

2018 Award Winner
USAWC Student Awards Program

The Arctic: A New Security Dilemma?

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United States Army War College
Class of 2018

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REPORT DOCUMENTATION PAGE			Form Approved--OMB No. 0704-0188		
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.					
1. REPORT DATE (DD-MM-YYYY) 01-04-2018		2. REPORT TYPE PROGRAM RESEARCH PROJECT		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE The Arctic: A New Security Dilemma?			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S) Colonel Gina E. Adam United States Army			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Professor Michael K. Moyer			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College, 122 Forbes Avenue, Carlisle, PA 17013			10. SPONSOR/MONITOR'S ACRONYM(S)		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Approved for Public Release. Distribution is Unlimited.					
13. SUPPLEMENTARY NOTES Word Count: 6574					
14. ABSTRACT This paper first addresses the current environmental state of the Arctic, particularly the issue of sea ice extent and global warming. It then reviews the opportunities that the Arctic opening provides and the related economic implications. The paper explores U.S. strategy and expectations regarding the Arctic region, and evaluates DOD and other agency strategies for the region. The paper assesses the key actors in the emerging economic opportunities; with emphasis placed on near-peer (i.e., Russia and China) activities in the Arctic. Their stated strategies are of particular interest and where possible, the status of their equipment and infrastructure will be assessed. The paper then reports the state of U.S. preparedness for Arctic activities, addressing four key capabilities and associated infrastructure. Finally, the paper explores the international response to an opening Arctic and assesses whether this situation will become one of competition or cooperation.					
15. SUBJECT TERMS Arctic militarization, Russia, China, icebreakers					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES 37	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER (w/ area code)

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(6574 words)

Abstract

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The Arctic: A New Security Dilemma?

The Arctic region includes the Arctic Ocean and adjacent seas and the land north of the Arctic Circle and includes eight nations, with five (The Arctic Five) having littoral / coastlines in Arctic Ocean.¹ These eight nations are members of the Arctic Council, an intergovernmental forum which promotes environmental protection and sustainable development and enables governance of the region, though it has no security mandate.² With the state of Alaska having land above the Arctic Circle and coastlines on the Chukchi and Beaufort Seas, the U.S. is an Arctic nation and has an inherent interest in the region. The U.S. has had written policy statements for the region for decades, with a specific strategy for the Arctic published in 2013. Since the time of this strategy's publication, interest in the Arctic in economic and national security circles has increased. This increased interest is due to climate change which results in reduced Arctic Ocean sea ice. The pace of warming suggests there will be new economic opportunities and potential international friction in the Arctic. With competing interests and increased activity in the region come concerns about military activities and national security. These concerns are amplified since both the U.S. and Russia are Arctic nations and other nations such as China have expressed interests in the region. In addition, increased maritime traffic in the Arctic in pursuit of economic opportunities increases the potential for disaster response or search and rescue requirements. The U.S. has limited capabilities in the Arctic and is considering how best to prepare for activities in this region. As the U.S. and other nations expand their capabilities and prepare for Arctic opportunities, the opening of this region has the potential to present a security dilemma for the United States.

Arctic Sea Ice and Climate Change

Climate change and its origins have been debated extensively, but data shows that global temperatures are steadily rising.³ What cannot be argued is the significant impacts climate change is having in the Arctic region. While scientists are studying the effects of climate change on terrestrial factors such as biodiversity, permafrost melting, and releases of additional greenhouse gasses, the bigger concern from a national security perspective is the effect on sea ice.

The first report from the Intergovernmental Panel on Climate Change (IPCC), created by the World Meteorological Organization and the United Nations (UN) Environmental Program in 1988,⁴ established the baseline of scientific knowledge about sea ice and global warming. The panel noted weak understanding of the effect of sea ice reductions in global climate models, the negative impact on certain high-north species as well as the benefits possible from increased access to shipping, and recommended improved global measurement systems for sea ice thickness and extent.⁵ Currently, IPCC reports that sea ice extent has declined every decade since 1979 and predicts reductions in sea ice year-round. The most extreme model shows a possibility of a nearly ice free Arctic by the middle of the 21st Century.⁶ The findings from the IPCC are substantiated by data maintained by the National Snow and Ice Data Center; the most recent data are displayed in Figure 1.

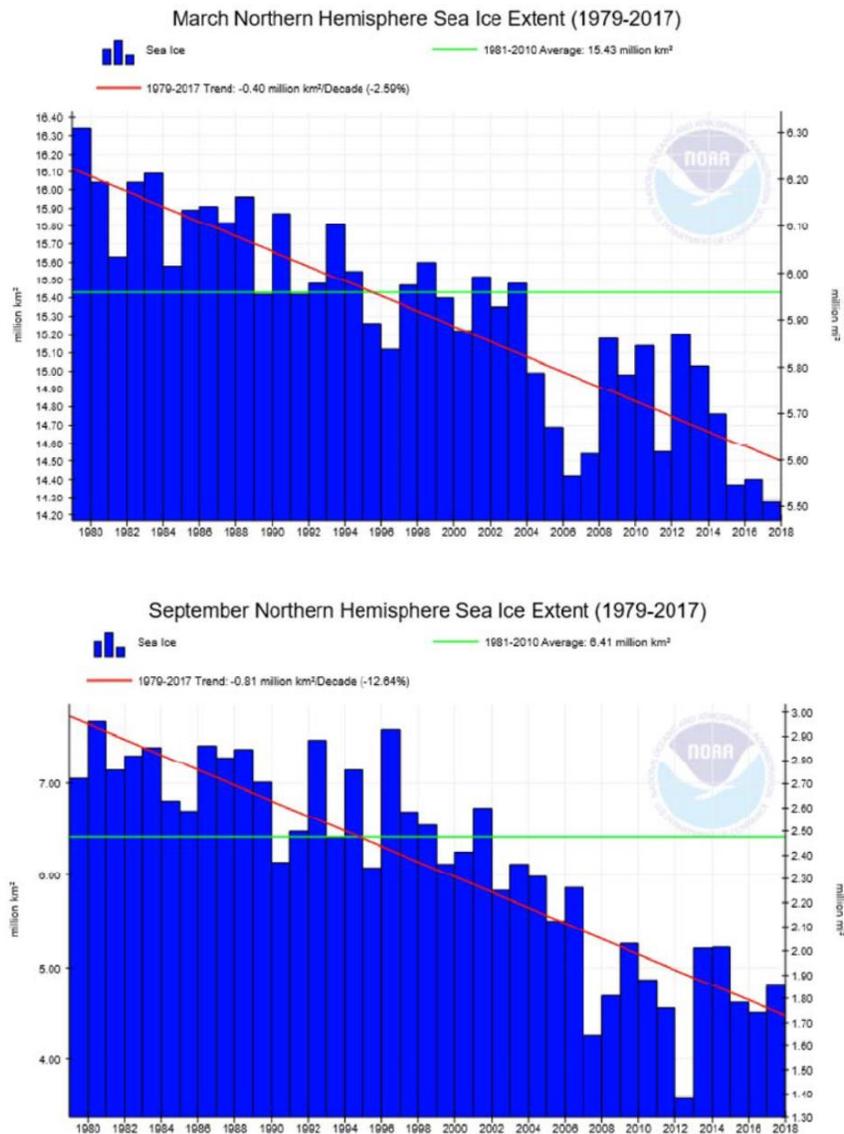


Figure 1. Winter (March) and Summer (September) Sea Ice Extent from 1979 to 2017⁷

Another important measure for sea ice is the annual maximum: the point where growth of sea ice extent stops before reverting to loss. Using daily satellite imagery over the last 39 years, scientists identify this point as occurring in March of each year. The most recent analysis shows 2018 had the second lowest annual maximum (2017 was the lowest) and the last four years have produced the four lowest annual maximums.⁸

The annual minimum in September of each year has also recently hit record lows showing a thirteen percent decline per decade.⁹ Another concern about sea ice is its age which correlates with thickness. Recent reports show declines in older, thicker ice, leaving the bulk of the ice cover composed of thin, new ice.¹⁰ Sea ice volume, a measure combining extent and thickness, has also decreased since 1979,¹¹ with 2017 assessed as the year with the lowest “annually averaged sea ice volume.”¹²

The data are clear, sea ice is decreasing. Although expected, the rate of change exceeds predictions,¹³ “defies any historical comparison,”¹⁴ and “is accelerating beyond all scientific expectations.”¹⁵ Earlier models predicted ice-free summers near the end of the 21st century. Some now suggest ice-free summers could be a regular occurrence by 2030.¹⁶ Recent modeling predicts summer sea ice will be non-existent in the second half of the century. Although there will be thin ice accumulation in winter, the second half of the current century (2051-2090) will see significant reductions in sea ice levels in March (winter sea ice) as compared to ice levels from 1971 to 2020.¹⁷

The reduction in sea ice has several implications. First, decreased sea ice extent allows more open water for navigation during the summer months and potentially for longer durations. Second, if the Arctic Ocean becomes free of ice in summer, the ice that builds in winter is single-season ice and thus weaker than multi-year ice.¹⁸ Weaker ice may lead to increased navigability in months other than the summer season. Increased navigability of the Arctic Ocean due to these two factors opens up a number of economic opportunities.

Economic Opportunities

The reduction in sea ice yields several potential economic opportunities, particularly development of energy resources such as oil and natural gas, use of fisheries, and transportation routes such as the Northern Sea Route (NSR) and Northwest Passage.¹⁹ Predictions about the quantity and value of these resources are mixed, dependent upon the costs required to extract them, and potentially limited by the actual sea ice present.

Energy resources in the Arctic are of significant interest. While much of the focus has been on oil, when using an oil-energy equivalent measure, gas predictions are three times higher than oil.²⁰ Predictions suggest the Arctic has 13% and 30% of the world's undiscovered oil and gas, respectively.²¹ While these energy deposits may not change the overriding patterns of global oil production, they are of significant interest to the Arctic nations.²² It is important to note that predictions assume that these offshore resources are recoverable.²³ The ability and drive to exploit these reserves will be hampered by several factors. The costs of exploration and development of the fields²⁴ must be taken into consideration as well as the costs for infrastructure that will withstand the Arctic environment, personnel willing to work there, and logistics and supply costs and challenges.²⁵ The risk of a spill and the absence of cleanup methods and technologies present additional barriers to development.²⁶ Regardless of whether these deposits can be accessed now or in the near future, the importance of hydrocarbons to the world's economies makes this resource a significant interest to Arctic nations and others.

Fisheries in the Arctic are noted for their productive stocks including halibut, cod, shrimp, scallops, and crab.²⁷ Warming ocean temperatures and changes in sea ice could increase the productivity of some fisheries and make others more accessible.²⁸ Additional commercial harvesting in the Arctic could occur in areas that had been previously limited to subsistence use or of fish stocks that are new to the Arctic due to changing conditions.²⁹ A potential barrier to development of fisheries, especially those in the international waters of the central Arctic Ocean (CAO), is the unknown quantity of fish stocks and how fishery populations will persist through Arctic changes.³⁰ Given these unknowns and the scientific interest in the area, nine nations and the European Union signed an agreement to expand research and limit fishing in the CAO.³¹ Thus, interest in fishery development exists in the Arctic, but currently has an unknown economic value.

Transit through the Arctic Ocean for commerce has been increasing, with several noteworthy developments. The NSR along Russia's coast had been limited to Soviet/Russian ships until 2009; that year two German merchant ships transited from Korea to the Atlantic Ocean, escorted by Russian icebreakers.³² The first fully non-Russian vessel transited in 2010, one of four passages that year. In the following three years, transits increased to 34, 46, and 71 ships, with oil products as the bulk of the cargo.³³ Similarly, transits of the NWP increased from 5 to 16 from 2005 to 2016,³⁴ with a record-setting 30 passages in 2012.³⁵

Arctic routes could save significant time and cost for shippers. As examples, use of the NSR for shipments between Rotterdam and Yokohama cuts 40% of the distance compared to the route through the Suez Canal and shipping via the NWP is 25%

shorter between Rotterdam and Seattle than using the Panama Canal.³⁶ Transporters could see cost savings due to reduced fuel consumption, greater throughput for their ships, and reduced canal fees, with the potential for billions of dollars of savings.³⁷ Additionally, tankers that exceed the Panama Canal's size limitations currently sail around the Cape of Good Hope or Cape Horn,³⁸ a long voyage that could be avoided by using the NWP's deepwater route.³⁹ Due to these factors, Arctic shipping is projected to increase significantly in the next 10 to 20 years.⁴⁰ Projections for shipping via the NSR include container shipping to and from Europe and Asia which could become 20-35% of global container shipping due to the time and cost savings of using this route over the Suez Canal.⁴¹

There are notable barriers to transportation via the Arctic Ocean. Costs can be a significant factor and dependent upon multiple elements such as the speed that ships can maintain through the passages⁴² and possible fees charged for icebreaker escorts.⁴³ Uncertainty about sea ice conditions and ocean navigation as well as the remoteness and limited search and rescue (SAR) available serve to constrain the use of either the NSR or NWP for transportation at this time.⁴⁴ Additionally, development of Arctic shipping may be limited based on rising markets in southern locations (Southeast Asia, South America, and India) which would not benefit from a northern route.⁴⁵ Despite these constraints, the fact that shipping has been steadily increasing and the prediction for vast cost savings across the industry suggest that transportation in the Arctic will grow considerably in the coming years.

An additional transportation-related interest in the Arctic is tourism using sea-based activities. Cruise ships to Greenland and Baffin Island are popular⁴⁶ with recent

data showing 4000 travelers and 140 cruise ships sailing off Greenland's coast in 2007.⁴⁷ While tourism also includes private yachts in the NWP,⁴⁸ much recent interest has been in the development of large cruise ship passages. Notably the Crystal Serenity, with capacity for over 1,000 passengers, had its inaugural sail from Alaska to New York in 2016 and repeated in 2017.⁴⁹ While it is likely that the tourism industry will determine a profit model that accommodates the costs associated with Arctic passages,⁵⁰ there are significant concerns that may limit the development of this market. As noted above, SAR capabilities in the high-north are limited, a rescue effort for a cruise ship carrying 1,000 or more people would be a serious undertaking.

It is not possible to predict how rapidly these economic options would be developed and there are barriers that may limit this development. Yet several nations have taken steps to either develop these opportunities or position themselves to do so. A concern within the international community and U.S. national security enterprise is that the existence of these interests may lead to disputes among Arctic nations due to competing sovereignty claims. While some predict resources, especially oil and gas, will likely fall within a single nation's territory,⁵¹ others see the potential for friction as nations make claims beyond their exclusive economic zones (EEZ).⁵² Additionally, the overlapping nature of these interests raises questions about control and regulation – for example Who regulates pollution in or near fisheries from transportation assets? and What controls can nations place on access to waterways? Heightening these concerns is the question of what actions some nations may take to protect their interests. Finally, the Arctic community is wrestling with how to respond if disaster occurs in pursuit of these economic interests (e.g., oil spill, transportation or tourist ship running into trouble

at sea). Addressing the actions and intent of every Arctic nation is beyond the scope of this paper. To assess the U.S. national security implications of the Arctic, it is essential to understand the U.S. position on the Arctic as well as two near-peer competitors with Arctic interests: Russia and China.

Review of U.S. Arctic Strategy

Some have professed that the Arctic region has little importance to U.S. national security.⁵³ Others believe the U.S. has acknowledged the increasing geostrategic importance of the region for decades.⁵⁴ The U.S. formed the Interagency Arctic Policy Group (IAPG), reporting to the National Security Council (NSC), in the 1970s to formalize U.S. interests in the Arctic and national security concerns. At the time, U.S. policy elements included protection of U.S. interests, supporting development while limiting negative environmental effects, advancing science in the region, and promoting international cooperation.⁵⁵

Climate change has been a concern in scientific circles for decades, with U.S. government (USG) policymakers taking notice and incorporating concerns into strategy documents. A recent review showed that environmental issues were introduced to the National Security Strategy (NSS) in 1991 with more emphasis in 2007. Policymakers added climate and security considerations to the National Defense Strategy in 2008 and the Quadrennial Defense Review (QDR) and NSS in 2010.⁵⁶ Arctic climate change issues took some time to grab senior leaders' attention, with no mention of sea ice changes in the 1994 policy statement.⁵⁷

Since then, the USG is paying increased attention, suggesting an elevation of the Arctic's importance to national security. Given the time it takes to write and approve

these documents, it is likely some of the strategy statements were written at a time with more moderate expectations for sea ice loss. The pattern of significantly reduced sea ice in the last four years pre-dates some of these documents but may have influenced more recent ones. The 2015 NSS makes a few mentions of the Arctic, noting climate change, cooperation in the Arctic, and intent to reduce energy-related conflict, though stating nothing more specific.⁵⁸ However, the NSS does not need to delineate Arctic concerns due to the other strategy documents that specifically address the Arctic. The U.S. published a National Strategy for the Arctic Region (NSAR) in 2013 which supersedes the 2009 Arctic Region Policy.⁵⁹ Under President Obama, the White House reported progress on the Arctic via a 2015 Implementation Report and Implementation Strategy in 2016.

With an administration change in 2017, it is possible the U.S. strategy for the Arctic will change. The current administration published a new NSS which mentions the Arctic with respect to international institutions that work to keep “domains open and free.”⁶⁰ At this moment, the new administration has not published new strategy documents regarding the Arctic. Thus, the published documents are the principal statements from which to judge U.S. intentions for the Arctic.

The NSAR proclaims intent to keep the Arctic “peaceful, stable, and free”⁶¹ with three Lines of Effort (LOE). The first LOE, “to advance U.S. security interests”, describes the importance of infrastructure, capabilities, and domain awareness, freedom of navigation (FON), and using energy resources to provide U.S. energy security.⁶² The second LOE covers responsible stewardship in the region and focuses on environmental concerns, economic development, cultural values, traditional

knowledge, and scientific research, including charting the region's waterways.⁶³ The third LOE focuses on international cooperation and highlights the importance of seeking common interests in the region, including other nations and non-state actors, leveraging the Arctic Council, and joining the UN Convention on the Law of the Sea (UNCLOS).⁶⁴ While these LOEs and the specific objectives identified for each are more detailed than the earliest policy statements for the Arctic, the strategy has remained consistent through the years.

The 2015 Implementation Review identifies a number of programs initiated, to include the Arctic Executive Steering Committee (AESC) which created six interagency working groups.⁶⁵ The review identified numerous actions ongoing to address the LOEs with a number of interagency, academic, international, and public-private partnerships as well as initiatives in conjunction with Alaska Native communities.⁶⁶ Concurrent with this review, the AESC published a new implementation plan, updating the specific actions for each LOE, reducing redundancy, improving interagency coordination, and emphasizing scientific approaches. The implementation approach assigned specific agency coordination leads -- NSC Staff, WH Office of Science and Technology Policy, and Department of State (DOS), respectively -- for each of the LOEs. These assignments named specific agency leads for each action step in each objective, and supporting agencies for each objective.⁶⁷ These documents make clear that the USG has been thinking about the Arctic in very specific terms and that Arctic affairs have broad interagency involvement.

Some of the key agencies involved in national security and the Arctic are DOD and DHS, for military and security considerations and DOS for diplomacy. The DOD has

a published Arctic strategy. While DHS and DOS do not appear to have agency-specific Arctic strategy documents, DHS provides links to written testimonies as representations of its strategy.⁶⁸ Additionally, the USCG, an element of DHS, has an Arctic strategy. The USCG strategy highlights the agency's history of operating in the Arctic and its responsibility for "safe, secure, and environmentally responsible" Arctic maritime activity. It identifies three key objectives: "improving awareness, modernizing governance, and broadening partnerships" in the Arctic.⁶⁹ The DOD's 2016 Arctic strategy updates its 2013 document and states the principal goals are to "support the development of the Arctic as a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is defended, and like-minded nations work together to address emerging challenges."⁷⁰ The DOD and USCG strategies are nested with the NSAR and well-aligned with each other.

Within the DOD, neither the Army nor the Air Force have published Arctic strategies, though the Air Force is reportedly working on one.⁷¹ However, the U.S. Navy, as the service primarily concerned with maritime operations, published a strategic document in 2014, based upon the earlier DOD strategy. The Navy's strategic objectives include ensuring sovereignty, providing homeland defense, providing "ready naval forces", preserving freedom of the seas, and promoting partnerships.⁷² Assessing these strategic documents yields two overriding observations. First, they are all aligned with the NSAR's LOEs and implementation plans and demonstrate the U.S. commitment to interagency approaches and international cooperation in the Arctic. Second, the speed of publication of some documents (i.e., 2013 and then 2016 DOD strategies) may challenge subordinate organizations' ability to align their strategic

documents (i.e., the 2014 Navy Roadmap falls between the DOD initial and revised statements), but is also evidence for the increased importance the USG is placing on Arctic issues.

While the U.S. strategy clearly identifies the importance of security and protecting U.S. interests, it is also set in terms of peaceful cooperation. Whether this approach is realistic remains to be seen. In order to evaluate the likelihood of friction or cooperation in the Arctic, it is important to assess the key players in the current geostrategic environment.

Key Actor Activities, Interests, and Strategies

As the Arctic opens for economic endeavors, there is potential for friction between actors and the possible interpretation of development actions as threatening. U.S. allies are key partners in the Arctic, and while the U.S. has some disagreements with allies in the region, the historic concern is with Russia. China poses an emergent concern as a near-Arctic nation with stated Arctic interests. While the U.S. approach is one of stability and peace, understanding the strategies, interests, and activities of Russia and China will be essential to evaluating the peaceful approach of the U.S.

Russia

The Russian Federation (Russia) published its strategy for the Arctic in 2008 and identified four national interests. These interests highlight the Arctic as a resource base for the nation, “peace and cooperation” in the region, preserving ecological systems, and the NSR as a principal transportation route for the nation.⁷³ These interests are very similar to U.S. interests, though differences emerge in the specific objectives and priorities. Of particular note, Russia emphasizes defending its border and maintaining

fighting forces in the region⁷⁴ and proclaims jurisdiction over the NSR, even while acknowledging it as open for international navigation.⁷⁵

Russia has a number of economic interests in the Arctic and the nation's strategy makes clear it intends to pursue them. The nation is particularly interested in oil and gas reserves. This interest arises from the nation's federal budget basis on oil and gas production⁷⁶ and that it derives 20% its gross domestic product from Arctic activities.⁷⁷ Russia also actively emphasizes the NSR and its potential for carrying energy-resource cargoes,⁷⁸ often to Asian markets.⁷⁹ While the Russian strategy articulates resource development within Russia's territory,⁸⁰ recent analysis suggests Russia's petition for Arctic territorial claims may lead the nation to attempt to limit access to the NSR or charge for passage, if the UN approves those claims.⁸¹

International observers are keenly interested in Russia's military activities in the Arctic. Military activity in the Arctic is not new, nor limited to Russia. In fact, all Arctic states except Iceland have military installations north of the Arctic Circle.⁸² Russia's principal military unit in the Arctic is the Northern Fleet which has an 80 year history of basing and operating in the Arctic. Russia's Arctic naval and support capabilities, particularly their bases and nuclear powered icebreakers, exceed those of the U.S. Navy.⁸³ Recently, Russia has been expanding its military capacity in the Arctic. In 2015 it began equipping six Arctic bases⁸⁴ and has added an Arctic command and four brigade combat teams, as well as significant infrastructure (e.g., 14 airfields, 16 deepwater ports, and 40 icebreakers).⁸⁵

Recent analysis views Russian activities as militarizing the Arctic, establishing the Arctic as a "military fortress" and setting the "preconditions for a regional arms

race.”⁸⁶ These authors warn that Russia may view the Arctic as a base for larger wars and that the Russian Navy may utilize the Arctic as a connection between the Atlantic and Pacific Oceans.⁸⁷ Others have suggested that Russia’s buildup does not match the history of the Cold War and this militarization is countered by cooperative policy statements.⁸⁸ Russia’s military presence in the Arctic cannot be denied, and its signals may be mixed, but it is clear that Russia’s mindset will influence future actions.

Russia’s national identity is tightly associated with the Arctic which may influence how it interprets other nation’s actions.⁸⁹ It is likely that in Arctic relations Russia views NATO as a threat and fears encirclement by NATO nations in the Arctic, especially if Finland and Sweden join NATO.⁹⁰ Additionally, Russia views China as both a partner and a threat, especially given China’s challenges to Russia’s Arctic Ocean claims.⁹¹ Despite its written strategy proclaiming cooperation in the Arctic, it is likely that Russia’s victim-based outlook will color its perceptions of others’ actions in the region, whether those are development of economic resources or military activities to strengthen national security.

China

China is not an Arctic nation, though it has expressed and pursued Arctic interests for decades. As an entrée to the region, China has engaged in Arctic research since the 1990s. Seeing “resource-extraction and maritime-shipping opportunities” but having no territorial stake in the Arctic, China leveraged soft power. China used research diplomacy paired with economic investment and international governance to become a stakeholder in Arctic affairs.⁹² In 2013, China successfully petitioned to be an observer of the Arctic Council which allows the nation to share expertise and participate

in working groups and other governance activities related to the Arctic.⁹³ China initially invested in resource development, primarily in the energy sector, with Canada, Russia, and Iceland.⁹⁴ China's more recent investment partnerships include Finland, Greenland, and the U.S.⁹⁵

Prior to 2018, international observers inferred China's strategy for the Arctic from the actions noted above and statements by its leaders. China sought to appear non-threatening and stressed cooperation in the region, all while asserting its right to resource and shipping opportunities in the region.⁹⁶ President Xi Jinping, in a speech in 2017, introduced China's vision of a "Polar Silk Road" linking the Arctic to its Belt and Road Initiative and thereby connecting China and Europe.⁹⁷ In January 2018, China published a white paper in which the nation described its claim as a "Near-Arctic State" which will feel direct impacts from climate changes in the Arctic.⁹⁸ China's stated policy goals include "to understand, protect, develop and participate in the governance of the Arctic, so as to safeguard the common interests of all countries and the international community in the Arctic, and promote sustainable development of the Arctic."⁹⁹ The document explicates China's specific objectives for development of shipping, resource extraction, and tourism, while continuing scientific exploration, and conducting all activities in a spirit of cooperation and promoting peace and stability.¹⁰⁰

This strategy statement is consistent with that inferred from China's actions focused on cooperation, and makes clear China's views on access to Arctic resources. In addition to the economic partnerships identified above, China has taken some additional steps to advance its position. For example, after publicizing the strategy document, Chinese leaders encouraged companies to "build infrastructure and conduct

trial voyages.”¹⁰¹ For a non-polar nation, China has significant infrastructure and investments which will assist it in meeting its goals such as its current icebreaker and plans to build icebreakers and ice-strengthened ships for bulk carrier and tanker transport.¹⁰²

Two key questions emerge about China’s strategy and activities in the Arctic. These questions consider whether China has military intentions in the region and how other nations will perceive China’s actions. Some analysts suggest that China is likely to use military force to secure its objectives.¹⁰³ Others view China’s intent as peaceful, pointing to its published strategy and statements supporting international norms.¹⁰⁴ However peaceful China’s statements (and possibly intentions) may be, it is likely that other nations may perceive China as a threat in the Arctic. As noted, Russia has a propensity to view China’s challenges as threats, despite partnering with the nation for resource development.¹⁰⁵ Similarly, the U.S. assessment of China’s strategy will likely be mixed. The state of Alaska signed an economic partnership agreement with China¹⁰⁶ but others judge that China’s interests challenge U.S. interests.¹⁰⁷ While China’s interests in the Arctic are not new, the nation’s publication of a strategy for the region amplifies that interest. Despite stated respect for peace and stability in the region, China’s strategy and activities may well cause friction and suspicion.

U.S. Preparedness for Arctic Activity

The potential economic and security interests in the Arctic, especially those driven by actions of two U.S. near-peers, should increase U.S. awareness of the importance of the region to national security. While no one suggests that hostilities in the Arctic are imminent, the U.S. should consider the potential for future military action,

possibly as a result of commitments to its NATO allies and threats or actions by an aggressor such as Russia.¹⁰⁸ The U.S. has forces and materiel in Europe which may provide an Arctic response (e.g., MARFOREUR in Norway)¹⁰⁹ as well as Army and Air Force units in Alaska. Yet U.S. capability for operations in the Arctic is fairly undeveloped and will require considerable investment.¹¹⁰ More likely than military action is the potential for disaster response, SAR, or other operations to provide support to civil authorities as a result of increased shipping, tourism, or resource extraction activities in the Arctic.

Regardless of whether operations will be military or civil, key capabilities are needed in the Arctic. The U.S. trails other Arctic nations in developing these capabilities.¹¹¹ Addressing all of the goals in the U.S. strategy documents produces a long list of needs. This paper addresses four that are crucial for enhanced domain awareness and the ability to respond to events. These capabilities include sea mobility, overland mobility, deep water ports, and communications.

One of the key capabilities for activities in the Arctic is sea mobility, most often using icebreaking technology. Unfortunately, the U.S. has limited capability in this area and significantly lags Russia's 22 icebreakers and China's two.¹¹² Additionally, the private sector developed ship designs that would allow a ship to sail bow first when in open water, or stern-first if needing to break through ice.¹¹³ Similarly, Finland and South Korea have invested in ice-strengthened ships for shipping.¹¹⁴ Although the USCG has approved requirements for six additional icebreakers, three each of heavy- and medium-duty, it currently has only one functioning icebreaker in each category¹¹⁵ and the Navy has no "ice-capable" ships.¹¹⁶ As a part of the NSAR, President Obama

emphasized icebreaker capability and requested accelerated acquisition and funds from Congress in his September 2015 visit to Alaska.¹¹⁷ An integrated USCG / Navy program is underway and the Department of Homeland Security approved the program's advancement, paving the way for release of the formal request for proposal in March 2018.¹¹⁸ The first of the new U.S. icebreakers is scheduled for delivery in 2023,¹¹⁹ under an accelerated acquisition strategy.¹²⁰ Additionally, the USCG partnered with Canada's National Research Council to develop new icebreaker designs.¹²¹ The U.S. has acknowledged its weakness in sea mobility in the Arctic and is emphasizing development in this area and funding programs to advance this capability. The same cannot be said for overland mobility.

While much of the focus in the Arctic region is on sea lanes, there may be future need for overland mobility to support operations along coastal areas.¹²² The Arctic is largely road-less, covered in snow for much of the year, with tundra and wetlands emerging when the snow melts. Mobility in this region is challenging beyond the road system and relies upon aircraft, tracked vehicles, snow machines, and dog sleds to access points not connected by roads. The U.S. Army has used the Small Unit Sustainment Vehicle (SUSV) for these needs.¹²³ A brief SUSV history shows a validated initial requirement for a light infantry support vehicle in 1977 and a program of record (POR) which lasted until 1993.¹²⁴ Currently, the Army is divesting itself of the vehicle, there is no longer programmed support for it, and replacement parts are limited.¹²⁵ Alaskan units are clamoring for a replacement, though progress has been slow.

U.S. Army Alaska (USARAK) has spearheaded efforts to create a new POR to obtain a replacement SUSV and has recently gained some support for the concept.

USARAK submitted an Operational Needs Statement (ONS) in September 2016, stating a requirement for a Joint All-Weather/All-Terrain Vehicle (JAASV),¹²⁶ which was validated, but not funded, by the Army in February 2017.¹²⁷ Although the ONS is specific to USARAK's requirements (i.e., performance in extreme cold weather),¹²⁸ it was intentionally named (joint, all-terrain, all-weather) so as to gain support beyond the Arctic.¹²⁹ This program seeks commercial-off-the-shelf (COTS) solutions which poses challenges with the potential time to delivery. The two potential offerors in the market are likely high-cost and only at the advanced prototype / notional design phase.¹³⁰ Fulfilling an overland capability will likely not happen soon due to the COTS timeline and the unfunded program. Unless the JAASV gains supporters outside the Arctic, this overland capability may be viewed as a niche requirement with limited applicability elsewhere.

Another capability required to support Arctic operations is communication networks, an essential element that has been noted.¹³¹ In fact, the Arctic Council formed a Task Force to investigate telecommunications infrastructure development.¹³² Ground-based communications systems face challenges from distance and topography of the Arctic environment.¹³³ While satellite communications provide a means to work around these access limitations, they too have challenges in the Arctic.¹³⁴ These challenges affect both civilian and military systems. For example, Coast Guard ships use Navy and commercial satellites, despite their potential unreliability.¹³⁵

The U.S. has begun programs to enhance communications in the Arctic, such as a Navy POR for a five satellite constellation to provide polar coverage. This system is currently available while in its initial operational testing and use phase and there are

other experimental and developmental programs underway.¹³⁶ To increase communications capability in the Arctic region for a variety of operations, there are a number of concerns. For example, military activities will need secure / non-detectable signals whereas civil operations would need to be shared more widely. Investment in both types of systems will be required to advance this capability.

Operations in the Arctic, whether land- or sea-based will have logistics considerations, one of which is access to deepwater ports. The U.S. has no deepwater Arctic ports.¹³⁷ This dearth contrasts starkly with Russia's network of deepwater ports.¹³⁸ The U.S. has started thinking about deepwater port capability. The Navy has called for investigating deepwater port development.¹³⁹ The Water Infrastructure Improvements for the Nation (WIIN) Act recommended the study of Arctic deepwater port feasibility.¹⁴⁰ The U.S. Army Corps of Engineers investigated Nome, Alaska for deepwater port feasibility,¹⁴¹ but it is unclear how quickly this development could proceed or whether it is funded. One challenge to port development in Nome may be a reduced sense of urgency due to Shell Oil Company's discontinuation of oil exploration in the Arctic; the use of a port by offshore oil development vessels was a key driver for development.¹⁴² Additionally, Nome harbor is already busy and overcrowded;¹⁴³ development there would need to accommodate the traffic due to deliveries for the local area. Thus, there is interest in deepwater port capability in the U.S. Arctic, but no clear path forward.

The U.S. must be prepared for activities in the Arctic, whether for military purposes, to provide support to civil authorities, or to leverage economic opportunities in shipping, tourism, or resource extraction activities. To do so, the U.S. must attend to these four capabilities. Planners must consider funding and development lead times for

each of these capabilities; spending too much time assessing needs before moving to fulfill those needs will set the U.S. up for failure.¹⁴⁴ Decision-makers must guide programs and provide funding. Advocates will be needed to defend these programs to those who would argue the Arctic's strategic importance. In addition to enhancing these capabilities, U.S. leaders must carefully consider the future in the Arctic, and prioritize it appropriately.

Competition or Cooperation

The Arctic has long seemed a low priority to the USG,¹⁴⁵ even as significant interests were identified. Recent statements suggest the USG is ready to increase its prioritization of the Arctic.¹⁴⁶ Others disagree, suggesting the administration shows a lack of interest by not filling key vacancies¹⁴⁷ and does not take the climate change threat to the Arctic seriously.¹⁴⁸ In contrast, Russia views the Arctic as a high priority for funds and military planning.¹⁴⁹ China's investments and published strategy¹⁵⁰ underscore the weight of its interest. The U.S. lags its nearest peers in prioritization of and investment in the Arctic.

One of the biggest questions about the future of the Arctic is whether this region will be one of competition or cooperation. There are signs that point in both directions. The current U.S. president has framed U.S. national security in terms of competition, with an emphasis on pursuing interests and economic competitiveness.¹⁵¹ Yet, the stated U.S. policies towards the Arctic have primarily emphasized cooperation, even negating the value of unilateralism in the region.¹⁵² Russia and China have both highlighted cooperation in their written statements, but pursued unilateral actions or bilateral agreements to secure their access to resources in the region.

Whether competition or cooperation reign will be partly due to how the key actors in the region respond to friction points such as maritime access / FON, resource extraction opportunities, and military buildup. While Russia and Canada have both taken unilateral positions regarding control of transit routes, there are promising bilateral approaches such as Russia and China's shipping agreement in the NSR and the U.S. and Canada's understanding with respect to the NWP.¹⁵³ Claims for potential resource extraction at times overlap,¹⁵⁴ especially far offshore.¹⁵⁵ However the Arctic Five signed the Ilulissat Declaration in 2008 which should help reduce friction in this regard. Specifically, the nations agreed that the UNCLOS provides a suitable framework for establishing boundary claims and that they "remain committed to this legal framework and to the orderly settlement of any possible overlapping claims."¹⁵⁶ Those who say the region is not necessarily destined for conflict and that cooperation is already occurring¹⁵⁷ are probably correct when considering maritime and economic development activities. However, the military situation is more complex.

While informal and formal organizations such as the Arctic Five and Arctic Council are helpful for governance in the region, and there is increasing evidence of regional cooperation,¹⁵⁸ multilateral frameworks have limitations. The prohibition from addressing military security challenges Arctic Council effectiveness.¹⁵⁹ Some view Russia's military infrastructure development as a sign of militarization, though countered by cooperation.¹⁶⁰ Others believe this militarization could prompt other Arctic nations to follow suit.¹⁶¹ China's strategy for the Arctic carefully avoids this form of security dilemma whereby other nations feel threatened by China's interests in the Arctic and increase their military buildup in response.¹⁶² However, Russia's tendency to feel

threatened in the Arctic may drive further military development, despite the cooperative agreements with China. If other nations respond to Russia's militarization with their own military development, the entire Arctic region could be engulfed in a security dilemma, rather than promoting a peaceful, cooperative atmosphere.

In this environment, the U.S. must decide its role and engagement level in the Arctic. One view is that the U.S. must invest in developing capabilities for the region in order to demonstrate commitment and deter other nations from aggressive pursuits.¹⁶³ Rather than deterring aggression, another author suggests the U.S. should prioritize preventing dominance by another power in the region.¹⁶⁴ Further, he minimizes the security dilemma concerns and suggests the U.S. should be more worried about doing nothing.¹⁶⁵

It is clear from the foregoing analysis that the U.S. cannot afford inaction in the Arctic. Yet investment in Arctic capabilities presents risks for the U.S. Focusing on military development will likely send the region into a multi-state security dilemma, with the U.S. and Russia as key players. In addition to this potential security dilemma, the financial and technological investment that will be required to develop this region presents an additional threat. U.S. budgets are not unlimited; any investment in Arctic capabilities will likely strip resources from other priorities, to include addressing other national security threats. To reduce the risk of an Arctic security dilemma, the U.S. and other Arctic nations should seek transparency in their actions in order to reduce uncertainty and build trust.¹⁶⁶

The way forward for the U.S. is to leverage multiple sources of national power. The U.S. should strengthen its use of the economic and diplomacy instruments of

power. Specifically, the budget risk to the U.S. could be reduced with development partnerships with other nations in the region. For example, deepwater port and communications capability development would benefit many Arctic nations, as well as those like China with interests in transit through the region. Additionally, the U.S. cannot control how other nations perceive their actions, but through diplomacy could work to reassure others of peaceful intent. The U.S. strategy for the Arctic is already one of interagency cooperation. Highlighting the many non-military factors in U.S. interests and activities could work to increase cooperation in the region and limit the likelihood of a burgeoning security dilemma. The changing climate, increasing economic interests, military developments, and substantial investments required for Arctic capabilities make this region a significant concern for the U.S. Yet this area provides considerable opportunity for the U.S. in the coming years, especially if approached in a spirit of cooperation and with the engagement of the whole spectrum of USG.

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