operations (Table 8. Generating Options).

Table 8. Generating Options

Military Operations	Suitability	Feasibility	Acceptability
Military Engagement Activities	Y	Y	Y
Emergency Preparedness	Y	Y	Y
Freedom of Navigation and Overflight	Y	Y	N
Sanctions Enforcement	Y	N	N
Enforcement of Exclusion Zones	Y	N	N
Foreign Assistance	Y	Y	Y
Protection of Shipping	Y	Y	Y
Show of Force Operations	Y	N	N
Interagency Coordination	Y	Y	Y
Information Sharing	Y	Y	Y

Source: Created by author using information from Joint Chiefs of Staff, Joint Publication 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 17 January 2017, incorporating Change 1, 22 October 2018), VI-5 -VI-13.

Chapter Conclusion

The intent of the analysis within this chapter was to identify themes within the countries to answer the research questions. The analysis answers the primary research question that USNORTHCOM should generate military options within the Arctic and identifies six types of military activities it should consider. Additionally, the analysis

highlights several locations where those activities should take place, which answers the second research question. The analysis partially supports the answering of the third research question regarding capabilities; however, it is limited in scope and can only support this from a strategic context. The following chapter will discuss the recommendations to the secondary research questions and highlight that USNORTHCOM's ability to address Arctic opportunities and challenges does not necessarily need to be unilateral. In certain activities, USNORTHCOM may only have a supporting role and may not necessarily be the lead or have sole ownership.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Chapter Introduction

The purpose of this research is to identify potential friction points for USNORTHCOM so that it can effectively align military resources in the Arctic. The analysis in the previous chapter answers the primary research question, which is: “Should USNORTHCOM generate military options in the Arctic based on various nations and non-governmental entities attempting to seek influence in the region, in a frigid climate, in a timely fashion, and with the requirement to work in conjunction with U.S. interagency organizations?” It is because of this, that the recommendations within this chapter will support the answering of the secondary research question, which is, “What type of military activities should USNORTHCOM conduct, and where, if it needs to generate military options in the Arctic?” Additionally, the recommendations will focus on the six types of military operations USNORTHCOM should consider from the analysis within chapter four. The tertiary research question could only be answered in partial, which is, “What additional capabilities will USNORTHCOM require to ensure it is capable of generating an appropriate military response in the Arctic if required?” Due to this, that question will be a part of the section within this chapter that addresses future research. This chapter will conclude with future Arctic research implications and provide a summation of this thesis.

Recommendations

The analysis in chapter four answers the “should” aspect of the primary research and identifies six types of military operations that answer the second research question. Those military operations include military engagement activities, emergency preparedness, foreign assistance, protection of shipping, interagency coordination, and information sharing. Additionally, the analysis identifies several critical geographic areas of focus that answer the “where” aspect of the secondary research question. Those areas include the three significant maritime passages within the Arctic, and the preceding recommendations will highlight activities, which are worth consideration. Of significance, the NWP has the most opportunity to enhance national security and interests with both Canada and the Kingdom of Denmark. These opportunities begin with military engagement activities.

The first military operation USNORTHCOM should consider within the Arctic is military engagement activities. These activities begin with military exercises with the countries of Canada and the Kingdom of Denmark, specifically Greenland, which incorporates the ability to leverage the resources of the private sector into them. As the Kingdom of Denmark already includes the private sector into its SAR missions, a similar approach could be feasible to preserve military resources and expand coordination efforts. For a focus, military exercises could also place significant emphasis on search and rescue, responding to humanitarian assistance, and leveraging the capabilities of the local municipalities to augment certain stability functions. The integration of more agencies outside of the DoD into Arctic related military exercises would strengthen

interoperability, contribute to shared understanding, and strengthen governmental responses to Arctic challenges.

Also, future Arctic military exercises could incorporate the forces of more NATO members in areas that are less likely to be future points of contention, particularly with Russia. The GIUK-N gap, or areas within the NWP, would be ideal locations to expand interoperability and build partner capacity with countries that may also have to respond to Arctic challenges in the future. While the incorporation of all NATO members into maritime exercises in and around the GIUK-N gap may not be entirely acceptable, it could begin with building interoperability amongst the navies of specific NATO members. They could also scale towards being more trilateral or bilateral, with Canada and the Kingdom of Denmark.

The second military operation USNORTHCOM should consider within the Arctic is the ability to conduct emergency preparedness. This type of operation pertains specifically to the ability to respond to commercial activities that could cause environmental damage within the region. These potential hazards could damage regional infrastructure and could directly impact the indigenous populations residing within the Arctic. As the growth of tourism, commercial and economic developments continue to converge within the Arctic, so does the potential for unforeseen disaster response. As such events could place strain on local resources, USNORTHCOM would undoubtedly be a part of the solution. As there is the potential that these events could have long-term implications to U.S. national security, the first area worth considering focus would be the Bearing Strait, as that is the point where all of the three major maritime corridors

converge. A secondary area to focus, to indirectly enhance U.S. national security, would be areas within the NWP to support Canadian efforts.

The third military operation USNORTHCOM should consider within the Arctic is the ability to provide foreign assistance. Specifically, in the form of humanitarian support to Canada and the Kingdom of Denmark regarding their indigenous populations. While USNORTHCOM would not be the U.S. lead in this effort, this is a type of military operation it could consider supporting as it relates to enhancing defense partnerships and could reduce potential security challenges. Also, as a supporting nation, Canada or the Kingdom of Denmark would likely focus support on the remote areas within the Arctic. This focus also includes areas around the NWP.

The fourth military operation USNORTHCOM should consider within the region is the ability to generate capability to ensure the protection of shipping. While this is a military operation which may not require immediate focus, it is worth considering for two reasons. The first is the potential convergence of maritime traffic within the Bering Strait. The second is similar maritime convergence within the NWP, which could cause disruption to commercial trade or hinder military force projection. As generating military capability to support the protection of shipping coincides with the most recent U.S. NSS, it remains another opportunity to work with regional partners and protect U.S. national security and interests within the Arctic.

The fifth type of military operation USNORTHCOM should consider within the Arctic is an emphasis on interagency coordination. This effort will only continue to be more critical in the future and would best suit the countering of Chinese economic influence within the region. While USNORTHCOM is a part of the U.S.'s Arctic

approach, at times, it should and will be in more of a supporting role to develop the Arctic. However, USNORTHCOM should have the ability to leverage and ensure U.S. diplomatic and economic efforts support one another and are not mutually exclusive. This network could either be through liaisons or the establishment of an Arctic interagency coordination group, which would support the strengthening of Arctic international regulation and new policies coinciding with military objectives. Also, the establishment of such an Arctic interagency group would enhance the ability to respond to the varying array of influence that nations, including China and Russia, will continue to pursue.

The sixth type of military operation USNORTHCOM should consider regarding the Arctic is expanding information, which will be critical in the future for synchronizing military resources and responding to an array of potential Arctic crises. Worth considering is the ability for USNORTHCOM to leverage the expertise of individuals who have an in-depth understanding of the stakeholders who are converging on the Arctic domain. This ability includes closer relationships with Arctic academic researchers, in addition to DoD analysts, who are the sole experts on the stakeholders seeking Arctic influence. The inability to incorporate these individuals into a form of a unified understanding of the Arctic could create redundant efforts and potentially strain a finite amount of resources.

Another component of expanding information sharing includes increasing shared understanding amongst the military and local governments within the Arctic. This exchange could begin with the routine sharing of metrological data, military operations in the region, and, if required, intelligence sharing amongst local municipalities within Alaska. Additionally, the sharing of information could also consider expanding U.S.

defense information with the local government support agencies within the respective countries of Canada and the Kingdom of Denmark.

Recommendations for Future Research

Future Arctic research should consider three aspects. The first consideration is the ability to identify future capabilities gaps within the specific military operations that were a part of this research. As answers to the tertiary research question were only partial, this would significantly support the execution of these activities by USNORTHCOM within the Arctic. The second consideration is that future research must account for the emerging stakeholders who are seeking to play a role in the Arctic. Critical to this is the ability to incorporate the revisions of policy changes of the nations identified within this research. Specifically, conducting research that includes any changes to Russia's Arctic policy is worth considering, as it is one of the more active Arctic stakeholders. The third consideration is that future research could attempt to refine the methodology within this research, which could include the incorporation of more quantitative components. This revision would be beneficial to develop a threshold of influence across DIME regarding a specific stakeholder. It would also enhance the ability to commit future military resources within the Arctic precisely.

Army Research Implications

There are three critical components to the implications of Army research addressing the Arctic. The first is a strategic understanding of the Arctic stakeholders, which then coincides with the ability to apply that understanding to their specific intentions and actions. The second implication is the acknowledgment that the region is

not static, and future Arctic research must be continual. The Arctic environment will continue to provide differing arrays of access, and other global stakeholders will continue to draw interest in the region. The last research implication is that the incorporation of U.S. interagency organizations, and their views, need to be considered whenever possible. As the array of global Arctic influence in the future varies across DIME, the U.S. DoD will remain only an aspect of the U.S.'s Arctic approach. At times, the military may potentially not be the most significant component of that approach.

Chapter Conclusion

This research concludes with the recommendations that USNORTHCOM should generate a response within the Arctic and identifies several military options it could consider. The recommendations also identify where those activities should focus, which future researchers should continue to refine. As the Arctic continues to evolve, there will be a need to revisit these recommendations, specifically for USNORTHCOM, to appropriately manage a finite amount of resources in a region that has an overwhelming amount of complexity. Also, future Arctic researchers should consider refining the methodology within this study to support their efforts. These approaches will more than likely be useful as Arctic influence, development, and intentions of stakeholders will inevitably intensify. An ability to do this will better shape the Arctic, enhance U.S. national security and interests, and effectively employ the military within the region.

BIBLIOGRAPHY

- Air Greenland. "Search and Rescue." Accessed 21 April 2020. <https://www.airgreenland.com/charter/products/search-and-rescue>.
- Arctic Monitoring and Assessment Programme (AMAP). *Arctic Climate Change Update 2019: An Update to Key Findings of Snow, Water, Ice, and Permafrost in the Arctic (SWIPA) 2017*. Tromsø, Norway: AMAP Secretariat, 2019. Accessed 26 March 2020. <https://www.amap.no/documents/download/3295/inline>.
- Blank, Stephen J. *Russia in the Arctic*. Carlisle: Strategic Studies Institute, 2011. Cited in Mathieu Boulègue. *Russia's Military Posture in the Arctic: Managing Hard Power in a 'Low Tension' Environment*. London, UK: Chatham House, 2019. Accessed 16 April 2020. <https://www.chathamhouse.org/publication/russia-s-military-posture-arctic-managing-hard-power-low-tension-environment#>.
- Boland, Kells. "The Russian Northern Sea Route and a Canadian Arctic Seaway." In *Canada's Arctic Agenda: Into the Vortex*, edited by John Higginbotham and Jennifer Spence, 21-41. Waterloo, Ontario: Centre for International Governance Innovation, January 2019. Accessed 29 March 2020. www.jstor.org/stable/resrep21105.8.
- Boulègue, Mathieu. *Russia's Military Posture in the Arctic: Managing Hard Power in a Low Tension Environment*. London, UK: Chatham House, 2019. Accessed 16 April 2020. <https://www.chathamhouse.org/publication/russia-s-military-posture-arctic-managing-hard-power-low-tension-environment#>.
- Charron, Andrea. "Canada, the United States, and Arctic Security." In *Canada's Arctic Agenda: Into the Vortex*, edited by John Higginbotham and Jennifer Spence, 92-101. Waterloo, Ontario: Centre for International Governance Innovation, January 2019. 92-101. Accessed 6 April 2020.
- Conley, Heather A. "The Organizing Principles of China's Emerging Arctic Policy." In *China's Arctic Dream*, 3-5. Washington, DC: Center for Strategic and International Studies, February 2018. Accessed 29 March 2020. www.jstor.org/stable/resrep22427.4.
- Creswell, John W. *Qualitative Inquiry & Research Design Choosing among Five Approaches*. Thousand Oaks, CA: Sage Publications. 2013.
- Flick, Uwe. *An Introduction to Qualitative Research*. 6th ed. Thousand Oaks, CA: Sage Publications, 2018.
- Government of Canada. *Canada's Arctic and Northern Policy Framework*. Ottawa: Government of Canada, 2019. Accessed 5 April 2020. <https://www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587>.

- . *Canada's Arctic Foreign Policy*. Ottawa: Government of Canada, 2017. Accessed 16 October 2019. https://www.international.gc.ca/world-monde/international_relations-relations_internationales/arctic-arctique/arctic_policy-canada-politique_arctique.aspx?lang=eng.
- Havnes, Heljar, and Johan Martin Seland. “The Increasing Security Focus in China's Arctic Policy.” The Arctic Institute, Center for Circumpolar Security Studies, July 16, 2019. Accessed August 24, 2019. <https://www.thearcticinstitute.org/increasing-security-focus-china-arctic-policy/>.
- Jing, Dai, and Raymond Huff. “Great Power Collaboration? A Possible Model for Arctic Governance.” *Military Review* 100, no. 1 (January-February 2020): 80–87.
- Joint Chiefs of Staff. Joint Doctrine Note 1-18, *Strategy*. Washington, DC: Government Printing Office, April 2018.
- . Joint Publication 1-0, *Doctrine for the Armed Forces of the United States*. Washington, DC: Government Printing Office, July 2017.
- . Joint Publication 3-0, *Joint Operations*. Washington, DC: Government Printing Office, January 2017 (Incorporating Change 1, October 2018).
- Keil, Kathrin. “Economic Potential.” In *Arctic Security Matters*, edited by Juha Jokela, 21-32. Paris, France: European Union Institute for Security Studies, June 2015. Accessed 26 March 2020. www.jstor.org/stable/resrep07064.6.
- The Kingdom of Denmark. *Denmark, Greenland, and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020*. Copenhagen: Ministry of Foreign Affairs; Nuuk: Department of Foreign Affairs; Torshavn: Ministry of Foreign Affairs. 2011.
- Larsen, Joan Nymand, Oleg A. Anisimov, Andrew Constable, Anne B. Hollowed, Nancy Maynard, Pål Prestrud, Terry D. Prowse, and John M.R. Stone. “Polar Regions.” In *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contributions of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by V. R. Barros, C.B. Field, D. J. Dokken, M. D. Mastrandrea, K. J. Mach, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, and L. L. White, 1567-1612. Cambridge, NY: Cambridge University Press, 2014.
- National Science Foundation. Arctic Research and Policy Act of 1984, as amended. Public Law 98-373 - July 31, 1984; amended as Public Law 101-609 - November 16, 1990. Accessed 29 March 2020. https://www.nsf.gov/geo/opp/arctic/iarpc/arc_res_pol_act.jsp.

- Nicol, Heather N., and Justin Barnes. "Resilience, Environment and Economic Development in the Canadian Arctic." In *Canada's Arctic Agenda: Into the Vortex*, edited by John Higginbotham and Jennifer Spence, 110-119. Waterloo, Ontario: Centre for International Governance Innovation, January 2019. Accessed 29 March 2020. www.jstor.org/stable/resrep21105.16.
- Office of the Secretary of Defense. *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*. Washington, DC: Department of Defense, May 2019.
- . *Summary of the National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge*. Washington, DC: Department of Defense, 2018.
- Office of the Under Secretary of Defense for Policy. *Report to Congress: Department of Defense Arctic Strategy*. Washington, DC: Department of Defense, June 2019.
- Olesen, Mikkel Runge, and Tenna Nørup Sørensen. "The Intensifying Great Power Politics in the Arctic." In *Intensifying Great Power Politics in the Arctic – Points for Consideration by the Kingdom of Denmark: From an Analysis of Assessments and Strategies in Finland, Norway and Iceland*, 8-20. Copenhagen, Denmark: Danish Institute for International Studies, January 2019. Accessed 29 March 2020. www.jstor.org/stable/resrep21443.5.
- Patton, Michael Q. *Qualitative Research and Evaluation Methods*. 4th ed. Thousand Oaks, CA: Sage Publications, 2015.
- The People's Republic of China. *China's Arctic Policy*. State Council Information Office, January 2018. Accessed 25 March 2020. <http://www.scio.gov.cn/zfbps/32832/Document/1618243/1618243.htm>.
- Pincus, Rebecca. "Three-Way Power Dynamics in the Arctic." *Strategic Studies Quarterly* 14, no. 1 (2020): 40-63. Accessed 29 March 2020. www.jstor.org/stable/26891883.
- Pletcher, Kenneth. "Northeast Passage." *Britannica*, 2013. Accessed 16 May 2020. <https://www.britannica.com/topic/Northeast-Passage>.
- President of Russia. "Russian Federation Marine Doctrine: Vladimir Putin held a meeting to discuss the new draft of Russia's Marine Doctrine." 26 July 2015. Accessed 17 April 2020. <http://en.kremlin.ru/events/president/news/50060>.

- President of Russian Federation. *Federation Marine Doctrine*. Moscow: Russian Federation, July 2015. <http://en.kremlin.ru/events/president/news/50060>. Accessed 29 March 2020. Cited in Katarzyna Zysk. "Russia's Strategic Underbelly: Military Strategy, Capabilities, and Operations in the Arctic." In *The Russian Military in Contemporary Perspective*, edited by Stephen J. Blank, 687-728. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, September 2019. Accessed 29 March 2020. www.jstor.org/stable/resrep20098.18.
- . *Marine Doctrine of the Russian Federation 2015*. Translated by Anna Davis. Moscow: The Russian Federation, July 2015.
- Richter-Menge, J., M. L. Druckenmiller, and M. Jeffries, eds. "2019: Arctic Report Card." NOAA's Arctic Program. Accessed 28 March 2020. <https://www.arctic.noaa.gov/Report-Card>.
- Rotortrade. "Air Greenland Partners with Rotortrade to Purchase 2xEC225 Helicopters for SAR Operations." February 6, 2020. Accessed 21 April 2020. https://www.rotortrade.com/en/rotortrade_airgreenland.
- Stang, Gerald. "Climate Change." In *Arctic Security Matters*, edited by Juha Jokela, 9-20. Paris, France: European Union Institute for Security Studies, June 2015. Accessed 15 March 2020. www.jstor.org/stable/resrep07064.5.
- Stauffer, Peter, ed. "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle." Fact Sheet, U.S. Department of Interior, U.S. Geological Survey, 2008. Accessed 6 April 2020. <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.
- Strauss, Anselm, and Juliet Corbin. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 2nd ed. Thousand Oaks, CA: Sage Publications, 1998.
- . *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 2nd ed. Thousand Oaks, CA: Sage Publications, 1998. Cited in Michael Q Patton, *Qualitative Research and Evaluation Methods*. 4th ed. Thousand Oaks, CA: Sage Publications, 2015.
- Stronski, Paul, and Nicole Ng. "The Arctic." In *Cooperation and Competition: Russia and China in Central Asia, the Russian Far East, and the Arctic*. 25-31. Washington, DC: Carnegie Endowment for International Peace, February 2018. Accessed April 6, 2020. www.jstor.org/stable/resrep16975.9.
- United States Coast Guard. *United States Coast Guard Arctic Strategic Outlook*. Washington, DC: U.S. Department of Homeland Security, April 2019.
- United States Coast Guard Acquisition Directorate. "Polar Security Cutter." Factsheet, U.S. Department of Homeland Security, March 2020. Accessed 13 April 2020.

- <https://www.dcms.uscg.mil/Portals/10/CG-9/Acquisition%20PDFs/Factsheets/POLAR.pdf?ver=2019-05-22-082731-003>.
- U.S. Global Change Research Program (USGCRP). *Fourth National Climate Assessment*. Vol. 2, *Impacts, Risks, and Adaptation in the United States*. Edited by D. R. Reidmiller, C. W. Avery, D. R. Easterling, K. E. Kunkel, K.L.M. Lewis, T. K. Maycock, and B. C. Stewart. Washington, DC: USGCRP, 2018. doi:10.7930/NCA4.2018.
- U.S. Northern Command (USNORTHCOM). “About USNORTHCOM.” Accessed March 31, 2020. <https://www.northcom.mil/About-USNORTHCOM>.
- U.S. President. *National Security Strategy of the United States of America December 2017*. Washington, DC: The White House, December 2017.
- Yin, Robert K. *Case Study Research and Applications: Design and Methods*. 6th ed. Thousand Oaks, CA: Sage Publications. 2018.
- Zysk, Katarzyna. “Russia’s Strategic Underbelly: Military Strategy, Capabilities, and Operations in the Arctic.” In *The Russian Military in Contemporary Perspective*, edited by Stephen J. Blank, 687-728. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, September 2019. Accessed 29 March 2020. www.jstor.org/stable/resrep20098.18.
- . “Russia and the High North: Security and Defense Perspective.” In *Security Prospects in the High North: Geostrategic Thaw or Freeze?* Edited by Sven G. Holtsmark and Brooke A. Smith-Windsor. Rome, Italy: NATO Defense College, 2009. Cited in Katarzyna Zysk, “Russia’s Strategic Underbelly: Military Strategy, Capabilities, and Operations in the Arctic.” In *The Russian Military in Contemporary Perspective*, edited by Stephen J. Blank, 687-728. Carlisle Barracks, PA: Strategic Studies Institute, US Army War College, September 2019. Accessed 29 March 2020. www.jstor.org/stable/resrep20098.18.