

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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 this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this 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)		2. REPORT TYPE	3. DATES COVERED (From - To)		
4. TITLE AND SUBTITLE			5a. CONTRACT NUMBER		
			5b. GRANT NUMBER		
			5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S)			5d. PROJECT NUMBER		
			5e. TASK NUMBER		
			5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSOR/MONITOR'S ACRONYM(S)		
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION / AVAILABILITY STATEMENT					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (include area code)

United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combatant Development Command
Quantico, Virginia 22134-5068

MASTER'S OF MILITARY STUDIES

TITLE:

*The U.S. Coast Guard and the Future Security of the Arctic
Policy...Frozen in Time*

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER'S OF MILITARY STUDIES

AUTHOR:

Lieutenant Commander Christopher C. Rosen, USCG

AY 2017-2018

Mentor:	<i>Brine Louise Andrews</i>
Approved:	<i>[Signature]</i>
Date:	<i>5/2/18</i>

Mentor:	<i>Wathan Packard</i>
Approved:	<i>[Signature]</i>
Date:	<i>02 May 2018</i>

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE
OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY
REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND
STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY

REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING

STATEMENT

Table of Contents

Abstract

Table of Contents.....iii

List of Figures.....v

Executive Summary.....vi

1. Introduction.....1

2. Historical Context.....3

3. US Maritime History and the Arctic.....3

 3.1 US Navy (USN) History

 3.2 US Coast Guard (USCG) History

 3.3 Missions

 3.4 Responsibilities in the Arctic

4. United Nations Convention on the Law of the Sea (UNCLOS).....6

 4.1 Definition

 4.2 United States Ratification Issues

 4.3 EEZ – Continental Shelf Extension

 4.4 Disputes

5. Arctic Council.....14

 5.1 History - Responsibility

 5.2 Current and Future Efforts

6. Strategic Competition.....17

 6.1 Russia

 6.2 China

7. National and Service Level Strategic Arctic Policies.....22

 7.1 National Defense Strategy

 7.2 National Security Strategy

 7.3 National Strategy for the Arctic Region 2013

 7.4 Department of State ISAB 2016

 7.5 21st Century Cooperative Naval Strategy

 7.6 USN Arctic Roadmap

7.7.	USCG Arctic Strategy	
7.8.	Coast Guard Arctic Strategy Implementation Plan 2017	
8.	Conclusions.....	26
8.1.	Update Strategic Policy	
8.2.	Surface Warfare Officer Training	
8.3.	Forward Supply or Basing	
9.	Recommendations.....	31
10.	Bibliography.....	36

List of Figures

Figure 1: Maritime Jurisdictions

Figure 2: Current Arctic Nation Exclusive Economic Zones

Figure 3: Disputed Extended Continental Shelf Claims

Figure 4: Vessel Transits for the US Arctic

Figure 5: Russian Submarine Plants Flag on Arctic Seafloor

Executive Summary

Title: *The US Coast Guard and the Future Security of the Arctic Policy...Frozen in Time*

Author: Lieutenant Commander Christopher C. Rosen, USCG

Thesis: Alignment of National and service level policies that will ensure future continuity of action toward the creation of an armed, Arctic-capable fleet with crews who are trained to respond is of the utmost importance to the security of the United States.

Discussion:

With the decrease in sea ice, increase in use of Arctic transportation routes, and natural resource exploration, the Arctic region has already become an area for increased competition. Russia and China are both working aggressively to establish and gain an advantage in the area. The US Coast Guard's aging 40+ year-old icebreaker fleet is hanging by a thread, and only as of this year have plans and funding been approved to build the first replacement. In addition to existential threats, the current icebreakers can only partially meet the demands of the nation's marine safety, search and rescue, marine environmental protection, and national defense missions. The US reluctance to ratify the United Nations Convention on the Law of the Sea in conjunction with the current gaps in national and service level policies remain an obstacle to moving forward in a unified fashion. The key to establishing the US as a leader in the Arctic region lies in updating and synchronizing these policies to ensure continuity in achieving our future goals in the region.

Conclusions:

The United States needs to secure its future in the Arctic, develop the capability to support its allies, and support global interests in the region. US efforts need to be well defined, firm, and lasting. In light of the competitive actions by both Russia and China, US efforts also need to be assertive and withstand the constant flux of the US political cycle. Of the many different policies and recommendations put forward by the US Government, the recommendations outlined in the Department of State *ISAB* from September of 2016 continue to make the most sense.

Recommendations:

1. Revise the 2013 *National Strategy for the Arctic Region* to establish clear strategic policy that will endure.
2. Develop the training plan necessary for Coast Guard crews to employ the projected defensive, anti-ship weapons systems.
3. Research infrastructure options to support forward basing or resupply of the icebreaker fleet.

The Arctic region has the potential to become the site of extremely dynamic competition for all the nations, Arctic and non-Arctic, that seek to take advantage of newly discovered resources. Security in the Arctic has accordingly become an increasingly topical problem for American defense officials. They know it is important; but how should they prepare to deal with it? Planning for the future requires anticipating future events.

Consider the following scenario, c. 2025:

Russia has just tapped into one of the largest oil reserves ever discovered; however, it's bordering the continental shelf of the United States. The location of this oil causes a great deal of concern. Russia could tap into this pocket of oil, but it is likely to extend beyond the border, into the United States' unrecognized extended continental shelf. The Russian government attests that because the United States hasn't ratified the United Nations Convention of the Law of the Sea (UNCLOS), that the US has effectively lost their claim to this area and that this area is not part of their continental shelf. The Russian Federation has taken a defensive stance, insists they will not relinquish their claim to this area, and will not consider pulling out. Russia has seized every resource and capability advantage possible in the Arctic to date. The US has taken more than ten years since updating their Arctic Strategy to put a new heavy icebreaker into service that is a far cry from the requested number of six. The US Coast Guard worked tirelessly with the Navy to ensure the ship had anti-ship weapons systems, but at best can only use small-caliber machine gun fire to defend itself in a conflict. The plans to retrofit the ship with anti-ship missile systems have fallen short and lost support over the years. Even though the ship was designed to accept such systems, it would require the ship to immediately perform an urgent shipyard availability that would prevent the ship from responding for nearly a year. In addition to the lack of weapons systems, the ship's crew doesn't have the requisite training to target or launch these weapons.

Achieving the necessary capability to avert such a future will not happen overnight, and it will require a great deal of public support. The creation of a fleet to maintain access to the region can take as much as ten years. The previous scenario with Russia is only one possible future. Geography alone makes it reasonable to assume Russia and China will partner exclusively for resources in the Arctic. The extent of their cooperation may never be known until it's too late for the US and its allies to disrupt it.

Alignment of National and service level policies that will ensure future continuity of action toward the creation of an armed, Arctic-capable fleet with crews who are trained to respond is of the utmost importance to the security of the United States.

Icebreakers constitute a prerequisite for Arctic operations, but to understand the increasing political and military salience of the Arctic, one must also appreciate its changing geography and topography. Ice has covered the Arctic Ocean since the beginning of recorded observations. In the twentieth century, the amount of ice has fluctuated between 6.2 million square miles and 2.3 million square miles after the summer melt, but recently ice levels have gone as low as 1.6 million square miles as recently as 2007 and continue to decrease at a dramatic rate.¹ September of 2012 was also a record year for lowest levels of Arctic ice, but even as recent as 2017, ice levels have continued to reach record lows.² According to NASA, on February 13th, 2017, “the combined Arctic and Antarctic sea ice levels were at their lowest point since satellites began to continuously monitor sea ice in 1979.”³ Despite differing opinions regarding the cause of and solution to climate change, the data clearly show ice levels that are continuing to decrease year after year. The decrease in the level and amount of frozen ice and corresponding increase in the area that is “ice free” together form an annual trend, as does the increasing duration of the ice-free period of the year. Given that pattern, one can anticipate greater economic activity during the ice-free portion of the year, and greater need to provide year-round security capable of contending with the remaining area of ice.

In order to analyze and examine what may be needed to help the US close the ever-widening gap; a review of the history, policies, and recent actions of other Arctic and non-Arctic nations involved is necessary. Specifically, looking at the unique geography of the Arctic region and the convergence of the sovereign territorial areas of each country involved and the

capabilities of those nations to establish and maintain a presence in the Arctic is necessary. Furthermore, a historical basis of US activity in the Arctic region is essential to understand how past, current, and future US capability compares to its nearest competitors. Finally, an assessment is needed of the global entities that help maintain cooperation in the region, legal basis that underpins the framework of the anticipated competition, and the current US national and service level policies that indicate the US' understanding of the future operating environment.

Historical Context

Even before changing ice levels became so evident, the US had long needed to maintain a presence in the region. The nation has routinely been the only entity capable of responding there to the needs of mariners in distress or to fulfill national security objectives during times of war. The current challenge is to enable the two sea services, the Navy and the Coast Guard, to collaborate more effectively in the area.

US Maritime History and the Arctic:

To provide context for current US naval operations in the Arctic, understanding the history of both the US Navy and the US Coast Guard in the region is vital. Looking at the history and the cooperation between the two services in the past gives an indication of how strategically important the Arctic was in the past, and a preview of how the future may require a return to joint cooperation. Both services have extensive experience in the region; however, the more recent history shows a significant gap between the two services' capabilities to operate in the Arctic independently.

Today, the fact that the United States Navy operated surface vessels in the Arctic may be relatively unknown, but at one time they had a presence that far exceeded the capability that even the US Coast Guard maintains today. The *Wind-Class* Icebreaker was first built in the early 1940's for both the Navy and Coast Guard, six vessels in total, which remained in service through World War II, and on into the late 20th century. The ships were used by both services during the war to provide supplies to bases in both Russia and Greenland but only remained in the service of the Coast Guard after the Navy's icebreakers were transferred over in 1966.⁴ Since then the only active presence by the Navy has been by the submarine fleet, primarily submerged and rarely operating on the surface.

The US Coast Guard has been involved with missions in the Arctic since the late 19th century. The missions performed are consistent with the service's statutory missions today, primarily marine safety, marine environmental protection, national defense, marine resource management of fisheries, and search and rescue. As early as 1897, the US Revenue Cutter Service (predecessor to the US Coast Guard) was called on to assist a whaling fleet caught in the ice near the northernmost part of Alaska, Point Barrow. During World War II, the service used the four previously mentioned *Wind-Class* icebreakers, the NORTHWIND, EASTWIND, WESTWIND, and SOUTHWIND in conjunction with the USS BURTON ISLAND and USS EDISTO, the two Navy *Wind-Class* icebreakers, to support the allied bases in the Arctic region. In the 1950's, during the Cold War, the service helped to establish a Defense Early Warning System in the high north to help provide for the detection of hostile aircraft that may threaten North America. During this period Coast Guard cutters became the first US flagged vessels to circumnavigate the North American continent in conjunction with Canadian Coast Guard ships. This transit was the first of its kind and paved the way for mapping the Northwest Passage and

Arctic navigation in the future. The *Wind-Class* ships remained in service until the last was finally decommissioned in 1989 leaving the Coast Guard with its current complement of heavy icebreakers, the POLAR STAR and POLAR SEA, of which, only the former is still in service today.⁵

To provide the still-required capability in the region, the Coast Guard has needed to use its newest medium-sized icebreaker, the HEALY, to fill the ever-widening gap in surface assets. As recently as 2012, the USCGC HEALY was called on to assist Nome, Alaska in enabling the transit of desperately needed oil and gas by breaking through as much as eight feet of ice to enable a Russian tanker to supply the community during the harsh winter. These efforts over the years have firmly established the US Coast Guard's expertise and presence as one of necessity for the communities in the region. Even still, the fleet has dwindled dramatically over the years.

Of the US Coast Guard's 11 statutory missions, the marine safety, marine environmental protection, search and rescue, law enforcement, and national defense missions all give the Coast Guard a long worklist and a multitude of possible challenges the service could face in the Arctic region. The marine safety mission is primarily the regulatory function that the Coast Guard performs over US flagged recreational and commercial vessels to enforce standards and compliance with all international and US safety and pollution regulations. The marine environmental protection mission is primarily focused on preventing incidents of pollution, and ensuring the responsible parties perform required actions to restore the environment when and if a spill occurs. The Coast Guard's search and rescue and law enforcement missions are more widely known and most prominent in many cases. The law enforcement mission covers a wide range of laws and regulations separate from marine safety regulations. These include customs and fiscal laws, fisheries/catch limits, and interdiction of illegal smuggling of any contraband

items, or people. The search and rescue mission is concerned with assisting mariners in distress anywhere the Coast Guard can bring its resources to bear.

The national defense mission is one that has been regularly performed in the past, but is not necessarily widely known. Whether through safety and security boardings on foreign vessels offshore or escorting nuclear submarines in and out of American ports, the Coast Guard plays a significant role in keeping the public and US national interests safe and secure every day. Many people, to include members of the Coast Guard, who have a general understanding of the Coast Guard's icebreaker fleet see its purpose as primarily to support humanitarian, research and scientific activities, and that has been the USCG legacy for many years. Breaking ice for supply ships in Antarctica or taking scientists to the Arctic for research are the most prominent tasks for the US icebreakers. The national defense mission, however, is not the first one that may come to mind regarding the Coast Guard's primary mission in the polar regions of the world.

Despite the past focus on marine safety, marine environmental protection, and search and rescue missions, in light of increases in traffic in the region and the aggressive, competitive stance of other Arctic and non-Arctic nations, US capability to perform national defense and security missions in the Arctic is a growing concern. To understand why, one must look at the legal basis for territorial delineation and examine how the boundaries between the Arctic nations converge.

United Nations Convention on the Law of the Sea:

In 1982 the United Nations issued the *Convention on the Law of the Sea* (UNCLOS), which began defining the boundary lines across the globe where each country would retain sovereign control over the natural resources above, on, and below the surface of the world's

oceans. Most of the territorial boundaries around the world are relatively well defined, but the Arctic is an area where, in the past, access was limited, and sovereignty therefore did not concern states as much. Now, with the decrease in sea ice, access has opened up significantly. In light of the discovery and estimation of a significant amount of natural resources, the area is receiving much more attention and “land grabs” have begun. Normally the territorial boundary for a country lies at the 12 nautical mile (NM) line. This boundary is the agreed-upon limit of a nation’s sovereign territory where most vessel types from other countries may not make undeclared entry except in instances of “innocent passage.” Innocent Passage is the act of passing through a foreign nation’s territorial sea solely as a function of saving transit time as long as the vessel does not dwell in the area or conduct business. The below picture represents the different jurisdictions a coastal state may exercise according to UNCLOS.

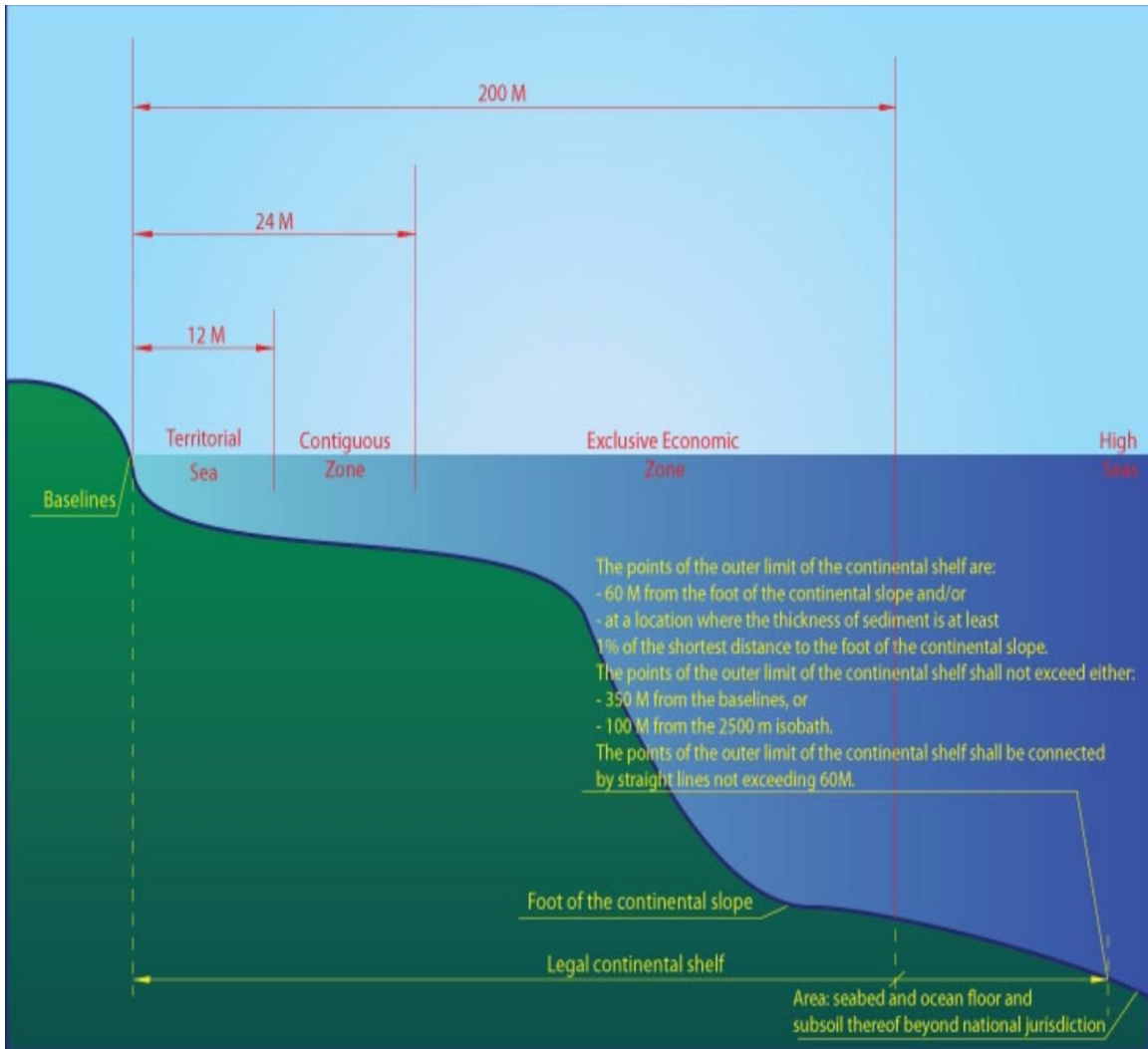


Figure 1: Maritime Jurisdictions

Source: "United Nations Convention on the Law of the Sea," December 10, 1982. *Maritime Jurisdictions*.

A major point of contention among top US officials and lawmakers concerns the United States' inability to garner enough support in the United States Senate to ratify the Convention. All of the Arctic Nations except the United States have signed and ratified the Convention, which binds them all to the agreement. By signing and ratifying, a country gains a voice in deliberations regarding the agreements and requests from other nations party to the convention. The United States honors the spirit of the document. In March of 1983, President Ronald Reagan issued the United States Oceans Policy Statement, which asserted the United States' intent to, "provide a legal order that will, among other things, facilitate peaceful, international uses of the oceans and provide for equitable and effective management and conservation of marine resources."⁶ National Security Decision Directive 83 reaffirmed the United States' view on the Law of the Sea and declared US readiness to regard the agreements in UNCLOS as generally accepted "customary international law."⁷ President Bill Clinton also appealed to the Senate to ratify the UNCLOS document in 1994, but as of yet, the Senate has not taken action enough to achieve the two-thirds approval necessary.

Although the binding nature of the UNCLOS document has some legislators concerned that ratifying will handcuff any future US ability to maneuver on a global scale, failure to ratify poses a significant disadvantage to the United States. Not joining UNCLOS leaves the United States out of future discussions. This prevents the nation from having a seat at the table to shape the evolution of the document.⁸ Moving forward toward ratification in the current political environment seems extremely unlikely.

The disadvantage to the US in failing to ratify UNCLOS appears likely to grow, as member countries can also work within the framework laid out in UNCLOS to establish their claim to extended continental shelf requests. For the countries who have ratified UNCLOS, they

can and have submitted their views regarding the agreement and are also allowed within the framework of the document to have their territory and economic areas, etc., changed or extended in regards to their unique geography and where their boundaries meet with others.

In the picture below, you can see a representation of the North Pole and Arctic Region with red dashed, 200-mile Exclusive Economic Zones (EEZ) lines drawn for the five countries that have current territorial claims to the region. The EEZ, according to Article 56 of the UNCLOS, gives each nation “sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living.”⁹

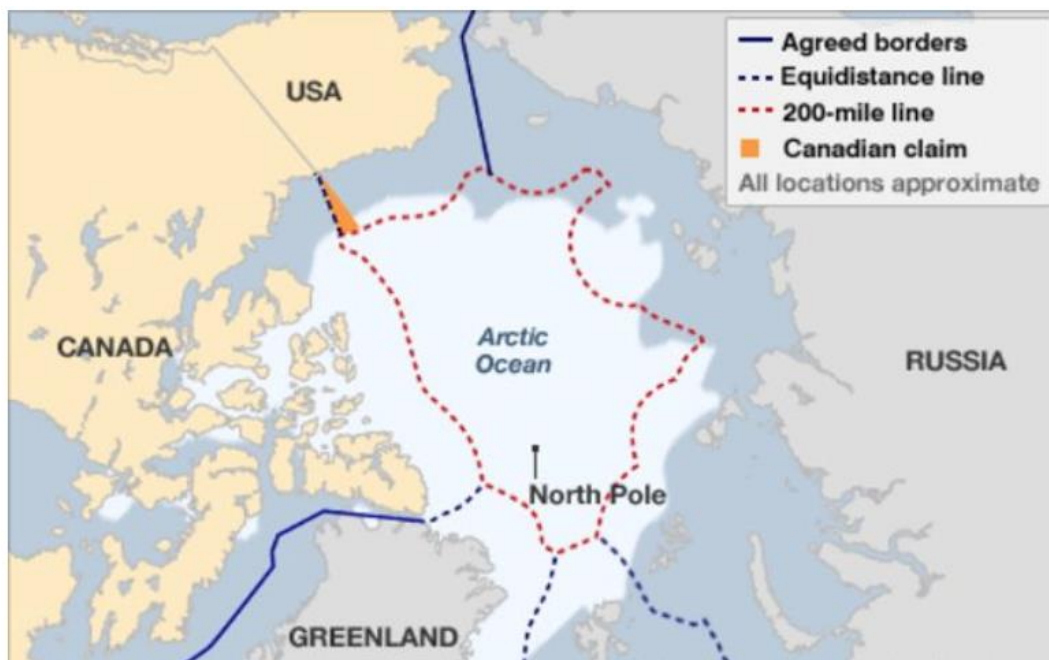


Figure 2: Current Arctic Nation Exclusive Economic Zones

Source: Sian Griffiths, “US-Canada Arctic border dispute key to maritime riches,” *BBC News*, August 02, 2010, <http://www.bbc.com/news/world-us-canada-10834006>.

UNCLOS article 76, subpart 5, also allows countries to request recognition of their sovereignty over the continental shelf as far out as 350 nautical miles from their coastline and limited by a depth of no more than 2,500 meters, which has led to the dilemma and overlap shown in the

picture below.¹⁰ As can be seen in the conflicting and overlapping claims, this subpart creates the potential for conflict and the need for resolution between the competing nations.

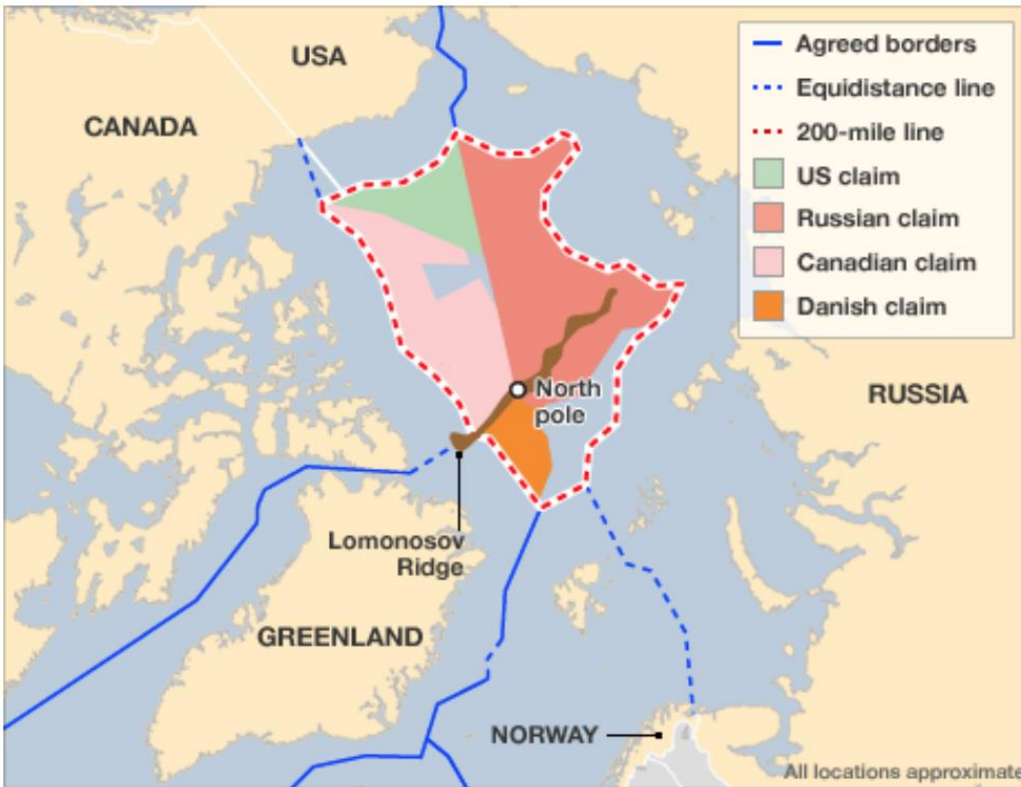


Figure 3: Disputed Extended Continental Shelf Claims

Source: Andy Rowell, "Russia Leads Arctic Oil Race," *Oil Change International*, September 2010, <http://priceofoil.org/2010/09/23/russia-leads-arctic-oil-race/>.

The principal nations involved in this disputed territory are Russia, Denmark (Greenland), and Canada. The primary reason these countries are competing for these areas and trying to increase their portion is the great number of potential oil and natural gas reserves located under the seabed. According to a US Geological Survey published in 2008, "The Arctic accounts for about 13 percent of the undiscovered oil, 30 percent of the undiscovered natural gas, and 20 percent of the undiscovered natural gas liquids in the world."¹¹

These figures have created a great deal of interest in the region. At the very least, countries are maneuvering to stake claim to the region and secure the future potential to exploit these resources.

Another significant factor increasing the need for access in the region, also due to decreasing ice levels, is the increase in maritime shipping traffic. There will be a significant cost saving to countries if they can use the Northwest Passage (NWP), above North America, or the Northern Sea Route (NSR) above Europe and Asia. Canada and the US have had to respond to numerous search and rescue incidents already, and the number is increasing each year. “Over the past two decades, marine transportation has increased in several hotspots of the Canadian Arctic such as Hudson Strait, Baffin Bay and the southern Beaufort Sea – the US- Canada dual stewardship area of the North American Arctic.”¹² In the summer of 2017, Canada alone responded to nearly 30 search and rescue calls and assisted more than 60 vessels by breaking ice to allow their transit.¹³ The US Alaskan waters have seen an increase of nearly 20 percent in maritime traffic through the region over the last eight years, and Maritime Transportation officials expect this number to continue to rise.¹⁴ The table below from the same report shows the expected US Arctic Activity projections based on transit numbers from 2013. The most conservative estimates indicate the numbers of vessels and transits doubling by the year 2025, and more liberal projections estimate that the numbers of ships and transits could quadruple.

2025 U.S. Arctic Vessel Activity Projections

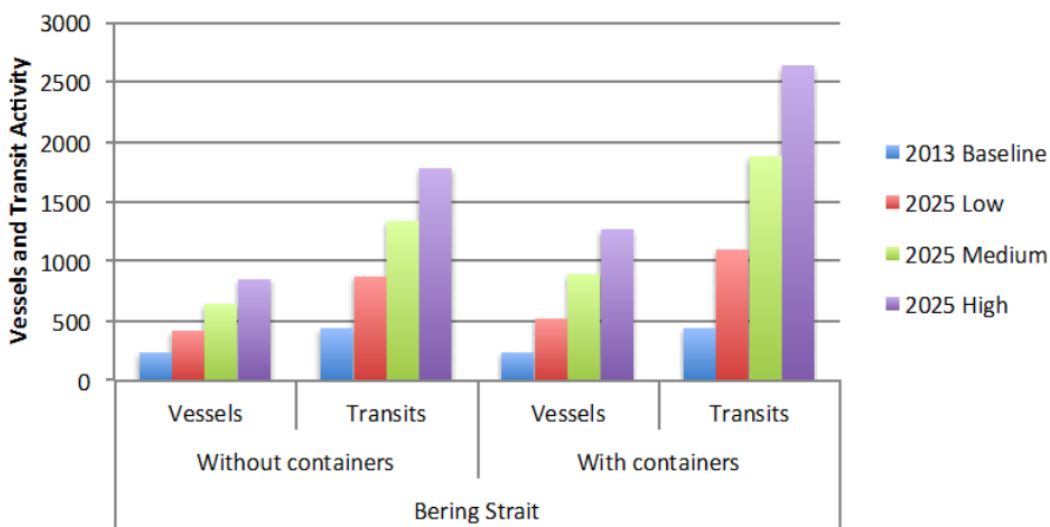


Figure 4: Vessel Transits for the US Arctic

Source: Committee on the Maritime Transportation System, *A 10-year projection of Maritime Activity* (Washington, DC: Committee on the Maritime Transportation System, January 2015), 57.

Although the US and Canada are allies and regularly partner in the Arctic region, there is potential for disagreement between the two nations. Much of the NWP passes through Canadian territorial waters. Because of this, Canada has taken the stance that it will have the authority to allow or deny passage through this route. The US contends that, because of the limited navigational space, Freedom of Navigation rules should apply. The passage will provide cost savings to the world and the right of transit passage or innocent passage should apply through this narrow route just as through many narrow straits throughout the world. The Canadian viewpoint is not very different from the Russian viewpoint that the Northern Sea Route (NSR) should fall under their sovereign control as it is the part of the Arctic route that passes through their territorial waters.

The NSR has also seen an increase in activity due to record low levels of ice in the region. According to Evgeniy Ambrosov, the Senior Executive Vice-President of Russian

shipping company Sovcomflot and a non-voting member of the Arctic Economic Council, “In 2016, the record tonnage carried through the waters of the Northern Sea Route was surpassed; over 6.5 million tonnes were transported via the route. By 2020, this amount may be exceeded 3 times.”¹⁵ The indications of increased traffic are such that shipbuilders worldwide are building vessels capable of breaking any ice they encounter along the route. According to one Russian website, “Special ARC 7 ice class carriers (by Russian classification standards) have been custom-designed and are being built for the Yamal LNG Project to support year-round navigation without any icebreaker assistance along westbound navigation routes, and during summer navigation season - eastbound via the Northern Sea Route.”¹⁶ Plans for the future and vessels that can operate through the NSR include a purchase order made to Daewoo Shipbuilding and Marine Engineering (DSME) in South Korea for 15 ships of this same class of LNG carrier. DSME received this \$14.8 billion order from companies in Russia, Japan, and Canada.¹⁷ This dollar figure alone shows the intent of shipping companies to use these Arctic routes for shipping. In most cases, the transit across the top of Asia can be made in half the time instead of transiting through the Suez Canal, and naturally at a substantial cost saving. An increase in traffic will undoubtedly increase the number of calls for assistance and the potential for maritime pollution incidents occurring. This potential for use and global recognition that this area will be of great importance to the world has spawned the development of a management body intended to resolve conflict and promote cooperation in the region.

The Arctic Council:

The leading intergovernmental organization that seeks to promote cooperation and coordination between Arctic nations is the Arctic Council. Representatives from the eight Arctic

nations, the Russian Federation, Sweden, Finland, Norway, Canada, Iceland, the Kingdom of Denmark, and the United States, produced the Ottawa Declaration establishing the council in September of 1996 to provide regular intergovernmental consideration and consultation on Arctic issues.¹⁸ The three major components of the Arctic Council consist of the eight member nations, the six indigenous permanent participation organizations, and the six main working groups. Through these groups, the council conducts business and addresses concerns. Within these three components, the non-Arctic nation “observers” are allowed to participate in the working groups. Observer status can be obtained by non-Arctic nations who, among other things, accept and support the objectives of the council, recognize the sovereignty, authority, and jurisdiction of the Arctic nations, and respect the values, interest, and cultures of the Arctic indigenous peoples. Of the 13 observer nation-states, the most notable are: the Republic of India, the Peoples Republic of China, Japan, the United Kingdom, and Italy. In addition to the observer nations, 13 intergovernmental agencies have been granted observer status as well. They include the International Council for the exploration of the Sea, the International Federation of Red Cross and Red Crescent Societies, and the North Atlantic Marine Mammal Commission.

Arctic Council initiatives on the agenda to take place in 2018 include meetings among Arctic nation ministers for the environment and science to focus on efforts to promote participation between the nations to prevent pollution and increase scientific cooperation.¹⁹ In addition to these meetings, the Arctic Council is overseeing the third major pollution exercise in the region which will exercise the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (MOSPA agreement), one of the three major binding agreements the council has negotiated. The significance of the MOSPA exercise is that it will

involve representatives from the eight Arctic Nation Coast Guard agencies, highlighting the importance and relevance of these agencies in efficiently cooperating to protect the environment.

In addition to the above initiatives, there have been two very significant agreements reached between Arctic nations in the last year. They are the ban on fishing in the Arctic high seas and the joint proposal to the International Maritime Organization (IMO) by the United States and the Russian Federation for two-way routes through the Bering Strait and the Bering Sea.²⁰ The ban on fishing, negotiated to a term of 16 years, will automatically extend for five more years unless one of the signatory countries – Russia, United States, China, Norway, Canada, Denmark, South Korea, Japan, Iceland, and the European Union – objects.²¹ The agreement and joint proposal to the IMO constitute an effort to formalize safer routes through the hazardous navigation areas through international traffic transits that lie in US and Russian territorial waters.²²

All of these initiatives and interaction on the international level highlight just a few of the complexities and significant concerns for the Arctic nations and particularly the United States, which will need to be able to address them and provide appropriate support in the future. The vast array of issues highlights the global importance of the region and reveals one of the main reasons that non-Arctic nations seek observer status. The Arctic will undoubtedly prove to be of vast importance to global commerce at an ever-increasing rate in the future. Examining the Arctic efforts of two major powers (Arctic and non-Arctic) will help highlight some of the growing US and international concerns.

Strategic Competition:

Even though Russia has the most massive geographic footprint in the Arctic region, it has already taken steps to claim even more territory in the Arctic region. In addition to the most substantial Arctic-capable naval presence of any other nation, over 40 icebreakers, four of which are nuclear, Russian efforts regarding different provisions allowed by UNCLOS demonstrate an intense focus on the region. By ratifying the United Nations Convention on the Law of the Sea, and also by being the first Arctic nation to assert additional claims in the region, the Russians have demonstrated eagerness unmatched by any other country. In ratifying the convention, Russia acted quickly to establish a claim to sovereignty over a 200 NM EEZ and began organizing research into justifying a further extension to its claim on the continental shelf. The speed with which the Russians ratified the convention seems to indicate that they recognized that the treaty would give them an advantage in the region. As early as 2001, only four years after ratifying the convention, Russia was the first nation to submit its extended continental shelf claim to the region, requesting the United Nations grant their submission to add 460,000 square miles to their 200NM EEZ.²³

Russia acted this quickly because UNCLOS originally placed a ten-year time limit on a nation's ability to claim an extended continental shelf based on the day UNCLOS came into force for that nation.

Under article 4 of annex II to the Convention, a coastal State intending to establish the outer limits to its continental shelf beyond 200 nautical miles is obligated to submit particulars of such limits to the Commission on the Limits of the Continental Shelf along with supporting scientific and technical data as soon as possible but in any case within 10 years of the entry into force of the Convention for that State.²⁴

Russia's submission for extension potentially expands its territory out past the North Pole and overlaps every other Arctic nation's potential and proposed claims. Since this submission, however, there has been no formal resolution by the Commission on the Limits of the

Continental Shelf (CLCS). In many instances, this ten-year period has been extended based on the ability of the submitting nation to fund the research needed, develop the technology, or construct the vessels required to perform the hydrographic study to substantiate a claim like this. This was further validated when the 18th meeting of the States Parties on the Law of the Sea (SPLOS) submission 183 from June of 2008 recalled the previous 10-year time limit established in SPLOS 72 (11th meeting).²⁵

In addition to the more legal process by which Russia has begun to claim rights in the region, the planting of a Russian flag on the seafloor of the North Pole led to considerable controversy in 2007.²⁶ International lawyers were quick to dismiss this act as being an explicit declaration by the nation. However, this contradicts the claim by the Russian polar oceanographer Artur Chilingarov stating, “The Arctic is Russian. We must prove



Figure 5: Russian Submarine Plants Flag on Arctic Seafloor

Source: Billy Johnson, “Russia Claims 463,000 Square Miles of Arctic Territory,” *newsweek.com*, August 04, 2015, <http://www.newsweek.com/russia-claims-463000-square-miles-arctic-territory-359829>.

the North Pole is an extension of the Russian coastal shelf.”²⁷ Despite Russian authorities claiming the flag planting was not what it appeared to be, it is difficult to believe that this incident and statement did not imply Russian belief in their sovereignty in the region.

Russia outlines its Arctic Strategy very clearly. According to the Russian Federation webpage on the Arctic Council site, Russia’s national interests in the Arctic are the following:

- the use of the Arctic Zone as a strategic resource base of the Russian Federation, providing solutions to the task of socio-economic development of the country;
- preservation of the Arctic as an area of peace and cooperation;
- conservation of the unique ecosystems of the Arctic;
- use of the Northern Sea Route as a national unified transportation line of the Russian Federation in the Arctic²⁸

These aims by the Russian Federation are substantiated further in the Department of State ISAB report from 2016 as well. In the report, the ISAB found that “Russia also views its Arctic coastline as a valuable source for natural resources, a potentially important shipping route, a major fishing zone, and a future generator of increased revenues through several means...”²⁹

Russia is very overt about its desire to maintain a considerable foothold in the region, and it appears it is not holding anything back. The Northern Russian fleet is the largest naval fleet in their inventory which contains, in addition to their robust icebreaking capability, 42 of the nation’s 72 submarines, eight of which are ballistic missile capable.³⁰ This is the most significant strength of the Russian naval fleet, which is well positioned to maintain presence and lines of communication in the region. The Russians possess an unmatched ability to meet any other navy in a conventional confrontation across the Polar Regions of the globe. The Russian Federation’s apparent intent and clearly stated policy to establish itself in the Arctic is thoroughly substantiated, as is its capability to maintain a predominant presence in the region.

While Russia indeed returns the largest radar signature in the Arctic, China is emerging as another powerhouse, but not through conventional military means. China is moving forward with an aggressive economic strategy that is securing a large foothold within other Arctic nations; in addition to the nation's own extensive efforts to establish a physical presence in the Arctic. The economic needs of the most populous country on the planet are a huge driver in the world's economy; the Arctic is no exception, as the Chinese justify their efforts there by the need to sustain their population. Chinese maritime influence is building worldwide, as evidenced by their investment in multiple European ports. As a reliable indicator that China is beginning to receive support from previously unsupportive nations, the recent investment by China in Greece has gone a long way towards preventing retaliatory efforts by the European Union. According to an article in the New York Times, "Greece helped stop the European Union from issuing a unified statement against Chinese aggression in the South China Sea."³¹ This is just a small example of how the Chinese are winning support and gaining a foothold in other countries around the world. While they still lack the naval presence that Russia has in the region, they have already proven to be a competent competitor diplomatically and economically.

One of the most significant recent developments regarding the Arctic region is China's recent release of its Arctic strategy. The nation's focus on the Arctic and adamant, confident approach to participation in the Arctic Council, though technically only as "observers," should serve as a significant warning to the Arctic nations, as well as the other non-Arctic competitors. Given that they do not have territory above the Arctic circle, but consider themselves what they term a "near-Arctic State," they have shown they intend to participate and are not going to stand idly by while other nations, Arctic or not, dictate affairs in the region. They are relying on continued recognition as a major power and are working to

establish solid cooperative partnerships with all the Arctic nations. As a major source of funding, research, technology, and a major maritime transportation entity, China has a strong position in helping to provide “understanding, governance, protection, and development” of the Arctic region. One key takeaway from their Arctic Strategy is their assertion of mutual respect. They clearly state that this respect should be reciprocal between all international parties and respect the overall interests of the international community in the region as well.

While no other country currently has a fleet to compete militarily with Russia in the Arctic, China regularly participates in Arctic research and is building a second icebreaker which should be ready to sail much sooner than any other Arctic nation. The Xuelong 2, or Snow Dragon 2, is the first Chinese built icebreaker and was already launched in December 2017. Reports in CHINADAILY claim the ship will be ready to participate in scientific research with the Ukrainian-built Xuelong, China’s first icebreaker, as early as 2019, giving China a much more regular presence in the Arctic than ever before.³² The Chinese government consistently touts China’s presence and contributions to Arctic research over the last 30 or more years to reinforce the nation’s legitimacy in the years to come as well. China asserts that itself as a significant player in the region, and no other nation can refute its contribution or capability.

The above assessment of Russian and Chinese efforts and claims brings us back to the scenario of future capabilities and challenges, c. 2025. What will the United States do in the interim to address these growing claims and concerns by these rival and potentially disruptive states? Not necessarily adversaries of America, Russia and China both constitute “strategic competitors.”³³ An assessment of current US National and strategy and policy, together with service-level policy, provides a gauge with which to evaluate US efforts to compete with these two nations.

National and Service Level Strategic Arctic Policies:

The January 2018 United States *National Defense Strategy* speaks of increasing influence and preserving access to markets that will improve our standard of living. Sustaining US advantage in the Western Hemisphere, modernizing key capabilities, forward force maneuver, and posture resilience are the key objectives in this strategy, but nowhere does it identify the Arctic as an area of concern. It also speaks of deterring Russian adventurism but does not address aggressive competition by China in the Arctic. This updated strategy identifies how the United States has enjoyed “uncontested superiority in every operating domain.”³⁴ What it does not do is speak about recent efforts by Russia and China for example, already outmatching our ability to project force into the Arctic region. How can the United States acknowledge the current state of competition by rival nations, but not address the need for a US presence in the Arctic region or the lack of US preparation?

The new *National Security Strategy* (NSS) under President Trump’s Administration mentions the Arctic once, in the context of discussing the Western Hemisphere. Compared to the Strategies of other countries, this fact seems to portray a point of view that is uniquely unconcerned with the region. While it does mention the Arctic in terms of discussing access to the sea, the focus of the Western Hemisphere section is on combating international criminal organizations primarily in Central and South America. The NSS also mentions Russian and Chinese support for countries whose governments do not permit a free society, such as Venezuela, which represses its people under an authoritarian regime. The NSS does not, however, address Russian and Chinese efforts to co-opt states in the Arctic region that are friendly to the West.

The four “Pillars” of the NSS describe some of the more general concepts central to ensuring our national security, but do not enter into much detail. Pillar II speaks of Embracing Energy Dominance, which discusses the enormous energy potential of the North American “shared” region, but make no specific mention of the Arctic, and leaves the reader wondering what this term means exactly. Because of the recently discovered potential of this region, the Arctic logically should be considered a major portion of this “enormous energy potential.” Accessing this potential would require the ability of a significant naval component to ensure this security.

Pillar III briefly discusses the methods by which Russia and China are competing, just short of war. It acknowledges that the United States sees the world in “binary terms,” either engaged in conventional warfare or not at all, instead of an “arena of continuous competition.” It also acknowledges that the United States has not kept pace with the changes in the nature of this global competition and is currently falling behind. The document states that the nation needs to be prepared to operate in multiple domains at once. Does the Arctic constitute such a domain? The statement could be construed to imply support for the Coast Guard’s service policy of upgrading and increasing US capability in the Arctic region, but the document neglects to identify the Arctic specifically. The Arctic is not one of the maritime areas identified. Nevertheless, without specifically identifying the region as requiring efforts to upgrade US capability to contend with “continuous competition,” the NSS does leave open the possibility of including the Arctic in deciding where to allocate funding.³⁵

The *National Strategy for the Arctic Region*, published in 2013 by President Obama’s administration, strongly supports the Coast Guard’s Arctic role and highlights the overall goals of the United States in the region in 2013. The primary focus of the National Arctic Strategy is

advancing United States Security Interests in the area. Access to the region over, on, and under the waters of the Arctic is of primary importance. The policy also identifies the ever-diminishing extent of Arctic ice from year-to-year. Like the other national-level strategic policies pertinent to the Arctic, however, this document fails to specify firm direction and support for the various armed services and government agencies active in the region.³⁶

The final report of the *International Security Advisory Board (ISAB) on Arctic Policy*, published in September of 2016, addresses many of the key issues that national policy and individual service policies have identified as important in managing and improving US national security goals, maintaining obligations to the inhabitants of the Arctic region, and upholding the national duty to support allied nations in the region as well. This report makes six recommendations for future US actions in the Arctic region. They are:

- First, the United States must continue to lead on Arctic safety, security, and stewardship.
- Second, the United States should promptly ratify the United Nations Convention on the Law of the Sea (UNCLOS).
- Third, the United States should increase its presence and domain awareness in the Arctic.
- Fourth, we need to continue to strengthen our alliances and partnerships, including with Arctic Council nations, observers, and other partners.
- Fifth, the United States should adopt policies and practices to deal with the Russian dimension of Arctic developments.
- Sixth, Transparency and Confidence Building Measure should be strengthened to reduce the risk of miscalculation or accident.³⁷

The report highlights an ever-increasing focus on the Arctic by national and international media outlets and a heightened awareness of the area in general. Some of the key takeaways from this report include not only the acknowledgment of the quickly changing environmental conditions of the region but also, and primarily, the ISAB's focus on Russian activities over the past few years.

Looking at the different US policies at the service level, both the Navy and the Coast Guard, have published service level strategic documents outlining their Arctic plans and efforts

for the future. The US Navy's *Arctic Roadmap 2014-2030*, goes into detail about the service's strategic objectives, leadership, missions, and ways and means for their near, mid, and far term operations in the region. In the near term, this document asserts that the Navy is meeting current needs based on the weather, state of the ice, and their ability to operate with their fleet of submarines. The mid-term period (2020-2030), is focused primarily on supporting the Coast Guard and other government agencies, while the far term, 2030 and beyond, the Navy believes ice-free conditions may require more regular support. The department is confident this will meet the requirements of national strategic policies.³⁸

The Coast Guard's *Arctic Strategy* published in 2013 clearly outlines what the service is currently capable of and what the future should look like to give them the capability to maintain a constructive naval presence in the region. The Coast Guard's Arctic Strategy does not ignore the facts of climate change, and acknowledges the significant changes that are already occurring. The "Northern Sea route traffic is growing each year, primarily in response to energy and mineral resource demands from Asia."³⁹ The service also clearly defines what is needed for the service to address the increasing traffic in both Arctic sea routes. The Coast Guard "must provide a surface presence to safeguard the region and its resources."⁴⁰ Included in this strategy are the identification of resource types, and priorities the service should employ to achieve the goals of providing the surface presence and maritime domain awareness objectives. The strategy, a product which was created nearly five years ago under President Obama's administration has made some progress, but there have been regular additions and updated implementation plans since 2013.

The *Coast Guard Arctic Strategy Implementation Plan for 2017* is still in draft form, but it brings forward many of the objectives and initiatives first established in the Coast Guard's

Arctic Strategy document from 2013. It further details some of the more significant efforts needed to address the major efforts the Coast Guard will be pursuing over the next ten years. This document furthers emphasizes the three strategic objectives in the Arctic; Improving Awareness, Modernizing Governance, and Broadening Partnerships. Improving Awareness is an effort to ensure “persistent” awareness of activities in the maritime domain. Because of the harsh climate for much of the year, this is challenging to maintain, but necessary to establish the operating environment and ensure safety, stewardship, and national security along North America’s Northwest Passage. Establishing numerous partnerships will be the primary way the Coast Guard begins to build awareness of activities in the region. Partnerships with agencies such as the National Oceanic and Atmospheric Administration, Department of State, and Department of Defense are just a few of the national level agencies, not to mention the numerous local, state, and tribal organizations which will be vital to building this capacity. Modernizing Governance will be needed to establish the authorities, institutions, and organization behind how these different agencies interact and accomplish their goals. This Broadening of Partnerships is essential to achieving the constant surface presence that the Coast Guard desires and needs to establish to support greater security, safety, and environmental protection strategic goals. The big questions are how these efforts will materialize and will they be effective.

Above and beyond individual service doctrines, the overarching need for a joint approach to the Arctic remains to be met. In 2015, working closely together, the Navy, Marine Corps, and Coast Guard published *A Cooperative Strategy for 21st Century Seapower*, a joint document that begins to explain joint and service level focus on the Arctic. However, what is intended to be a new and innovative step forward in joint strategy for the US naval services leaves the Coast Guard “holding the bag” when it comes to maintaining the nation’s presence in the Arctic.

The first paragraph of this “cooperative strategy” addressing support for national security specifies deterring conflict, responding to a crisis, defeating aggression, and protecting the maritime commons. This paragraph sets up the cooperative “all domain access” objectives of the three services. A preceding short paragraph on the Arctic and Antarctic, however, talks about the sea services assessing the needs in the Arctic region, but essentially assigns the entire responsibility on the Coast Guard to provide this access and capability.⁴¹ The lack of any mention of assistance from the Navy with this effort hardly supports a cooperative sea-service strategy, all the while acknowledging a “predicted growth in maritime activity.”⁴²

Conclusions:

How will the United States answer the aggressive efforts of the major competitors in the Arctic? Will they be able to follow through with current plans to build a fleet of icebreakers to help ensure the US can project power in the region? In addition to a fleet that can reach the harsh environment, will the planning and design of an Arctic-capable fleet that can be equipped with anti-ship or other defensive weapons systems occur on schedule?

In the most recent budget proposal for fiscal year 2019, the US Navy has allocated one billion dollars to the Coast Guard to build their first replacement heavy icebreaker. The Commandant of the Coast Guard stated that the planning has already begun and expects to award the design contract in fiscal year 2019. Based on the progress achieved over the past four years, this is a significant development, but it is only a start.

The United States needs to secure its future in the Arctic, develop the capability to support its allies, and support global interests in the region. US efforts need to be well defined,

firm, and lasting. In light of the aggressive messaging by both Russia and China, they also need to be assertive and able to withstand the constant flux of US domestic politics. Of the many different policies and recommendations put forward by the US Government, the recommendations outlined in the Department of State *ISAB* from September of 2016 continue to make the most sense.

Of the six recommendations given in the DoS *ISAB*, ratifying UNCLOS will present the most significant political hurdle of them all. This should most certainly be a priority, but it should be a priority inside a much more comprehensive and firm strategic policy. This policy should clearly identify US resolve to develop an Arctic capability and intent to be a major player in the region. Codifying this is essential not only to establish a sense of urgency for defining US goals, but also to provide future funding for these efforts. The US budgetary process does not allow for funding in the absence of a clearly stated requirement. The United States needs an updated National Strategic Policy for the Arctic Region that not only emphasizes the need for the Senate to move toward ratifying UNCLOS, but also identifies very distinct measures to increase the US maritime capability in the Arctic. A policy that accomplishes both of these purposes will allow the Administration to request appropriate funding amounts and position the United States to have a “seat at the table” regarding UNCLOS issues on a global scale.⁴³ Adding this capability is necessary not only to support commercial traffic operating in the area, but also to conduct national defense, law enforcement, and marine safety activities as well.

Although funding for a replacement ship has been allocated, a significant obstacle remains to be overcome in the form of the training required to ensure that the crewmembers aboard these new icebreakers can employ their advanced weapons systems.⁴⁴ In comparison to the Navy, the Coast Guard receives very little resident, professional training in employing

advanced weapons systems. Coast Guard officers get some shipboard navigation simulator time in either New London, CT or in Yorktown, VA. These two locations are the only ship driving simulators that the Coast Guard owns. Most officers and enlisted personnel assigned to shipboard billets, where they will be expected to certify as Conning and Deck Watch Officers (DWO), receive the bulk of their training on-the-job. Most weapons systems on the newest USCG cutters still only consist of traditional naval gunfire, which does not justify the same type of training program that the Navy has for its Surface Warfare Officers (SWO). Officers in the SWO career path in the Navy receive resident training at every level as they promote. Beginning with their Basic Division Officer Course and continuing through their training before becoming a department head, executive officer, and commanding officer, they have a great deal of dedicated training with their advanced weapons systems before assignment in a position where they have the authority to launch missiles, for example. The Coast Guard needs to identify how it will overcome the gap in its ability to employ these weapons systems in the future. If advanced weapons systems are installed, starting the discussion with the Navy now will decrease the time needed to bring Coast Guard DWO's up-to-speed.

Options to bridge the gap in organic Coast Guard capability to use these advanced weapons systems could include building this into current DWO personnel qualifications standards (PQS), and/or funding Coast Guard personnel to attend Navy warfare training. Currently, funding training to the same level or standard as the Navy hardly seems justified, but advanced planning will surely be needed. The concept of defending the ship does not differ fundamentally from using much more deadly weapons in defense. Even if the ship is only fitted with traditional naval gunfire or has advanced anti-ship missiles, the decision to engage is similar in most respects. Only the extent of possible damage is different. The primary difference is one

of a technical nature, pertaining to targeting capability. A quick fix remedy will be needed if this training isn't instituted early enough. Bringing Navy Operations Specialists (targeters) and SWOs onboard to advise and assist current crewmembers would also be an option, but that brings with it other small wrinkles such as berthing and establishing a clear chain of command. Having the dialog sooner, rather than later, will enable the United States to respond more quickly to any need for national defense operations in the Arctic.

A timely response will undoubtedly be a crucial strategic requirement as well. The ability to maintain the US sea lines of communication will be vital to not only the United States but also to other nations using the NSR or NWP for shipping and transit. To keep six icebreakers in both Polar Regions year-round, having the infrastructure to support these ships with a minimum of transit time will be another crucial factor. This capability could go a long way toward deterring aggressive competition or aggression from other nations who may try to exploit a gap in US capabilities and physical presence. The US already has to overcome opposing international opinion by not having ratified UNCLOS, but having a fleet that is weeks or months away, such as responding from Seattle, WA (current base for POLAR STAR) to a crisis in Baffin Bay off the coast of Greenland, would only exacerbate the issue. China has already recognized there is an advantage to having infrastructure on both sides of the NSR by attempting to purchase an abandoned naval base in Greenland. Thankfully, the Kingdom of Denmark denied this purchase because of long-standing agreements and for concern of how the US may react to having a Chinese base so close in the Western Hemisphere. For this very reason, the US should itself consider reestablishing auxiliary supply points in Greenland. For example, increasing the capacity of the port in the capital of Nuuk to accept larger ships to act as a supply station when operating in the Arctic.

Supporting the build-up of shipyard and maintenance infrastructure would be of great operational benefit as well, allowing the icebreaker fleet more options and flexibility. This kind of initiative will take years to be available, and will require a great deal of support. One new icebreaker that needs to transit from Seattle to the Arctic will not provide the strategic deterrence or operational presence that will be necessary to maintain US obligations to environmental protection, search and rescue, marine safety, or national security.

Recommendations:

In sum, the United States and its naval services are already far behind if they intend to provide any form of presence or deterrence in the Arctic. Providing any replacement to the aging heavy icebreaker, USCGC POLAR STAR, currently only able to provide seasonal presence and virtually no military capability, is as much as six years from an initial operating capacity. At best, that is still only a part-time capability. To maintain a persistent presence in the region, the Coast Guard will need a minimum of three heavy icebreakers and three medium icebreakers to provide already required support to the Antarctic as well as the increased shipping and vessel transits in the Arctic. The Coast Guard will need a fleet capable of protecting US interests and supporting US allies in both areas of the globe simultaneously.

In addition to building icebreaker capability, the United States must heed the six *ISAB* recommendations. These highlight the need to continue to lead on Arctic safety, security, and stewardship, in part by ratifying UNCLOS, in part by expanding diplomatic partnerships, and in part by enhancing US Arctic maritime capability, while also dealing with the Russian challenge. Russia alone, however, is not the only problem; the United States must also recognize the growing involvement of China in Arctic affairs, and take the necessary steps to remain

competitive. At the same time, with an eye to reducing the risk of miscalculation or accident inherent in such competition, the United States must also improve transparency and strengthen confidence-building measures.

Beyond such official recommendations, the following three lines of effort are essential in order to carry out joint maritime support of US national defense in the Arctic:

4. **Revise the 2013 Arctic Strategy to establish clear strategic policy that will endure.**
5. **Develop the training plan necessary for Coast Guard crews to employ the projected defensive, anti-ship weapons systems.**
6. **Research infrastructure options to support forward basing or resupply of the icebreaker fleet.**

With these measures, the United States will be positioned not only to defend national interests in the Arctic, but also to uphold its obligations to the international community there as well.

The threat of disruption or crisis in the Arctic is growing. Increased activity leads to increased risk to mariners and the environment. Competition for limited resources and the desire to achieve an advantage over other competitors will likely result in a willingness by rival nations to take risks, which, in turn, increases the potential for maritime emergencies, environmental mishaps, and armed conflict. The lack of consistent US prioritization in the region, from administration to administration, will only encourage an increase in competition. This competition could create an environment that prevents the “all domain access” discussed in the

Cooperative Strategy for 21st Century Seapower. The US Coast Guard and US Navy need to adopt a long-term, joint initiative to ensure both services can provide the needed capability in support of a forward-based presence. Without this unity of effort and focused direction, neither the technological capability nor the necessary fleet capacity will ever materialize. Without a renewed plan to establish an Arctic presence, the US will be unable to uphold its environmental and humanitarian protection duties at a minimum, along with protecting security interests, and supporting US allies in deterring aggression from rival nations.

-
- ¹ Edmond A. Mathez and Jason E. Smerdon, *Climate Change: The Science of Global Warming and Our Energy Future* (New York: Columbia University Press, 2009), 177.
- ² Committee on the Maritime Transportation System, *A 10-year projection of Maritime Activity* (Washington, DC: Committee on the Maritime Transportation System, January 2015), 1.
- ³ Maria-Jose Vinas, "Sea Ice Extent Sinks to Record Lows at Both Poles," *National Aeronautics and Space Administration*, last update August 6, 2017, <https://www.nasa.gov/feature/goddard/2017/sea-ice-extent-sinks-to-record-lows-at-both-poles>.
- ⁴ Jonathan White, RADM, USN, retired, "When the Navy Operated in the Arctic," *The Sextant*, September 4, 2014, <http://usnhistory.navylive.dodlive.mil/2014/09/04/when-the-navy-operated-in-the-arctic/>.
- ⁵ Transportation Research Board and National Research Council, *Polar Icebreakers in a Changing World: An Assessment of U.S. Needs*, (Washington, DC: The National Academies Press, 2007) e-book edition, chap 6.
- ⁶ Ronald Reagan: "Statement on the United States Ocean Policy," March 10, 1983. Online by Gerhard Peters and John T. Woolley, *The American Presidency Project*. <http://www.presidency.ucsb.edu/ws/index.php?pid=41036>
- ⁷ Roncevert Ganan Almond, "U.S. Ratification of the Convention of the Law of the Sea," *thediplomat.com*, May 24, 2017, <https://thediplomat.com/2017/05/u-s-ratification-of-the-law-of-the-sea-convention/>.
- ⁸ *Ibid.*
- ⁹ "United Nations Convention on the Law of the Sea." December 10, 1982, *United Nations*, (1994), Article 56.
- ¹⁰ *Ibid.*, Article 76.
- ¹¹ *90 Billion Barrels of Oil, 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic: USGS CoreCast*, July 2008 (statement of Brenda Pierce, USGS).
- ¹² Committee on the Maritime Transportation System, *A 10-year projection of Maritime Activity* (Washington, DC: Committee on the Maritime Transportation System, January 2015), 62.
- ¹³ *Ibid.*, 63.
- ¹⁴ *Ibid.*, 64.
- ¹⁵ World Maritime News Staff, "SCF: Northern Sea Route's Traffic Volume Set to Triple by 2020," *World Maritime News*, March 2017, <https://worldmaritimeneeds.com/archives/216440/scf-northern-sea-routes-traffic-volume-set-to-triple-by-2020/>.
- ¹⁶ YAMAL LNG Website, <http://yamallng.ru/en/project/tankers/>, accessed January 30, 2018.
- ¹⁷ Aiswarya Lakshmi, "World's First Ice-breaking LNG Carrier Christened," *marinelink.com*, June 2017, <https://www.marinelink.com/news/icebreaking-christened426018>.
- ¹⁸ "The Ottawa Declaration," September 19, 1996, *Arctic Council*.
- ¹⁹ Arctic Council News and Events, "A Look Ahead: The Arctic Council in 2018," *Arctic Council*, last updated February 09, 2018, <https://arctic-council.org/index.php/en/our-work2/8-news-and-events/481-ac-in-2018>.
- ²⁰ Arctic Council News and Events, "A Look Ahead: The Arctic Council in 2018," *Arctic Council*, last updated February 09, 2018, <https://arctic-council.org/index.php/en/our-work2/8-news-and-events/481-ac-in-2018>.
- ²¹ Emily Russell, "U.S., Russia and Others Agree to Ban Fishing in the Arctic Ocean," *alaskapublic.org*, December 01, 2017, <https://www.alaskapublic.org/2017/12/01/u-s-russia-and-others-agree-to-ban-fishing-in-the-arctic-ocean/>.
- ²² *Establishment of two-way routes and precautionary areas in the Bering Sea and Bering Strait*, Sub-Committee on Navigation, Communications and Search and Rescue, submitted by the Russian Federation and the United States, November 17, 2017, https://www.navcen.uscg.gov/pdf/IMO/NCSR_5_3_7.pdf.
- ²³ Charles Clover, "Diplomatic battle begins over Arctic," *The Telegraph*, May 27, 2008, <http://www.telegraph.co.uk/news/earth/earthnews/3342916/Diplomatic-battle-begins-over-Arctic.html>.
- ²⁴ "United Nations Convention on the Law of the Sea." December 10, 1982, *United Nations*, (1994), Article 4 of Annex II.
- ²⁵ "United Nations Convention on the Law of the Sea-Meeting of States Parties," June 20, 2008, *SPLOS/183*.
- ²⁶ Billy Johnson, "Russia Claims 463,000 Square Miles of Arctic Territory," *newsweek.com*, August 04, 2015, <http://www.newsweek.com/russia-claims-463000-square-miles-arctic-territory-359829>.
- ²⁷ Paul Reynolds, "Russia ahead in Arctic 'gold rush'," *BBCNews*, August 1, 2007, <http://news.bbc.co.uk/1/hi/6925853.stm>.
- ²⁸ Arctic Council, "Russian Federation," *Arctic Council*, accessed February 05, 2018, <https://www.arctic-council.org/index.php/en/about-us/member-states/russian-federation>.

-
- ²⁹ US Department of State, *International Security Advisory Board Report on Arctic Policy*, (Washington, DC, September, 2016), 20.
- ³⁰ *Ibid.*, 22.
- ³¹ Jason Horowitz and Liz Alderman, *Chastised by E.U., a Resentful Greece Embraces China's Cash and Interests*, The New York Times, August 26, 2017.
- ³² Ma Chi, "China's First Home-Built Icebreaker Named Snow Dragon 2," *chinadaily.com.cn*, September 27, 2017, www.chinadaily.com.cn/china/2017-09/27/content_32544019.htm
- ³³ US Department of Defense, *National Defense Strategy* (Washington, DC: Office of the Secretary, January 2018), 3.
- ³⁴ *Ibid.*
- ³⁵ The White House, *The National Security Strategy of the United States of America* (Washington, DC, 2017).
- ³⁶ The White House, *The National Strategy for the Arctic Region* (Washington, DC, 2013).
- ³⁷ US Department of State, *International Security Advisory Board Report on Arctic Policy*, (Washington, DC, September, 2016), 38.
- ³⁸ US Department of the Navy. *U.S. Navy Arctic Roadmap 2014-2030*. Washington, DC: Office of the Secretary of the Navy, February 2014.
- ³⁹ US Coast Guard, *Arctic Strategy* (Washington, DC: Office of the Commandant, 2013), 39.
- ⁴⁰ *Ibid.*
- ⁴¹ US Department of the Navy, *A Cooperative Strategy for 21st Century Seapower* (Washington, DC: Office of the Secretary of the Navy, March 2015), 18.
- ⁴² *Ibid.*
- ⁴³ US Coast Guard, *Arctic Strategy* (Washington, DC: Office of the Commandant, 2013), 39.
- ⁴⁴ Sydney J. Freedburg Jr., "New Icebreaker Will Have Space, Power for Weapons: Coast Guard," *breakingdefense.com*, January 10, 2018, <https://breakingdefense.com/2018/01/new-icebreaker-will-have-space-power-for-weapons-coast-guard/>.

Bibliography

- Mathez, Edmond A. and Jason E. Smerdon. *Climate Change: The Science of Global Warming and Our Energy Future*. New York: Columbia University Press, 2009.
- US Committee on the Maritime Transportation System. *A 10-year projection of Maritime Activity*. Washington, DC: US Committee on the Maritime Transportation System, 2015.
- “United Nations Convention on the Law of the Sea.” December 10, 1982, *United Nations, Maritime Jurisdiction*. (1994).
- “United Nations Convention on the Law of the Sea.” December 10, 1982, *United Nations*, (1994).
- Griffiths, Sian. “US-Canada Arctic border dispute key to maritime riches.” *BBC News*, August 02, 2010. <http://www.bbc.com/news/world-us-canada-10834006>.
- Rowell, Andy. “Russia Leads Arctic Oil Race.” *Oil Change International*, September 2010. <http://priceofoil.org/2010/09/23/russia-leads-arctic-oil-race/>
- World Maritime News Staff. “SCF: Northern Sea Route’s Traffic Volume Set to Triple by 2020.” *World Maritime News*, March 2017. <https://worldmaritimeweb.com/archives/216440/scf-northern-sea-routes-traffic-volume-set-to-triple-by-2020/>.
- Lakshmi, Aiswarya. “World’s First Ice-breaking LNG Carrier Christened.” *marinelink.com*, June 2017, <https://www.marinelink.com/news/icebreaking-christened426018>.
- “The Ottawa Declaration.” September 19, 1996. *Arctic Council*.
- Russell Emily. “U.S., Russia and Others Agree to Ban Fishing in the Arctic Ocean.” *alaskapublic.org*, December 01, 2017, <https://www.alaskapublic.org/2017/12/01/u-s-russia-and-others-agree-to-ban-fishing-in-the-arctic-ocean/>.
- US Coast Guard Navigation Center. *Establishment of two-way routes and precautionary areas in the Bering Sea and Bering Strait*, Sub-Committee on Navigation, Communications and Search and Rescue. Submitted by the Russian Federation and the United States, November 17, 2017. https://www.navcen.uscg.gov/pdf/IMO/NCSR_5_3_7.pdf.
- Transportation Research Board and National Research Council. *Polar Icebreakers in a Changing World: An Assessment of U.S. Needs*. Washington, DC: The National Academies Press, 2007. e-book edition, chap 6.
- US Department of the Navy. *U.S. Navy Arctic Roadmap 2014-2030*. Washington, DC: Office of the Secretary of the Navy, February 2014.

- US Coast Guard. *Arctic Strategy*. Washington, DC: Office of the Commandant, 2013.
- US Department of the Navy. *A Cooperative Strategy for 21st Century Seapower*. Washington, DC: Office of the Secretary of the Navy, March 2015.
- US Department of Defense. *National Defense Strategy*. Washington, DC: Office of the Secretary, January 2018.
- The White House. *The National Security Strategy of the United States of America*. Washington, DC, 2017.
- US Department of State. *International Security Advisory Board Report on Arctic Policy*. Washington, DC, 2016.
- Clover, Charles. "Diplomatic battle begins over Arctic." *The Telegraph*, May 27, 2008, <http://www.telegraph.co.uk/news/earth/earthnews/3342916/Diplomatic-battle-begins-over-Arctic.html>.
- "United Nations Convention on the Law of the Sea-Meeting of States Parties." June 20, 2008. *SPLOS/183*.
- Johnson, Billy. "Russia Claims 463,000 Square Miles of Arctic Territory." *newsweek.com*, August 04, 2015, <http://www.newsweek.com/russia-claims-463000-square-miles-arctic-territory-359829>.
- Reynolds, Paul. "Russia ahead in Arctic 'gold rush'." *BBCNews*, August 1, 2007, <http://news.bbc.co.uk/1/hi/6925853.stm>.
- Horowitz, Jason and Liz Alderman, *Chastised by E.U., a Resentful Greece Embraces China's Cash and Interests*. The New York Times, August 26, 2017.
- Freedburg Jr., Sydney J. "New Icebreaker Will Have Space, Power for Weapons: Coast Guard." *breakingdefense.com*, January 10, 2018, <https://breakingdefense.com/2018/01/new-icebreaker-will-have-space-power-for-weapons-coast-guard/>.