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Climate Change and Implications for National Security and International Law in the Arctic

Choteau X. Kammel

CLIMATE CHANGE AND IMPLICATIONS FOR NATIONAL SECURITY AND INTERNATIONAL LAW IN THE ARCTIC

By: Choteau X. Kammel[†]

Abstract

Climate change threatens national security due to the potential it carries to destabilize fragile regions, damage military installations, and exacerbate existing tensions between countries. While these effects will be global, the Arctic region represents a microcosm of a future where climate change affects the strategic priorities of states and renders existing governing institutions inadequate. Moreover, climate change will challenge the collage of "soft" international law that governs the Arctic, administered primarily through the Arctic Council's collaborative forum. While this system has been effective, the opening of the Far North to increased sea passage, commercial exploitation, and great powers' interests necessitates a more robust integration of binding law and should spur the United States and the North Atlantic Treaty Organization ("NATO") to better prepare for confrontations and contingencies that may arise as the ice recedes.

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[†]Choteau Kammel is a J.D. Candidate at Texas A&M School of Law with a graduation date of May 2024. He would like to thank his dad for inspiring his love of history and conservation and Texas A&M School of Law professors Charlotte Ku and Vanessa Casado-Perez for their guidance and support throughout the research and writing process.

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I. INTRODUCTION

In October of 1987, two years before the Berlin Wall fell and less than five years before the Soviet Union dissolved, General Secretary Mikhail Gorbachev christened the Russian Arctic city of Murmansk with the Order of Lenin. The order was the Soviet Union's highest civilian honor, and Gorbachev praised the city for its historical contributions to Russia. In the midst of the Cold War, he spoke of ongoing tensions with NATO and the arms race with the United States. To the city of Murmansk, located above the Arctic Circle, these words resonated strongly because in the 1980s, both the United States and the Soviet Union had begun to position military installations and nuclear weapons in the region for the possibility of cross-polar strikes. Despite these pressures, Gorbachev said in Murmansk, "Let the North of the globe, the Arctic, become a zone of peace. Let the North Pole be a pole of peace . . . . [May it be] a genuine zone of peace and fruitful cooperation."[1]

Fast forward three decades to when, in response to American criticism of Russian naval action and military expansion in the Arctic Ocean, current Russian President Vladimir Putin said, "Everyone wants to bite off somewhere or to bite off something from us. But they should know, those who are going to do this, that we will knock out everyone's teeth so that they cannot bite."[2] Similarly, Nikolai Patrushev, Secretary of the Security Council of Russia, said, "The Arctic must become Russia's main strategic base," and "[it] cannot be ruled out that the battle for raw materials will be waged with military means."[3]

1. Mikhail Gorbachev, Gen. Sec'y of the Communist Party of the Soviet Union, The Speech in Murmansk (Oct. 1, 1987), https://www.barentsinfo.fi/docs/gorbachev_speech.pdf [https://perma.cc/5KZM-DSW2].

2. Paul D. Shinkman, *Putin Fires Back at U.S. Arctic Concerns: "We Will Knock Out Everyone's Teeth"*, U.S. NEWS & WORLD REP. (May 20, 2021), https://www.usnews.com/news/world-report/articles/2021-05-20/putin-fires-back-at-us-arctic-concerns-we-will-knock-out-everyones-teeth [https://perma.cc/E4TA-FXVQ].

3. Scott G. Borgerson, *The Great Game Moves North: As the Arctic Melts, Countries Vie for Control*, FOREIGN AFFS. (May 25, 2009), https://www.foreignaffairs.com/articles/commons/2009-03-25/great-game-moves-north [https://perma.cc/DFK3-FWLB].

The stark contrast between the words of 1987 and those of today provides insight into growing strategic competition in the Arctic. Further, the compounding effects of climate change in the region contribute greatly to creating an environment ripe for such competition and conflict.

Concisely put,

> [C]limate change will have its greatest effect on the Arctic, which will experience impacts ranging from increasing ambient air temperature to glacier and sea ice melting to permafrost thaw. This altered environment will result in new national security concerns for circumpolar nations such as the United States, including increased Arctic access by Russia and other nations; competition over newly accessible fossil fuel resources; and loss of Arctic military facilities resulting from permafrost thaw and land subsidence.[4]

Before these concerns can be fully explored, however, the concept of climate change as a national security threat must be established.

This Article addresses the effects of climate change on national security policy, militaries, and governing legal institutions in the Arctic Circle. It will discuss climate change as a national security threat and detail how the United States military is attempting to adapt for operations in an environment altered by climate change. With the background established, the Article will then discuss the Arctic's specific vulnerability to climate change, its governing structures, and implications for American security and strategic interests in the region. Lastly, it will offer policy considerations for the United States and the Arctic's governing institutions.

II. CLIMATE CHANGE AS A NATIONAL SECURITY THREAT

While this Article's focus is on climate change's effects in the Arctic region, understanding those effects first requires a discussion on climate change as a national security risk. Although climate change is not often thought of as a traditional national security threat, such as terrorism, nuclear missiles, or military invasions, academics and some

4. Elizabeth L. Chalecki, *He Who Would Rule: Climate Change in the Arctic and Its Implications for U.S. National Security*, 10 J. PUB. & INT'L AFFS. 204, 204 (2007).

policymakers have explored climate change as a national security factor since at least the 1970s.[5] Moreover, while the contention that climate change constituted a threat to national security remained largely scholastic until the turn of the century, the United States' military and defense apparatus has been considering it for some time. Further, the Department of Defense's own 2021 Climate Risk Analysis stated, "In worst-case scenarios, climate change-related impacts could stress economic and social conditions that contribute to mass migration events or political crises, civil unrest, shifts in the regional balance of power, or even state failure."[6] Consequently, climate change is a national security threat because of its ability to create conditions that hamper militaries in their efforts to respond to traditional security threats.

The first mention of climate change in official United States military strategy came in 1997 alongside more traditional security risks.[7] The published strategy noted that climate change affects the world in aggregate: societies, institutions, and states. Accordingly, it affects the environment in which militaries operate.[8] Through climate change, that environment is now being shaped by "record temperatures, unprecedented sea levels and frequent extreme weather events."[9] Due to its ability to create conflict over resources, damage coastal cities and military installations, and disrupt fragile states and ecosystems, "climate change is best viewed as a threat multiplier which exacerbates existing trends, tensions and instability."[10]

5. Kurt M. Campbell & Christine Parthemore, *National Security and Climate Change in Perspective*, BROOKINGS INST. 3 (2016), https://www.brookings.edu/wp-content/uploads/2016/07/climaticcataclysm_chapter.pdf [https://perma.cc/2YX9-DULG].

6. OFF. OF THE UNDER SEC'Y FOR POL'Y, U.S. DEP'T OF DEF., DEPARTMENT OF DEFENSE CLIMATE RISK ANALYSIS 8 (2021) https://media.defense.gov/2021/Oct/21/2002877353/-1/-1/0/DOD-CLIMATE-RISK-ANALYSIS-FINAL.PDF [https://perma.cc/58ZU-WBLP].

7. U.S. DEP'T OF DEF., A NATIONAL SECURITY STRATEGY FOR A NEW CENTURY (1997), https://history.defense.gov/Portals/70/Documents/nss/nss1997.pdf?ver=2whGiEUYiceAyme45GiJzA%3d%3d [https://perma.cc/DH7V-PP4J].

8. Michael Brzoska, *Climate Change and Military Planning*, 7 INT'L J. CLIMATE CHANGES STRATEGIES & MGMT 172, 173 (2015).

9. Press Release, Security Council, Climate Change Exacerbates Existing Conflict Risks, Likely to Create New Ones, Assistant Secretary-General Warns Security Council, U.N. Press Release SC/14260 (July 24, 2020), https://press.un.org/en/2020/sc14260.doc.htm [https://perma.cc/6VXH-MCWC].

10. THE HIGH REPRESENTATIVE & THE EUR. COMM'N, CLIMATE CHANGE AND INTERNATIONAL SECURITY 2 (2008),

Therefore, considering these wide-reaching effects and their potential to heighten preexisting cleavages, militaries have begun taking action to prepare for operations in a fundamentally different environment due to climate change. This effort, however, is not universal amongst militaries. While the United States and its allies have actively implemented climate plans into their militaries to varying degrees, neither China nor Russia have shown a desire to integrate climate policies in their armed forces beyond acknowledging that increasing severe weather events demand more robust disaster response capabilities.[11]

Currently, each branch of the American military has climate change action plans designed to reduce their respective environmental footprints. While emission reductions may forestall or even mitigate some of climate change's effects and are laudable efforts, for this Article's purposes, climate change is a foregone conclusion because it has already begun to alter the world's environment. While mitigation efforts may pay dividends in the future, the military has to operate in that altered environment today. Therefore, if climate change is a national security risk and a threat multiplier, how does it affect militaries, and ultimately, how does it affect strategic interests in the Arctic?

The most tangible effect of climate change on strategic military planning is how it has contributed to more severe and more frequent extreme weather events—events such as hurricanes, wildfires, and floods that can directly damage military installations and facilities. Moreover, "climate change has growing implications for the costs of operating U.S. military installations and associated equipment. DOD maintains more than 5,000 military installations worldwide. Of these, more than 1,700 are in coastal areas and have been or may be affected by sea-level rise or extreme weather events."[12] These extreme weather events have become more common, as "the last twenty years has seen the number of major floods more than double, from 1,389 to 3,254,

https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/reports/99387.pdf [https://perma.cc/96J4-QHUL] [hereinafter CLIMATE CHANGE & INT'L SECURITY].

11. *See* Michael Brzoska, *Climate Change and the Military in China, Russia, the United Kingdom, and the United States*, BULL. ATOMIC SCIENTISTS, Jan.–Feb. 2012, at 43.

12. Hibbah Kaileh & Kelley M. Sayler, *Climate Change and Adaptation: Department of Defense*, CONG. RSCH. SERV. (Apr. 6, 2023), https://crsreports.congress.gov/product/pdf/IF/IF12161 [https://perma.cc/K983-W9UD].

while the incidence of storms grew from 1,457 to 2,034. . . . There has also been a rise in geo-physical events including earthquakes and tsunamis."[13]

The United States military has not been spared as severe weather events have increased. For example, 2018's Hurricane Michael inflicted $4.7 billion in damages to Tyndall Air Force Base in Florida, and windstorms in 2021 damaged 694 military facilities across Oklahoma, Texas, Kansas, and Louisiana, to name only two instances.[14] Additionally, the Eastern Seaboard of the United States is home to dozens of Air Force and Navy installations[15] and is also the region most vulnerable to sea level rise. By 2100, the sea level along the East Coast could rise by as much as five to seven feet, resulting in more frequent and severe flooding and posing a direct threat to military installations along the coast.[16]

In response to the threat of worsening natural disasters and weather, the Department of Defense has embarked on a military-wide resiliency program to adapt America's defense infrastructure to withstand these increasingly severe weather events.[17] The scale of this effort is enormous, and its fiscal cost even more so, with the Department of Defense's 2023 budget request seeking "$2 billion for installation resiliency measures, which . . . are to '[adapt] military facilities to withstand increasingly challenging conditions and . . . to rapidly recover from disruptions to public infrastructure from climate-induced extreme weather.'"[18]

Functionally, the United States military has also been strategizing for a future in which its non-offensive capabilities are increasingly demanded because "climate change is likely to cause an increase in

13. Denis McClean, *#DRRDAY*: *UN Report Charts Huge Rise in Climate Disasters*, U.N. OFF. FOR DISASTER RISK REDUCTION (Oct. 13, 2020), https://www.undrr.org/news/drrday-un-report-charts-huge-rise-climate-disasters [https://perma.cc/TP9X-2FAF].

14. Kaileh & Sayler, *supra* note 12.

15. *See infra* Exhibits A & B.

16. WILLIAM V. SWEET ET. AL, NAT'L OCEANIC & ATMOSPHERIC ADMIN., GLOBAL AND REGIONAL SEA LEVEL RISE SCENARIOS FOR THE UNITED STATES 1, 23 (2022), https://aambpublicoceanservice.blob.core.windows.net/oceanserviceprod/hazards/sealevelrise/noaa-nos-techrpt01-global-regional-SLR-scenarios-US.pdf [https://perma.cc/B5RR-BJ8J].

17. OFF. OF THE UNDER SEC'Y OF DEF. FOR ACQUISITION & SUSTAINMENT, DEP'T OF DEF., REPORT ON EFFECTS OF A CHANGING CLIMATE TO THE DEPARTMENT OF DEFENSE 10 (2019) [hereinafter REPORT ON CHANGING CLIMATE].

18. Kaileh & Sayler, *supra* note 12.

demand for military forces in both disaster response and humanitarian assistance operations."[19] Consequently, the United States Navy has recognized a need for a larger fleet of hospital ships to prepare for both future armed conflict and disaster relief efforts.[20] While such appropriation has utility in either circumstance, funds allocated towards more hospital ships are funds not allocated toward aircraft carriers, submarines, or other assets perhaps more well-suited to the Navy's traditional power project role.

Some scholars have further noted that a deepened duality between a military's traditional force projection mission and humanitarian relief could weaken the former because "equipping armed forces with additional capabilities to perform functions related to disaster management will lead to changes in force structures. . . . All this means increasing costs of armed forces, unless other functions are reduced."[21] Furthermore, although military support for disaster relief has become an accepted part of emergency response, that concept may need to be revisited as climate change increases severe weather because "reliance on military capabilities becomes more problematic when disasters become more frequent, as disaster management is not the prime function of armed forces. . . . Using armed forces in disaster management presents a form of 'militarization', even if it occurs for beneficial purposes."[22]

A relatively recent example of a state resisting foreign disaster relief due to its delivery via military means is the case of Myanmar when it was hit by a cyclone in 2008.[23] The government refused to issue entry visas for foreign aid delivered by the United States and United Kingdom navies and only later accepted assistance through international humanitarian organizations under a deal brokered by the Association of Southeast Asian Nations ("ASEAN").[24] While increased demand for disaster relief is a contingency the United States

19. ED MCGRADY ET. AL, CTR. FOR NAVAL ANALYSES, CLIMATE CHANGE: POTENTIAL EFFECTS ON DEMANDS FOR US MILITARY HUMANITARIAN ASSISTANCE AND DISASTER RESPONSE 5 (2010), https://apps.dtic.mil/sti/citations/ADA564975 [https://perma.cc/LG6J-CKN3].

20. Salvatore R. Mercogliano, *New Hospital Ships Are Needed*, U.S. NAVAL INST. (May 2020), https://www.usni.org/magazines/proceedings/2020/may/new-hospital-ships-are-needed [https://perma.cc/M9CK-3J7Y].

21. Brzoska, *supra* note 8, at 180.

22. *Id.*

23. *See id.*

24. *Burma: One Year After Cyclone, Repression Continues*, HUM. RTS. WATCH (Apr. 30, 2009, 6:13 PM), https://www.hrw.org/news/2009/04/30/burma-one-year-after-cyclone-repression-continues [https://perma.cc/HDR9-E9VU].

military is preparing for,[25] it may face growing resistance against militarily provided relief from countries across the global south. This region is both geopolitically unaligned and one of the most at risk for climate change-induced disasters.[26] Consequently, competition for influence with its states may necessitate the United States exploring humanitarian aid delivery through non-military means such as directing resources toward NGOs or through the United States Agency for International Development ("USAID").

Beyond direct damage to military installations and increased demand for disaster relief, the American military is also preparing for a world in which the effects of climate change alter its operational environment and it must account for the environmental effects of its own presence in other states. These preparations foresee situations where the United States has lost access to Pacific naval facilities due to sea level rise, warmer air reduces aircraft range and efficiency, wildfires ravage bases, and resource scarcity burdens logistics.[27] Accordingly, such preparations involve a global environment affected by climate change, with the Arctic or the Pacific representing microcosms of the aggregate.

Although it has not yet occurred, situations could arise where Pacific nations that host United States naval bases refuse to allow continued American presence due to the negative environmental effects such bases can bring. For example, while not directly linked to climate change, New Zealand bars nuclear-powered United States naval vessels from making port in its harbors.[28] While this policy stems from an anti-nuclear stance, it is foreseeable other countries could adopt similar prohibitions on United States military forces due to environmental concerns, such as what occurred in the Philippines in 2012-2016 when the United States Navy dumped toxic waste into its waters.[29] Although perhaps not directly related, then-President of the Philippines Rodrigo Duterte announced shortly after the waste dumping incident a realignment with China and a stated opposition to

25. *See* REPORT ON CHANGING CLIMATE, *supra* note 17, at 9-10.

26. DAVID ECKSTEIN ET. AL, GERMANWATCH, GLOBAL CLIMATE RISK INDEX 2021, at 13 (2021).

27. REPORT ON CHANGING CLIMATE, *supra* note 17, at 5-9.

28. Henry Cronic, *New Zealand's Anti-Nuclear Legislation and the United States in 1985*, WILSON CTR. (Aug. 26, 2020), https://www.wilsoncenter.org/blog-post/new-zealands-anti-nuclear-legislation-and-united-states-1985 [https://perma.cc/9GZU-LMZ2].

29. Jeff D. Colgan, *Climate Change and the Politics of Military Bases*, 18 GLOB. ENV'T POL. 33, 33 (2018).

the presence of the United States military in the country. Although the Philippines has shifted allegiance back toward the United States as China asserts claims to its territorial waters, it remains a cautionary tale that if the United States military does not consider the environmental effects of its bases, it risks losing access to forward-deployed facilities and the trust of important allied states.

As an Arctic example, the melting of glacial ice recently revealed an abandoned United States project from the Cold War, known as Project Iceworm, to build missile defense sites under Greenland's ice sheet. As the ice has melted, it has exposed the sensitive Arctic environment to formerly buried stockpiles of diesel fuel, radioactive materials, and chemical toxins.[30] This case demonstrates "that climate change could impose additional costs on overseas military operations," and "[f]ailure to address those costs—regardless of whether they are legal or 'merely' political—could compromise the government's ability to operate overseas military bases."[31] Additionally, the United States military's reputation for damaging areas where it builds military bases may greatly hinder its ability to operate in the Arctic, as allies like Denmark ("Greenland"), Canada, and Norway could be hesitant to allow an American presence over fears of environmental pollution and harm.

Although there are few public examples of the United States paying actual costs of the environmental harms its military installations may cause, one historical example suggests such costs are steep, as the country has paid Canada over $100 million to remove radar detection sites from its primarily indigenously populated Arctic territories.[32]

Consequently, "[c]limate change reverberates into other environmental issues, potentially generating a combination of subnational, international, and transnational political contestation."[33] Accordingly, the political and financial liabilities of overseas bases will continue to pressure the United States military as climate change continues.

Opposite the United States, on the "other side" of what some scholars have been hesitant to declare a new cold war but nevertheless representing a world shifting toward multipolarity, are Russia and China.[34] Neither the Russian nor the Chinese military has published

30. *Id.*
31. *Id.*
32. *Id.*
33. *Id.*
34. James F. Smith, *Are We Entering Another Cold War? Probably Not—But It*

or announced plans or intent to combat climate change through adaptation or significant mitigation efforts.[35] The Chinese military, however, does have "explicit roles in promoting economic development and providing disaster relief," and it "is also involved in climate mitigation—not by reducing greenhouse gas emissions, but by planting trees."[36] As alluded to in an earlier discussion on the dangers of militarized disaster relief, China has also become particularly proactive in humanitarian aid efforts in both Asia and Africa as it has sought to leverage relief as a diplomatic tool to curry favor with unaligned states.[37] As the United States competes for support in those critical regions by providing developmental aid and disaster relief, the possibility of conflict through competitive altruism may emerge.

While neither Russia nor China appears to be concerned about climate change in a military context, the United States has decided that the strategic costs of not preparing for operations during climate change are higher than the cost paid to adapt. Accordingly, the United States military continues to hold that climate change is a national security risk and that the expense of combatting it is warranted. Moreover, this risk is global in nature and will have financial, political, and operational implications across diverse regions from the Pacific to the Arctic.

Therefore, with the capacity to worsen weather events that damage military facilities, cause civil strife, reduce resource availability, and challenge existing institutions and legal mechanisms, climate change is ultimately best described as a "threat multiplier."[38] The Arctic is uniquely vulnerable to these threats; therefore, climate change's ramifications in the far north will challenge both the United States' national security and strategic interests in the region and also the collage of soft international law that governs it.

Could Be Even Worse, HARV. KENNEDY SCH. (Mar. 8, 2022), https://www.hks.harvard.edu/faculty-research/policy-topics/international-relations-security/are-we-entering-another-cold-war [https://perma.cc/NGX5-6Z5Q].

35. Brzoska, *supra* note 11.

36. *Id.*

37. Lina Gong, *China's Emerging Disaster Diplomacy: What It Means for Southeast Asia*, S. RAJARATNAM SCH. OF INT'L STUD. COMMENT. No. 023 (2020).

38. CLIMATE CHANGE & INT'L SECURITY, *supra* note 10.

III. CLIMATE CHANGE IN THE ARCTIC

The Ancient Greeks coined the name Arktos, meaning "bear," for the far north of the earth based on the appearance of constellations.[39] It is a region loosely defined as the northernmost portion of the world ranging from the North Pole down to 66 degrees latitude[40] and consists of the Arctic Ocean, its ice sheets, associated seas, and eight sovereign states: Russia, Canada, the United States, Denmark by way of Greenland, Iceland, Finland, Norway, and Sweden.[41] The Arctic is additionally home to over four million indigenous people, including the Inuit people of Alaska, Canada, and Greenland, the Yu'pik, Inupiat, and Athabascan of Alaska, and the Sami people who span Norway, Sweden, Finland, and Russia.[42] This diverse array of national interests, in conjunction with the presence of indigenous peoples with long-running ties to the region, has resulted in a complex array of collaborative governing mechanisms in the Arctic led by the Arctic Council that this Article will cover in a proceeding section.

As mentioned earlier, climate change may have stronger, more pronounced effects in the Arctic region because "the warming potential of the Arctic is more significant than the rest of the globe . . . As highly reflective snow and ice cover melt into highly absorptive water, surface area that used to reflect sunlight will now absorb it, radiating the resulting energy back from the earth as heat."[43] Additionally, "[s]ince much of the Arctic's environment is close to 32 degrees Fahrenheit, a relatively small increase in the ambient air temperature can result in large environmental changes and feedbacks."[44]

Due to these phenomena, the Arctic may be warming up to four times faster than the rest of the world, and as a result, nearly 70% of the total icepack volume[45] in the region has melted in the last twenty years alone.[46] This warming's direct environmental effect is likely to

39. Leila Mead, *A Warming Arctic Is a Warning for the World*, INT'L INST. FOR SUSTAINABLE DEV.: EARTH NEGOTS. BULL., April 2022, at 2.
40. TIMO KOIVUROVA ET. AL, CLIMATE GOVERNANCE IN THE ARCTIC 147 (2008).
41. Mead, *supra* note 39.
42. *Id.*
43. Chalecki, *supra* note 4, at 206-07.
44. *Id.* at 207.
45. *See infra* Exhibit C.
46. Mead, *supra* note 39.

be twofold: dramatic reductions in ice coverage across the Arctic and melting permafrost on land.[47]

Currently, the extent of sea ice across the Arctic has been consistently declining by just over 13% per decade since the end of the 1970s.[48] Extrapolated out over time, this could see an ice-free Arctic between midcentury and 2070, with much of that melt additionally causing a rise in Arctic sea levels by several feet.[49] This sea level rise will pose a threat to coastal structures already threatened by the melt of the permafrost on which they are often built.[50]

The dramatic effects of a region once frozen in thick sheets of ice year-round becoming nearly ice-free with coastal flooding led former United Nations Secretary-General Ban Ki-moon to describe it as a bellwether because "what is happening in the Arctic affects other parts of the world."[51] Consequently, with it established that climate change in the Arctic is occurring more rapidly and more severely than in other parts of the world, it is important to next discuss the Arctic's governing institutions before delving into how climate change in the region will challenge both American national security interests and the region's international mechanisms.

IV. THE ARCTIC'S GOVERNING INSTITUTIONS

As mentioned above, the Arctic is a generally defined geographical region consisting primarily of the Arctic Ocean and then territories of eight sovereign states: Russia, Canada, the United States, Denmark, Finland, Sweden, Iceland, and Norway. Due to its diverse indigenous peoples, fragile ecosystems, and harsh climate, the Arctic states have taken a unique approach to international governance in the region, opting to use a collaborative framework that focuses less on formulating hard binding law and more on joint research and scientific study efforts. The vehicle for these efforts is the Arctic Council.[52]

47. Lee Mottola, *NATO's Arctic Command: A Case for the Expansion of NATO's Mission in the High North*, THE ARCTIC INST. (Jan. 17, 2023), https://www.thearcticinstitute.org/nato-arctic-command-case-expansion-nato-mission-high-north/ [https://perma.cc/Q9J7-3DBV].

48. *Arctic Sea Ice*, NASA EARTH OBSERVATORY (Sept. 16, 2016), https://www.earthobservatory.nasa.gov/features/SeaIce/page3.php#:~:text=Arctic%20sea%20ice%20generally%20reaches%20its%20maximum%20extent [https://perma.cc/Q33C-UZ9Q].

49. Mottola, *supra* note 47.

50. *See id.*

51. *Id.*

52. *See* ARCTIC COUNCIL, https://www.arctic-council.org/

Ironically, the Arctic Council's roots can be traced back to General Secretary Gorbachev's 1987 call for peace and friendship in the Arctic. Finland heeded this call and invited the Arctic states that now form the Arctic Council to form the Arctic Environmental Protection Strategy ("AEPS") in 1989, a joint deliberative body for discussing environmental impacts in the region.[53] Canada went on to explore the possibility of a more formal institution that would bring the Arctic nations together with representation and input from the region's indigenous peoples, and this effort ultimately resulted in the Ottawa Declaration of 1996 that established the Arctic Council.[54]

In addition to the eight member states, the council consists of six permanent participants that represent the region's indigenous groups and 38 observers that consist of non-Arctic states and NGOs. It is divided into six working groups focusing on: (1) pollution monitoring, (2) flora and fauna conservation, (3) emergency response and preparedness, (4) marine environment protection, (5) sustainable economic development, and (6) contaminant control.[55]

Foundationally, the Arctic Council's purpose is to "provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic."[56] As will become important in a later portion of this Article, the Arctic Council is also forbidden from discussing military and security affairs.[57]

The council's primary work centers on environmental research and collaborative studies based on inputs from the member states and the concerns of groups of indigenous peoples. While it cannot legislate or obligate states to its recommendations, its work has been the basis for several binding international agreements, such as the 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic and the 2017 Agreement on Enhancing International Arctic Scientific Cooperation.[58]

[https://perma.cc/JHV5-KJCS].

53. Markku Heikkilä, *It All Started in Rovaniemi*, UARCTIC SHARED VOICES, 2016 Special Edition, at 14.

54. *Id.*

55. ARCTIC COUNCIL, *supra* note 52.

56. Declaration on the Establishment of the Arctic Council, Sept. 19, 1996, 35 I.L.M 1387.

57. *Id.*

58. Mead, *supra* note 39, at 5.

While the Arctic Council coordinates joint communication and research activities between the Arctic states, the Arctic is primarily made up of the Arctic Ocean and not the territory of sovereign states. Accordingly, the United Nations Convention on the Law of the Sea ("UNCLOS") governs the open waters and grants that states "can claim the natural resources on, above, and beneath the Arctic Ocean floor up to 200 miles from their shorelines. They can also extend their claim up to 350 miles from shore for any area that is proven to be a part of their continental shelf."[59] UNCLOS further provides a framework for the regulation of seabed mining, dispute resolution mechanisms for signatories, and an application process for states seeking to validate their continental shelf claims.[60]

UNCLOS went into force in 1994 with 168 parties to the treaty.[61] While the United States complies with UNCLOS in practice as a form of customary international law, it has not ratified the treaty.[62] Additionally, although UNCLOS is not specific to the Arctic, its relevance to the region is substantial due to competing claims of Arctic states[63] alleging continental shelf continuities that could grant exclusive access to larger swathes of the open ocean and its seabed resources. Russia, for example, has claimed the Barents Sea, Bering Sea, the Sea of Okhotsk, and the Central Arctic Ocean, even planting a Russian flag in the seabed under the North Pole.[64] Canada and Denmark both make similar competing claims to Russia's under the North Pole.[65]

Beyond the binding tenets of UNCLOS and the Arctic Council, another more informal deliberative group of stakeholders in the region is the Arctic Five, made up of Canada, Denmark, Russia, the United States, and Norway. These are the states with Arctic coastlines and accordingly are also the most relevant to the application of UNCLOS in the Arctic. Consequently, due to the United States' non-ratification of UNCLOS, it cannot validate its own Arctic continental shelf claims, nor can it participate in the dispute resolution processes the treaty

59. Marta Kolcz-Ryan, *An Arctic Race: How the United States' Failure to Ratify the Law of the Sea Convention Could Adversely Affect Its Interests in the Arctic*, 35 UNIV. DAYTON L. REV. 149, 149 (2009).
60. *Id.* at 150, 157.
61. U.N. Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397.
62. Kolcz-Ryan, *supra* note 59, at 150.
63. *See infra* Exhibit D.
64. *Id.*
65. *Id.*

provides. A later Section will discuss the perils of this course of action in more detail.

While the Arctic Five is more of an informal forum rather than a governing institution, its representation of the Arctic's largest sovereign states and the presence of competing continental shelf claims amongst them suggest its pronouncements carry substantive weight on the Arctic governance conversation. In May of 2008, the Arctic Five states released the Ilulissat Declaration, which affirmed that "We [the Arctic Five] remain committed to [UNCLOS] and to the orderly settlement of any possible overlapping claims."[66] Additionally, the Arctic Five states further clarified that they collectively "see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean."[67] Consequently, this statement made it clear that the Arctic's primary stakeholders, at least as of 2008, believe the existing legal regime and institutional mechanisms to be adequately sufficient or at least have little desire to rediscuss new governing institutions or facilities.

Moving forward, climate change has national security implications and exacerbates risks. Due to its fragile nature and ecosystems, climate change is impacting the Arctic more quickly than other regions of the world, and consequently, the resulting strategic and institutional stressors in the region are becoming more pressing. The Arctic's governing mechanisms are not well prepared to address potential future conflicts in the region, but its national stakeholders have also shown little interest in an expanded or more formal facility for legal regulation. Therefore, what specifically are the impending climate change-driven national security and strategic implications in the Arctic, and what can or could be done to address them effectively?

V. CLIMATE CHANGE-DRIVEN NATIONAL SECURITY RISKS IN THE ARCTIC

As Arctic temperatures warm and the ice sheets recede, "this altered environment will result in new national security concerns for circumpolar nations such as the United States, including increased Arctic access by Russia and other nations; competition over newly accessible fossil fuel resources; and loss of Arctic military facilities

66. ARCTIC OCEAN CONF., ILULISSAT DECLARATION (2008), https://cil.nus.edu.sg/wp-content/uploads/2017/07/2008-Ilulissat-Declaration.pdf [https://perma.cc/G5RQ-MLMP].

67. *Id.*

resulting from permafrost thaw and land subsidence."[68] Consequently, the strategic importance and challenges driven by climate change in the Arctic arise from the operational demands its effects will have on the United States military in conjunction with increased opportunity for conflict. As the Arctic's once stalwart ice melts, the region will open to increased commercial passage through new sea lanes, and its natural resources will become accessible for exploitation. In either case, the United States military must be prepared to first mitigate climate change's effects on its existing infrastructure in the region. Second, the military must be prepared to increase its Arctic presence to ensure security of commercial passage and the respect of international waters. Similarly, the Arctic's loose collage of soft international law is not well prepared to act in a conflict mitigation capacity.

For most of recorded history, the Arctic has long been inaccessible due to its ice coverage and treacherous seas. The storied legends of explorers seeking and often failing to find the fabled Northwest Passage that would connect the Atlantic and Pacific oceans through the far north[69] reinforce the significant and secluded isolation from substantial human exploration and travel the Arctic has enjoyed for millennia. In an era of climate change and melting ice, however, that inhospitable nature looks to be one supplanted by a race for resources and great powers interest.

Although not likely to be fully ice free until 2070,[70] as the Arctic's ice recedes it may open two new sea lanes to commercial ventures that could significantly reduce maritime trade transit times but also place increased operations demands on the United States Navy to ensure freedom of navigation and flow of commerce. Over 90% of international trade involves maritime transportation,[71] and currently the Panama Canal is the primary connection between the Atlantic and Pacific oceans, with approximately 5% of the world's maritime trade passing through annually.[72] In an ice-free Arctic, however, the

68. Chalecki, *supra* note 4.

69. *See Northwest Passage*, ENCYCLOPEDIA BRITANNICA, https://www.britannica.com/place/Northwest-Passage-trade-route [https://perma.cc/G7RJ-CNBG] (last updated Jan. 8, 2024).

70. *See* Mottola, supra *note* 47.

71. *Coastal Fast Facts*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. OFF. FOR COASTAL MGMT., https://coast.noaa.gov/data/nationalfacts/pdf/hand-out-coastal-fast-facts.pdf [https://perma.cc/R4PS-XRAK].

72. Nicole Rutherford, *China Looks to Use Northwest Passage for Faster Shipping*, CANADIAN GEOGRAPHIC (Apr. 25, 2016),

Northwest Passage, which goes through northern Canada,[73] will cut transit times from parts of Asia in the Pacific to the Atlantic by upwards of 30% relative to using the Panama Canal, depending on the route's origination and destination ports.[74] Additionally, ownership of the Northwest Passage is disputed, with Canada asserting sovereignty over it as internal Canadian waters and the United States and the European Union claiming it to be international waters.[75]

Although it may be unlikely that the entirety of the Panama Canal's trade reroutes through the Northwest Passage, China has made it clear it intends to exploit the Arctic route due to its cost savings in transit time.[76] While Canada asserts sovereignty over the passage and has sought to require all ships accessing it to register with its coast guard authority,[77] it does not possess the naval capacity to prohibit travel. Additionally, its traditional allies in the United States and Europe do not support its stance on the Northwest Passage, which further hinders its enforcement authority. Consequently, "as climate change melts the Arctic ice, more surface ship traffic will force the Canadians to either defend their claim or abandon it."[78] Furthermore, while the United States Navy has acted as the defensive steward of global maritime trade in the post-war era, "if the United States, concerned about increasing traffic to the north, thinks that Canada cannot adequately patrol its Arctic waters, it might assume responsibility itself, treading on Canadian sovereignty."[79] This could strain American-Canadian relations at a time and in a place where consensus amongst American allies is of paramount importance.

A substantive American naval presence in the region will further be necessary because "while an ice-free Northwest Passage may translate into more trade and material wealth, increased ship traffic will also result in a rising number of vessels from hostile nations or non-state

https://canadiangeographic.ca/articles/china-looks-to-use-northwest-passage-for-faster-shipping/#:~:text=Mapping%20China%20looks%20to%20use%20Northwest%20Passage%20for [https://perma.cc/R8MA-UUKS]; Serkan Arslanalp et al., *Climate Change Is Disrupting Global Trade*, INT'L MONEY FUND BLOG, (Nov. 15, 2023), https://www.imf.org/en/Blogs/Articles/2023/11/15/climate-change-is-disrupting-global-trade [https://perma.cc/J9XQ-DEUN].

73. *See infra* Exhibit E.
74. Rutherford, *supra* note 72.
75. Kolcz-Ryan, *supra* note 59, at 154.
76. Rutherford, *supra* note 72.
77. Kolcz-Ryan, *supra* note 59, at 154.
78. Chalecki, *supra* note 4, at 213.
79. *Id.*

actors, who have no incentive to obey internationally accepted laws regarding national waters or even notify a country of their presence."[80] A later portion of this Article will further discuss the effects of increased Arctic force projection demand on the United States Navy and its operational capacities.

While climate change opens the Northwest Passage in the Arctic to increased commercial access, it will additionally open the Northern Sea Route[81] to the same. The Northern Sea Route is comparable to the Northwest Passage in that it shortens transit times between oceans, but it is located along the Russian Arctic coast and can reduce transit times between parts of Asia and the North Atlantic by upwards of half depending on the course of travel.[82] Currently, the route taken by ships departing Asia for western and northern Europe goes through the Suez Canal, with up to 12% of the world's maritime trade passing through Egypt.[83] With the Northern Sea Route opening due to ice melt, it is probable that a portion of that commerce may be diverted through it due to cost savings.

Unlike the Northwest Passage's jurisdictional conflicts, the Northern Sea Route falls primarily within Russia's 200-mile Exclusive Economic Zone ("EEZ"), and while it considers the route to be internal Russian waters, it has also devoted significant naval resources to keeping the route open for commercial shipping.[84] Russia has developed the world's largest icebreaker fleet for maintaining an obstruction-free sea lane that, even before the worst of climate change results in an ice-free Arctic, is annually open to commercial traffic from June to October.[85] In contrast, and as will be discussed in a proceeding Section, the United States Navy possesses no icebreakers, and the Coast Guard only retains two aging vessels unfit for extensive Arctic service.[86]

80. *Id.*
81. *See infra* Exhibit F.
82. Chalecki, *supra* note 4, at 214.
83. N.Z. MINISTRY OF FOREIGN AFFS. & TRADE, THE IMPORTANT OF THE SUEZ CANAL TO GLOBAL TRADE (2021), https://www.mfat.govt.nz/en/trade/mfat-market-reports/market-reports-africa/the-importance-of-the-suez-canal-to-global-trade-18-april-2021/ [https://perma.cc/7HPU-KSGT].
84. Chalecki, *supra* note 4, at 214.
85. *Id.*; *Major Icebreakers of the World*, U.S. NAVAL INST., https://www.dco.uscg.mil/Portals/9/DCO%20Documents/Office%20of%20Waterways%20and%20Ocean%20Policy/20170501%20major%20icebreaker%20chart.pdf?ver=2017-06-08-091723-907 [https://perma.cc/J5KG-EHFQ] (last updated May 1, 2017).
86. C. Todd Lopez, *U.S. Needs More Icebreakers for Arctic*, U.S. DEP'T OF DEF.

Furthermore, Russia has invested heavily in ensuring commercial traffic will flow through the Northern Sea Route. The prospects of up to 12% of global maritime trade moving through a Russia-controlled sea lane could result in a situation not dissimilar to the ongoing crisis in Ukraine where Russia weaponizes port access and maritime commerce as a conflict bargaining chip. While the United States cannot prevent commercial traffic from using the Northern Sea Route as it opens, more maritime traffic crossing through Russian waters in the Arctic adds further necessity to an increased American naval presence in the region.

Whether through the opening of the Northwest Passage or the Northern Sea Route, climate change will redirect the flow of a not-insignificant amount of the world's maritime commerce through the Arctic, necessitating a substantial American naval presence in the region "in order to monitor shipping and military traffic through adjacent waters."[87]

Beyond the opening of new sea lanes to commercial traffic, the melting of the Arctic's ice additionally opens the region up to increased resource exploitation and the possibility of conflict over those resources. The Arctic region possesses an estimated 22% of the earth's natural gas and oil reserves located in the territorial lands of sovereign Arctic states but primarily in the seabed beneath the Arctic Ocean.[88] With such a vast untapped resource reservoir becoming accessible, the Arctic states have begun staking claims, and even non-Arctic countries such as China have asserted a commercial interest in the region's resources.[89] Moreover, "[a] lack of Arctic territory has not hindered China from expressing interest in extending its growing influence into the High North. [This began] with a 2018 declaration wherein the People's Republic of China identified itself as the 'near-Arctic power', while designating the polar region for considerable investment."[90] Additionally, Chinese involvement in the Arctic would likely be collaborative with Russia, as the other Arctic states are

(Feb. 8, 2022), https://www.defense.gov/News/News-Stories/Article/Article/2928402/us-needs-more-icebreakers-for-arctic/#:~:text=It%27s%20true%20that%20ice%20is%20melting%20in%20the [https://perma.cc/4S5D-GYLC].

87. Chalecki, *supra* note 4, at 213.

88. Zhao Long, *Arctic Governance: Challenges and Opportunities*, COUNCIL ON FOREIGN RELS. (Nov. 29, 2018), https://www.cfr.org/report/arctic-governance [https://perma.cc/EM8C-GYH3].

89. Mottola, *supra* note 47.

90. *Id.*

United States allies. This could result in the Arctic falling into the same conflicting spheres of influence that much of the world has, pitting a Sino-Russian bloc against American-allied states.

While much of the Arctic's seabed is already located within the Arctic Five's own respective Exclusive Economic Zones and therefore is largely undisputed, the remainder lies underneath international waters, with many opposing claims asserting sovereignty over it. As mentioned earlier, for unclaimed waters and seabeds, UNCLOS "allow[s] for all states to enjoy the rights of navigation, overflight, fishing, scientific investigation, and resource exploration and exploitation, including in parts of the Arctic Ocean."[91]

Importantly, UNCLOS allows states to claim rights to seabeds beyond their 200-mile EEZs if they can prove their continental shelves extend beyond that reach, and it establishes a United Nations-sanctioned process for submitting and validating such claims. With Russia having competing seabed claims with Denmark, Canada, and Norway, and even the United States and Canada disputing a portion of the Arctic,[92] UNCLOS is the only binding framework for establishing determined sovereign boundaries in the Arctic. Beyond submitting and validating claims, it also allows parties to the treaty to formally dispute claims and provides a mediation forum for peacefully resolving such conflicts.[93] Russia has already stated it considers military force a viable option for ensuring access to resources over which it claims sovereignty,[94] while Canada, Denmark, and Norway are all American-allied NATO states. Accordingly, there is a risk that Russia could use military force to assert claims over seabeds and waters under the jurisdiction of a NATO member, greatly increasing the likelihood of wider armed conflict.

Furthermore, for Russia, "conquering the Arctic has great symbolic value. It represents the nation's historical imperialistic determination and offers tremendous prestige, thereby making it a core national interest. . . . With a lack of a diversified economy, Russia sees the hydrocarbons as assisting the regime's survival against the evils the West exacts upon it, including countering recently imposed sanctions. Even if it requires coercive diplomacy and military confrontation, Russia will protect these assets to sell to other buyers such as China

91. Long, *supra* note 88.
92. *See infra* Exhibit D.
93. Kolcz-Ryan, *supra* note 59, at 159.
94. Elizabeth Anne L. Hoettels, *Medical Support to the DoD Arctic Strategy*, 2 AETHER: J. STRATEGIC AIRPOWER & SPACEPOWER 58, 66 (2023).

and India to ensure continued income flows."[95] Moreover, ongoing Russian aggression in Ukraine contributes to speculation that possible Arctic aggression is not entirely unfounded.

Complicating the question of competing Arctic resource assertions, the United States has not ratified UNCLOS and accordingly cannot participate in its seabed claims validation or dispute resolution procedures.[96] Thus, the United States remains beyond the purview of the one binding piece of international law that frames maritime activity and resource usage in the Arctic, which will hinder the nation's ability to assert its own Arctic claims and to oppose Russia's expansion. The latter is of imperative interest because "the United States might face Russian naval incursions into its northern waters," while "U.S. (and Canadian) strategic considerations would not permit Russia to have unfettered access to the Western Hemisphere Arctic."[97] Importantly, however, while the United States has not ratified UNCLOS, it complies with UNCLOS's general principles in practice and asserts that "[w]hen necessary and appropriate, [it] will challenge excessive maritime claims in the Arctic to preserve the rules-based international order."[98] Consequently, the possibility of armed confrontation between great powers in the Arctic is one that additionally exposes weaknesses in the Arctic's international legal regime, as the Arctic Council is prohibited from discussing military matters.

Climate change is causing the Arctic's ice sheet to melt. Such an eventuality will open the Arctic to increased commercial passage through new sea lanes and to resource exploitation that could result in conflict over disputed seabed claims. In either case, the United States will require a greater military presence and capacity in the region to counterbalance any possible Russian aggression and to assure safe commercial passage of the seas. Accordingly, it is important to discuss the implications such operational demands will have for the United States military and, furthermore, what direct risks climate change in the Arctic poses to American defense infrastructure.

95. *Id.*
96. *Id.* at 59.
97. Chalecki, *supra* note 4, at 215.
98. OFF. OF THE UNDER SEC'Y FOR POL'Y, DEP'T OF DEF., REPORT TO CONGRESS: DEPARTMENT OF DEFENSE ARCTIC STRATEGY 13 (2019), https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/1/2019-DOD-ARCTIC-STRATEGY.PDF [perma.cc/AKV7-GGAC] [hereinafter DOD ARCTIC STRATEGY].

VI. ARCTIC CLIMATE CHANGE AND UNITED STATES MILITARY INTERESTS

First, the United States military is currently ill-equipped for expanded Arctic operations because "[t]raditional military tactics, logistics, and equipment will likely be unsuited to the challenges of combat in the High North."[99] Further, "land forces would require special modification and training to operate in the region if they intend to maintain the flexibility and rapid response abilities that make them so potent . . . . Likewise, the issue of polar seas would restrict the usage of traditional naval forces."[100] Additionally, while military aircrafts's functionality is less likely to be hindered by the Arctic environment, air bases and other operations hubs are susceptible to melting permafrost weakening their foundations.[101] Therefore, Arctic military operations are substantially different than past conventional conflicts in which the United States military has engaged.

Russia contains 53% of the Arctic's coast and accordingly possesses significantly more regional military infrastructure than the United States does.[102] This disparity limits American regional force projection and, as will be discussed later, necessitates greater military integration with Arctic NATO and soon-to-be NATO states. Consequently, after several decades fighting insurgency in the deserts and mountains of Iraq and Afghanistan, along with the Navy preparing for possible conflict in the Pacific, the United States military is not currently tailored toward operating extensively in the Arctic. The Department of Defense has recognized these weaknesses and accordingly has increased training exercises and wargames efforts in the Arctic in preparation for possible military action in the region.[103] Additionally, the Navy and Coast Guard recently recognized the need for an icebreaker fleet beyond the few rescue vessels currently maintained.[104] While certainly necessary, greater appropriations for Arctic-specific vessels means less funding available for conventional naval assets such as submarines, aircraft carriers, and support ships that may be needed in an eventual Pacific conflict. Thus, while the United States Navy must make significant investments in its capability

99. Mottola, *supra* note 47.
100. *Id.*
101. *Id.*
102. *See infra* Exhibit G.
103. DOD ARCTIC STRATEGY, *supra* note 98, at 11.
104. Lopez, *supra* note 86.

to prepare for Arctic conflict, there will be opportunity costs that could reduce effectiveness in other capacities.

The realm of military medicine is another area where the Arctic presents challenges to military operations there. While the United States military obtained a 98% survival rate in its Middle Eastern conflicts, such a rate is unlikely in the High North where inclement weather and immense travel distances between developed facilities make delivery of robust military medical care more difficult. "Future Arctic wars will most certainly feature mass casualties, delayed evacuation times, and significant resource strains. These conflicts will challenge medics' training, knowledge, and spirit."[105] Resource shortages and delayed logistics times will likely affect other areas of military readiness as well, such as weapons platform readiness, base maintenance, and mechanical repair. Accordingly, American military preparation for eventual conflict in the Arctic will require service-wide adaptation and significant financial investments both in tangible technologies and in personnel training.

The final and most direct impact that climate change's effects in the Arctic will have on American military capability will be physical damage to military infrastructure due to weather events and melting permafrost. Alaska is the United States' Arctic foothold, and warmer temperatures in the Arctic threaten to weaken the American ability to operate effectively from and in the region. This is significant because "Alaska is the closest U.S. state to major Russian population centers (3,800 nautical miles between Juneau, AK and Moscow, Russia), making it a geostrategic location for U.S. security fixtures."[106] Moreover, Alaska is home to nearly two dozen early warning radar sites that form the North American Aerospace Defense Command's ("NORAD") North Warning System ("NWS").[107] While these sites were considered technologically advanced in the Cold War, financial neglect, melting permafrost, and sea level rise threaten to render them ineffective against future threats in the Arctic. Consequently, the Department of Defense's 2019 Arctic Strategy stated that "[t]hawing permafrost, compounded by storm surge and coastal erosion,

105. Hoettels, *supra* note 94, at 72.

106. Rhemi Marlatt, *The Intersection of U.S. Military Infrastructure & Alaskan Permafrost Through the 21st Century*, THE ARCTIC INST. (Oct. 27, 2020), https://www.thearcticinstitute.org/intersection-military-infrastructure-alaskan-permafrost-21st-century/ [https://perma.cc/E9NH-3KLT].

107. *Id.*

adversely affects infrastructure, including DOD installations."[108] Thus, while Arctic military operations will drive increased financial expenditure on training and military vehicle adaptation, American military facilities will require additional investment to remain viable in the region.

Overall, as climate change opens the Arctic to increased maritime passage and resource exploitation, the potential for conflict between great powers rises. The Arctic looks to be split, like much of the world, between a resurgent authoritarian bloc in Russian and China and an American-led coalition of NATO and allied countries. Consequently, military operations in the Arctic will require significant overhauls of American warfighting technologies, strategies, and platforms in order to effectively assert American and allied interests in the region. Furthermore, the region's governing international institutions must evolve to preempt armed conflict or escalation in the Arctic. The following Section of this Article will discuss strategic considerations and recommendations for the United States and the Arctic's international governing mechanisms.

VII. STRATEGIC CONSIDERATIONS AND RECOMMENDATIONS

The United States faces several strategic challenges as climate change shapes the Arctic into a probable flashpoint for conflict in the coming decades. These challenges range from increased financial burdens to support training and re-equipping a military force for Arctic operations, possible diplomatic strife with Canada over the Northwest Passage, resource disputes across competing continental shelf claims, and the lack of a clear allied consensus on operations in the region.

Climate change in the Arctic poses additional challenges to the region's governing institutions. The Arctic Council currently lacks authority to discuss security and military concerns but perhaps more importantly is not even currently operating at full capacity. Following Russia's invasion of Ukraine in February 2022, the Council paused its work indefinitely.[109] As of March 2023, there has been a limited resumption of work on projects by the other seven Arctic states

108. *Id.*

109. Timo Koivurova, *Is It Possible to Continue Cooperating with Russia in the Arctic Council?* GEO. J. INT'L AFFS. (Jun. 29, 2022), https://gjia.georgetown.edu/2022/06/29/is-it-possible-to-continue-cooperating-with-russia-in-the-arctic-council/ [https://perma.cc/KC29-D92U].

without Russia.[110] Consequently, the Arctic's only formal and established intergovernmental forum is now only partially functional. It lacks one of the region's largest states and the one most likely to be at odds with the other Arctic states. Therefore, considering the challenges facing both the United States and the Arctic's international institutions, what should be done?

The United States should be prepared for the financial expenditures necessary to retool and re-equip its military for possible conflict and operations in the Arctic region. Specifically, the Navy will require a significant technological overhaul to ensure its ships are sufficiently weatherized for Arctic operations, and icebreaker development should be fast-tracked. With new commercial maritime lanes opening in the coming decades due to climate change, if the Navy seeks to undertake its espoused duty to ensure global freedom of navigation, it must be prepared to deploy extensively into the Arctic. Moreover, while the American and NATO allies have begun holding more training exercises in the Arctic,[111] Russia's regional military footprint dwarfs that of any allied coalition. Although its invasion of Ukraine has exposed significant vulnerabilities in Russia's armed forces, the war has also shown that Russian leadership is willing to take dangerous and unexpected actions and shows little concern for casualties or combat costs. Accordingly, the United States and NATO should take Russian militarization and aggression in the Arctic seriously.

Currently, the United States and its allies lack a cohesive or uniform Arctic strategic agreement or approach beyond Article V mutual defense commitments to NATO Arctic states.[112] With Finland's and Sweden's new memberships, the Arctic is poised to be split between Russia on one side and seven NATO allies on the other. Thus, the United States should pursue an expanded allied strategy for Arctic operations that includes significant input from Finland, Sweden, and Norway: three Nordic states with extensive Arctic experience. This

110. Trine Jonassen, *The Arctic Council: The Arctic 7 Resume Limited Work Without Russia*, HIGH N. NEWS (Jun. 8, 2022), https://www.highnorthnews.com/en/arctic-council-arctic-7-resume-limited-work-without-russia [https://perma.cc/UXU8-WPZV].

111. *Exercise Cold Response 2022 – NATO and Partner Forces Face the Freeze in Norway*, NATO (Mar. 25, 2022), https://www.nato.int/cps/en/natohq/news_192351.htm [https://perma.cc/32UF-CBHY].

112. *Collective Defence and Article 5*, NATO (July 4, 2023), https://www.nato.int/cps/en/natohq/topics_110496.htm [https://perma.cc/9DZB-6DW6].

could include, amongst other things, partnerships to develop better technology for Arctic operations, forward deployment of American forces in Scandinavia, and an expanded military medical care network to allow allied use across regional NATO member facilities. Considering its location in the North Atlantic and naval capabilities, the United States should also consider inviting the United Kingdom into integrated Arctic security cooperation and planning.

One proposal that would integrate American and allied interests into a formal Arctic strategic approach would be for NATO to establish an Arctic Command ("ARCCOM").[113] A unified command of allied Arctic states would prove significant to the United States because "the nature of competition in the High North is so unique it will require an individualized focus."[114] Moreover, "NATO [could] establish a dedicated command to be the motive force of the alliance's efforts to advance discussion and deterrence in all things Arctic, be they diplomatic, informational, or military, allowing it to pursue all of these goals at once."[115]

Although this concept would improve American military footing for Arctic operations, there is a risk of escalating tensions with Russia if the Arctic is viewed through a lens that pits Russia on one side and NATO on the other. Additionally, an important political and legal question that the Arctic NATO states should be prepared to answer is whether Russian force on or to assert a claim over a disputed seabed or ocean constitutes an armed attack in the context of Article V's collective defense obligation. Furthermore, due to the high potential for conflict in an Arctic increasingly polarized between NATO states and Russia, the region should retain a diplomatic forum that is not predicated on military alliances, hence the importance of the Arctic Council.

An additional strategic challenge that the United States should consider as the Arctic opens is its ongoing dispute with Canada over the Northwest Passage. Canada is an integral hemispheric and global ally; therefore, the United States should be prudent as to how it approaches a sea lane that Canada considers to be sovereign internal waters. A plausible course of action would be for Canada to retain but suspend its claim and provide consent to the United States Navy to patrol the passage.

113. Mottola, *supra* note 47.
114. *Id.*
115. *Id.*

As a final consideration for the United States, it should ratify UNCLOS. "All Arctic nations . . . except for the United States, [have] ratified the Convention . . . As a nation with an extensive coastline and a continental shelf with enormous oil and gas reserves, the United States has much more to gain than lose from joining the Convention."[116]

Moreover, if the United States ratifies UNCLOS, it would be able to contest Russian expansion in the region and gain access to the convention's dispute resolution procedures.[117] While the United States may follow UNCLOS in principle, its unratified adherence fails to provide access to the convention's full benefits. With significant seabed disputes between Russia and the United States' Arctic allies and Russia's assertion that military force is a viable tool for securing those claims, UNCLOS is the only binding legal framework for the region that offers a tangible avenue for resolving conflicting claims. Accordingly, the United States should ratify it and assert its own participation in the process. Although Russian recognition of the convention is less certain owing to its invasion of Ukraine, such speculation is not a license for inaction on the part of the United States in seeking to leverage international mechanisms to advocate its national interests.

As for strategic considerations for the Arctic's international institutions, the potential for conflict over maritime trade access and resources in the Arctic is too significant not to have a functioning intergovernmental forum that allows for the discussion of security concerns between states. Therefore, the Arctic Council should amend its own foundational rules to allow for the consideration of military and security affairs and bite the metaphorical bullet by seeking to bring Russia back into the fold of regional cooperation. Constructing international governing mechanisms from the ground up is difficult, and accordingly, the cooperative infrastructure that the Arctic Council has built since the 1990s should be adapted to suit the evolving needs and challenges of the region. For example, although the Arctic Council is not nearly as integrated and expansive as the United Nations, the latter's obvious failings do not demand its abolition but rather necessitate its further evolution.[118]

116. Kolcz-Ryan, *supra* note 59, at 173.

117. *Id.*

118. Suzanne Nossel, *The World Still Needs the UN*, FOREIGN AFFS. (Mar. 18, 2021), https://www.foreignaffairs.com/articles/world/2021-03-18/world-still-needs-un [https://perma.cc/NEP7-A6K2].

Although Russian cooperation with the United States and allied nations in the Arctic on security matters is unlikely, keeping channels of communication open for de-escalation purposes has its own utility, and "there [still] may be some room for cooperation with Russia on environmental protection, scientific exploration, and search and rescue operations."[119] Furthermore, the Arctic Council's inclusion of indigenous peoples in its decision-making and deliberation makes it unique as an international organization, and there is additional value in continuing collaborative efforts in the Arctic with the input of native peoples whose livelihoods will be directly impacted by climate change in the region. Although it may be unpalatable to cooperate with Russia as it continues its illegal invasion of Ukraine, for the sake of seeking a more secure Arctic for all parties in the face of climate change, it may be best if the Arctic Council continues cooperation with Russia and expands its work to include the discussion of security and military concerns.

Therefore, while the United States faces its own host of challenges in the Arctic, it also has tangible and actionable options to best establish its strategic regional interests. These include defense planning for the costs likely required to operate in the Arctic, ratifying UNCLOS, settling the Northwest Passage dispute with Canada, and developing a cohesive Arctic front across allied nations. For the Arctic's international institutions, however, while there are evolutionary steps to better adapt to climate-induced security challenges, their feasibility is weakened by the low probability of Russian cooperation. Regardless, the existing institutions should be best leveraged and modified to de-escalate future conflicts and incorporate the views of the Arctic's diverse stakeholders into any such cooperative efforts.

VIII. CONCLUSION

Although a relatively new consideration to the national security risks discussion, climate change's ability to impact the American military's tangible assets, drastically alter its operational environment, and exacerbate preexisting cleavages makes it a "threat multiplier."[120]

119. Raphael S. Cohen et al., *Little in Common: Prospects for U.S.-China and U.S.-Russia Security Cooperation*, RAND CORP. (2023), https://www.rand.org/pubs/research_briefs/RBA597-1.html [https://perma.cc/S2PF-WEYL].

120. CLIMATE CHANGE & INT'L SECURITY, *supra* note 10, at 2.

While its effects will be global, climate change will affect the Arctic at a more rapid pace than other regions and accordingly will have consequential effects on the United States' strategic interests and the Arctic's own international institutions.[121] Ultimately, while there are steps available to both the United States and the Arctic's international mechanisms to better adapt to climate change's security challenges, the unpredictability of a militarist Russia, China's own interest in the region, and a general fracturing of the rules-based international order suggest that the Arctic of the 21st century remains far from the "zone of peace" once envisioned by General Secretary Gorbachev in 1987.

121. *See* Chalecki, *supra* note 4.

IX. APPENDIX

Exhibit A

Exhibit B

Exhibit C

Exhibit D

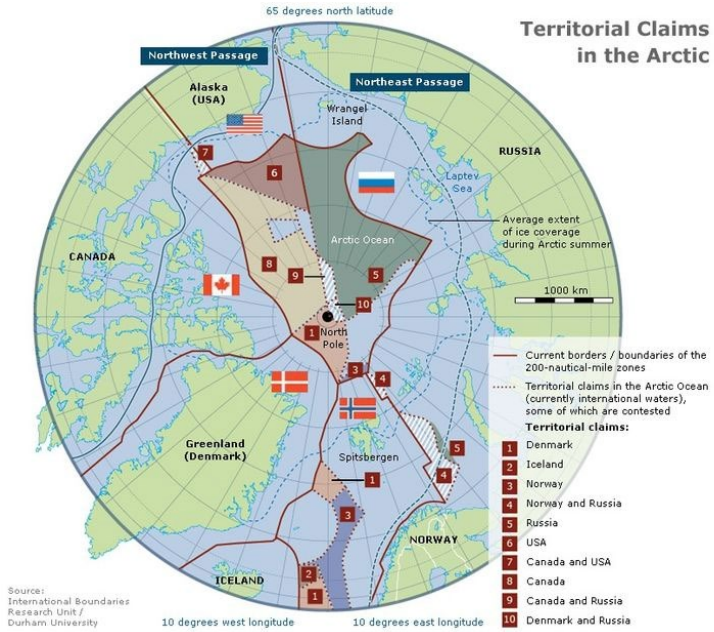

Exhibit E

Exhibit F

Exhibit G


RUSSIA'S
ARCTIC BUILD-UP
USA
RUSSIA
U.S. SENATOR for ALASKA
DAN SULLIVAN
KEY
INFANTRY BASE
HEADQUARTERS
NAVAL BASE
ELECTRONIC WARFARE & RADAR
AIRFIELD & SEARCH AND RESCUE