

Anticipating Policy Options for Addressing U.S. Arctic Hurdles

Abbie Tingstad

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Anticipating Policy Options for Addressing U.S. Arctic Hurdles

Testimony of Abbie Tingstad¹
The RAND Corporation²

Before the Committee on Transportation and Infrastructure
Subcommittee on Coast Guard and Maritime Transportation
United States House of Representatives

May 8, 2019

Chairman Maloney, Ranking Member Gibbs, and other distinguished members of the committee, thank you for the opportunity to appear before you this afternoon. Ongoing and emerging transformations in the Arctic are raising many important questions, and we do not yet have all the answers. How will or should international and domestic governance evolve? What is next for indigenous communities? How will China's role evolve? What is the United States' path?

I am going to focus on anticipating and pre-emptively addressing some key Arctic vulnerabilities. The three main points I would like to leave the committee with today are:

1. One of the greatest concerns that has emerged in my research are incidents that might imperil safety, bring military (or other) assets together in escalatory ways, or release toxins into the environment.
2. Regional cooperation and governance will influence demands on the maritime (and broader) transportation system and the U.S. Coast Guard through their role in generating, preventing, and mitigating problems.
3. Mitigating capability gaps to enable safety, security, and stewardship activities will require investing in organizations and people, as well as in multiple types of assets and infrastructure.

I elaborate in detail on these points in what follows.

¹ The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of the RAND Corporation or any of the sponsors of its research.

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The Arctic Is Vulnerable to Incidents Endangering Safety, Security, and Environmental Integrity

There are many uncertainties about the Arctic. However, we do know something about the primary drivers of change and how these could shape and disturb the Arctic's complex environment. In our research, my colleagues and I have used scenarios to explore the types of changes that might result in regional safety, security, and environmental vulnerabilities.

Several fundamental drivers of change influence potential paths of change in the Arctic. These factors include economics, technology, climate and physical environment, the regulatory environment, and social issues.

Not all drivers play the same role in Arctic change. One way to think about these drivers is that they raise or lower the “cost of doing business” by promoting, restricting, or controlling access. Principal among these drivers is climate, which has enhanced maritime access, but has negatively affected winter road seasons and transportation infrastructure. Other forces shaping access include technological advances in drilling, automation, network and connectivity; legal conventions, other laws, and regulations; military postures and operations; and widely observed operational and cultural norms.

Other change drivers shape activities in the Arctic. Some examples are indigenous community autonomy, anticipated or existing hydrocarbon and fishery resources, and perceptions of the Arctic within domestic political discourse. These types of forces also both discourage and motivate activities in the Arctic. For example, an increased emphasis on the health of the Arctic environment could motivate ecological monitoring and some types of tourism, while discouraging further resource extraction and large-scale shipping.

These drivers of change can be combined to form scenarios that illustrate potentially dangerous Arctic situations. My colleagues and I used these scenarios during two research activities that took place in 2017:

- a series of Coast Guard–focused scenarios deliberated on during two workshops with servicemembers and other partners³
- an Arctic cooperation tabletop exercise conducted with a multinational Arctic stakeholder group in Oslo, Norway.⁴

Our Coast Guard Arctic scenarios featured alternative assumptions about development of activity in the Arctic. We then combined these assumptions with plausible events or longer-term problems that would necessitate some kind of Coast Guard participation. The scenarios often included cooperation with partners in various capacities. Although the workshops were designed

³ Abbie Tingstad, Scott Savitz, Kristin Van Abel, Dulani Woods, Katherine Anania, Michelle D. Ziegler, Aaron C. Davenport, and Katherine Costello, *Identifying Potential Gaps in U.S. Coast Guard Arctic Capabilities*, Santa Monica, Calif.: RAND Corporation, RR-2310-DHS, 2018. As of April 29, 2019: https://www.rand.org/pubs/research_reports/RR2310.html

⁴ Stephanie Pezard, Abbie Tingstad, and Alexandra Hall, *The Future of Arctic Cooperation in a Changing Strategic Environment: Insights from a Scenario-Based Exercise Organised by RAND and Hosted by NUPI*, Santa Monica, Calif.: RAND Corporation, PE-268-RC, 2018. As of April 29, 2019: <https://www.rand.org/pubs/perspectives/PE268.html>

somewhat differently, participants at each event were invited to develop concepts of operation for each scenario, identify capabilities to use to achieve some level of incident resolution, and assess the most limiting gaps.

The Coast Guard scenarios covered a variety of situations. For example, participants began one workshop by considering the following events that might occur in the present-day Arctic:

- a ship collision in the Bering Strait
- a passenger plane crash somewhere north of the Alaska-Yukon Territory boundary
- activists in kayaks protesting new offshore oil drilling programs
- a small coastal community threatened by a storm surge and severe weather.⁵

The participants then considered events that might occur in the 2030s. Within the context of a future world in which measured economic growth draws people and primarily legal economic activity north, Coast Guard workshop participants discussed

- the implications of a new, deepwater port
- an offshore oil rig explosion
- a protest for environmental reasons against hydrocarbon extraction.⁶

Within the context of a future world in which disorder is increasing, regulations loosen, people are migrating north, and international cooperation is weakened, Coast Guard workshop participants discussed

- a suspected cyber attack that takes out power in three U.S. Arctic villages
- foreign vessels increasingly fishing illegally in the U.S. Exclusive Economic Zone
- a suspected terrorist attack on a cruise ship
- illicit trafficking of people and goods.⁷

The objective of the Oslo exercise was to test the limits of Arctic stakeholder cooperation by unfolding a series of events—in which no particular nation stood out as the ultimate aggressor—over the course of the 2020s. These events could potentially raise tensions among two or more Arctic nations, as well as among other stakeholders, including indigenous communities and the hydrocarbon industry. Following a set of starting conditions, participants considered the issue of overlapping claims for continental shelf extensions, opportunities and risks associated with further development of waterways through the Northwest Passage and the Northern Sea Route, and responses to two potentially escalatory incidents: the blocking of one vessel by another and a near collision between ships.⁸ Participants were asked to consider plausible stakeholder responses and posit under what conditions Arctic cooperation might unravel at each step of the exercise.

⁵ Tingstad et al., 2018.

⁶ Tingstad et al., 2018.

⁷ Tingstad et al., 2018.

⁸ These were intentionally focused on the maritime domain because international incidents of significance are somewhat more plausible in this domain during the timeframe of the early to mid-2020s.

One of the primary findings from both the Coast Guard scenario analysis and the Oslo international tabletop exercise was that stakeholders at all levels were concerned about safety, risk of escalation stemming from marginal incidents (particularly those involving military or law enforcement), and containment and mitigation of environmental hazards. The following situations were of particular concern:⁹

- Countries choose recurring safety issues or unplanned military encounters to emphasize larger longer-term or extra-regional security issues. Participants were concerned that such incidents might have unintended consequences among domestic audiences.
- Maritime access and activity increase faster than anticipated and countries cannot manage the situation with existing fixed and mobile infrastructure, leading to loss of life and environmental degradation. Increasing disorder leads to real or perceived voids in governance, regulation, and security. Countries with particularly vested economic interests forcefully attempt to contain and control mounting turmoil.

During the course of the Coast Guard workshops, many discussions focused on concern about the ability to perform search and rescue, law enforcement, or pollution response. During the Norway exercise, participants were concerned about the outcome of the United Nations' Commission on the Limits of the Continental Shelf examination of competing claims for continental shelf extensions, the possibility of deep ocean hydrocarbon extraction, and shifting alliances—as well as NATO's presence in the Arctic.

Cooperation and Governance Make a Difference

Many factors influence the vulnerability of the Arctic to safety and security incidents. Cooperation and governance stand out for several reasons.¹⁰ First, they shape activity in the Arctic and affect the resources required and available to govern that activity. Second, there is an important co-dependency between them: Cooperation between different stakeholders internationally and domestically enables or constrains governance as well as resources to support it;¹¹ similarly, governance issues both motivate and test the boundaries of cooperation. Third, both cooperation and governance have tremendous ramifications both at home and abroad and are strongly influenced by domestic policies (and often by domestic perceptions). Finally, there are some strong examples in recent Arctic history of employing cooperation and governance tools to make decisions ahead of potential crises.

⁹ These observations are naturally driven by the events of the scenarios presented. However, researchers and participants participating in both analyses were strongly encouraged to question assumptions and lead discussions down other paths to ensure that thinking was not constrained to the particular futures at hand.

¹⁰ *Cooperation* includes long-term and short-term activities that facilitate shared decisionmaking and/or resources. *Governance* involves constructing, implementing, and enforcing laws, regulations, practices, and general guidance.

¹¹ Such as for policy enforcement and to support and mitigate the consequences of economic development.

Throughout modern Arctic history, cooperative decisionmaking on governance has built a foundation for reducing vulnerability to incidents, events, or patterns of concern.¹² For example, the Agreement on the Conservation of Polar Bears was put into effect in 1973 at a time of heightened Cold War tensions.¹³ Some more recent examples of cooperation include the 2018 agreement to prevent unregulated high seas fisheries in the Central Arctic Ocean;¹⁴ the U.S.-Russian proposal, approved by the International Maritime Organization, to define six two-way routes in the Bering Strait to enable safer shipping;¹⁵ and the 2017 Agreement on Enhancing International Arctic Scientific Cooperation.¹⁶ Arctic cooperation on the international scale (such as the 2011 Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic) has been broadly facilitated through the Arctic Council since the council's formation in 1996, although these activities have notably (and perhaps for good reason) excluded military security topics.¹⁷ The Arctic Coast Guard Forum brings together the relevant coast services from all eight Arctic states.¹⁸ The International Code for Ships Operating in Polar Waters (Polar Code) is a landmark step, facilitated by the International Maritime Organization, toward risk reduction in maritime polar environments.

In addition, partnerships with indigenous organizations and communities at the international and subnational level, as well as relationships with commercial, academic, and nonprofit entities, cannot be overlooked. These types of partnerships can be particularly important for law enforcement, incident prevention, and incident mitigation.

Recently, Russian assertiveness in the Arctic and the emergence of China as a long-term player in the region has raised questions for some Arctic nations about the power of cooperation and partnerships for addressing governance issues. Russia has been increasing its military capabilities in the Arctic, forming a northern command, establishing two Arctic brigades,

¹² Stephanie Pezard, Abbie Tingstad, Kristin Van Abel, and Scott Stephenson, *Maintaining Arctic Cooperation with Russia: Planning for Regional Change in the Far North*, Santa Monica, Calif.: RAND Corporation, RR-1731-RC, 2017. As of April 29, 2019: https://www.rand.org/pubs/research_reports/RR1731.html

¹³ "Agreement on the Conservation of Polar Bears," Oslo, November 15, 1973. As of April 18, 2019: <http://pbsg.npolar.no/en/agreements/agreement1973.html>

¹⁴ See Jane George, "A New International Deal Protects the Central Arctic Ocean's Fish Stocks," *Arctic Today*, October 3, 2018. As of April 18, 2019: <https://www.arctictoday.com/new-international-deal-protects-central-arctic-oceans-fish-stocks>

¹⁵ "IMO Approves US-Russian Proposal on Bering Strait Shipping Routes," *World Maritime News*, May 23, 2018. As of April 18, 2019: <https://worldmaritimeweb.com/archives/253399/imo-approves-us-russian-proposal-on-bering-strait-shipping-routes>

¹⁶ "US Signs Agreement on Enhancing International Arctic Scientific Cooperation," *National Science Foundation News Release*, May 12, 2017. As of April 18, 2019: https://www.nsf.gov/news/news_summ.jsp?cntn_id=241923

¹⁷ Arctic Council, "Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic," May 12, 2011. As of April 18, 2019: <https://oaarchive.arctic-council.org/handle/11374/531>

¹⁸ A North Atlantic Coast Guard Forum and a Pacific Coast Guard Forum similarly seek to build cooperation.

developing infrastructure, and deploying and upgrading military assets.¹⁹ The Russian government and economic sector is also investing in fixed and mobile infrastructure for civilian or commercial use, and some of this infrastructure appears to be dual-use. For example, this year, the Russian Ministry of Natural Resources and Environment released a plan for further developing mineral resources in the Arctic and the logistics for bringing them to market via the Northern Sea Route.²⁰

China has been promoting the idea of a “Polar Silk Road” in recent years. This builds on China’s decades-long interest in polar science and its more recent participation as an observer in Arctic governance issues through the Arctic Council. In its 2018 Arctic policy, China reaffirmed its position that the Arctic matters to states without recognized territory in the region. China’s Arctic policy states unambiguously that its goals with respect to the Arctic are

to understand, protect, develop and participate in the governance of the Arctic, so as to safeguard the common interests of all countries and the international community in the Arctic, and promote sustainable development of the Arctic.²¹

China’s investment in the Yamal Liquid Natural Gas project with Russia was substantial. Other investments have been more modest, and some have not come to fruition (such as the purchase of an unoccupied naval base in Greenland and the development of a now-cancelled resort in Svalbard).

The United States and others are right to be wary of Russian and Chinese activity in the Arctic, but must be mindful of some important points. Russia and China do not have identical histories, stakes, or interests in the Arctic. Like the United States, Russia has territory in the region. Russia’s confidence in the efficacy of the protective ice barrier for its long, strategically and economically important northern rim is understandably waning. Its recently increased regional assertiveness should be interpreted against the backdrop of other factors, such as broader Russian military reforms and Russia’s continued cooperative behavior on applied matters, such as Bering Strait navigation and scientific advances. Thus far, Russia’s policies on Northern Sea Route administration have had limited impact on the freedom of others to navigate in the region (in part because of the route’s overall limited navigability). Russia continues to have many economic incentives to participate in cooperative governance frameworks and discussions on Arctic issues.

In contrast, China does not hold any territory in the Arctic. It is one of 13 Arctic Council Permanent Observer States; China has participated by the council’s rules and in the spirit of

¹⁹ Andrew Osborn, “Putin’s Russia in Biggest Arctic Military Push Since Soviet Fall,” *Reuters*, January 30, 2017. As of April 22, 2019: <https://www.reuters.com/article/us-russia-arctic-insight/putins-russia-in-biggest-arctic-military-push-since-soviet-fall-idUSKBN15E0W0>

²⁰ “Russia Releases Comprehensive Plan for Arctic Logistics,” *Maritime Executive*, March 19, 2019. As of April 22, 2019: <https://www.maritime-executive.com/article/russia-releases-comprehensive-plan-for-arctic-logistics>

²¹ People’s Republic of China, State Council, “China’s Arctic Policy,” white paper, January 26, 2018. As of April 22, 2019: http://english.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm

cooperation. A number of Arctic nations have put up roadblocks to Chinese investment, largely because of domestic pressure. That said, the economic and military resources at China's disposal make it a very powerful observer, and there is no doubt that China seeks investment and influence in the region. This cannot necessarily be assumed to be restrained or benign.

When it comes to the shifting geopolitics of the Arctic, Russia or China do not operate in a vacuum. Alliances, interests, and actions shift over time, and these shifts have implications for governance and cooperation. For example, some of Russia's recent activities have brought other Arctic states closer together (such as Finland and Sweden signing a trilateral agreement with the United States). The question of whether China's "Near-Arctic State" concept will catch on with others, creating the potential for a negotiating bloc, remains on the horizon.²²

United States decisionmakers will need to contemplate the potential impacts shifting geopolitics will have on governance and the associated needs for infrastructure and other capabilities in the Arctic. As discussed, governance has an important influence on shaping demand for Arctic access and the transport systems of the future. Real or apparent gaps in governance and such materiel capabilities as infrastructure could create the perception of a security void. This might invite more presence and influence from stakeholders with vested regional interests.

It Will Take More than One Investment to Shore Up Arctic Capabilities and Capacity

What are the key capability gaps for U.S. Arctic operations? One issue that concerns me greatly is the characterization—in the media at least—of the United States' Arctic operating challenges as an "icebreaker gap."²³ I do think that the U.S. is dangerously limited in its individual ability to break ice. This numbers game—in particular, comparisons to the overwhelming size of the Russian icebreaker fleet—also has real significance from a great power competition perspective. Another reason for the icebreaker focus is the long lead time to plan and build these unique ships.

However, while this generalization of Arctic challenges might be convenient, it distracts from the broader problem of systemic capability shortfalls. In our examination of broad priorities for closing Coast Guard capability gaps, we found that no single type of capability worked for every scenario or acted as a "silver bullet" solution for mitigating shortfalls. For this study, we defined *capability* broadly, as a means to accomplish a mission, function, or objective.²⁴ Our scope included such individual materiel assets as icebreakers and helicopters; fixed infrastructure

²² Pezard, Tingstad, and Hall, 2018.

²³ Charlie Gao, "The 'Icebreaker Gap': How Russia is Planning to Build More Icebreakers to Project Power in the Arctic," *National Interest*, August 19, 2018. As of March 19, 2019: <https://nationalinterest.org/blog/buzz/icebreaker-gap-how-russia-planning-build-more-icebreakers-project-power-arctic-29102>

²⁴ Department of Homeland Security, *Department of Homeland Security Manual for the Operation of the Joint Requirements Integration and Management System*, Washington, D.C., DHS Instruction Manual 107-01-001-01, April 4, 2016, p. 3.

like ports and airfields; and organizations, agreements for cooperation, and people (including training).

First, we looked at the existing capabilities that the Coast Guard, federal interagency partners, local communities, and commercial providers could use to add value in different scenarios. In addition to existing icebreakers, some of the most valuable assets included MH-60 Jayhawk helicopters, HC-130 aircraft, various airports and airfields, ports, National Security Cutters, drones, medical evacuation capabilities, satellite and other communications networks, rescue coordination centers, Coast Guard sector specialist personnel, and data (maritime traffic, weather, ice, and other conditions important for on-scene response). These examples help highlight the diversity of capabilities that are needed for Arctic operations. No one asset can do it all alone.

Second, we examined shortfalls in the existing capabilities within the study scenarios. We found that the shortfalls varied as much or more as the existing capabilities. In general, these gaps—defined as capabilities not readily available or planned to be available to the Coast Guard—fell into the broad categories of communications, awareness, and response.

Communications are critical for Coast Guard (and a variety of other) missions. Problems in the Arctic include patchy and unreliable voice communications and extremely limited or nonexistent bandwidth.

An important aspect of awareness is understanding and assessing situations. In the Arctic, “operating blind” is a term that is used to describe the limited level of awareness: Threats and hazards are often poorly understood, and the capacity and capability are lacking to regularly monitor those that are identified. There is particular concern about sensing previously unidentified threats and hazards that do not or cannot actively emit signals, such as “dark” vessels and fast-moving ice. The ability to fuse information from individual data streams into a unified picture of activity and conditions is also challenging.

Finally, the potential for response to a threat or hazard in the Arctic is extremely limited and strongly depends on the proximity to the incident location of scarce material assets, people, and supporting infrastructure. Naturally, reducing the incidence of threats and hazards is an important first step. However, if prevention fails, ensuring that the right people and assets are available and can be deployed rapidly to the right place is necessary. Responders must consider harsh operating conditions and the few resources available for coordination. Furthermore, access to appropriate follow-up materiel and procedures, including medical care and hazardous material clean-up, is not guaranteed. Ensuring sufficient sustainment of operations is the next challenge.

This study was not intended to provide recommendations on specific ways to mitigate gaps. However, the diversity of ways in which workshop participants elected to shore up capability and capacity in the context of different scenarios alludes to a rich set of possibilities. No one type of mobile asset, fixed infrastructure, organization, collaboration, or other entity appeared to satisfy every potential gap. Rather, a combination of existing capabilities (in many cases with increased capacity) and diversification of capabilities to support communications, awareness, and response appears to be necessary in order to tackle current and future vulnerabilities in the Arctic. Some specific types of mitigation options considered include:

- installing additional communications infrastructure and leveraging the growing number of commercial communications satellites in polar orbits
- exercising communications tactics, techniques, and procedures to train servicemembers in overcoming decisionmaking challenging with attenuated communications channels
- investing in remotely controlled air, sea, and amphibious craft for providing persistent wide-area surveillance, especially if these assets are networked together and to sensors on other assets to provide a common operating picture
- updating data-gathering and database construction processes to enhance the role of automation to improve data quality, make data accessible, and fuse information into a common operating picture
- developing operating concepts, plans, and investment strategies that recognize the need for both agile, first response assets as well as infrastructure and logistics to sustain longer-term operations and (literally) conduct heavy lifting
- investigating remotely controlled airlift and oil-spill response capability
- adding small-boat landing capability to icebreakers
- increasing the number of forward operating locations and resources, including local and mobile elements
- prepositioning key response items in partner communities
- enforcing new industry self-help regulations
- improving long-term relationships with native communities (including through additional Coast Guard cultural training).

There are also some broader governance-related issues to contemplate when it comes to getting out in front of problems, such as those related to incidents that put safety, security, and environmental integrity at risk. First, continuing to participate in discussions and decisionmaking is very important. Historically, Arctic cooperation and governance has benefited from stakeholders operating under the same frameworks. The United States has the opportunity to continue work in the Arctic Council and Arctic Coast Guard Forum. Finding ways to keep discussion channels open for important military security communications is also vital. Reconsidering the ratification of the United Nations Convention on the Law of the Sea also is an option.

Second, enabling stewardship and security (including law enforcement) through the provisioning and maintenance of appropriate infrastructure and capabilities, as well as organizations and people to support Arctic operations, is important. First and foremost, this provides opportunities for incident prevention and mitigation. It also demonstrates the presence of the United States as a capable and reliable partner, both internationally and in a domestic context. Importantly, as demonstrated by Russia, certain types of infrastructure can send a mixed message, so we should consider the messaging associated with our investments. Ultimately, it will take more than one investment and the efforts of federal, state, and local agencies and organizations to get out in front of the issues that keep those responsible for safety, security, and stewardship in the Arctic awake at night.

Throughout history, the Arctic has been largely inaccessible place to outside cultures. However, because of climate and improvements in technology, we can no longer view the Arctic

as “falling off the top of the map.” The Arctic is changing rapidly in many respects. By making the right investments in organizations and people, as well as in multiple types of assets and infrastructure, we can get in front of tomorrow’s Arctic problems, some of which are already upon us today.