NEW STRATEGIC DYNAMICS in the ARCTIC REGION

Implications for National Security and International Collaboration

February 2012

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Chapter 1

As the polar ice cap continues to melt, giving way to new and ever larger waterways in the Arctic, the world is witnessing nothing less than the opening of a new ocean, something that has not occurred on Earth since the end of the Ice Age. As if its creation were not newsworthy enough, this new, fifth ocean—which will essentially be an expanded and more navigable version of the Arctic Ocean that now exists—holds out the promise as well of new seaways linking Europe and Asia via the High North that could, in the view of numerous maritime experts, substantially reduce travel distances, transit times, and overall transportation costs by the 2030–35 timeframe.\(^1\) Adding to the Arctic’s importance even before then is the prospective extraction of significant strategic mineral supplies from the northernmost territories—especially those offshore in the Arctic seabed—of Norway, Russia, Denmark, Canada, and the United States, commonly referred to as the Arctic Five. Most prominent in this context are the Arctic’s oil and gas supplies that are currently projected to account for upwards of 22 percent of the world’s undiscovered but technically recoverable hydrocarbon reserves, the development of which will become increasingly feasible and cost-effective over the next decade. Indeed, for this reason alone, the Arctic Five have quickened their efforts to extend their sovereignty over extended continental shelves (ECS’s)\(^2\) where some of the most promising deposits are believed

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1 See remarks made by Admiral Gary Roughead, USN, then U.S. chief of naval operations, at the “Active in the Arctic” seminar held in Washington, D.C., on Capitol Hill on June 16, 2011, http://www.navy.mil/navydata/people/cno/Roughead/Speech/110616%20Arctic%20Capitol%20Hill.pdf. According to Roughead, the use of Arctic sea lanes could reduce transport costs by $1 million or more per trip.

2 Under the UN Convention on the Law of the Sea (UNCLOS), every coastal state has a continental shelf out to two hundred nautical miles from its coastal baselines (or out to a maritime boundary with another coastal state), but the shelf may extend beyond that limit if certain criteria outlined in article 76 of UNCLOS can be met. The extended continental shelf (or ECS) is that portion of the continental shelf that lies beyond this two-hundred-nautical-mile limit. See Bureau of Oceans and International Environmental and Scientific Affairs, U.S. Department of State, “Extended Continental Shelf Fact Sheet (March 9, 2009),” http://www.state.gov/g/oes/rls/fs/2009/120185.htm.
to be located, while other countries with a strong interest (but no territorial claim) in the Arctic and its resource riches — including distant, but energy-hungry economic powerhouses like China, Japan, and South Korea — do their best to retain access to the Arctic and to avoid being marginalized in policy debates over its future.

That said, time, cost, and technology constraints appear to be working against any competitive “rush to the Arctic” fueled in part by the lure of an oil and gas bonanza beyond compare along the lines suggested by a number of the more popular studies on Arctic dynamics published in recent years. Far more likely is a slow and methodical push into the High North, not the least because there is so much yet to learn (or, in some cases, to relearn) about operating safely in the harsh Arctic landscape, so little infrastructure already (or soon to be) in place to support such operations, and such limited capacity even among the Arctic Five to undertake and sustain Arctic operations of any kind, be they commercial or military in nature. Moreover, while access to — if not control over — offshore Arctic resources remains a strategic goal shared by quite a few influential countries located both within and beyond the Arctic region, the probability of serious interstate rivalry or, in the worst case, open conflict in pursuit of this objective seems quite low, at least in the near-to mid-term future. In the first place, the vast majority of hydrocarbon deposits locked in the Arctic seabed are concentrated within the sovereign territory of one or another of the Arctic Five, where ownership is clear and undisputed. Secondly, while there are disagreements over who owns various resource-rich areas where two or more exclusive economic zones (EEZs) and potential ECS’s appear to overlap, the 2010 agreement between Norway and Russia over how best to divide a sector they both claimed in the Barents Sea, together with a commitment by the Arctic Five in 2008 to abide by procedures set forth in the UN Convention on the Law of the Sea (UNCLOS) for determining the dimensions of each country’s ECS, suggests that a peaceful settlement of any territorial dispute is more likely than not. Third, and finally, the sheer expense and technical challenges involved in extracting oil, gas, and other strategic resources from the Arctic ocean floor argue for a joint, collaborative effort among interested parties, Arctic and non-Arctic alike, as opposed to a “go it alone,” unilateralist approach.

These and similar considerations are likely to preserve the Arctic as a “High North, low tension” arena, to borrow a phrase popularized by Norway’s foreign minister, for some years to come. This is not to suggest, however, that the Arctic promises to remain trouble-free as its resources and sea lanes become increasingly accessible. For one thing, it remains unclear what would happen if an Arctic Five country whose ECS claim was rejected under UNCLOS procedures refused to abide by the ruling. Given the resource wealth that could be at stake, the resulting standoff could indeed lead to disputes and military posturing by rival claimants that could trigger, in turn, a crisis in the Arctic that might even end up with shots being fired. As for seaborne trade through the Arctic, smugglers and others involved in illicit commerce (possibly including terrorist elements) could eventually seek to take advantage — just as legitimate shippers would — of the shorter routes and transit times offered by Arctic sea lanes, benefits that may seem especially attractive in those areas (likely to be extensive in the wide-open, sparsely populated expanses of the High North) where transit routes are poorly policed. In addition, as its scale and importance grow, transarctic maritime traffic may be viewed as an attractive target for attack by various disaffected groups, especially when ships pass through narrow choke points such as the Bering Strait along the way. Such scenarios may seem far-fetched at the moment, but they cannot be dismissed in the event that a bustling trade in strategic commodities takes hold in the Arctic. This would be especially true were the Arctic to become the locus of a global trade in oil and gas, given all the vulnerabilities associated with offshore production

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4 The exclusive economic zone is the offshore zone where coastal states have jurisdiction over economic and resource management, including sovereign rights for the purpose of exploring, exploiting, conserving, and managing natural resources, whether living or nonliving, of the seabed, subsoil, and the superjacent waters. Typically, the EEZ includes waters three to two hundred nautical miles offshore. See National Oceanic and Atmospheric Administration, U.S. Department of Commerce, “What is the EEZ?” http://oceanservice.noaa.gov/facts/eez.html.
facilities and the supporting infrastructure required to bring supplies to market, as well as the economic costs that could be imposed if important energy flows were disrupted.

At the same time, whatever the level of regional tension at any particular time, the Arctic, situated atop three continents, has been and will continue to be, in geostrategic terms, an extremely valuable piece of real estate. Since the late 1950s, for example, the United States has viewed the Arctic Ocean as an ideal location for ballistic missile submarine patrols, and its importance for the strategic mobility of American naval forces, including surface as well as subsurface platforms, will almost certainly grow as Arctic waterways expand and become more navigable. In a similar vein, modern airlift and fighter/bomber aircraft based in Alaska are closer to Japan, South Korea, and China than they would be if they operated from the west coast of the United States, and no more than eight hours’ flight time from anywhere in the Northern Hemisphere, all of which significantly enhances America’s crisis response and power projection capabilities. Moreover, given that the Arctic would be an optimal vector for ballistic missile attacks against the United States originating from Russia, China, North Korea, or even Iran, it is also an ideal location for missile defense and early warning systems designed to handle current and emerging threats, perhaps to include someday – in view of the Arctic’s largely maritime character – sea-based platforms, such as the U.S. Navy’s Aegis-equipped cruisers. The ways in which these and other strategic advantages associated with the Arctic have influenced (and continue to influence) the national security perspectives of the United States, the other Arctic Five countries, and rising global powers (such as China) are discussed in detail in later chapters of this report, but the key point to be made here is that such advantages are real and growing, and that this will remain the case, whether or not the Arctic’s oil and gas deposits are effectively tapped, or its utility as a pas sageway for seaborne trade is fully exploited.

Finally, developments in the Arctic may hold useful lessons for other resource-rich regions where territorial claims remain unsettled and freedom of the seas could be challenged. More specifically, if the Arctic states and other key stakeholders are able to develop a framework for regional collaboration that also respects and protects the national interests of the Arctic Five, a similar approach may also be tried (and eventually prove successful) in, for example, disputed maritime zones like the South China Sea. The geopolitical dynamics of the Arctic and South China Sea regions, of course, are not entirely similar, but there is enough overlap with regard to such issues as ensuring unimpeded maritime passage through
international waters, agreeing on procedures for defining the ECS's of neighboring states, and developing cooperative plans for drilling offshore oil and gas deposits, to warrant some degree of investigation into how well Arctic models of cooperation might apply, and the same may be true with regard to other areas of the globe of rising strategic importance where multiple national, regional, and international interests intersect. While the jury is still out on the best system of governance for the Arctic region as a whole, current trends suggest that a patchwork of relevant private, public, intergovernmental, and nongovernmental organizations, rather than one overarching structure, is the best approach, centered perhaps around a core group of interested parties, which, in the case of the Arctic, would be the Arctic Council.\(^5\) As this approach matures, moreover, the Arctic could serve as a valuable laboratory for testing how best to establish and maintain a safe, stable, and secure environment in regions where a diversity of interests, ambitions, and expectations could easily clash, possibly in a violent manner, absent an effective mechanism for multinational and multilateral governance.

With these observations in mind, the analysis that follows aims to paint a comprehensive picture of the new strategic map just now emerging in the Arctic, to examine what that portends with regard to the potential for conflict or cooperation within the region, and, on that basis, to determine as clearly as possible the likely policies and priorities of the Arctic Five and other key regional stakeholders, and the skills and capabilities to operate in the Arctic that they will require as a result. Chapter 2 sets the overall stage insofar as major region-wide dynamics are concerned, focusing in particular on the emergence of more navigable Arctic sea lanes, the scale and accessibility of the Arctic’s strategic resources, and ongoing challenges with regard to Arctic governance. Chapter 3 explores in depth the strategic interests of the Arctic Five countries and the steps they are taking to safeguard those interests, while chapter 4 analyzes the priorities and programs of the other national and institutional stakeholders in the future of the Arctic, including the non-coastal Arctic states (Iceland, Sweden, and Finland) and the major Asian powers noted above (China, Japan, and South Korea), as well as NATO and the EU. Finally, chapter 5 offers some summary conclusions and policy recommendations, with an emphasis on what the United States needs to do to assert its leadership as this “new Arctic” described at the outset continues to take shape.

\(^5\) Formally established in 1996, the Arctic Council is a high-level intergovernmental forum whose aim is to promote cooperation, coordination, and interaction among the Arctic states (which includes the Arctic Five plus Iceland, Sweden, and Finland), with involvement of Arctic indigenous communities and other key stakeholders that may be granted permanent observer status. Traditionally, the council has focused on issues of sustainable development and environmental protection in the Arctic, but, as the Arctic becomes more accessible, the council has branched out to address search and rescue, oil spill response at sea, and other civil emergency requirements. Now that the council has set up a permanent secretariat in Tromsø, Norway (following the 2011 ministerial in Nuuk, Greenland), it is poised to play a more catalytic role in future debates over how best to manage the Arctic region. See the Arctic Council website, http://www.arctic-council.org/index.php/en/about-us.
In the not-too-distant future, the combined impact of climate change, a melting polar ice cap, the opening of new and potentially more economical maritime transport routes, growing interest in the region's underwater mineral resources, and competing territorial claims among the coastal states could transform the Arctic from a relative strategic backwater to a strategic crossroads – and potential flashpoint – of global importance. In fact, in the view of one informed observer, “it is no longer a matter of if, but when” the world will witness a “great Arctic gold rush,”1 fueled this time by the “black gold” of oil and by rising demand for other scarce resources. This in turn could introduce a previously unimagined potential for competition and possibly even conflict to this inhospitable and once fairly inaccessible region. Of course, technological challenges, cost constraints, and alternative (and more immediately attractive) investment opportunities elsewhere could slow or redirect efforts by countries or institutions with a strong interest in the Arctic from developing a large-scale or effective presence in the region in the near-term future. Over the longer run, however, the drive for geopolitical influence and economic leverage in the High North is bound to intensify and to involve an expanding number of stakeholders from within and outside the region.

To begin with, whatever the exact cause, the continuing erosion in the Arctic’s hard, perennial (multi-year) ice is expected to render what have long been difficult-to-use sea lanes, such as the Northern Sea Route (north of Russia) and the Northwest Passage (over North America), far more accessible to both commercial and military vessels for a greater part of the year. Both Arctic routes could provide a more direct and cost-effective seaway between Europe and Asia, and their potential availability has accelerated efforts to construct new types of ice-capable Arctic tankers, ice-strengthened surface ships, and next-generation icebreaker fleets. So, too, the prospect of newly accessible Arctic sea lanes and ships better able to traverse them safely could trigger a scramble for territory and resourc-

es among the five Arctic rim powers, especially since the polar region is thought to hold as much as one-fourth of the world’s yet-to-be-discovered, but technically recoverable, oil and natural gas supplies. The hope of tapping these same supplies someday, along with other non-fuel minerals to be found on the floor of the Arctic Ocean, as well as on land situated above the Arctic Circle, has also drawn the attention of several influential non-Arctic, but resource-deficient, countries, such as China, Japan, and South Korea, who are conducting their own geological explorations in the High North to protect their future resource interests. The Arctic agenda, in this sense, is becoming increasingly global, with access to capital, as one influential Arctic observer recently remarked, a chief currency of Arctic power, whether the capital is physical, infrastructural, legal, or intellectual.

To complicate matters, while a number of regional and multilateral governance structures are already equipped to deal with specific Arctic-related issues, no single, commonly agreed-upon institutional mechanism exists for managing the full range of commercial or military activity that the Arctic is likely to host over the next decade or two, and then beyond. Presumably, the 1982 UN Convention on the Law of the Sea (UNCLOS) and its Commission on the Limits of the Continental Shelf (CLCS) will facilitate a process for resolving disputed territorial claims among the five Arctic coastal states, but it remains unclear what the consequences would be if a claimant were to reject the recommendations of the CLCS. In recent years, national self-interest and sometimes unilateral actions appear often to have had the upper hand in the quest for influence and control within the High North, albeit so far without prompting violence or a serious standoff between rival stakeholders. Nonetheless, as the Arctic region continues to become more accessible for exploration and exploitation, a more comprehensive and integrated approach to the management of Arctic activities, and one that balances local, regional, national, and international interests and priorities, will be required.

This chapter examines in some depth the likely impact of three key factors on future developments in the Arctic region: the projected accessibility of important Arctic sea lanes, the rising importance of Arctic resources, and ongoing debates over Arctic governance issues. It first surveys the emergence of new maritime passages in the Arctic and their strategic implications, and then presents an overview of the Arctic’s major fuel and non-fuel minerals and other critical resources (fish stock, for example). The chapter closes with an assessment of existing and proposed systems for managing in the future what will almost certainly be an historically unprecedented level of human activity, in what is and will remain a unique and fragile, if nonetheless economically alluring, Arctic ecosystem.

Sea Lanes, Shipping, and Choke Points

For some time now, the Arctic has experienced “retreating sea ice, melting glaciers, thawing permafrost, increasing coastal erosion, and shifting vegetation zones,” making it increasingly accessible to maritime traffic. A report by the Arctic Council, entitled “Impacts of a Warming Arctic: Arctic Climate Impact Assessment” (ACIA), noted that Arctic temperatures have increased at double the global rate, and that over the past thirty years nearly 385,100 square miles, or about 8 percent, of the annual sea ice extent has disappeared. It is already estimated that approximately 41 percent of the permanent Arctic ice has completely disappeared, “and every year a further million square miles or so vanishes, shrinking the ice cap to around half of the size it covered in the mid-twentieth century.” By many estimates and scientific accounts, the Arctic will likely be seasonally ice-free by the middle of this century, if not much sooner.

2 The five Arctic rim, or circumpolar, countries are the United States, Russia, Norway, Canada, and Denmark (which controls Greenland). In addition, Finland, Iceland, and Sweden are non-rim Arctic nations, for a total of eight Arctic nations overall.


4 Oran Young, “The Future of the Arctic: Cauldron of Conflict or Zone of Peace?” International Affairs 87, no. 1 (January 2011).


6 Ibid., 33.


Already, the reduction in Arctic ice cover during the summer of 2008 opened up both the Northern Sea Route and the Northwest Passage for the first time in recorded history, and a number of ocean experts expect the Arctic eventually to become fully navigable year-round, just like the Baltic Sea or the Great Lakes.

In time, new transarctic sea lanes could save shipping companies thousands of miles in travel. According to one study, the Northern Sea Route could cut the sailing distance from Yokohama, Japan, to Rotterdam, the Netherlands, by almost five thousand nautical miles, or 40 percent, compared to the customary route through the Suez. A voyage from Seattle to Rotterdam via the Northwest Passage would be some two thousand nautical miles shorter than a route through the Panama Canal, a reduction of 25 percent. Some experts also believe that, once enough ice has melted, a new route could run right over the North Pole, perhaps connecting, according to one scenario, new “megaports” in the North Atlantic and the Pacific via an Iceland-to-Alaska shipping route. Needless to say, such shortcuts could also save the shipping industry billions of dollars a year (especially with respect to supertankers and other megaships that can’t pass through the Suez or Panama Canal). They would also greatly reduce the need for commercial and military vessels alike to sail through the potentially treacherous waters of the Middle East, Indian Ocean, and South China Sea, including pirate-infested sectors off the Horn of Africa and around the Strait of Malacca. Skeptics, however, argue that the hope of such shortcuts is a chimera, or, at the very least, a distant (and likely quite expensive) prospect.

Distances are shorter across the Arctic between north Asia and north Europe, which accounts in part for China’s rising interest in developing an “Arctic bridge” for its exports to the West. The farther south the ports of origin or ultimate destination lie, however, the smaller this advantage is, and it eventually disappears, especially when both ports are southern. At the same time, even when the distance between ports is significantly shorter across the Arctic, the journey could actually take longer. Decreased solid ice means increased icebergs in the Arctic, which could force surface ships to travel at lower speeds and take occasional detours. At the same time, all models of Arctic melting, while varying the earliest date of ice-free summers, concur that the Arctic Ocean will be covered in ice most of the year for the foreseeable future. Even though ships are able to navigate the Northwest Passage...
and the Northern Sea Route during the summers, thawing varies every year, and “it is difficult from year to year to predict the extent of the ice the following year.” In the Arctic, “storms can be very rough and unpredictable, and atmospheric icing from sea sprays can paralyze a ship’s superstructure.” Further, supertankers and megaships are simply too big to pass through some parts of the Arctic. Sections of the Northwest Passage, for example, are very shallow, including the Union Strait, which is only thirteen meters deep. In addition, the path opened by icebreakers is not wide enough to accommodate these huge vessels.

Shorter transit distances, however, could attract commercial shippers concerned by the price of fuel. As fuel cost is one of the largest variables (and escalators) in overall shipping cost, high fuel prices make the shorter Arctic routes more appealing. Two other key issues to consider, however, are container icing and route stability, both or either of which could add cost and time to a transarctic journey, including higher maritime insurance costs. Moreover, shipping today runs on a just-in-time principle, but “continuously changing conditions in the Arctic” mean that a ship’s route may require more flexibility and that a specific delivery date cannot be guaranteed. On the other hand, bulk shipping (mass transport), where speed or delivery time is not a major factor, may certainly have a greater and more immediate future across the Arctic. Given the limited options for the transport of goods over land in many Arctic territories, delivering cargo by sea from one point to another within specific geographic sectors of the Arctic – intra-arctic shipping along the Alaskan and Canadian coasts, for example – is already on the rise, and will certainly increase as economic activity on- and offshore expands with the commercial development of Arctic oil, natural gas, and other mineral deposits.

Wider use of Arctic sea lanes, however, will also bring new challenges with regard to the freedom of navigation in contested waters. Russia claims sovereignty over much of the Northern Sea Route over Eurasia, while the United States and the European Union (EU) maintain that this waterway is an international strait open to all and subject to certain mutually recognized guidelines for use. In part to shore up its maritime control in this sector, the Russian navy began to patrol Arctic seas in the summer of 2008 for the first time since the Cold War ended, and Moscow announced as well that it intended to build three new nuclear-powered icebreakers to join what is already the world’s largest icebreaker fleet to help support “sovereign operations” in these areas. During this same timeframe, Russia also reinstituted strategic bomber flights over the Arctic, as a way to assert its presence and underscore its abiding interests in the region. Of perhaps greater practical importance (and impact), Moscow has begun to set in place a more robust legal regime for the Northern

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13 Lassere, “High North Shipping: Myths and Realities,” 180.
15 Christensen, “Are the Northern Sea Routes Really the Shortest?” 3.
17 Christensen, “Are the Northern Sea Routes Really the Shortest?” 5.
18 For a Russian perspective on Arctic security-related activities, see Katarzyna Bozena Zysk, “Russian Military Power and the Arctic,” The EU Russia Center Review, no. 8 (October 2008): 80–86.
Sea Route defining rules and regulations for the seaway’s use, while taking steps as well to invest in essential infrastructure along Russia’s Arctic coast to render maritime commerce via the Northern Sea Route safer and, in time, less costly.

In a similar vein, Canada has become highly protective of its claim to sovereignty over the Canadian Arctic Archipelago portion of the Northwest Passage, which runs from the Atlantic through Baffin Bay and the archipelago to the Pacific by way of the Bering Sea. As they do with respect to the Northern Sea Route, the United States and the EU insist that the Northwest Passage is an international strait through which the right of innocent passage is assured. Canada, however, disagrees, claiming the waterway as part of Canada’s “internal waters,” the use of which by foreign vessels requires prior Canadian permission and would remain subject to the full force of Canadian domestic law. To support a more active presence and help to protect its sovereign rights in its northernmost territories, Canada plans to procure new naval patrol ships for the Arctic and to build a new deep-water port and a cold-weather military training center along the Northwest Passage. However, none of these initiatives, discussed in greater detail in the Canadian section of chapter 3, is likely to discourage ships from making use of the Northwest Passage route when considerations of time and economics dictate (and climatic conditions allow), as the Danish cable-layer MV Peter Faber did in August 2008 when it needed to move expeditiously from a project near Taiwan to one located between Newfoundland and Greenland.

Beyond questions of unfettered access, both routes also include strategic choke points – such as the Bering Strait and Canada’s Queen Elizabeth Islands in the Northwest Passage, and Russia’s Severnaya Zemlya and New Siberian Islands in the Northern Sea Route – that could be blocked by adversaries bent on disrupting Arctic shipping, including the transport of oil and gas supplies extracted from Arctic deposits. Thus, the Arctic sea lanes could also create additional geostrategic vulnerabilities that must be carefully examined by the United States and other powers that may become dependent on these routes for a growing proportion of their seaborne commerce. The potential for targeted attacks by state or non-state actors – including smugglers, terrorists, and other clandestine operatives with an ax to grind – could be especially high. Any
increased criminal activity along the Northwest Passage could be facilitated by the existence of numerous gravel airstrips scattered along its shores (the legacy of Cold War-era defenses and countless research and prospecting expeditions), adding to the illegal activity already taking place when cruise ships disembark undocumented foreign nationals during the summer in Inuit communities where there is scheduled air service but no immigration controls.\textsuperscript{21}

In addition to the purposeful manipulation of Arctic choke points, isolated ships are at risk of being damaged by ice or of mechanical failures or other breakdowns along the Northwest Passage and the Northern Sea Route. “The lack of infrastructure in the Arctic region will in most cases result in a long response time before outside help may be given to personnel in distress.”\textsuperscript{22} There are no harbors, for example, along the Northwest Passage in case of breakdown or damage.\textsuperscript{23} For this and similar reasons, air and maritime surveillance in the Arctic must be expanded well beyond current and even projected levels to assure a sufficient degree of safety as both commercial and tourist-related traffic along Arctic sea lanes increases. This clearly looms as an area for closer cooperation between some or all of the Arctic players that could prove quite fruitful, as the “international sharing of observations of ship traffic made by satellite systems and patrol aircraft will be an important step towards safer shipping in Arctic waters.”\textsuperscript{24}

No doubt, such considerations played a role in the decision by members of the Arctic Council to sign a binding agreement on search and rescue responsibilities in the Arctic at the Council’s May 12, 2011, ministerial meeting in Nuuk, Greenland.

The possible advantages of Arctic transit have also increased interest among commercial shipbuilders in the construction of “double-acting” tankers that would be capable of sailing through the High North region without the aid of icebreakers,\textsuperscript{25} moving bow first through open water and then turning and moving stern first through ice or water with floating ice. Already, the shipping sector is “investing billions” in tankers designed for Arctic operations; in 2007 262 ice-class ships were in existence worldwide with another 234 on order,\textsuperscript{26} all capable of steaming through a range of ice-infested waters without the assistance of icebreakers. Winterization solutions such as de-icing methods and double-acting vessels will become less expensive over time, but they still do tend to increase building costs and decrease cargo capacity. Ships designed to navigate the Arctic are also likely to be slower and less efficient on the open seas. One solution could be ship-to-ship transfers from winterized ships once through

\textsuperscript{21} Ibid., 17.
\textsuperscript{22} Econ Pöyry, “Arctic Shipping 2030,” 14.
\textsuperscript{23} Christensen, “Are the Northern Sea Routes Really the Shortest?” 3.
\textsuperscript{24} Econ Pöyry, “Arctic Shipping 2030,” 14.
\textsuperscript{25} Borgerson, “Arctic Meltdown.”
\textsuperscript{26} Howard, The Arctic Gold Rush, 113.
the Arctic, but that “implies large investment in reloading ports and development of more sophisticated reloading technology.”

Others point out that “shipping companies are in no rush to develop what they perceive as a risky and not necessarily profitable route.” As discussed above, Arctic shipping will demand for some time to come craft able to maneuver in icy conditions. “Heavy ice strengthening and winterization are minimum requirements and a hull shape with icebreaking capabilities is required for year-round operation.” Winterizing container ships increases the building cost by an expected 20 percent, which cuts into any savings from a shorter route. Moreover, winterizing vessels is not a guarantee for safe passage. In November 2007, the MS Explorer cruise ship, which had an ice-strengthened hull, hit a chunk of low-lying floating ice, known as a “growler,” in Antarctica and sank, and there is no reason to suspect that similar accidents won’t happen in a more accessible, and heavily traversed, Arctic. And ice damage, notes Joe Cox, president of the Chamber of Shipping of America, is just one complication in Arctic shipping, adding to the numerous problems of no real ports, few working lighthouses, and limited data about “treacherous obstacles” that make the Arctic far from easy to navigate. At the same time, because of such obstacles, insurance premiums could be twice as high on Arctic routes, further adding to the cost of transarctic shipping.

Many of the challenges associated with a steady growth of transarctic shipping are explored in great depth in the Arctic Council’s seminal study, The Arctic Marine Shipping Assessment, also referred to as The AMSA 2009 Report. This report focuses on ships in the Arctic Ocean, their impact on the Arctic environment, and recommendations for safer shipping in the future. Although The AMSA 2009 Report notes that the International Maritime Organization (IMO) has developed voluntary Guidelines for Ships Operating in Arctic Ice-covered Waters, it recommends that those guidelines be mandatory. The report goes on to encourage the development of a multilateral Arctic search and rescue (ASR) body in an effort to make shipping to and through the Arctic region less dangerous. In part because of that proposal, the Arctic Council, as noted earlier, endorsed the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic at its May 2011 meeting, which stands as the first legally binding treaty concluded by the council’s eight member states. More specifically, “it coordinates life-saving international maritime and aeronautical SAR coverage and response among the Arctic States across an area of about 13 million square miles in the Arctic.”

That said, transarctic shipping on a global scale—and all the hazards that go with it—is unlikely to really boom unless and until the Arctic is open for transit “for at least several months a year.” In the meantime, however, as mentioned earlier, an increase in resource exploration and exploitation in the Arctic, eventually to include significant offshore oil and gas production, is almost certain to increase the shipping of materials to, from, and within the Arctic region associated such activities. It is even possible that shipping by sea will be the method of choice for reaching mining operations ashore, given the limited network of usable roads above the Arctic Circle and the fact that those roads that do exist must be rebuilt every year because of the effects of annual warming. To a large extent, therefore, the commercial (if not strategic) viability of Arctic sea lanes will be determined by the scale and pace of potential resource development in the region, which is the topic of the discussion that follows.

The Promise of Arctic Resources

Currently, the Arctic region is the source of approximately a tenth of the world’s oil and a quarter of its gas, and, with the exception of the Snøhvit (or Snow White) offshore gas

28 Lasserre, “High North Shipping: Myths and Realities,” 179.
29 Mejlændar-Larsen, “ARCON – Arctic Container.”
30 Ibid.
31 Lasserre, “High North Shipping: Myths and Realities,” 195.
33 Lasserre, “High North Shipping: Myths and Realities,” 196.
37 Econ Pöyry, “Arctic Shipping 2030.”
38 Lasserre, “High North Shipping: Myths and Realities,” 190.
field operated by Norway’s StatoilHydro, these resources are extracted entirely from onshore areas. However, the energy industry has shown significantly greater interest in developing the Arctic’s offshore possibilities following the July 2008 release of the Circum-Arctic Resource Assessment (CARA) by the U.S. Geological Survey (USGS). That assessment, estimating undiscovered, technically recoverable oil and gas supplies, concluded that some 90 billion barrels of oil, 1669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids may be found north of the Arctic Circle, about 84 percent of it in offshore areas. Core samples from the ridge indicate that the Arctic basin was once covered by semi-tropical waters containing vast amounts of organic matter, making it a near perfect environment for the formation of massive hydrocarbon beds. Because the sea north of Russia has more manageable ice conditions, and given the size of estimated reserves in that area, experts anticipate that this particular section of the Arctic will be the first to be developed for gas and oil retrieval. In addition, the Arctic Ocean’s long, outstretched continental shelf suggests a high potential for commercially accessible offshore oil and gas deposits, leading some analysts to conclude that those zones that are easier to tap – such as those along the Alaskan Arctic coast – could someday host as many offshore platforms as the Louisiana shore does now.

Based on the USGS data, optimists conclude as well that roughly 22 percent of the world’s oil and gas reserves are to be found in the Arctic. Skeptics have questioned this figure, with one pointing out that the “USGS has continuously stressed the uncertainties associated with the study.” A 2006 assessment, The Future of the Arctic, published by Wood Mackenzie and Fugro Robertson, questioned the optimism of earlier assessments and concluded that the Arctic was not “one of the last great oil and gas frontiers,” though the study did acknowledge that the region probably did hold quite large gas (as opposed to oil) reserves. Perhaps it is safer to state broadly that from 10 percent to 25 percent of the world’s oil reserves are estimated to be located in the Arctic. Still, in an age when high energy prices are expected and energy independence is an important policy consideration for the United States and other nations, even if the Arctic held just 10 percent of the world’s oil resources there could be a “great Arctic gold rush” to claim those reserves.

Growing worldwide reliance on gas, moreover, could also prompt competition for access to the Arctic’s gas reserves (including gas hydrate deposits), especially among countries searching for alternatives to ever greater dependence on gas imports.

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41 Econ Pöyry, “Arctic Shipping 2030.”
43 Ibid., 165.
44 Howard, The Arctic Gold Rush, 75.
46 Borgerson, “Arctic Meltdown.”
Emerging Strategic Dynamics | New Strategic Dynamics in the Arctic Region

From Russia (which has not shied away in the past from reducing its gas exports for political reasons). That said, a resource-fueled race to the Arctic may not be quite as imminent, conflict-prone, or wide-ranging as some have suggested. First of all, the Arctic’s hydrocarbon resources are not all resting under disputed seas around the North Pole. The majority of the undiscovered oil and gas is either onshore or within the noncontroversial two-hundred-nautical-mile exclusive economic zones (EEZs) of the Arctic coastal states. In the few areas where sovereignty is disputed and/or unclear, the rival claimants are close allies and/or likely partners in future production schemes, and not inclined to allow tensions over resource ownership to become overly acrimonious. This is certainly the case with respect to potential oil-rich sectors of the seabed in the Beaufort Sea claimed by both the United States and Canada, and to competing claims by Canada and Denmark to the waters off tiny Hans Island, located between Greenland and Canada’s Ellesmere Island. Before agreement was reached between Russia and Norway in April 2010 on how to draw the dividing line in parts of the Barents Sea claimed by both, speculation over a possible clash between Russia and Norway over overlapping claims both in the Barents and in the waters off the Svalbard archipelago was perhaps more plausible, but the June 2011 ratification of a boundary agreement that defines once and for all Russian and Norwegian claims in the Barents augers well for the peaceful, diplomatic resolution of any future disputes between Moscow and Oslo, as does Russia’s need for investment and technical assistance from Norway to tap its deep-water offshore oil and gas reserves.

Nor is any scramble for resources in the Arctic, should it occur at all, likely to spread throughout the region, given that anticipated hydrocarbon deposits—the most coveted of the Arctic’s mineral resources—are not dispersed evenly throughout the Arctic. More than 70 percent of the oil, for example, is estimated to lie in just five geologic provinces: Arctic Alaska, the Amerasia Basin, the East Greenland Rift Basins, the East Barents Basins, and the West Greenland-East Canada sector. Additionally, more than 70 percent of the natural gas is estimated to be in only three provinces: the West Siberian Basin, the East Barents Basins, and Arctic Alaska along the North Slope. Needless to say, this distribution explains Russia’s intense interest in Arctic exploration, as 80 percent of its potential oil and gas reserves are estimated to lie in the continental shelf off Siberia. The huge Shtokman field alone, discovered some 340 miles off the coast in the middle of the Barents Sea, is thought to hold reserves of 110 trillion cubic feet of gas, plus another 31 million tons of condensate, a natural gas liquid often found in association with raw natural gas.

As for the Alaskan Arctic, also considered one of the region’s most promising hydrocarbon zones, it is estimated that more than 27 billion barrels of undiscovered oil lie off the coast of Alaska, accounting for a third

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48 In both 2006 and 2009, for example, pricing disputes between Russia and Ukraine led Gazprom to temporarily cut off supplies. Howard, The Arctic Gold Rush, 90.
51 Lasserre, “High North Shipping: Myths and Realities,” 185.
52 Condensate is a low-density mixture of hydrocarbon liquids present as gaseous components in raw natural gas. It condenses out of the raw gas when temperatures fall below the hydrocarbon dew point temperature of raw gas, not an uncommon feature in the Arctic.
of the Arctic’s undiscovered oil overall. Of even greater potential significance are Alaska’s large, recoverable gas reserves, with deposits off the North Slope expected to yield over 119 trillion cubic feet of conventional gas resources, as well as huge quantities of gas hydrates that are likely to constitute an increasingly attractive source of supply. Indeed, USGS scientists projected in 2008 that undiscovered but recoverable natural gas resources to be found in Alaskan gas hydrates could total at least 85.4 trillion cubic feet, enough, according to one informed report, “to heat more than 100 million average-sized homes for more than a decade.”

Close by, in the Mackenzie Delta area of the Northwest Territories, Canada’s recoverable underground gas reserves are also thought to be quite sizeable, ranging from 5 trillion to 6 trillion cubic feet.

Of course, some would argue that it is precisely this uneven distribution of hydrocarbon reserves that could lead to competition and even conflict for control of the Arctic. The largest offshore deposits by far – possibly equivalent to 586 billion barrels of oil – appear to be located in the territory claimed by Russia, including the Lomonosov Ridge. For comparison’s sake, all of Saudi Arabia’s currently proven oil reserves (though not its unexplored resources) amount to just 260 billion barrels. That said, Russia’s claim to the Lomonosov Ridge has not gone unchallenged. Both Canada and Denmark also lay claim to the ridge as part of their extended continental shelf, and, given that each country has much smaller reserves of oil and gas in their respective EEZs than Russia has in its EEZ, they have comparatively more to gain from winning disputed claims. This may be one of the reasons that Denmark, according to an August 2011 official report entitled *Kingdom of Denmark Strategy for the Arctic 2011-2020* released by Copenhagen, intends to make a claim before the UN Commission on the Limits of the Continental Shelf by the end of 2014 to the North Pole itself, which lies within two hundred nautical miles of the Lomonosov Ridge, and could, by extension, solidify Denmark’s rights to at least a part of the ridge’s riches. Moreover, the prospect that new extraction technologies, together with the melting of the polar ice cap, could make it feasible and cost-effective to recover even larger amounts of gas and oil from the ridge than is currently thought possible provides yet another incentive for rival national claims.

This is not to suggest in any way that oil and gas production in the Arctic will be an easy or affordable task, whatever the level of technology available or the project size of recoverable reserves. Like the shipping sector, the energy industry will face harsh conditions exploring in and extracting from the Arctic Ocean. The floating ice and growlers that can damage ships could also wreak havoc on stationary drilling platforms, and the limited infrastructure along Arctic coastlines that will hamper transarctic shipping will also complicate offshore mining efforts. Tapping remote gas fields, in particular, requires a major investment in supporting infrastructure, whether the gas is to be piped to the mainland or moved by LNG tankers. And in terms of climate change, “as the ice cap melts,” one expert notes, “the probability of polar storms, which are extremely powerful and difficult to forecast even with today’s weather technology, increases dramatically,” creating in the process an extremely challenging environment for commercial operations.

Compared to the costs of extracting and transporting hydrocarbons from the Middle East, moreover, oil and gas production in the Arctic is likely to be prohibitively high for most energy companies in the foreseeable future. Producing oil in the Middle East, for example, can cost as little as $20 per barrel, whereas exploiting onshore Arctic oil in 2008 cost between $40 and $100 per barrel. This is on par with estimated costs for oil shales ($50 to $100 per barrel), but even more expensive than extracting from oil sands (estimated to cost $40 to $80 per barrel). More telling still, it is expected that offshore exploitation in the Arctic will cost 50 percent more than the development of onshore reserves. Hence, there are “many parts of the Middle East, Africa, Siberia, and South America that are still relatively unexplored;” concludes one skeptic, and “that can contin-

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55 Gove, “Arctic Melt: Reopening a Naval Frontier.”
56 The CARA estimates were based on “recoverable reserves” using current technology, and assumed that extraction would have to be done under conditions of permanent sea ice and at current water depths, all of which would tend to limit the amounts that could be recovered. U.S. Department of the Interior, U.S. Geological Survey, “Circum-Arctic Resource Appraisal,” 1.
58 Ibid., 169.
59 Ibid., 170.
ue to produce oil well into the twenty-first century with much lower overheads than the Arctic. Nevertheless, as the repository for at least 22 percent of the world’s undiscovered hydrocarbon reserves (and possibly much more), the Arctic does indeed remain, in the words of the CARA report, “the largest unexplored prospective area [for such supplies] remaining on Earth.”

As the Arctic becomes more accessible, the urge to explore these reserves more fully will become hard to resist, and the potential payoffs from successfully tapping them difficult to ignore.

Additionally, beyond oil and gas, the Arctic seabed also appears to contain valuable non-fuel mineral resources, including substantial amounts of high-grade manganese, copper, nickel, and cobalt, as well as gold and diamonds. Commercial development of these resources still seems a

Howard, The Arctic Gold Rush, 78.

long way off, but technological breakthroughs, perhaps prompted by accelerated economic activity in the Arctic as a whole, could change that assessment more quickly than one might expect. Meanwhile, onshore deposits of lead, zinc, iron ore, coal, and rare earth minerals, among other deposits of value, are already being developed in the Arctic, or attracting renewed attention from major mining companies, because of rising demand (especially from China), higher prices as a result of such demand, and the greater access to mineral deposits (and options for their transport to market) that has resulted from the melting of the polar ice cap and overland permafrost. In Alaska, for example, the Red Dog mine is now the second-largest zinc mine in the world (accounting for 5 percent of world production and 79 percent of U.S. production), as well as the fourth-largest lead-producing mine (accounting for 3 percent of world production and 33 percent of U.S. production). On Greenland’s west coast, the Black Angel mine, located some 250 miles north of the Arctic Circle, which was closed in

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the early 1990s for cost-related reasons, reopened in 2009
following the discovery of a huge sulfide deposit, and the
prospects are high that current explorations for gold, dia-
monds, platinum, and rare earth minerals, to mention but
a few items of interest, may lead to additional production in
Greenland in the not-too-distant future. Similar opportuni-
ties, moreover, appear likely in northern Canada, given
Ottawa’s greater support for the development of infrastruc-
ture in remote regions of Canada’s High North. The Mary
River iron ore mine on Baffin Island, for example, is up
and running, and, with 365 million tonnes of proven and
probable reserves, it is slated to produce some 18 million
per year for the next quarter century.63

Last, but far from least, a marked increase in commer-
cial fishing in the Arctic could occur much sooner than
the exploitation of the region’s fuel and non-fuel minerals.
Currently, the EEZs of the five Arctic coastal states hold
about 90 percent of the region’s fish resources.64 However,
a steady melting of the polar ice cap could provide fisher-
men with access to previously unreachable fishing grounds,
and warmer Arctic water temperatures could encourage a
migration of fish from one state’s EEZ to that of another or
to disputed regions in the north Arctic.65 These trends, in
turn, may bring with them a number of unwelcome chal-
lenges. A larger and more frequent presence in the Arctic
of fishing fleets that may be poorly prepared for Arctic
conditions is, for example, yet another cause for concern
with respect to search and rescue capabilities in a region
where coast guard assets (though growing) are still rather
limited and often otherwise engaged. At the same time, if
fisheries and fish populations migrate as described above,
this could also increase the possibility of conflict – simi-
lar to the “cod wars” between Iceland and Norway in the
mid-1990s – between fishing fleets from a growing num-
ber of competing nations, especially as global fish stocks
plummet.66

In summary, then, while it will take time and substan-
tial investment to develop Arctic resources in a safe, cost-
effective, and environmentally sound manner, there is no
question that these resources are vast, becoming increas-
ingly accessible, and bound to attract greater global atten-
tion over the next decade and beyond. This is especially
true with regard to Arctic oil and gas reserves, given that
hydrocarbons will remain the world’s primary and pre-
ferred energy source for many years to come. So, while
the Arctic may never experience a gold-rush-like response
from resource-hungry nations, it will almost certainly
emerge as an increasingly attractive, if still challenging,
new frontier for exploration and exploitation. Clarifying
who owns what in those areas where that is still unclear,
providing security (and asserting sovereignty) in resource-
rich areas where ownership is not disputed, and establish-
ing international rules of the road for those who wish to
transit Arctic waterways and/or help to tap the region’s
mineral wealth and fisheries will remain, therefore, pri-
ority tasks for the five Arctic coastal states and other key
stakeholders in the future of the Arctic.

**Governance Issues and Alternative Frameworks for Arctic Cooperation**

It is clear, nevertheless, that the emerging geopolitical,
geo-economic, and geostrategic significance of the High
North, fueled by the effects of ongoing biophysical chang-
es, vast potential for offshore resource development, rising
commercial shipping opportunities, and the northward
expansion of fisheries, among other dynamics, is already
prompting nagging questions about the future manage-
ment of Arctic development. Indeed, international debate
on how best to respond to and oversee the Arctic’s ongoing
transformation has led to a variety of alternative proposals
for addressing one or another aspect of Arctic governance,
ranging from efforts to strengthen and expand existing
institutional arrangements for managing activities in the
polar realm to recent calls by prominent nongovernmen-
tal organizations (NGOs) and other stakeholders without
a territorial claim to the Arctic for the establishment of
a new, overarching legal framework to guide Arctic gov-
ernance in a way that guarantees access to all, while pro-

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63 Byers, *Who Owns the Arctic?* 41.
64 Rajabov, “Symposium: Arctic Sovereignty.”
65 For a useful review of future fishery management options, particularly
in Alaska’s EEZ, see Fisheries Working Group, *Policy Options for Arctic
group/download/FishEX.pdf; and North Pacific Fishery Management Council,
“Fishery Management Plan for Fish Resources of the Arctic Management
Resources Influence National Security* (Washington, D.C.: Center for a
tecting it as well from unregulated exploitation. Some observers have even started referring to the Arctic region as a “governance barometer,” in the sense that the area is gradually becoming an important test bed for governance solutions that may also apply to other regions where national, transnational, and global interests and concerns all intersect, sometimes in rather competitive ways.\(^67\)

The Arctic region, however, does not exist in a “legal vacuum” in which a new set of rules could be applied that would be sufficient to cover all plausible contingencies with regard to contested ownership, resource development, and the movement of people and goods. Rather, it is more like a multi-level mosaic of collaborative frameworks and agreements that is fluid and dynamic, continuously shaped by members’ conscious decisions and by informal practice.\(^68\) Not only are multiple indigenous forms of governance in place,\(^69\) for example, but the Arctic Governance Project, a recent initiative by researchers and stakeholders from the eight Arctic nations, has identified over seventy existing governance arrangements and more than a dozen emerging and potential ones, all of whose scope and focus may be directly relevant to governance needs in the Arctic.\(^70\) This range of regimes includes global framework arrangements (the United Nations Convention on the Law of the Sea, known as UNCLOS, for instance), multilateral environmental agreements (such as the 1992 UN Framework Convention on Climate Change), international economic arrangements (such as the World Trade Organization), regional organizations (most notably, the Arctic Council), sub-regional arrangements (including the Saami Parliamentary Council), national arrangements with trans-boundary effects (such as Canada’s wildlife management regimes), and land claim agreements dealing with the rights of indigenous peoples.\(^71\) This in turn leads to the involvement of a wide variety of administrative organizations, including United Nations agencies and programs (such as the International Maritime Organization), regional bodies (including regional fisheries management organizations as well as NATO and the EU), Arctic-specific bodies (such as the working groups of the Arctic Council), indigenous peoples organizations (along the lines of the Inuit Circumpolar Council), sub-national bodies (the Northern Forum, for example), and numerous NGOs (like the International Council for the Exploration of the Sea). It is worth noting as well that the UN General Assembly annually adopts resolutions concerning the management of oceans and fisheries that provide specific guidance on how the Law of the Sea should be implemented worldwide, including in the higher latitudes.\(^72\)

Despite this complex collection of interacting organizations, regimes, and regulations, no overarching, commonly agreed-upon legal and/or political mechanism currently exists for managing the High North as a whole, especially when it comes to handling disputes that could lead to conflict between or among countries with a territorial claim to the Arctic, nor is there any near-term prospect of reaching multilateral agreement on a single governance regime for the Arctic that deals directly with the security of the overall region. Moreover, according to some experts, with respect to certain governance issues there are almost “too many fingers in the pie” and too many frameworks and institutions, which simply adds to the problem of multiple and overlapping institutional rules that need to be reconciled on a number of levels among countries with diverse institutional memberships, loyalties, and national priorities.\(^73\)

In addition, a multitude of non-state actors, including intergovernmental and indigenous peoples organizations, multinational corporations, environmental NGOs, and sub-national units of government, are expected to


\(^{68}\) Oran Young, “If an Arctic Ocean Treaty Is Not the Solution, What Is the Alternative?” Polar Record, November 2010.

\(^{69}\) The Arctic has a history of indigenous governance systems, described by anthropologist Edward Hall as “high-context” communicative cultural approaches that are predicated on socio-cultural fluency/knowing, as opposed to Western/European “low-context” communicative approaches, which rely on written rules and systems emanating from a hierarchical authority. Edward Hall, Beyond Culture (New York: Anchor Books, 1976).


\(^{71}\) Arctic Governance Project, “Arctic Governance in an Era of Transformative Change.”


play an increasingly important role in future Arctic governance solutions, pointing to the need for more nuanced thinking on how best to manage an Arctic of the future that is host to an expanding variety of human activity. As a result, many Arctic experts and policy officials are coming to the conclusion that rather than attempting to single out one or more regimes or organizations as the key to effective management, it may be more productive for the time being to focus on strengthening a broad suite of Arctic governance systems, treated as a set of distinct but interlocking arrangements that can be applied to a number of concerns simultaneously and for which the whole is greater than the sum of its parts.74 In that regard, the influential, if limited, frameworks of UNCLOS and the Arctic Council feature prominently in the current debate on how best to expand existing regimes in the region so as to tackle the full portfolio of likely governance challenges, while also ensuring that they interact in a mutually supportive and synergistic manner.

The Law of the Sea

While the intricate tapestry of Arctic governance is perpetually being rewoven, many Arctic experts point to the 1982 UN Convention on the Law of the Sea as perhaps the best foundation on which to build a more authoritative mechanism for guiding the future use of Arctic waterways and the development of Arctic resources. UNCLOS, which encompasses some 320 articles grouped into seventeen parts, does provide clear procedures for settling boundary disputes, for submitting resource claims beyond an individual country’s EEZ, for ensuring environmental protection, and for defining which maritime passageways fall within the sovereign control of one or more coastal states and which must remain open to unrestricted use. UNCLOS allows coastal nations resource management and exploitation control over their EEZ, which extends two hundred nautical miles beyond their territorial sea baseline. When the continental shelf goes beyond the EEZ, nations may also claim limited sovereignty over seabed resources in that area, known as the extended continental shelf (or ECS), which, effectively, can reach out to 350 nautical miles from the shoreline. Control of and resource exploitation in areas located beyond the continental shelves, referred to as the deep seabed, fall, however, under the administration of the International Seabed Authority (ISA), which was created under the auspices of UNCLOS to help oversee the development of seabed areas that lie beyond national jurisdiction in a way that benefits the international community as a whole.

Unfortunately, it often is not easy to determine precisely where one nation’s jurisdiction ends and another’s begins in either an EEZ or ECS context. This has proven to be, and will continue to be, an especially difficult task in the Arctic, which has one of the longest uncharted and most geologically complex continental shelves in existence, large portions of which are already claimed by more than one Arctic nation. Under UNCLOS article 76, a coastal state may claim jurisdiction in seabed areas where underwater features in the ECS are considered geologically similar to the state’s continental landmass and, hence, an extension of its continental shelf. In the event of a jurisdictional dispute, the Commission on the Limits of the Continental Shelf, a twenty-one-nation body established under UNCLOS, makes science-based recommendations regarding rival claims submitted by member states within ten years of their having ratified UNCLOS. A number of additional international treaties and customary international law are also part of the Law of the Sea, including the 1958 Continental Shelf Convention, various supporting instruments for deep seabed minerals, the 1995 UN Fish Stocks Agreement, and the shipping-related treaties of the International Maritime Organization, among others.75

Yet, despite its breadth and scope, UNCLOS is not equipped to deal in sufficient depth with a number of potentially contentious issues, and its procedures and guidelines do not translate very well to the complex geology and shifting landscape (and seascape) of the Arctic. Hence, they have not provided much relief so far in helping to resolve competing claims of sovereignty or in clarifying precisely where freedom of the seas does or does not apply. More specifically, the convention fails to spell out detailed rules regarding the delimitation of maritime boundaries between adjacent or opposite states, the regulation of marine fishing, the scope of what qualifies as peaceful use of the high seas, or the precise criteria to be used in evaluating ECS claims of coastal states.76 Instead,

74 Arctic Governance Project, “Arctic Governance in an Era of Transformative Change.”
75 Hoel, “The High North Legal-Political Regime.”
76 Young, “If an Arctic Ocean Treaty Is Not the Solution.”
the CLCS can only issue “recommendations” that are aimed at merely supporting (or not) a country’s “claim on the expansion of the outer continental shelf.” According to some critics, this framework could allow an aggressive state to ignore the commission's recommendation or to submit a claim after the ten-year deadline, because of new evidence, because it failed to make a claim on time, or because it wants to challenge a later claim by a neighboring state. At present, it remains unclear what, if any, recourse a state would have if it disagreed with a CLCS ruling, or, more worrisome still, what the UN or other states could do if the claimant in question chose to ignore the CLCS decision altogether and took steps to assert its sovereignty in the disputed area.

Yet another complication from the U.S. perspective is that Congress still has not ratified UNCLOS, a fact that has left American officials at a severe disadvantage, compared to their counterparts in other Arctic countries, in their efforts to advance (and secure international recognition of) U.S. national claims – and to review those made by potential competitors – with respect to offshore resources located beyond the country’s two-hundred-mile exclusive economic zone. Bilateral agreements between the United States and Canada provide some protection regarding future operations in the Arctic, and they may be expanded in certain sectors (and for certain issues) to include Russia and other countries and stakeholders. Until ratification occurs, however, Washington would have little leverage over a management regime for the Arctic based principally on UNCLOS rules, and it would not, as many supporters of ratification regularly point out, have a “seat at the table” equal to that of the other ECS claimants. Needless to say, this is a rather absurd position to be in for one of the most powerful Arctic nations, especially one that very likely holds a legitimate claim to one of the most resource-rich, if not the richest, ECS sectors of the five Arctic coastal states.

UNCLOS, like many other framework agreements, is therefore seeking to provide a set of internationally approved mechanisms that interested parties can then use to “bridge the gap between broad principles and the

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77 Rajabov, “Symposium: Arctic Sovereignty.”
78 Econ Pöyry, “Arctic Shipping 2030.”
concrete circumstances of specific situations.” As part of this approach, the UNCLOS conflict resolution regime might suggest on occasion that certain disputes and claims may be better resolved through other bodies and venues intended to apply the convention’s principles to concrete cases, such as the International Court of Justice (ICJ) system, interstate arbitrations, or through agreement between or among the states involved. Of these options, interstate arbitration and ICJ litigation could be rather complicated affairs in an Arctic-related dispute, particularly if the dispute involved a majority (if not all) of the coastal states, a situation that would probably make it nearly impossible to achieve an equitable outcome that could fully satisfy all the parties involved. Potentially more difficult to manage would be the finality of arbitration judgments in particular, which frequently render the “opportunity to appeal, rescind, or adjust the arbitration award” virtually non-existent.

**A Binding Arctic Ocean Treaty?**

Given these limitations associated with an UNCLOS-based governance approach, some countries and international organizations—including various environmental NGOs and, until recently, a few EU agencies as well—have advocated a treaty-based regime for the Arctic similar to that set forth in the 1959 Antarctic Treaty and its associated agreements (generally referred to as the Antarctic Treaty System, or ATS), which froze all territorial claims, banned military activity on the continent, and set it aside as a scientific preserve. Proponents of this alternative solution argue that a comprehensive framework agreement (or a constitutive arrangement) that creates a single integrated governance system would provide “the ideal way to manage the Arctic” by developing an overarching hard-law treaty that would guarantee “an orderly and collective approach to extracting the region’s wealth.” Such an agreement would not only serve as an institutional platform for the establishment of a systematic regulatory mechanism, but would, according to organizations such as the World Wildlife Foundation (WWF), address several Arctic governance gaps that currently exist, including a detailed strategy for ecosystem-based management (EBM). Similarly, the European Parliament proposed in a 2008 resolution the creation of “an international treaty for the protection of the Arctic, having as its inspiration the Antarctic Treaty,” although EU officials later discarded the idea as simply counterproductive. Still others have suggested much more limited frameworks of governance that either aim at environmental protection over the wider mission of sustainable development or focus more specifically on the maritime Arctic as opposed to the entire High North.

The Antarctic Treaty System, however, works in large part because it deals with a remote and uninhabited landmass, far from major oceanic trade routes, where issues of sovereignty are held in abeyance by mutual agreement. Such an approach would not really be suitable for the Arctic, a largely maritime world that is literally transforming before our eyes, whose primary sea lanes could emerge as major global trade routes, and whose oceanic and seabed resources could become the object of military, as well as economic, competition. Moreover, given the Arctic’s physical proximity and connection to the sovereign territory of the five countries on its rim, and given both its newfound accessibility and its projected commercial value, the likelihood of ever banning all military activity in the region—especially activity aimed at protecting national assets and ensuring a safe and secure operational environment—must be considered quite low. More to the point, precisely because of its potential importance for trade and scarce resources, such a move would almost certainly be viewed as counter to the strategic interests of all eight Arctic nations, and perhaps as well to those of a good number of non-Arctic nations that are increasingly drawn to the region for its sea lane advantages and resource supply.

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79 Young, “If an Arctic Ocean Treaty Is Not the Solution.”
80 Rajabov, “Symposium: Arctic Sovereignty.”
81 Ibid.
82 Ibid.
83 Borgerson, “Arctic Meltdown.”
86 Young, “If an Arctic Ocean Treaty Is Not the Solution.”
promise. The Arctic coastal states have made it clear that they are not interested in becoming parties to a comprehensive, legally binding governance system for the Arctic, and, even if there had been an interest, any effort to create a single ATS-like treaty would most likely be mired in lengthy negotiations, leading to a product that would be lacking in substantive content as a result of inevitable compromises made to produce an agreed-upon text.\(^{87}\) Moreover, indigenous peoples could very well perceive such a state-centric arrangement as threatening and even detrimental to their own unique interests in the region.\(^{88}\)

Some of those in favor of a comprehensive legal treaty have based their proposition on the claim that UNCLOS is deficient as a framework agreement for the Arctic Ocean, particularly since the United States has yet to ratify the convention and is therefore unable to make use of its principles and regulations as a platform for asserting U.S. national and economic interests outside of EEZ limits in the high polar region. In practice, however, Washington implicitly accepts the vast majority of UNCLOS provisions as part of customary law (with the notable exception of the system governing deep seabed mining in part 11 of the UNCLOS document), and there has been no indication – and very little real likelihood – that American officials would instead prefer to ratify a rigid arrangement based on hard law to deal with Arctic issues.\(^{89}\) A further major challenge is the problem of identifying what the appropriate set of players would be in a possible negotiation of a single Arctic regime. In order to accommodate and regulate emerging developments and activities beyond national EEZ jurisdictions, a comprehensive agreement would necessarily exceed the geographical and legal remit of the Arctic nations and would likely require the participation of non-Arctic states and many other entities with a stake in the Arctic. In this context, for example, other Northern Hemisphere states with an interest in the opening Arctic sea lanes, such as Germany, Japan, China, Korea, and the Netherlands, would almost certainly expect to play a role in the future development of commercial shipping in the region, as well intergovernmental bodies, including the EU and member states of NATO with respect to, among other issues, activities on the high seas of the Arctic Ocean.\(^{90}\) At the same time, such broad participation would raise complex questions about the exact role and influence of key non-state actors in the north, such as indigenous peoples’ organizations that currently enjoy the status of permanent participants in the Arctic Council, sub-national bodies like the Northern Forum and the Barents Regional Council, and prominent environmental NGOs like WWF.\(^{91}\) Indeed, as one observer recently remarked, the Arctic is becoming “ever more entangled” with the rest of the globe and “ever more at the mercy of decisions made elsewhere, often without the slightest consideration for the top of the world.”\(^{92}\)

In light of such considerations, many in the research and policy communities have concluded that it would be well-nigh impossible to reach clear agreement on the exact composition of the membership for any legally binding regime intended to address “a sizeable suite of governance needs” arising in the Arctic Ocean.\(^{93}\) Moreover, binding agreements of this type have traditionally proven difficult to adjust appropriately and efficiently in a timely manner and, as was the case with the Antarctic Treaty itself, may lead to protracted debates over the addition of protocols and instruments to the original framework Treaty, posing a serious disadvantage given the Arctic’s rapidly changing circumstances.\(^{94}\) Although UNCLOS may be difficult to apply to some of the newly emerging issues in the High North, such as the introduction of ecosystem-based management and the importance of incorporating traditional or indigenous ecological knowledge into governance models, its general principles are broad enough, and they provide a fully applicable framework with respect to the majority of current and expected challenges relating to the Arctic Ocean, especially when combined with other relevant arrangements.\(^{95}\) After all, even the much-praised Antarctic Treaty System has evolved over time and now consists of three separate conventions that are not identical with regard to membership, spatial scope, or substantive issue

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87 Young, “The Future of the Arctic.”
88 Ibid.
89 Young, “If an Arctic Ocean Treaty Is Not the Solution.”
90 Ibid.
91 Ibid.
93 Young, “If an Arctic Ocean Treaty Is Not the Solution.”
94 Young, “The Future of the Arctic.”
95 Young, “If an Arctic Ocean Treaty Is Not the Solution.”
coverage, giving rise to a number of closely related yet distinct bodies.\textsuperscript{96}

What many have proposed as an alternative solution to a single binding Arctic treaty is the creation of a robust, multifaceted “regime or governance complex” that would consist of various interconnected arrangements, equipped with the capability to address “specific issues on their own but that also add up to a comprehensive governance system” for the Arctic region as a whole.\textsuperscript{97} Proponents of this strategy have often pointed out that, given the wide range of Arctic issues (and their variable stages of “ripeness” for international agreement), the sheer number of relevant actors, the spatial scope of the problems, and the auspices under which negotiations can go forward, the best approach to building governance capacity would be to focus first on one or two specific issue areas where the prospects for success are the greatest. By way of example, those who favor a step-by-step, function-by-function approach along these lines point to the Arctic Council’s recent success in negotiating and adopting a legally binding search and rescue (SAR) regime, as well as to related efforts to upgrade the 2002 voluntary guidelines that govern commercial shipping in Arctic waters into a mandatory Polar Code under the auspices of the IMO.\textsuperscript{98}

On the other hand, any agreement on oil and gas development in areas under the jurisdiction of individual Arctic coastal states would likely take the form of a set of basic guidelines or a collection of best practices, rather than mandatory regulations. So, too, while fishing activities in the high seas portions of the Arctic are already covered under the provisions of the Northeast Atlantic Fisheries Convention, relevant players may choose to resolve specific fishery disputes through the establishment of relatively informal agreements, much as Norway and Russia have done since the 1970s in terms of fisheries management in the Barents Sea.\textsuperscript{99} Moreover, with respect to maritime jurisdiction issues, states could find it in their interest to negotiate legally binding agreements that involve only two or three countries, similar to the 2010 bilateral agreement between Norway and Russia delimiting their respective EEZs in the Barents Sea and parts of the Arctic Ocean. There are early indications, for example, that Canada and the United States may also apply this same method to resolve their own boundary differences in the Beaufort Sea. At the same time, the harvesting and conservation of marine mammals in the Arctic fall under the provisions of a number of arrangements, including the 1973 International Agreement on the Conservation of Polar Bears and Their Habitat and the 1992 North Atlantic Marine Mammal Commission (NAMMCO), among others. Similarly, the Association of Arctic Expedition Cruise Operators (AECO), a nongovernmental organization that has emerged as the counterpart of the International Association of Antarctica Tour Operators (IAATO) in the Antarctic, could increasingly address regulatory issues pertaining to the rapid rise of ship-based tourism in the Arctic.\textsuperscript{100}

To be sure, the complex mosaic of governance arrangements that would emerge from a blending of various regimes into a loose network of systems would be difficult to manage. It would, however, have the twin advantages of “flexibility across issues” and “adaptability over time,” along with the ability to be adjusted at a later point on a case-by-case basis when it comes to the legally binding character of the agreements themselves.\textsuperscript{101} Such a model of evolving governance may be ideally suited to regions such as the Arctic that are still emerging, and the final character of which remains unclear.

The Arctic Council

In the very near term however, the Arctic Council, the region’s principal high-level forum for the promotion of cooperation and interaction among the eight Arctic states, a number of permanent observers, and a variety of affiliated organizations (for specific issues), looms as perhaps the central structure around which a broader regional governance system for the High North might be built, even though its decisions and policies on matters of substance continue for the most part to lack intrinsic legal quality. Established in 1996 as an extension of the earlier Arctic Environmental Protection Strategy (AEPS), the Arctic Council provides a valuable intergovernmental mechanism for addressing a number of “soft law,” or non-binding, issues, including environmental protection and sustainable development, and for monitoring and assessing new

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\textsuperscript{96} Ibid.
\textsuperscript{97} Young, “The Future of the Arctic.”
\textsuperscript{98} Young, “If an Arctic Ocean Treaty Is Not the Solution.”
\textsuperscript{99} Ibid.
\textsuperscript{100} Ibid.
\textsuperscript{101} Ibid.
developments in the Arctic, although its scope explicitly excludes “matters related to military security.” As a result, the Arctic Council’s formal competence, resources, and instruments are not designed or equipped to deal with the “hard,” security-related strategic dimension of Arctic challenges, or with the “the real dynamics of commercial exploitation and economic development” in the polar region, shortfalls that have undermined the organization’s ability to address key governance issues in a holistic manner. It is, therefore, primarily a policy-shaping body that functions as a consensus-based, facilitating, or catalytic forum, rather than a regulatory or decision-making entity. Moreover, the council’s informal practice of avoiding fisheries issues, its lack of reliable funding sources, and its current exclusion of major non-Arctic states that are likely to have at least some say in future events in the region, have led a number of experts to characterize it as a “high-minded” and “toothless” arrangement, typically seen as the protector of smaller players, such as indigenous peoples, and often limited in its initiatives to those supported on a voluntary basis by one or more of its members.

Nevertheless, the Arctic Council has succeeded in its work well beyond initial expectations. Though not a governance system in its own right, it has achieved remarkable results in identifying emerging Arctic issues that need to be addressed, moving them onto the policy agendas of Arctic stakeholders, supplying invaluable background analyses for relevant questions, and providing a venue in which a host of regional non-state actors can participate more effectively in Arctic policy development. A notable high point came at the May 2011 Arctic Council ministerial meeting in Nuuk, Greenland, with the signing of the historic search and rescue agreement discussed above, the first-ever legally binding treaty to emerge out of the Arctic Council process, as well as the first binding agreement endorsed by all eight Arctic states on any issue. Significantly, at this same meeting, council members also agreed to establish a permanent secretariat in Tromsø, Norway, as a way to improve institutional continuity and efficiency of administration, and they launched a new initiative to examine further the concept of ecosystem-based management, or the notion of looking at the full range of human activities taking place within a given ecosystem (in this case, the Arctic) with a view to managing those developments in a sustainable manner. In two other important steps, the council mandated the establishment of a new task force, charged with overseeing the development of appropriate prevention and response measures to deal with the real possibility of a major oil spill incident in polar waters, and it agreed as well to define more clearly the criteria for determining which countries and organizations should be given permanent observer status on the council.

According to a number of longstanding observers of Arctic trends, this increasing institutionalization of the Arctic Council may pave the way toward a more inclusive and effective governance structure for the Arctic region, setting in place a system by which interested parties—be they state or non-state—can join with Arctic states in an “Arctic Council Plus” format to tackle specific policy challenges. In this way, the council could help to promote joint research and multilateral cooperation on fairly non-controversial (but still quite important) projects of common interest, such as the commercial development of methane hydrates extracted from Arctic waters, disaster relief preparedness in the Arctic region, and new tanker designs for transporting oil and gas in the High North environment. By taking additional steps to improve communi-
cation and information sharing among its members and affiliates (policy objectives identified by Sweden as priorities under its current council chairmanship\textsuperscript{107}), the council can become the primary repository for knowledge on Arctic affairs and play an even greater role than it already does “in amplifying the voice of the Arctic in global settings.”\textsuperscript{108}

Taken together, these initiatives could also serve as important confidence-building measures (or CBMs) that could help to dampen the potential for rivalry and boost the prospects for multinational and/or cross-organizational cooperation among Arctic stakeholders – at least with respect to soft security matters – should the “great Arctic gold rush” heat up in earnest. It will take, however, a major change in policy and a serious act of leadership by the United States to drive the Arctic Council in this direction, as it was Washington that prevented the group at its creation from tackling security-related issues. Secretary of State Clinton’s participation in the recent Nuuk ministerial meeting, the highest level of attendance by a U.S. official at any Arctic Council gathering, together with America’s co-chairmanship (with Russia) of the council task force that developed the SAR treaty, and its leadership role in the new oil-spill task force, may just be the first necessary steps in this direction.

**Nordic Cooperation**

In the meantime, the shortcomings of Arctic management proposals centered primarily on UNCLOS, an ATS-like model and, until recently, even the Arctic Council, have led a number of Arctic stakeholders to consider less wide-ranging regional and sub-regional approaches for High North governance. Although the Nordic Cooperation framework, which includes Norway, Denmark, Sweden, Finland, and Iceland, has traditionally shied away as well from security matters of any kind, because of Finnish sensitivities on this score, in recent decades Nordic ministers and other government officials have cautiously, but with increasing openness, begun to raise a number of high politics and security-related issues when they gather for joint consultations.\textsuperscript{109} Aside from the longstanding coordination among the Nordic countries with respect to overseas peacekeeping missions, Nordic Cooperation involves as well joint operational structures and defense equipment collaboration, and the framework’s official inter-parliamentary body, the Nordic Council, recently placed “societal security” cooperation on its agenda.\textsuperscript{110}

Under the auspices of the Nordic Council of Ministers, for example, the five Nordic states released a joint report in February 2009 (often referred to as the Stoltenberg report) that called for, among other things, more concerted efforts by Nordic nations to establish a maritime monitoring system in the Arctic, as well as for a joint maritime response force with search and rescue expertise and an icebreaker capability, to be joined in time by a joint amphibious unit trained to operate in Arctic conditions. Ideally, the monitoring system would be a civilian system capable of fusing the various national information management networks currently maintained by each Nordic country into an integrated real-time picture that could be shared by all showing what is happening at any given point in time in or on the seas being monitored. Such a system, the report goes on to argue, would make it more feasible as well to create a joint rescue coordination center to support the joint maritime response force, which would be composed of coast guard and search and rescue units from all the Nordic countries. As for the amphibious unit, it would build on the amphibious force collaboration already established between Finland and Sweden, and, with the aid (as suggested in the Stoltenberg report) of a logistical support vessel that could function as a command, transport/supply, and amphibious landing platform, it would bring to Arctic

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\textsuperscript{108} Young, “The Future of the Arctic.”

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\textsuperscript{109} Bailes, “Options for Closer Cooperation in the High North.”

\textsuperscript{110} Ibid.
operations at least a limited capability to handle a wider array of contingencies.\textsuperscript{111} Once forward progress on these initiatives has been made, it is the hope of the Nordic Council that the Nordic countries can encourage similar cooperative efforts by the Arctic Council as a whole, with a particular emphasis on promoting cooperation with and among Russia, Canada, and the United States. In a further effort to translate the idea of Nordic defense cooperation into legally binding agreements, the five countries issued a new proposal in early 2011 that called for the development of a Nordic joint declaration of solidarity (NJDS), which would provide a “common and automatic military response by all Nordic states” in the event one or more were attacked.\textsuperscript{112}

**Barents Euro-Arctic Council**

In a similar initiative, cooperation in the Barents Euro-Arctic Region (BEAR) was launched in 1993 at a foreign ministers’ conference in Kirkenes, Norway, as a northern framework for cooperation intended to act at both the intergovernmental (Barents Euro-Arctic Council, or BEAC) and interregional (Barents Regional Council, or BRC) levels simultaneously so as to “develop the region both socially and economically” in order to increase its competitiveness in Europe.\textsuperscript{113} Like the Arctic Council, the BEAC is a relatively “soft” institution whose purview has traditionally excluded any security or geostrategic matters, and, like the Nordic Council, the BEAC restricts the scope of cooperation to natural partnerships. In the view of its members, sub-regional, neighborly collaboration can streamline resource use and foster synergies without subjecting proposals to uninterested parties, thus allowing for the development of specific and efficient solutions. Currently, the main priority of the BEAC is to strengthen multi-level governance and regional cooperation by interlinking the challenges of economic growth, climate change, and sustainable use of natural resources toward an eco-efficient economy. The BRC, on the other hand, is a forum for cooperation among the thirteen counties or sub-national entities\textsuperscript{114} of the BEAC member states, and it focuses on strengthening the Barents Euro-Arctic Region’s political structures. Barents Cooperation also extends to other regional multilateral organizations, including the Arctic Council (AC), the Council of the Baltic Sea States (CBSS), and the Nordic Council of Ministers (NCM). In addition, the BEAC framework is an active participant in the European Union’s Northern Dimension ini-


\textsuperscript{114} Finnmark, Nordland, and Troms in Norway; Norrbotten and Västerbotten in Sweden; Arkhangelsk, Murmansk, Republics of Karelia and Komi, and Senets Autonomous Okrug in Russia; and Kainuu, Lapland, and Oulu in Finland.
tiative, which promotes further cooperation among the Northern Regional Councils. This kinetic, multi-level discourse, viewed holistically, generates a flexible and adept mechanism for regional Arctic governance in the Nordic-Barents zone.

**International Maritime Organization**

The IMO, yet another international and intergovernmental forum that can play an especially important role in dealing with specific shipping concerns pertaining to the Arctic, is a specialized United Nations agency that endeavors to “promote safe, secure, environmentally sound, efficient, and sustainable shipping through cooperation.” Like UNCLOS, its scope extends well beyond the Arctic and encompasses a wide range of conventions such as the International Convention on the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL). However, the only IMO instrument specifically designed for the Arctic is the voluntary and non-legally binding 2002 IMO “Guidelines for Ships Operating in Arctic Ice-Covered Waters,” revised and updated in December 2009. As no state has implemented these guidelines through binding legislation and no follow-up or evaluation procedures are in place, application of the rules is only apparent through state and international shipping practices.

Nevertheless, the fifty-fifth session of the IMO Sub-Committee on Ship Design and Equipment (DE) held in March 2011 reported further progress on the formulation of a mandatory, legally binding Polar Code for ships operating in the Arctic’s waters. The Polar Code is being developed to provide standard guidelines for ships operating in ice-covered or ice-infested waters in the higher latitudes, with an emphasis on appropriate ship design, proper training, and environmentally sound navigation. Its goal is to supplement other relevant instruments (such as SOLAS and MARPOL) in order to reduce the risks associated with shipping activities in hazardous icy conditions, setting in place agreed rules of the road to which any ships travelling in ice-covered waters must adhere. Meanwhile, through the combined efforts of the IMO and the World Meteorological Organization (WMO), the World-Wide Navigational Warning System (WWNWS) has been extended into Arctic waters, in anticipation of the need for improved measures to ensure safety at sea in the High North as the Arctic experiences an expanding level of business activity and more extreme, less predictable weather conditions due to a melting ice cap.

To facilitate this Arctic expansion for the WWNWS, five new navigational areas (NAVAREAs) and meteorological areas (METAREAs) have been established in the Arctic by the IMO and WMO, respectively, and they were slated to reach full operational capacity by June 2011. The key point here is that IGOs like the IMO are also critical to the multi-layered approach to Arctic governance that seems to be taking shape.

**Conclusion**

Clearly, the Arctic is emerging as an increasingly attractive market for investment and trade, based largely on the opening of new Arctic sea lanes, the access they provide to significant natural resources located within the Arctic region, and the overall rise in maritime traffic and economic activity throughout the Arctic that will eventually occur as a result. This is particularly true with respect to the tapping of oil and gas supplies in the Arctic and their transport to markets in Europe, North America, and Northeast Asia. As detailed in this chapter, it may, of course, take twenty years or more to reach the scale of transarctic seaborne trade anticipated in the most optimistic projections currently available. So, too, ongoing dis-
agreements over the use of the Northwest Passage and the Northern Sea Route, together with the very real possibility that the boundaries of national jurisdiction in contested ECS sectors may take more time to determine than expected, could reduce the annual volume of trade and slow the pace of oil and gas exploration and production in promising offshore locations. At the same time, shipping from point to point within the Arctic will undoubtedly develop sooner (and grow faster) than intercontinental traffic passing through the Arctic, just as the extraction of seabed minerals from within the EEZs of the Arctic Five will largely precede the extraction of similar supplies from their ECS's. What is beyond dispute, however, is the fact that the Arctic's sea lanes and its strategic resources will become increasingly accessible to, and more broadly used by, a growing list of trade-dependent and energy-hungry nations, Arctic and non-Arctic alike, by 2035 and beyond.

On the other hand, when it comes to issues of international governance and cooperation, the situation in the Arctic remains somewhat more muddled and undeveloped, especially with respect to security-related issues. While substantial institutional capacity already exists to manage a fairly broad range of regional concerns, any future cooperative approach is unlikely to take the form of a single, comprehensive treaty, much less a legally binding agreement, as a way to deal with emerging problems of Arctic governance.\footnote{122 Arctic Governance Project, “Arctic Governance in an Era of Transformative Change.”} What is more, any effort to devise an all-encompassing framework, according to many Arctic observers and stakeholders, would likely be “politically irrelevant,” time-consuming, and simply counterproductive, in the sense that it would detract attention from (and perhaps put on hold) a range of important ocean management issues that have individually seen great strides in recent years, such as search and rescue and the protection of the polar marine environment from oil spills.\footnote{123 Young, “If an Arctic Ocean Treaty Is Not the Solution.”} In addition, aside from strong resistance to such an agreement by the five coastal states, it is unlikely to succeed because the Arctic region is already, in the words of one informed observer, far “too occupied and exploited,” governed by a diverse group of stakeholders that are heavily invested in, and have some degree of legal or functional competence over, High North affairs.\footnote{124 Bailes, “Options for Closer Cooperation in the High North.”}

Given the gamut of practical challenges in the Arctic, many have argued that what is needed at this time is a flexible governance strategy that incorporates various distinct yet interrelated elements or agreements, making use of multi-functional, multi-institutional, and cross-sector solutions, and featuring “a suitable division of labor in which individual bodies do what they are able to do best, functional overlaps are addressed, and gaps in the existing architecture of governance are filled.”\footnote{125 Arctic Governance Project, “Arctic Governance in an Era of Transformative Change,” 10; Young, “If an Arctic Ocean Treaty Is Not the Solution.”} One of the biggest challenges in the coming decades will likely be the task of operationalizing newly emerging ideas as part of this framework, including the maintenance of biological diversity (as a foundation of ecosystem-based management), the protection of Arctic cultures (which are especially vulnerable to large-scale environmental disasters in the region), and the inclusion of Arctic indigenous peoples’ traditional ecological knowledge (or TEK) into the evolving system of governance.\footnote{126 Young, “If an Arctic Ocean Treaty Is Not the Solution.”} Strengthening the role of the Arctic Council, in that regard, especially at the applied level, becomes especially important, and ongoing work on pollution prevention measures and Arctic marine and coastal environment protection under the council’s Protection of the Arctic Marine Environment (PAME) program is a notable example of this strategy.

In view of the Arctic Council’s increasing purview on search and rescue and environmental issues, moreover, a growing number of U.S. officials and experts has begun to embrace the idea of establishing the Arctic Council Plus (also referred to as an A8 Plus) structure mentioned earlier in this chapter that would allow governance to gradually evolve from within the region and outward, beginning with an inner core group of Arctic countries and key stakeholders that would expand as necessary, adding more nations and/or institutional players depending on the requirements of the particular issues at hand. Looking at this Arctic Council Plus arrangement as a norm and an important piece of soft law would also allow members to build on the council’s success with respect to climate, oil and gas, and transboundary pollution assessments, as well
as its pioneering work on shipping, all of which are helping to develop an agenda for appropriate human activity in the High North. After all, the Arctic needs a champion that can effectively represent the concerns of its regional actors in global governance venues, and, at least for the moment, a sufficiently reformed and strengthened Arctic Council appears to be the best mechanism available to fulfill that role.127

The situation becomes much less clear, however, when matters of national and international security are involved, with regard to which the eight Arctic nations – most particularly, the five coastal countries – remain highly sensitive. At the multinational level, NATO appears to be the one organization that is able to address Arctic security in a serious manner, though its attempts to do so – detailed in the NATO section of chapter 4 – are still in the earliest stages and viewed with suspicion by Russia, which could play, if it chose to, a very disruptive role vis-à-vis Arctic policy. Aside from its ability to meet Western needs in the realm of military security, NATO’s unique expertise and assets for addressing possible civil emergencies and large-scale search and rescue problems in the circumpolar area could also prove indispensable in the future.128 NATO could thus play an important part because, as discussed earlier, rather than one overarching regime for managing Arctic affairs, what is likely to prevail for some time to come is a mix of collaborative frameworks, including bilateral, sub-regional, regional, and broader multilateral mechanisms, depending on the issue or issues to be addressed. As with other non-traditional security challenges (such as piracy, cyber-security, and disaster relief) that cut across the jurisdictions of existing security organizations, future security risks in the Arctic are probably best handled by what is known in NATO circles as a “comprehensive approach” strategy, according to which the diverse array of national, international, IGO, and NGO institutions that have a stake in the Arctic would take more concrete steps to coordinate and integrate their individual efforts in support of a common plan.

One idea for strengthening the security policy component of the Arctic Council would be for NATO to follow the EU’s lead in seeking permanent observer status on the council. That way NATO, in accordance with the Arctic Council Plus formula, could participate more directly in council discussions that could benefit from a broader regional security perspective. It is also possible that a new multilateral mechanism could be established to facilitate Arctic-wide discussions of emerging security concerns and military challenges. In that regard, promoting and developing an informal, unofficial forum for an Arctic-oriented security dialogue – similar perhaps to the annual Munich Security Conference in Germany and the Shangri-La Dialogue in Singapore – might be an ideal way forward. Just as the Munich session does for European security and the Singapore session for Asia-Pacific security, an Arctic forum along similar lines, hosted perhaps by one of the Arctic Five (or rotated among them), could provide an authoritative venue where recognized experts and senior officials dealing with Arctic security matters could come together on a regular basis to discuss security challenges in the Arctic region, but do so in an unofficial setting free from the constraints and sensitivities often associated with more formal and official diplomatic exchanges. Indeed, given the traditional reluctance of the Arctic Five to address security policy issues at the Arctic Council, such a forum, which could be open to all parties interested in contributing to a stable and secure Arctic region, is long overdue.

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127 Ibid.
128 Bailes, “Options for Closer Cooperation in the High North.”
Chapter 3

The future of the Arctic region and its strategic importance will be determined first and foremost by decisions made and actions taken by the Arctic Five – Norway, Russia, Denmark, Canada, and the United States. Each has a significant Arctic coastline and exclusive economic zone (EEZ), the prospect of a resource-rich extended continental shelf (ECS), and the consequent desire to assert its sovereign rights (and protect its strategic interests) in the High North to the furthest extent possible. Each is also likely to witness a substantial increase in economic activity in and through Arctic waters under its jurisdiction in the 2030 to 2040 timeframe, to include, as detailed in chapter 2, a sizeable expansion in the extraction of Arctic oil and gas and a steady rise in both intra-arctic and transarctic seaborne trade. These trends, in turn, will require more concerted efforts by all five, singly and, where possible and appropriate, collectively, to improve maritime domain awareness and safety in and around the areas they control, to acquire an enhanced capacity to respond to accidents and disasters at sea under Arctic conditions, and to counter any threats to security that may arise as the Arctic as a whole becomes more accessible and more heavily trafficked. Moreover, how the Arctic Five handle these challenges will define in large part what is possible and necessary with regard to broader multilateral cooperation within the Arctic region.

Understanding the current Arctic priorities, policies, and programs of Norway, Russia, Denmark, Canada, and the United States, therefore, is the best way to begin to develop a clearer picture of what the Arctic will look like as it transforms from a strategic backwater to a new strategic crossroads. Toward that end, this chapter provides in-depth assessments of the strategic interests of all five countries in the Arctic region and the various measures they are taking to safeguard those interests now and in the years ahead. Emphasis is placed on the political, economic, military, and broader national security policies and programs of each country as they relate to the Arctic, and on the degree to which they may contribute to competition or cooperation among the five and/or with other Arctic stakeholders. Findings derived from the five coun-
try assessments presented below will help significantly to identify areas where additional capacity is required to sustain an adequate presence in the Arctic and to support Arctic operations in a secure, cost-effective, and environmentally sound manner.
Norway, considered by many as the European state with the clearest and most assertive Arctic policies, has long had extensive interests in the region in terms of geopolitical security, oil and gas investment, fishing resources, as well as environmental policy, and Norwegian government officials actively emphasize the Arctic’s continued importance to Norway’s national interest. Indeed, Oslo’s comprehensive new policy platform, the 2006 *The Norwegian Government’s High North Strategy*, singles out the Arctic region, and more specifically its European component, as the country’s “most important strategic target area” in the future, constituting a geostrategic “new dimension of Norwegian foreign policy.” Since adoption of its High North strategy, the government has reiterated its goal to effectively assert (and protect) Norway’s interests in the High North, enhance its regional presence, and exercise Norwegian sovereignty and authority in the area so as to ensure that the country can maintain its important role in resource management. While it already enjoys a leading maritime role in the Arctic area, with jurisdiction over more than two million square kilometers of ocean real estate, the government in Oslo is also aware of the region’s tremendous economic value and strategic potential due in large part to present and prospective access to and control over vast natural resources in the Arctic’s waters, a great deal of which still remains to be agreed upon with Russia.

The central tenets of Oslo’s new strategic approach revolve around the Barents Sea as an important energy province, Arctic marine resource management, strengthening relations with Russia, and securing recognition and support for Norway’s jurisdictional claims with respect to large ocean and seabed areas in the Norwegian Sea, the Barents Sea, the Arctic Ocean, and around Svalbard. The Norwegian government has consequently intensified its efforts to raise international awareness and establish active dialogues with relevant stakeholders and key partners, such as the United States, on Arctic-related questions and developments, including the issue of closer cooperation with neighboring Russia. As part of this approach, in early 2005, Norway initiated a series of bilateral consultations, known as *nordområdedialoger* (dialogues on the High North), with counterparts from the United States, Canada, Germany, the UK, France, and the European Union (EU). One of the main goals of the diplomatic campaign, as Prime Minister Kjell Magne Bondevik explained, was to “gain understanding for the Norwegian view internation-

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ally,” while at the same time linking “jurisdictional matters to energy security for Europe and North America.”

Within NATO policy circles in particular, Norwegian officials have worked hard to increase the Alliance’s role and interest in the High North, emphasizing the importance of NATO’s core (collective defense) functions and the need for renewed focus on traditional stability and security tasks in and around allied territory, especially since the Atlantic Alliance is central to the defense strategies of all but one Arctic Ocean state (Russia). Some of the security challenges in this context, outlined in 2009 by Norwegian Deputy Minister of Defense Espen Barth Eide, include the existing and potential conflicts of interest in the Arctic area, the enduring strategic role of Moscow’s Northern Fleet in the Russian nuclear triad and the “sheer weight” of Russia’s Kola Peninsula military infrastructure located off the northern coast of Norway, the continued use of the Barents Sea by Moscow for military training and new weapon systems testing, and the ever-present possibility of deteriorating relations between Russia and the West.

However, according to official Norwegian thinking, while an increased NATO profile in the Arctic is necessary to address the “fundamental security interests” of its members, allied engagement in the area should always be carefully calibrated and tailored so as to avoid provoking countermeasures and to recognize and accommodate the concerns of others, particularly Russia.

The Russian Dimension of Norway’s Strategy

The maintenance of good working relations with Russia forms the central bilateral dimension of Norway’s High North strategy, and Oslo continues to place great value on resolving territorial disputes in the framework of bilateral dialogue or in international forums such as the Arctic Council. As the government’s High North policy has stressed, working closely with Moscow is essential, since many of the challenges in the Arctic “in areas such as the environment and resource management can only be solved with Russia’s engagement and Norwegian-Russian cooperation.” In recent years in particular, Norwegian policy officials have frequently taken practical steps to engage Russia proactively on a number of economic, industrial, research, environmental, and energy-related projects designed to foster mutually beneficial collaboration in the region, much like the so-called energy dialogue that has facilitated Norwegian-Russian oil and gas cooperation in the north since 1992. For example, since the launch of the Barents 2020 project in 2008, Norway has developed unified safety standards with Russia in the Barents Sea, and the two nations recently established a cross-border zone of technological and energy collaboration (the Pomor zone), which in June 2010 hosted the first joint Norwegian-Russian military exercise in sixteen years and the most extensive of any such joint exercises between the two countries.

In addition, Norway’s official policy vis-à-vis Russia, based on “pragmatism, interests, and cooperation,” has increasingly focused on greater bilateral and multilateral engagement with Moscow in the realm of “ecosystem-based management” and disaster relief preparedness for the entire Barents Sea, whose sensitive environment falls under the shared responsibility of Norway and Russia. For Oslo, a key goal of these initiatives has been to demonstrate the importance of a cooperative, sustainable approach to the protection of Arctic marine resources, which in turn might ease Russian anxiety and reduce the political significance of recognizing Norwegian jurisdictional claims with regard to ocean management in particular areas. Toward this end, Norwegian officials have also enthusiastically promoted efforts via the Barents Euro-Arctic Council (BEAC) to improve the collective capabilities of Norway and Russia, as well as of Sweden, Finland, and, as appropriate, other members and observers of the BEAC, to respond to major accidents, natural disasters, and man-made emergencies in the Barents Sea region. The centerpiece of these efforts has been a series of tabletop and field exercises, called Barents Rescue, held since 2001, which Norway hails as a model for how regional cooper-

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4 ibid.
atation can be advanced in parts of the Arctic where there are competing territorial claims.  

The Norwegian government has thus devised a multifaceted policy of balanced diplomatic and military engagement with respect to the Arctic. The policy is largely reminiscent of the country’s Cold War foreign and security policy, which combined deterrence with reassurance toward the Soviet Union and focused on maintaining equilibrium in the region and a pattern of low tension and cooperation between the East and West, while de-emphasizing the military competition in the northern areas. At the same time, Norway’s new strategy on the High North signals a more assertive and coherent approach to the complex issues of sovereignty, jurisdiction, and resource management in the Arctic as a way for the country to position itself within a newly emerging constellation of powers, interests, and conditions that may very well render traditional alliances less relevant in the future. Moreover, given the general postwar decrease in allied interest and engagement in the region, and in the absence of an overarching, Cold War-like cohesiveness and sense of common purpose in the North among the allies, Norway’s comprehensive foreign policy on the Arctic is also a reflection of the government’s desire to maintain its options and influence in the area as well as to prepare for a possible scenario in the coming years whereby Oslo might find itself “more alone” and self-reliant and far more deeply engaged bilaterally with Russia than ever before.

As part of this pragmatic approach, Norway has also consistently sought to downplay the Kremlin’s sometimes confrontational rhetoric and its heightened military activities in Arctic waters, including Moscow’s controversial flag-planting on the North Pole seabed in August 2007 and its March 2009 proposal to create a special Arctic security force by 2020. At a high-level meeting of the Arctic Five in 2009, for example, Norway’s foreign minister, Jonas Gahr Støre, urged other nations to analyze regional developments “coolly,” outside the framework of Cold War mental maps, as “not everything that Russia does in the Arctic, not every flag they plant, which is a symbolic gesture, has legal meaning.” In a similar vein, the Norwegian deputy minister of defense recently remarked that Oslo was “not concerned” by the stronger Russian military presence in the area and regarded it not so much as a step toward Arctic confrontation, but rather as a way to help foster increased cooperation in the region, as long as “the interested parties are informed.”

To some degree, Norway’s careful diplomatic approach and rhetoric with respect to Russia reflect the overarching theme within Norwegian policy, academic, and research circles alike that centers on a predominantly optimistic interpretation of current and future security developments in the Arctic region. This notion stems in good measure from the widespread view in Norway that much of the recent coverage of Arctic issues has been rather alarmist and overdrawn, as well as from the belief that existing economic factors in the area will likely continue to create a strong interest in maintaining stability in the Arctic, a particularly important factor for energy-producing countries such as Russia. Moreover, any large-scale exploitation of the technologically and environmentally challenging Arctic Ocean resources is only imaginable under conditions of regional stability. This, in turn, leads many Norwegian officials to conclude that it remains unlikely that any of the five Arctic littoral states would risk a large-scale, interstate military conflict, particularly to press for its preferred solution to regional clashes of interest, since the resulting political and economic costs of doing so would likely outweigh any conceivable gain.

In this particular context, many Norwegian pundits like to quote their foreign minister’s description of the

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6 For details on the Barents Rescue series, see Barents Euro-Atlantic Region, “Joint Committee on Rescue Cooperation in the Barents Region,” http://www.beac.st/?DeptID=8733.
7 Given Norway’s important geostrategic position during the Cold War, adjacent to the mighty Soviet Northern Fleet and surrounded by strategic weapons systems from both East and West, the country’s postwar defense strategy, known as Nordpolitikk, emphasized the adherence to a strict policy of prudence, which integrated deterrence, reassurance, precaution, and confidence-building into a composite security posture that ultimately ensured a state of low tension on NATO’s northern flank. Johan Jørgen Holst, “The Effect on Norway: Increased Precaution,” in S. Jervell and K. Nyblom, The Military Buildup in the High North (Lanham, Maryland: University Press of America, 1986).
8 Ole Andreas Lindeman, Norwegian Foreign Policy in the High North, Oslo Files on Defense and Security, Norwegian Institute for Defense Studies, January 2009.
Arctic as a “High North, low tension” region. Nevertheless, according to some more defense-minded experts, localized episodes could still develop into armed clashes despite the original intentions of the parties involved, given local asymmetries of military strength (principal in Russia’s favor) which could potentially encourage the use of limited force by one or another state actor in the region, based on the conviction that the other side(s) would avoid at all costs escalating the conflict into a major confrontation. A leaked classified report in 2007, for example, from the chief of the Norwegian armed forces, General Sverre Diesen, evaluated in detail such conflict scenarios, contemplating in particular a situation in which Russia’s drive for Arctic fishing rights and oil and gas resources would challenge Norway, escalating the crisis into “serious conflict” without much assistance to be expected from NATO. Diesen later elaborated that while no imminent danger of war existed, “there are gray zones” and the use of limited military power and operations “as part of a broader political crisis management cannot be excluded” in Norway’s neighboring areas.

**Norway’s Defense Initiatives for High North Security**

Although the Norwegians strive to maintain a constructive, friendly, and cooperative relationship with Russia, they are clearly concerned by Moscow’s increasingly assertive actions in the Arctic, and the issue of defining the appropriate response to the Kremlin’s strengthening military capabilities and posture in the High North features prominently in Norwegian strategic thinking. Despite an apparent breakthrough announced recently in the longstanding disagreement between Norway and Russia over the delimitation of their exclusive economic zones (EEZs) in the Barents Sea, a number of additional ocean areas, many of which would likely hold significant deposits of oil and other resources, remain under dispute. To complicate matters, Moscow has repeatedly challenged Norwegian legal jurisdiction over territorial waters and the seabed around Svalbard, despite the 1920 Svalbard (Spitsbergen) Treaty, which recognized Norwegian sovereignty over the archipelago. In the meantime, highly visible naval maneuvers by Russia and renewed long-range sorties of Russian strategic bombers have increasingly disrupted Norwegian air traffic in offshore areas and along the border. In 2007 alone, when Russia resumed its Cold War practice of sending warplanes to “buzz,” or test, the air defenses of Norway and other neighboring countries, Norwegian and NATO jet fighters scrambled to respond to eighty-eight such incursions by Russian bombers into Norwegian air space, an increase of more than 500 percent since 2006, and these so-called breaches of diplomatic etiquette have since continued to occur on a regular basis.

Furthermore, Moscow recently resumed its periodic submarine and battle ship patrols outside Norwegian territorial waters, particularly in disputed areas of the seas around Svalbard or in close proximity to Norway’s oil and gas platforms in the North Sea, and it has even conducted a “mock bombing run” against the Norwegian northernmost military command center in Bodo.

While the Norwegian government has emphasized the view that Russian moves have not been directed against Norway as such, Norwegian Minister of Defense Grete Faremo made it clear in a speech in January 2010 that Oslo must at the same time allow for the “possibility that situations may arise in which we have conflicting interests” and plan accordingly in case its relationship with Russia deteriorates in the future. Norway has thus cautiously begun to strengthen its own defense posture in the country’s Arctic regions. In 2009, for instance, Norway moved its center of military operations from its southern location outside Stavanger to the area of Bodo, in the north, carefully reinforcing the strategic value of the High North in both Norwegian and NATO foreign policy. In addition, the Defense Ministry’s new strategic concept, Capable Force, approved in 2009,

A more robust military engagement in the region is highly capable, as well as very expensive, with Russia, among other initiatives. In that respect, Norway’s ability to demonstrate single-handedly that it is able to protect its vital national interests in the Arctic and exercise proper authority in areas under Norwegian jurisdiction emerges as a key priority in its defense policy, not least because of Oslo’s concern that any outside perception of a void in its capabilities or resolve might encourage other stakeholders to attempt to fill it. As Defense Minister Faremo recently pointed out, “a passive policy would signal a lack of ambition, ability, and will to take care of both our interests and our obligations.”

A more robust military engagement in the region is therefore vital, she stressed, as a minimum to provide sufficient capability to simply traverse the vast distances involved, but even more importantly, to effectively maintain Norway’s credibility vis-à-vis the Kremlin and other states as well as to ensure the adequate monitoring and policing of activities at sea in its maritime zones.

Aside from the need for consistent government presence in the North, the Norwegian military’s new strategy also addresses the shifting global political and strategic realities that require the country to transform and update its armed forces to ensure a capacity for good crisis management and to provide an immediate response to future contingencies, including possible attempts to restrict Norway’s political freedom of action. Hence, the Norwegian government recently embarked on a substantial rebuilding and modernization of its armed forces. As part of this effort, for example, the Royal Norwegian Navy (RNN) has commissioned five new highly capable, as well as very expensive, Fridtjof Nansen-class frigates, equipped with NH-90 naval helicopters and a state-of-the-art version of the Aegis combat air defense system, that will boost the navy’s capacity to undertake higher-level maritime operations farther away from Norwegian coastal waters. Another recent addition of note is the sixty-five-hundred-tonne armed, ice-capable Svalbard patrol ship, which entered service in 2002, whose advanced capabilities, principally designed for hostile airspace and maritime environments, would allow Norway not only to protect Norwegian resources, but to maintain a strong yet non-threatening presence in the Arctic waters north of Norway, and more specifically in contested areas around the Svalbard archipelago. Similarly, the procurement of six new fast and stealthy Skjold-class guided-missile patrol ships, together with plans for building a highly mobile, multipurpose Joint Logistics and Support Ship (JLSS), are intended to enable Norway to extend its presence farther into the Arctic Ocean, adding important new capabilities to the Norwegian naval forces, which may in the future have to patrol an area triple the size of Norway’s current maritime domains.

Along with upgrading maritime assets, the Norwegian government is also modernizing its air force, and it recently signed an agreement with the United States to buy the extremely combat-capable F-35 Joint Strike Fighter, likely to be based in the north, at the largest Norwegian air force base in Bodø, which in recent years has seen a high number of interceptions of Russian aircraft. Furthermore, in 2006, Norway re-established large-scale allied military exercises in its northern territories. As part of Exercise Cold Response 2010, for instance, the country hosted some nine thousand troops from fourteen nations, including the United States, with military operations involving land, air, and naval forces and designed to provide soldiers with realistic combat training in Norway’s harsh Arctic winter environment.

And again, as noted earlier, the Norwegian military, along with teams from Norway’s civil emergency management agencies, has participated regularly in the BEAC’s Barents Rescue exercises (the most recent of which was hosted by Sweden in September 2011) as a way to improve its skills in the area of soft security operations (such as search and

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19 David Rudd, “Northern Europe’s Arctic Defense Agenda,” Journal of Military and Strategic Studies 12, no. 3 (Spring 2010).
rescue at sea, oil-spill cleanup, and related civil support missions) performed in Arctic conditions.

Norway’s significant investment in such military programs and Arctic-related activities has prompted one informed observer to conclude that while at the moment Norwegian officials “do not see an immediate military threat in the North, they are spending as if they are expecting one to develop.”22 Indeed, the government’s $5.78 billion defense budget for 2011 places the highest importance and spending priority on Norway’s strategic military presence in the High North, along with greater use of the navy’s newest surface ships, and although the budget is generally regarded as “tight,” this allocation does represent an increase in spending at a time when many other countries in Europe are choosing to reduce their funding for defense.23 However, a clear tenet of Norwegian strategic calculations appears to be to carefully balance its military presence in the Arctic such that it can be a stabilizing factor in a crisis, while at the same time not undermining regional stability by provoking countermeasures or the escalation of tensions.

Oslo’s integrated approach, combining diplomatic and military cooperation with the development of a small but highly capable warfighting northern capability, has not gone unnoticed by its Arctic coastal neighbors. The Canadian government, for instance, has selected the Norwegian coast guard’s Svalbard-class ice-resistant vessel design as the model for the proposed Arctic offshore patrol ship (AOPS) currently under consideration in Ottawa.24 Moreover, in a June 2010 parliamentary report on Canada’s Arctic sovereignty, senior Canadian officials singled out Norway as a model Arctic state that, “although believing in the principles of multilateralism and cooperation, has found it prudent to develop a significant military capability to ensure its northern interests,” and recommended a similar, whole-of-government approach to key security issues with respect to Canada’s own presence in the Arctic region as well.25

As mentioned earlier in this chapter (and elaborated on in the NATO section of chapter 4), Norway has also argued for a higher NATO profile in the High North and in the Arctic more broadly as a way to signal the Alliance’s ongoing commitment to the security of member-state territory and areas immediately adjacent to it. While acknowledging the importance of NATO operations in distant out-of-area theaters (such as Afghanistan), defense planners in Oslo also believe that the longer-term legitimacy of NATO still depends on its ability to respond effectively to the national security concerns of its individual members, and that this, in turn, requires at this time a greater degree of attention on NATO’s part to emerging challenges within Alliance territory and on its periphery. In this sense, public and political support in the Alliance for what are commonly referred to as NATO’s “away missions” (well beyond NATO territory) depends very much, the Norwegians suggest, on NATO’s willingness and capacity to take care of business on its own home turf, and that would include, they go on to emphasize, NATO initiatives to improve Arctic/High North security. This could be achieved, Norwegian officials contend, at relatively little expense by involving NATO more directly in national training and exercises related to the High North, by “dual-hatting” certain national headquarters among NATO Arctic nations so that the NATO command structure could use them for High North operations, and by improving intelligence sharing and analysis between NATO Arctic nations and NATO headquarters to ensure a common operating picture (and shared domain awareness) of the High North region.

### The Barents Sea Dispute

A prominent and steadfast feature of Norwegian diplomatic policies on the High North has been the emphasis on searching for a peaceful resolution, firmly based on the modern principles of international law, with regard to Arctic jurisdictional disputes, and the Norwegian government has worked hard on gathering the necessary geological evidence to support its legal position. Consequently, ten years after it became the first Arctic nation to rati-

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25 *Canada’s Arctic Sovereignty*, report of the Standing Committee on National Defence, House of Commons, Canada, June 2010.
by the UNCLOS treaty, Norway formally submitted in 2006 its case to the UN Commission on the Limits of the Continental Shelf (CLCS), a twenty-one-nation technical body that reviews countries’ science-based submissions in accordance with UNCLOS, arguing that Norway’s extended continental shelf (ECS) extends far beyond its two-hundred-mile commercial jurisdiction zone, incorporating the disputed areas of the Loophole, a large triangular region in the central Barents Sea believed to be rich in oil and gas; the Western Nansen Basin, situated in the Arctic Ocean north of Svalbard; and an area known as the Banana Hole (or the Herring Loophole), which lies in the Norwegian Sea, outside the economic zones of Iceland and Greenland. In April 2009, the CLCS issued its final recommendations, ruling in favor of Norwegian sovereignty claims and thereby extending Oslo’s continental shelf authority and its “rights and responsibilities in maritime areas of some 235,000 square kilometers,” covering a region roughly three-quarters the size of mainland Norway. The UN recommendations, however, also raised the prospect of considerable tension between Norway and its neighbors, most notably the Russians, primarily because the ruling did not affect outstanding unresolved delimitation issues among the countries involved, advising them instead to find “an equitable solution” together, and also given that the Loophole decision itself involved some of the same territory claimed by Moscow in its unsuccessful submission to the CLCS in 2001.

Nonetheless, in the spring of 2010, Oslo announced it had achieved a major breakthrough surrounding its long and complex disagreement with Russia over the delimitation of the two countries’ exclusive economic zones in the Barents Sea, a disagreement that threatened to devolve into military, as well as economic, rivalry and possibly even conflict, if not agreeably settled. For nearly four decades, Norwegian policy has advocated positioning the maritime boundary at the midpoint between opposing land masses, the so-called median line principle conventionally used elsewhere in the world, and Norway’s goal has been to apply this rule to the area between its Svalbard archipelago to the west and the Russian island groups of Novaya Zemlya and Franz Josef Land to the east. Russia, on the other hand, has argued instead for a sector line boundary, extending more or less straight north from the mainland, which would have provided it with enormous additional economic territory, about the size of the entire Norwegian sector of the oil-rich North Sea. In a surprising turn of events, however, the Russian and Norwegian sides signed in April 2010 an historic compromise agreement, resolving their longstanding border dispute in the Barents Sea and parts of the Arctic Ocean, and dividing the area into clear economic zones stretching as far as the edge of Europe’s northern continental shelf. As a result, a new maritime delimitation line will split the resource-rich disputed sea floor and ocean area of about 175,000 square kilometers into two parts of approximately equal size.

The clear boundary agreement, formally ratified by both countries in June 2011, is already opening the way for oil and natural gas exploration in the recently delineated

waters of this vast and lucrative region. According to recent estimates by the Norwegian Petroleum Directorate, for instance, 30 percent or more of all undiscovered and potential Norwegian resources may lie in the Barents Sea, and Norwegian energy companies, among others, have shown eagerness to begin seismic work, exploration, and drilling in the area, with Norway’s first season of seismic surveys in a three-thousand-square-mile section of the formerly disputed waters scheduled to be completed in September 2011. Long appreciated for its rich stocks of fish such as the prized Arctic cod, with catches here making up a significant share of the annual catches of both Russia and Norway, the Barents region is now poised to become “Europe’s energy Klondike,” as many pundits believe, amounting to “a last untapped pool of natural resources.”

The entire region is re-emerging as “something new on the European radar screen,” as Foreign Minister Jonas Gahr Store has noted, thanks in large part to substantial seabed deposits of not only oil but enough natural gas to meet much of the continent’s needs for decades. Large shipments of liquefied natural gas (LNG) from the recently developed Snøhvit (Snow White) underwater mega complex on the Norwegian side are already underway, and the vast Shtokman gas field in the Russian part of the Barents Sea, a reservoir that holds enough gas to meet global demand for a year, is set to become operational around 2016. Although still in its relative infancy, the Snøhvit field, which is home to Europe’s largest LNG terminal and so far the only one in the Arctic region, has already proven highly productive and operations are projected to further increase over the next few years. In addition, Norwegian oil major StatoilHydro, the world’s biggest offshore operator, announced in late 2008 that it had discovered yet another “promising” reserve in the Barents Sea, located northeast of Snøhvit, that reportedly could contain between seventy and five hundred billion cubic feet of recoverable natural gas. More recently, in April 2011, Norway announced yet another breakthrough oil and gas discovery at Skrugard, located some two hundred kilometers from the Norwegian coast, a find that is believed to hold as much as 250 million barrels of recoverable hydrocarbons, rendering it bigger than the only other oil field in the area at present, called Goliat, which is expected to be operational after 2013.

The growing number of discoveries in the Barents Sea region, including further Arctic gas strikes at Norvarg and Skalle that could significantly increase the country’s natural gas exports, have prompted the Norwegian government, along with energy companies, to consider various options for transporting the new reserves out of the area, including a possible extension of Norway’s existing offshore pipeline system in the North Sea hundreds of miles north, all the way up to the Barents Sea and Snøhvit, potentially also connecting the gas field to the mainland. Although Foreign Minister Støre has cautioned that many more reservoirs would need to be discovered before developing a new pipeline would make financial sense, he nonetheless announced in late August 2011 that Gassco, the state-owned operator of the Norwegian offshore gas transportation system, is working on a study to determine the feasibility of extending the

29 Ibid.
30 Howard, The Arctic Gold Rush.
31 “Norway Eyes Gas Pipeline to Barents Sea,” UPI, September 2, 2011.
pipeline system northward to the Norwegian Sea area and beyond. The project, currently estimated to cost between $1.8 billion and $5.5 billion, has been hailed as a “decisive” factor for the Arctic region’s future development and if it is indeed successful, according to Støre, it could herald a new “epoch of great significance for welfare, development, and employment in the north.”

Russia, on the other hand, is sorely deficient when it comes to extracting oil and gas in the Arctic’s extremely demanding conditions on its own, and it entirely lacks expertise in crucial areas such as deep-water offshore drilling as well as the ability to make the most of existing fields by applying the latest and highly advanced methods of enhanced “tertiary recovery.” Moscow is thus largely dependent on the assistance of Western energy companies, which have “far more experience and far more sophisticated technology” for operating in deep water and icy conditions, with Norwegian firms, in particular, leading the way in offshore exploration methods, horizontal drilling, sub-sea technologies, and LNG conversion plants. Not surprisingly, Gazprom’s chairman, Alexey Miller, has publicly praised Statoil’s “long experience, vast resources, and advanced technologies” as “fundamental” to the success of current and future Russian projects. This is partly what caused Moscow to swallow its pride and conclude a joint venture with Norway’s StatoilHydro and French conglomerate Total to develop the massive Shitokman gas field (24 percent of which now belongs to Statoil) in the Barents Sea. At the same time, the oil reserves on Norway’s continental shelf in the Norwegian Sea are expected to decline rapidly unless the country begins oil exploration in new areas. The Norwegian view of the Barents region as a possible new energy province that will enable it to maintain its oil and gas production in the future was undoubtly a contributing factor, among others, in negotiating a faster solution to the Arctic maritime border dispute in the Barents Sea. Moreover, the newly demarcated area’s additional energy reserves mean that Norway’s environmentally sensitive Arctic archipelagos of Lofoten and Vesterålen could remain closed to drilling, alleviating a major political issue that had threatened to split the ruling


32 Ibid.
33 Howard, The Arctic Gold Rush.
government coalition. At the same time, the Norwegian oil industry could gain important access to supplies and fields that may very well be closer to shore and therefore less expensive to develop than Shtokman, while taxes on oil and gas sectors, contributing a third of state revenues, will continue to flow in.\(^{36}\)

Aside from securing closer energy cooperation between Norway and Russia and enhancing energy stability in the Arctic in general, the agreement’s foundation in international law and bilateral negotiation has important implications for resolving existing and future conflicts between other countries in the High North, and, as Russian President Dmitry Medvedev has suggested, the accord can be viewed as a “constructive model” of how rival Arctic states should settle their competing interests.\(^{37}\) In addition, according to Norwegian subject matter experts, Russia has finally “rid itself of a problem in its relationship with a small and friendly neighbor” that is deeply anchored in both NATO and the Western community, a development that could in turn have positive political effects more broadly, including a significant impact on European security.\(^{38}\)

A further result of the agreement, related to the development of the gas market, is that it might make it possible for energy from the Barents Sea to be transported to the continent via an extension of the pipeline grid on the Norwegian continental shelf, leading to substantial cost and investment savings for both Russia and Norway. Nevertheless, although many joint projects have been announced, especially in the energy sector, a number of oil and gas fields identified by Russian seismic surveys in the 1980s appear to straddle the demarcation line, and at this point it remains unclear as to how the two countries, especially Russia, intend to handle the joint financial regulation and exploitation of those particular Arctic resources.

The Svalbard Controversy: Economic and Strategic Considerations

Yet another significant dispute of high priority for the Norwegian government is the disagreement surrounding the status of the waters and shelf around its Svalbard archipelago high above the Arctic Circle, where considerable quantities of oil and natural gas are almost certain to be found, according to geologists. At the heart of the simmering controversy is the ambiguous interpretation of the 1920 Svalbard (Spitsbergen) Treaty, which recognized Norway’s “full and absolute” sovereignty over the islands, but contained as well an unusual clause giving the other signatory countries “equal rights” to certain economic activities “on land and in the territorial waters” of the archipelago (article 3).\(^{39}\) The yet-to-be resolved contentious issue pertains to Norway’s legal right to claim and exercise authority over Svalbard’s surrounding maritime areas, including

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the waters beyond the archipelago's twelve-mile territorial sea, and whether Oslo can establish an exclusive economic zone in the area around the islands. According to official Norwegian thinking, the Svalbard Treaty's stipulations do not apply outside the islands' twelve-mile limit, given that there is nothing in the treaty's legal text, or in fact in UNCLOS itself, restricting Norway's entitlement as the sovereign nation to declare an adjacent EEZ. Furthermore, officials in Oslo maintain that the treaty's limiting provisions should not affect the status or resources of surrounding seabed areas, particularly since the Svalbard shelf itself is an undisputed and UNCLCS-sanctioned geographical extension of the Norwegian mainland's legal continental shelf. Further complicating matters is the current lack of an accepted common view, whether legal or political, among the wider body of signatories. These signatories include fellow NATO members and the majority of EU states, whose preference so far has been to press instead for their own national interests, jealously guarding their rights under the Svalbard Treaty and at the same time growing increasingly wary of Russia's ambitions and its attempts to gain a privileged position in the archipelago's surrounding waters. Britain, for example, in its desire and haste to secure equal access for its oil companies to Svalbard's maritime areas in the future, caused a minor diplomatic row in 2006 when it excluded Norway from a meeting that discussed potential scenarios in the event that Oslo were to open up these areas for exploration.40

In light of its concerns for peace and security in the contested region, the Norwegian government decided to postpone establishing an EEZ and opted in 1977, “for the time being,” to create a non-discriminatory fisheries protection zone adjacent to the islands, a decision that allowed the nationals of other signatory countries to fish in the surrounding two-hundred-mile area on equal terms, but which effectively defied the Norwegians' own claims to exclusive rights around Svalbard.41 Nevertheless, Oslo's jurisdiction and enforcement of national regulations in the fisheries zone have largely been accepted and recognized by every one of the contracting parties to the 1920 Treaty except Russia, whose fishing industry has long relied on the rich stocks of fish found in Svalbard's waters, with an estimated 25 percent of its annual catch coming from this region. Although the Russian government has for the most part tacitly accepted Norwegian inspections to verify compliance with the strict environmental regulations in the fisheries zone, it has instructed the captains of its fishing vessels to refrain from signing the inspection protocols, as that would be equivalent to recognizing Norway's sovereign rights and authority in the zone's waters. Tension between Oslo and Moscow heightened in 2002 when a Russian marine geological expedition, which had obtained permission from Norway to conduct a

40 Britain, among other signatory countries, argues that the Svalbard archipelago has its own continental shelf to which the provisions of the Svalbard Treaty would apply. Howard, The Arctic Gold Rush.

41 Pedersen, “The Constrained Politics of the Svalbard Offshore Area.”
strictly scientific survey of the Svalbard continental shelf, ignored Norwegian regulations and employed instead a seismic vessel to search for hydrocarbons, prompting Norway to begin a stricter enforcement of its “ban on petroleum exploration” in the Svalbard area. A further incident, which ultimately threatened to escalate into full-scale armed conflict, occurred in the archipelago’s waters in October 2005, when the Norwegian coast guard intercepted and attempted to inspect a Russian trawler, the Elektron, on the suspicion of illegal, unregulated, and unreported (IUU) fishing in the fisheries protection zone, and two of the Norwegian officers were subsequently taken captive by the trawler’s skipper, resulting in a five-day standoff with the Norwegian authorities in midsea. Although the stalemate was eventually resolved peacefully, it nevertheless illustrated the ease with which an issue of civil law enforcement in the area with respect to a commercial actor can quickly escalate into a potentially serious diplomatic confrontation between states. Furthermore, the Elektron incident became a test case for Oslo’s ability to police, enforce, and justify its management regime of the fisheries protection zone, sparking a heated debate in Norway about the naval presence required to protect Norwegian interests, including the capacity needed to prevent similar occurrences, in the waters surrounding Svalbard.

Such ominous developments, combined with Russia’s growing military presence in the Arctic over the last few years, have prompted EU ministers and NATO defense chiefs alike to warn that “a serious conflict could emerge between Russia and Norway” over the “large deposits of gas and oil that are currently locked under a frozen continental shelf” around the islands of Svalbard. Echoing this view, the commandant of the Norwegian Coast Guard, Commodore Geir Osen, has stressed as well that unlicensed petroleum exploration on Svalbard’s continental shelf indeed represents “a potential source of conflict,” especially “if handled wrongly.” Moreover, according to Osen, “the situation can become particularly difficult” from the Norwegian standpoint if it were to involve “a Russian company enjoying passive support from the Russian government. How should Norwegian authorities deal with such a situation? Should one only protest or use military force?” For their part, Russian officials have repeatedly emphasized not only the region’s oil-bearing potential but also the importance of the Svalbard archipelago’s superb geostrategic position in the waters north of the Kola Peninsula, potential control of which remains especially important to the Kremlin’s defensive strategy and force projection in the Atlantic. As during the Cold War, Russia’s strategic calculus continues to place enormous weight on the ability to move its Northern Fleet out of Murmansk and into the North Atlantic through the waters of the “Svalbard/Norwegian gap” in a potential conflict, and Russian officials are still fearful that NATO maneuvers could bottle its naval forces up and substantially undermine Russia’s position in the event of a confrontation. However, despite the Kremlin’s formal rejection of Norwegian management or sovereignty over the maritime zone around Svalbard, in practice it has largely respected Norway’s right to monitor and regulate fishing in the area, primarily because Moscow realizes that without the 1920 treaty and under the 1982 UNCLOS rules alone, Russia would have no clear legal rights to any of the natural resources that are found outside the archipelago, and partly because it has not wanted to jeopardize the freedoms and de facto preferential treatment it currently enjoys in the fisheries protection zone. Moreover, a senior Russian official recently admitted that “the real reason for the arguments” between Oslo and Moscow “is the oil rather than fish,” apparently alluding to Russia’s willingness to cooperate more in the future, given its heavy dependence on rival Norwegian energy companies for the highly demanding development of offshore fields. Although there has been speculation about a possible comprehensive settlement – a package deal – between Russia and Norway involving aspects of the unresolved Svalbard issue and the recent compromise the two countries reached on delimiting the Barents Sea

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42 Howard, The Arctic Gold Rush.
45 Ebiner and Zambetakis, “The Geopolitics of Arctic Melt.”
46 Lindeman, Norwegian Foreign Policy in the High North.
shelf, it remains unclear whether Oslo and Moscow view agreement on the two issues as legally connected.\textsuperscript{48} Given the sensitive nature of the Svalbard controversy, however, it is unlikely that Norway would formally exercise its claimed exclusive rights over the adjacent continental shelf and its resources until conditions have changed, even though foreign policy officials continue to assess such steps and the Norwegian government has cautiously reserved the right at a later stage to replace the current two-hundred-mile fisheries protection zone surrounding Svalbard with a full exclusive economic zone. Largely because of concerns about maintaining regional stability and the security of energy supplies, Norway has also chosen for the time being to practice only “lenient enforcement” of Norwegian hydrocarbon regulations in the offshore area around Svalbard, and the government has favored exercising a pragmatic policy with regard to suspected Russian energy-related activity in the region, including on occasion refraining from defining Moscow’s seismic surveys of the Svalbard shelf as illegal petroleum exploration.\textsuperscript{49}

**Energy Security, Fishery Protection, and “Resource War” Scenarios**

Clearly, then, one of the central components of Norway’s policy on the north involves the ever-rising political and economic significance of Norwegian energy resources located in the promising areas above the Arctic Circle. The government’s official High North strategy has thus aptly emphasized that “the focus of Norwegian energy policy is [merely] continuing its historical shift towards the north,” with the important goal of providing a predictable and stable framework for the development of offshore hydrocarbon fields, particularly in the Barents Sea and including the pursuit of “an active licensing policy that takes into account the need to follow up exploration results and the need to open up new areas for exploration.”\textsuperscript{50} For its part, the Norwegian energy industry, which alone accounted for some 22 percent of GDP in 2009, has further pressed for the development and opening of several new fields off the northern coast of Norway, as well as for increasing the recovery in currently producing and relatively mature petroleum areas so as to maintain sufficient levels of energy production. In this regard, the size and number of new discoveries will likely become a critical factor in the longer term, especially since Norway’s petroleum production peaked at 3.42 million barrels per day in 2001,\textsuperscript{51} and the government expects a gradual and significant decline of oil production levels in the future due to the maturing of previously huge offshore oil deposits in the North Sea and elsewhere on the Norwegian continental shelf (NCS). As a result, according to the chief executive of Statoil, Norway’s state-owned energy giant – which has invested heavily in searching for new reserves within the Arctic’s waters – “any realistic energy strategy in the future will have to rely on oil and gas” and in addition will require “a massive exploration effort” in the High North.\textsuperscript{52}

This view is increasingly shared by European leaders, who are acutely aware of the EU’s growing dependence on hydrocarbon imports and have in recent years identified energy security as one of Europe’s highest foreign-policy priorities. In 2008, for example, the EU energy commissioner, Andris Piebalgs, remarked that in order to enhance and guarantee the EU’s security of energy supply “you even need to go into hostile environments,” including sanctuaries, because “otherwise, where will we get energy from?”\textsuperscript{53} Recent European Commission estimates have further highlighted the need to address future access to fresh energy supplies, showing that EU countries’ reliance on imported oil and gas is expected to reach as high as 93 percent and 84 percent respectively by 2030.\textsuperscript{54} Such a

\textsuperscript{48} The current question of a possible exchange deal is closely related to Moscow’s decision in 1924 to formally recognize Norway’s exclusive rights and unconditional sovereignty over Svalbard, apparently as part of a “package deal” that included the Norwegian government’s acceptance and full recognition of the Soviet Union, a breakthrough step that the young Soviet Russian state desperately needed in order to secure formal recognition from other Western states as well (Sven Holtsmark, quoted in Lindeman, *Norwegian Foreign Policy in the High North*).

\textsuperscript{49} Pedersen, “The Constrained Politics of the Svalbard Offshore Area.”

\textsuperscript{50} Norwegian Ministry of Foreign Affairs, *The Norwegian Government’s High North Strategy*.


\textsuperscript{53} Ibid.

prospect, combined with the dwindling of Europe's own gas supplies from the North Sea, has enhanced Norway's standing as an ever more attractive energy partner and long-term supplier, particularly since Russia, which currently ranks as Europe's top source of natural gas and in 2009 surpassed Saudi Arabia as the world's biggest producer of crude oil, has raised European doubts by frequently showing readiness to use its energy status for political and strategic leverage. At the same time Norway, the world's second-largest exporter of natural gas after Russia, already meets nearly 20 percent of European Union needs, supplying over 30 percent of all the natural gas consumed by Germany alone. In addition, Norwegian natural gas production has seen steady annual increases since 1993, and, in the coming years, Norway has promised to provide Europe with up to 140 billion cubic meters of gas per year, a rise of more than 50 percent since 2007 that could contribute significantly to EU energy security and may soon equal gas import levels from Russia, given recent delays in Shtokman's development. What is more, the Norwegian government has found it increasingly difficult in recent years to balance the political dynamics and conflicts of interest between the oil industry on the one hand and the environmental and fishing communities on the other.

As for the fisheries sector, traditionally regarded as one of Norway's most important export industries, the Norwegian government has always lobbied hard for and has long invested in ensuring the commercial viability and development of its fishing industry, which remains the economic backbone of a great deal of Norway's

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**Norway’s Natural Gas Pipeline Exports, 2010**

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>30%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>27%</td>
</tr>
<tr>
<td>France</td>
<td>14%</td>
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<tr>
<td>Belgium</td>
<td>7%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8%</td>
</tr>
<tr>
<td>Italy</td>
<td>6%</td>
</tr>
<tr>
<td>Spain</td>
<td>5%</td>
</tr>
<tr>
<td>Austria plus Czech Republic</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: BP

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**Norway’s Total Gas Production & Consumption, 1991 - 2010**

As for the fisheries sector, traditionally regarded as one of Norway's most important export industries, the Norwegian government has always lobbied hard for and has long invested in ensuring the commercial viability and development of its fishing industry, which remains the economic backbone of a great deal of Norway's

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coastal regions, especially in the country's more remote northern parts. Norway manages the sizeable and highly productive fish resources of the Barents Sea with Russia under the framework of the Joint Norwegian-Russian Fisheries Commission, a bilateral body of national fishing authorities and experts that has met annually since 1976 to establish sustainable quotas, such as total allowable catches (TAC), and other technical regulations for harvesting the most important shared fish stocks in the area. Although collaboration between the two coastal states on the shared fisheries management system in the Barents Sea has generally functioned well, a series of disagreements and confrontations in recent decades with Russia over issues such as fishing rights and practices, the illegal transshipment of catches at sea to flag-of-convenience transport vessels, discarding of fish, and Russian overfishing in the eco-sensitive marine areas have put a strain on Norway's relations with Moscow, and Russian fishermen have frequently questioned or rejected officially established quotas and scientific recommendations for sustainability, arguing instead for higher catches in the area. In addition to the Elektron incident discussed earlier, in November 2007, another Russian trawler, the Tynda, was intercepted and detained for illegally fishing in Norway's exclusive economic zone, though the Norwegian authorities opted to impose a hefty fine on the vessel rather than confiscating its unauthorized catch of some 170 metric tons of herring. A far more serious situation, however, and one that provoked an exceptionally strong reaction against Norway by Russian officials, occurred in the spring of 2001, when the Norwegian coast guard arrested the Russian trawler Chernigov for violating fishing agreements in the protection zone around Svalbard and for employing illegal nets to trap large amounts of young fish under the minimum legal size that had been declared off limits to commercial fishing. In response to the incident, Moscow presented Oslo with a sharp diplomatic protest and decided to suspend collaboration with Norway in the Joint Norwegian-Russian Fisheries Commission, with the head of the Russian State Committee for Fisheries famously stating that in a similar future scenario, Russia's Northern Fleet "should shoot at and sink Norwegian coast guard vessels in the Svalbard Zone and do nothing to save their crews."

Growing global demand for fish could in the coming years spur a marked increase in commercial fishing in the Arctic and put additional pressure on the strict quotas, particularly in the Barents Sea, as a steady melting of the polar icecap provides fishermen with access to previously unreachable fishing grounds and as warmer Arctic water temperatures encourage a northward migration of fish, prompting a larger and more frequent presence of foreign fishing fleets in the Arctic. Because of temperature and other changes in their local waters in the 1990s, for example, a substantial number of fishermen from Iceland, whose economy continues to rely heavily on the fishing industry, decided to search for resources outside their maritime borders and repeatedly crossed into restricted areas under Norwegian jurisdiction where catches of cod were plentiful. In 1994, the Norwegian coast guard seized an Icelandic fishing vessel for illegally fishing in the Barents Sea, where Iceland did not have fishing quotas at the time. Tension escalated when Icelandic trawlers opened fire on Norwegian coast guard authorities on several occasions in 1994 in the Svalbard protection zone, culminating in the signing of a regional accord in 1999 that gave Iceland a small share of the cod stock in the Loophole in exchange for giving up its cod-fishing rights in the waters around Svalbard.

Such incidents have raised analysts' fears about a potential resource war in the Arctic region, similar to the armed clashes of the "Cod War" during the 1970s, when Britain and Iceland repeatedly sent warships to ward off each other's fishing vessels in disputed waters in the North Atlantic and full-scale confrontation was only narrowly avoided. After all, representatives for the Russian fisheries industry have regularly urged the government in Moscow to establish a secure military presence around the Svalbard archipelago. However, despite the exchange of sometimes harsh words and the occasional acts of showmanship, most notably by Russia, most fishing disputes in the High North are likely to have a peaceful resolution partly because fish, as noted above,

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59 Howard, The Arctic Gold Rush.
60 Ibid.
is not as significant a commodity, and does not have as strong political clout, as petroleum or gas, and in part also because of the Norwegian government’s continuous emphasis on collaboration with the Russians and the maintenance of regular contact and cordial relations with its other Arctic neighbors as well: Denmark, Greenland, and Iceland.

As part of Oslo’s recent initiatives to engage and resolve issues with its High North partners, for example, Norway signed a special treaty in 2008 with Reykjavik, clarifying the status and rules for exploration of the continental shelf and overlapping stretch of water between Iceland and the Norwegian island of Jan Mayen in the Arctic Ocean, an area of particular significance to both countries due to the geological composition of its rocks, which industry and government officials agree could potentially hold giant deposits of hydrocarbons. In addition, in 2006 Norway entered into a bilateral accord with Denmark and its province of Greenland on how to delimit the fisheries and shelf areas in the waters of the Western Nansen Basin, situated in the Arctic Ocean between Svalbard and Greenland.

Also in 2006, Oslo concluded an unprecedented agreement with Iceland and Denmark’s Faroe Islands that is expected to guide the future bilateral delimitation of the three countries’ respective extended continental shelves beyond the two-hundred-mile mark in a large stretch of water known as the Banana Hole, which lies in the Norwegian and Greenland Seas. The agreement, the first of its kind in the region, is also meant to provide much-needed clarity and predictability with respect to the future exploitation of resources in the area, as Norway’s foreign minister has emphasized. Oslo and Copenhagen have pledged as well to facilitate and not obstruct their national submissions to the UN Commission on the Limits of the Continental Shelf, which in April 2009 approved Norway’s outer shelf claims. Although Greenland (with Denmark), and even Iceland, could still submit potentially overlapping claims to the area, complicating further agreement on how the maritime borders should be drawn, the Norwegian government remains optimistic that the Nordic nations will continue working together in the same amicable spirit to resolve any difficult delimitation issues that might arise.

**Conclusion**

Looking ahead, Norway is likely to continue its campaign to highlight the importance of High North security and to urge its NATO allies to accord the Arctic a higher priority in Alliance planning. In so doing, Norwegian officials will continue as well to embrace the “High North, low tension” mantra popularized by Foreign Minister Støre, stressing that while the risks of military conflict are minimal at the moment, the potential for rivalry and miscalculation is real and could increase as the Arctic’s sea lanes and its resource potential rise in value. Beyond these considerations, moreover, Oslo will argue that a host of new, less traditional, but nonetheless demanding security challenges are emerging in the High North, including, once oil and gas production in the region really takes off and seaborne trade expands, a need for improved energy security, critical infrastructure protection, disaster response, all-domain awareness, and even anti-piracy and counter-terrorism capabilities, all designed to function well under harsh Arctic conditions. Norway understands that fielding such capabilities is beyond the capacity of any one country, and that collective, multinational efforts – be they at the Nordic, BEAC, Arctic Council, EU, or NATO levels – must be structured in a way that elicits cooperation, rather than resistance, from Moscow. In this sense, the Norwegians will strive, as they have in the past, to maintain a proper balance between asserting national and Alliance rights in

the Arctic and avoiding unnecessary confrontation with Russia. At the end of the day, however, they will caution against giving the Russians a veto (or appearing to do so via inactivity) over the size, composition, or regularity of any future Allied presence in the Arctic, as the Arctic has always been and will continue to be, in their view, squarely within NATO's geographic purview.
With the majority of its coastline lying above the Arctic Circle, Russia has enormous strategic interest in the Arctic. From a socio-economic perspective, Russia possesses the largest Arctic population, at approximately four million people, and the most developed infrastructure of the five Arctic coastal states. In addition to the potential commercial value of the Northern Sea Route (NSR), the vast natural resources in the Russian part of the Arctic, including an estimated 80 billion tonnes of offshore hydrocarbon deposits, will continue to buoy the country’s resource-dependent economy and will provide an influential political tool for Russian policy makers. However, from a military perspective, the opening of Russia’s northern border, which previously enjoyed the natural protection of Arctic sea ice, will also enable new environmental and illicit trafficking threats, creating new defense and border regulation requirements along its thousands of miles of coastline. At the same time, the Arctic will retain its significance as home of the Russian Northern Fleet, and, hence, the sea-based leg of the Russian nuclear triad. Furthermore, the Russian Arctic has particular political significance. Russia’s quest for the North Pole and the nation’s struggle to develop within the Arctic’s harsh environment have become important symbols of distinction and national pride; this identity-building element has only enhanced Russia’s protectiveness of its Arctic interests.

Consequently, Russia is an extremely important Arctic player with a stake in essentially all contentious Arctic issues: delimitation of territory, ownership and management of economic resources, particularly natural resource deposits, and the prevention of conflict between the military forces of the Arctic coastal states, all of which are improving, to one degree or another, their Arctic-oriented defense capabilities. Recently released Russian strategy documents, most notably The National Security Strategy of the Russian Federation through 2020 and The Principles of State Policy of the Russian Federation in the Arctic until 2020 and Beyond, reveal the continued and growing priority accorded these and other Russian Arctic interests, all of which are characterized by the desire to secure Russian control and governance over its claimed territory and the resources therein, including the Northern Sea Route. More importantly, however, these documents illustrate potentially worrying trends in the Russian security perspective, which have serious implications for its foreign relations in general and regional Arctic cooperation in particular.

Transarctic relations have long been marked by competition and the desire for expansion, and the Russian

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New Strategic Dynamics in the Arctic Region

...Federa...tion has frequently been at the forefront of this rivalry. However, Russia's security perspective increasingly exposes a deep insecurity, involving the perception of threats from without and from within, as well as concerns over a collusion between external and internal forces that could undermine Russian interests and weaken the unity of the Russian state. NATO and the United States are frequently represented as Russia’s primary external adversaries for the next ten to fifteen years, with particular reference to the Arctic as a potential flashpoint. This perspective, which has often isolated Moscow and kept it from cooperating with its neighbors even on areas of common interest, presents an enormous challenge for building regional cooperation.

While Russia engages in aggressive rhetoric, however, its policy actions in the Arctic are often far more pragmatic. This can be seen in recent progress made on territorial dispute negotiations (especially with Norway), environmental regulation, and search and rescue coordination, driven in part by a growing recognition among Russian authorities of their need for foreign assistance to develop Arctic resources and the NSR. The new U.S.-Russian Strategic Arms Reduction Treaty (New START), signed by the two sides in April 2010, also has the potential to change the tenor of Russian-U.S. and Russian-Western relations, as do oil production agreements. One such agreement was reached in August 2011 by Exxon Mobil and Rosneft, Russia’s state oil company, in which Exxon could gain access to as much as one hundred billion barrels of oil equivalent in the Kara Sea, in exchange for which Rosneft would acquire stakes in Exxon’s advanced drilling techniques and several of the company’s U.S. operations.

Even so, Russia’s strategic outlook cannot be expected to transform overnight. For the foreseeable future, then, Russia’s Arctic policy will likely retain its strong militaristic element, which has been compounded by Moscow’s new tendency to “securitize” issues viewed as strategically important to Russian national interests. This is especially true of the Arctic, given its strategic importance to Russia economically, politically, and militarily. As a result, although a major conflict in the Arctic seems unlikely today, it remains uncertain whether the region will evolve into an area of competition or cooperation in the future.

Russian Economic Interests in the Arctic

In many ways, concerns about energy security have increasingly defined Russian-European and Russian-Western relations and driven Russian national policy making. This is most evident with regard to the Arctic, because of its likely vast natural resource reserves and the importance of energy as a Russian policy tool, and no discussion of the Arctic can omit an examination of the current and potential economic significance of the region for Russia’s northern territories. The Arctic is, and will increasingly be, Russia’s primary resource base, with the nation’s economic interests in the Arctic focusing mainly on two areas: the Northern Sea Route, whose shipping volume in 2011 is projected to increase by as much as 500 percent over 2010, and the considerable wealth of natural resources already known to exist within Russian Arctic territory. Today, approximately 20 percent of Russia’s GDP and 22 percent of its global exports originate from its Arctic territory. As climate change makes mineral and hydrocarbon resources as well as commercial transit routes in the region more accessible in the future, the Arctic will take on even greater economic significance for Russia.

Along with the potential for commercial gains, a surge in transit volume and resource exploitation will bring gov-

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63 Andrew E. Kramer, “Exxon Reaches Arctic Oil Deal with Russians,” New York Times, August 31, 2011, 1. According to the agreement, Exxon and Rosneft will initially invest some $3.2 billion to explore offshore oil deposits in the Kara Sea, situated between the northern coast of European Russia and the Novaya Zemlya island chain. If all the fields slated for exploration were fully developed, the overall deal could in time be worth as much as $500 billion, giving Exxon ownership of major oil assets in the Russian Arctic and Rosneft shares in at least six Exxon oil fields in the United States, plus part ownership in Exxon’s advanced drilling operations, including deep-water drilling in the Gulf of Mexico and hydraulic fracturing drilling (or fracking) onshore. The fracking process in particular could eventually be applied to Russia’s substantial shale oil deposits, while partnering with Exxon in its Gulf of Mexico operations should give Rosneft much-needed experience in deep-water drilling that it can one day apply to future offshore efforts in Russian territory. See Stephen Bierman and Ilya Khrennikov, “Exxon Gains


65 Aleksei’ Il’in, “Arktike opredeliat granitsy [Delimiting the Arctic],” Rossii’skaia gazeta 196 (September 18, 2008).
ernance and infrastructural challenges. In order to meet these challenges and maximize the future benefits from Arctic routes and resources, the NSR and the Russian energy industry will require significant investment and development. Of course, the climate of the Arctic will continue to constrain transit and construction of energy infrastructure in the region for the near term. However, because of the weaknesses in existing NSR and Russian energy industry infrastructure, it is unlikely that the full economic potential of Russian Arctic territory can be realized even in the medium term without the help of foreign direct investment and cooperation. Recognition of this fact has created a conundrum for Russian political elites, who are trying to balance competing desires to maximize central control over energy resources and to overcome difficulties in resourcing and technology.

The Northern Sea Route: Possibilities and Challenges

When it is fully navigable, the NSR will provide a 40 percent (or approximately four-thousand-mile) shorter passage between Northern Europe and Northeast Asia than alternative routes. Consequently, the NSR could substantially lower transport costs as well as better connect Russia’s Arctic region with the rest of the federation and with the global market.\(^6\) In anticipation of this prospect, Germany, Russia, Finland, and South Korea have already begun constructing vessels suited to the northern climate, and in August 2009, two German ships completed the first non-Russian commercial journey from Asia to Western Europe via the NSR. While 2009 was primarily a “test year” for commercial vessels interested in negotiating the entire northern seaway, a much larger number of Russian and foreign Asia-bound bulk carriers transited the Northern Sea Route in 2010, including, among others, Russia’s *Baltika* tanker and Denmark’s *MV Nordic Barents* cargo ship, which itself completed an historic voyage in August 2010, transporting iron ore from northern Norway to China.\(^6^7\)

Nevertheless, even with a significant reduction of ice, the Arctic shipping environment will remain hazardous and necessitate additional precautions and costs for ships to transit safely for the foreseeable future. Determined to overcome these barriers to attracting foreign commerce, Russia has designated the integration of the NSR into global trade routes as a national priority. To this end, Russian authorities have issued multiple strategy documents intended to extend governance over the NSR and to develop the infrastructure necessary for enforcing that governance.\(^6^8\) Moreover, Russian parliamentary officials are now working on establishing a new law to guide the future use of the NSR which will include the creation of a special Northern Sea Route administration to oversee the passage of maritime traffic and to provide ships with vital navigational and hydrographical information, as well as rescue services when needed, along the entire route from the Kola Peninsula in the west to Kamchatka in the Russian Far East.\(^6^9\)

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\(^{68}\) These documents include the *Federal Program of Development of Transport System of the Russian Federation up to 2020*, *Federal Transport Strategy until 2010*, as well as the recently released *Fundamentals of Russian State Policy in the Arctic up to 2020 and Beyond*. For further discussion, see Tat’iana Abramova, “*Konferentsiia. Kto v Arktike Khoziain?* [Conference: Who Is the Master in the Arctic?]”, *Murmanskii’ Vestnik* 76 (April 28, 2009).

Russia's Arctic presence and policy are far more developed than those of other littoral states, a reflection of the higher priority that Russia has placed on Arctic issues in the past. In terms of governance, Russia is one of the few coastal Arctic states to have begun developing a legal regime of national safety and environmental standards in its Arctic territory. Russia also has a more developed Arctic infrastructure in terms of ports, serviceable icebreakers, and workforce. However, extending and enforcing Russian governance over the NSR has been complicated by jurisdictional disputes, and much of the existing infrastructure in the area is nearing decommission and poorly resourced. In commercial terms, therefore, the NSR is still widely viewed as a relatively uncompetitive option, because of its lack of surface infrastructure, navigation support systems, adequate environmental standards, and transparent tax and tariff rules. Close examination of these challenges, along with continued navigational difficulties, indicates that the opening of the NSR will be an economic boon to Russia only in the longer term and then only if the challenges of governance and weak infrastructure can be overcome. From this perspective, the presumed advantages provided by Russia's head start appear less significant, particularly as others of the Arctic Five leverage their significant financial and technological resources toward Arctic development.

Governance Challenges in the NSR

Increased maritime traffic through the NSR corridor has the potential to open up new sources of income for previously disconnected northern Russian cities. However, management and regulation of these opportunities present multiple governance challenges. In addition to border and customs enforcement issues, establishing a legal architecture to regulate shipping and diminish the probability of environmental and human security hazards is essential to Russia's Arctic economic potential. Although the NSR is becoming more navigable, for the foreseeable future there will continue to be unique navigational challenges, which will increase the potential for environmental accidents and human hazards. In order to reduce such risks, a coastal state is empowered by international law to enforce ecological standards for shipping within its two-hundred-nautical-mile exclusive economic zone, provided that such regulations are in accordance with international principles. Beyond the EEZ, the United Nations Convention on the Law of the Sea (UNCLOS) authorizes Russia and other port states to investigate and prosecute transiting vessels in violation of global safety, security, and environmental standards. However, such international standards remain largely in the formative stage, leaving a void in which individual coastal states have greater leeway to develop their own regulations.

Currently, Canada and Russia are the only nations to have implemented national safety and environmental standards for their Arctic zones independent of the International Maritime Organization (IMO). In part, this is because Russia, like Canada with the Northwest Passage, has long viewed the entire NSR as falling within its national legal jurisdiction, even beyond the EEZ limit, and has passed legislation extending its governance over the area since the 1920s. The basis for the current Russian legal regime over the NSR is vested in the 1990 Regulations for Navigation on the Seaways of the Northern Sea Route, the 1996 Guide to Navigation, the 1996 Regulations Concerning Icebreaking and Pilot Guidance, and the 1996 Requirements Relating to the Design, Equipment, and Supply of Ships. In recent years, the Russian government has expanded this legal regime by more clearly defining regulations and establishing a new group of inspectors empowered to board and expel ships in violation of Russian standards. Additionally, the most recent draft law contains clauses limiting access to the NSR by foreign military vessels and ships carrying environmentally harmful substances, including nuclear or radioactive weapons or material. The legislation also restricts overflight of foreign military aircraft in the NSR, though this is a particularly contentious move, because UNCLOS only permits a coastal state to regulate passage or overflight within its EEZ. For the most part, the NSR lies within the Russian EEZ, which compels

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70 Yenikeyeff and Krysiek, “The Battle for the Next Energy Frontier.”
71 For example, researchers are increasingly recognizing the dangers of the “Titanic effect,” an expected increase in numbers of icebergs as a result of the melting of the polar ice cap, to shipping and infrastructure (such as drilling platforms) in Arctic waters.
73 VanderZwaag et al., Governance of Arctic Marine Shipping.
foreign vessels and aircraft to obey these Russian regulations. However, Russian jurisdiction over the NSR on the high seas beyond its EEZ remains a point of contention among states fearing a precedent restricting freedom of the seas.

In addition to these concerns, application of the Russian Arctic legal regime has been controversial among the Arctic littoral nations because of an ongoing debate about where the NSR begins. Russian legislation covers the entirety of the NSR, but the EU has argued that the NSR begins in the North Sea and Finland claims that it begins in its port of Kemi. Although Russian authorities have dismissed these claims, they remain an obstacle to securing Russian national interests in the Arctic, which are first and foremost about achieving control over Russian territory.74

**Infrastructural Challenges in the NSR**

A major obstacle to extending governance over the NSR is the dearth of existing and reliable infrastructure. Russia possesses one of the most developed Arctic infrastructures, but it still falls far short of what is needed in order to attract foreign transit and implement its emerging legal regime. For this, the NSR will require significant investment and development to replace, expand, and modernize aging equipment and transport infrastructure. President Medvedev has made reforming and modernizing Arctic infrastructure a high priority on his agenda, but his ambitious plans are likely to be constrained by the fiscal realities of a Russia still recovering from the global financial crisis and by the political inertia that derailed Arctic modernization in the 1990s. As with many governmental initiatives, forward progress on Medvedev’s Arctic proposals may also be held up until the results of Russia’s 2012 presidential election are known.

In the past, transit through the NSR was limited by the harsh Arctic climate so there was little need to implement communications and monitoring systems. Similarly, there was little demand for emergency response (for instance, towing and other recovery capacity), contingency planning, or detailed mapping to help ships avoid areas of inadequate depth along the route.75 Increased traffic through the NSR will necessitate significant development in these areas, particularly in terms of contingency planning, preparedness standards, and vessel routing measures. Improved communication and weather monitoring systems as well as search and rescue capabilities can lower risks, making the route more attractive to foreign vessels. Kremlin-led reforms have begun to address coordination and communication issues through greater investment in the Russian Global Navigation Satellite System (Glonass, the equivalent of the U.S. Global Positioning System, or GPS). Moscow plans to expand this system from the current six satellites to thirty by the end of 2011, which will improve coverage in Arctic zones for commercial and military vessels and aircraft. How these plans will be affected by current budget constraints remains unclear.76

Transiting vessels will also require better coastal infrastructure along the NSR, such as ports in which to stop for repairs and trade. As the seaway becomes more navigable, Russia will also have to maintain existing infrastructure damaged by melting ice and other climatic changes. Currently, Murmansk is Russia’s only year-round ice-free port in the Arctic. In the past, only the port of Igarka was open to foreign ships when the NSR was passable. However, because of increased access, today more than forty-one Arctic ports are open to foreign ships. In order to continue facilitating trade along this route, President Medvedev has emphasized the importance of continuing to build the capacity and number of these ports, particularly in the less-developed area between the Kara Sea and the Bering Strait, as well as to establish a transport system linking northern cities with the rest of Russia.77 Largely because of previous climatic conditions, most northern ports, with the notable exceptions of Murmansk, Pechenga, and Salekhard, have not been adequately connected by road, rail, air transit, or pipeline. Modernization

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74 Tat’iana Abramova, “Konferentsiia. Kto v Arktike khoziain?”
75 These depth issues present another potential obstacle to attracting foreign shippers, because certain areas along the route, such as the Sannikov
77 Medvedev, “On Protecting Russia’s National Interests in the Arctic.”

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Strait and Vilkitsky Strait, are only around seventeen meters deep, which puts a significant limitation on the tonnage of cargo shipments, creating, in turn, a significant financial drawback for foreign shipping companies. Yuri Golotyuk, “Safeguarding the Arctic” Russia in Global Affairs 6, no. 3 (July–September 2008): 100–11.
of airports will be particularly important as long as the Arctic environment continues to limit other transport options; at present, nine federal airports are being modernized in the Russian Arctic. The weak mass transport system has also compounded other socio-economic problems in the Russian Arctic. An underdeveloped economic infrastructure, which does not provide sufficient housing or jobs, has created a population drain from the north. As a result, development of the Arctic region could be further limited by a shrinking workforce.\(^7\)

In spite of these challenges, the NSR has long played an integral role in linking the resource-rich Arctic north with national and, to some degree, international trade. As a result, Russian sailors have significant experience with Arctic navigation. Russia possesses an Arctic ice-capable surface force, composed of icebreaker and ice-class cargo ships, which has provided year-round lifelines to Russian Arctic settlements since the 1930s when the route was used to transport production from mines in Siberia to the rest of continental Russia.\(^7\) Of its twenty icebreakers, seven are nuclear-powered and Russia has set a goal of building six next-generation nuclear linear icebreakers (set for completion by 2015) and two nuclear river icebreakers, and it is developing a new class of diesel-electric icebreakers for the Arctic region.\(^8\) In the short to medium term, NSR transport is likely to continue to require icebreaker services because of the Arctic climate, perhaps with new capabilities to deal with changing environmental factors. In this respect, the existing Russian icebreaker fleet, despite its age, will play an important role in facilitating greater use of the NSR. However, the cost-effectiveness of global shipping will be hampered so long as an icebreaker escort is required.

## The Arctic’s Natural Resources

Climatic changes in the North are also opening new possibilities for exploitation of natural resources in the Russian Arctic. Russia is the dominant energy producer and supplier in the Eurasian region, and retention of that pivotal role is rooted in its vast Arctic resources. As mentioned above, a large percentage of Russian GDP and exports already come from the Arctic region, and its contributions are expected to grow as the seabed and ocean surface become more accessible. Already, Arctic fishing makes up approximately 10 percent of total global production for human consumption.\(^8\) More than 90 percent of Russia’s nickel and cobalt, 60 percent of its copper, and more than 96 percent of its platinum metal deposits are found above the Arctic Circle. In addition to these non-fuel mineral deposits, the Arctic contains an estimated 13 percent of the world’s oil reserves and 30 percent of the world’s gas reserves, with approximately 70 percent of the known fields falling within Russian territory, the vast majority of which (80 percent) are located north of Siberia.\(^2\) The concentration of these resources in Russia, particularly the natural gas, gives Moscow a growing ability to exert strategic control over the world’s energy market. Consequently, Russia has come to view these Arctic energy resources as not only a source of economic stability, but as a potentially valuable political tool.

As with the NSR, however, exploitation of Russia’s Arctic fuel and non-fuel mineral resources faces significant environmental, technological, and infrastructural challenges. In terms of the energy sector in particular, Gazprom, Russia’s state-run energy giant, has not invested sufficiently in maintaining and building new infrastructure, and its ability to continue meeting its current contract obligations has been called into question. Given the weaknesses of the Russian energy industry, there seems to be considerable incentive to cooperate with foreign companies on resource exploitation and transportation. However, such cooperation is frequently complicated by political barriers to foreign investment and the diplomatic complications of ongoing territorial disputes.

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\(^8\) For further discussion see Lasserre, “High North Shipping: Myths and Realities,” 179–99.


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Russia has a long history of resource exploration and exploitation in its Arctic territory. Many of Russia’s hydrocarbon discoveries occurred during the 1980s, but it has been mining Arctic minerals since the 1930s. However, while mineral exploitation has largely been limited by transport accessibility issues, which will be eased by the improved development of the NSR, exploitation of Russian Arctic oil and natural gas fields will continue to be complicated by additional technological, geological, and financial barriers, especially for fields located on the continental shelf. This is particularly true because natural gas, which makes up the majority of Russian resource reserves, must usually be transported to its destination through pipelines, unlike oil which can be shipped by sea or truck. Natural gas can be converted to liquid natural gas (LNG), which can then be shipped, but this requires both the exporter and importer to have the technology and facilities available to convert it from and to its natural gaseous form, all of which requires, in turn, a substantial financial investment.

At the same time, oil and natural gas production from Russia’s traditional sites in Siberia is expected to decline markedly in the coming decades. Given Moscow’s heavy reliance on oil and gas, which account, again, for about 60 percent of all exports, and faced with the challenge of meeting increased energy demand from Europe, Russia will have to increase its investment in energy infrastructure if it wants to retain its position as a pivotal energy exporter. Toward that end, it has already shifted its focus to untapped Arctic fields both onshore and offshore, such as the Yamal and Shtokman gas fields. After an earlier deal to develop offshore fields in the Kara Sea jointly with British Petroleum fell through, Russia’s state oil champion Rosneft signed a wider-ranging deal with Exxon in August 2011 that, as noted earlier, promises to bring online up to one hundred billion barrels of oil equivalent from Arctic fields, while also boosting production in the Black Sea, providing Russia with access to new technologies for developing oil shale deposits in Western Siberia, and substantially expanding its ability to conduct deep-sea drilling operations well offshore. Even before the Exxon deal was announced, Royal Dutch Shell, which signed a strategic agreement with Rosneft in 2007, signaled its own intentions in June 2011 to explore promising blocs in the Russian Arctic, including some in the same area of the Kara Sea, and Chevron Corporation has also indicated a desire to partner with Rosneft in developing oil and gas resources in the Russian Arctic. Additionally, development on the Yamal Peninsula, which holds an estimated thirty trillion cubic meters of gas, has already begun, but output has been hampered by the absence of mass transport systems to bring the gas to market. Further, the ground in the area alternately melts and refreezes, presenting a great challenge to engineers trying to construct pipelines, gas extraction and treatment facilities, or even housing for workers.

The Shtokman field, on the other hand, could yield an estimated 3.8 trillion cubic meters of gas and 31 million tons of condensate, making it the world’s second-largest offshore gas field. Most of Russia’s oil and natural gas resources in the Arctic are found in the seabed of its continental shelf, which is also the case for the other littoral states. However, Russia has minimal experience and poor technology for developing offshore oil or gas fields like Shtokman, especially in the Arctic’s ruthless climate. This deficiency of experience, in combination with the weak regional infrastructure, shrinking Arctic workforce, and the ever difficult Arctic weather, makes exploring and exploiting these fields an expensive and time-consuming process. At the same time, Russia is also dealing with its own particular ills: an aging population, severe health-related challenges, a weakened economy that remains dependent upon natural resource exports, and continued unrest and instability in the Russian regions of the North Caucasus. Furthermore, the recent fall in oil prices, which previously buoyed the Russian economy, has placed even greater constraints on investment.

83 Bierman and Khrennikov, “Exxon Gains Access to Arctic Frontier.”
86 The largest is the South Pars/Northern Dome field in the Persian Gulf, owned by Iran and Qatar. Ibid.
The costs of Arctic resource exploitation will also be driven up by environmental considerations. The severe depletion of biological resources throughout the Arctic, particularly fish stock in Russia’s European North, has already inspired international and multilateral agreements addressing overconsumption and potential hazards caused to the Arctic’s living resources by a greater human presence. An increase in offshore drilling could increase still further the possibility of pollution and accidents during extraction or transport, which could damage the Arctic’s fragile ecosystem. Of particular concern among international stakeholders in this regard are Russia’s recently announced plans to redraw the boundaries of a national Arctic park to accommodate the drilling plans of Rosneft and its Western partners, as well as Moscow’s plans to construct offshore nuclear-powered stations to exploit its seabed resources.

With all this in mind, it seems unlikely that Russia can achieve its ambitious goals to leverage its Arctic resources without the input of substantial foreign expertise and funding. Particularly because of the risks involved in working in the Arctic climate, it would also be logical for Gazprom to distribute these risks by including foreign partners. In fact, Gazprom has announced its willingness to cooperate on projects in the Arctic region with foreign investors. However, Russian authorities have yet to construct a successful cooperative model that allows access to foreign partners while ensuring the desired level of government oversight and control. Russia’s increasingly assertive foreign and energy policies also seem to indicate that overprotectiveness of its so-called strategic industries will not diminish in the near future. Whether or not the new Rosneft-Exxon deal and similar arrangements with other producers that may follow point the way to a new formula for successful cooperation remains to be seen.

Unresolved Territorial Disputes

Many of the challenges for Russian development of the NSR and its Arctic resources will be particularly difficult to overcome while territorial disputes remain unresolved. Although most of these Arctic disputes have persisted for over sixty years, the expedition of two Russian minisubs to the Lomonosov Ridge and the dramatic planting of a Russian flag in the North Pole seabed in August 2007 reignited public interest. As one of the two largest coastal Arctic nations, Russia was the first, and has continued to be the most aggressive, littoral state to stake its claim to the majority of unclaimed Arctic territory. As the Arctic and its wealth of resources become more accessible, the five littoral states have given increased attention to demarcating the region’s borders. In that respect, Russia remains directly involved in one major unresolved maritime boundary dispute (with the United States in the Bering Sea), and it is, in addition, one of three remaining claimants to the Lomonosov Ridge, which is the largest of the Arctic Ocean’s three submarine ridges spanning eighteen hundred kilometers from Siberia and across

the North Pole to Greenland and the Canadian-owned Ellesmere Island. These disagreements constitute a significant diplomatic barrier for broadening cooperation in the Arctic, preventing states from exploiting resources and fully establishing governance over their respective zones.

**The Russia-U.S. Maritime Boundary in the Bering Sea**

The United States became a littoral Arctic state in 1867 when it purchased Alaska from Russia. However, the 1867 Treaty of Cession implementing the transfer did not include specific coordinates for the new U.S.-Russian maritime border. A U.S.-USSR maritime boundary agreement was signed in 1990, which delimited this border and de facto confirmed Russian ownership of the Wrangel and other Arctic islands. The treaty came into effect provisionally in June 1990 after a diplomatic agreement was made between the U.S. Department of State and the Soviet Foreign Ministry. However, although the U.S. Senate ratified the treaty in 1991, Russia has never ratified it. Particularly after the discovery of oil deposits in the contested area, neither country has been fully satisfied with the terms of the 1990 agreement. Russia continues to demand more fishing rights, which the United States views as potentially detrimental to the Alaskan fishing industry. Within the U.S. government, moreover, a growing constituency views the Arctic islands as geographically important. For these reasons, then, the issue of the U.S.-Russian maritime border in the Arctic Ocean, Bering Sea, and northern Pacific Ocean remains unresolved.

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90 Also of note is an area in the central Bering Sea, known as the "doughnut hole," which abuts both U.S. and Russian EEZ waters. Regulation of this area of international waters became important after overfishing, by the United States, Russia, Japan, South Korea, China, and Poland in particular, threatened the remaining pollock stock, as well as regional, endangered species that fed on them. Leveraging UNCLOS article 63, which grants states the right to establish regional agreements concerning fish stock that exist within an EEZ and adjacent international waters, the United States and the Soviet Union initiated negotiations that led to the establishment of the multinational Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea in 1994, which oversees management of pollock in the region. This convention and subsequent agreements are important precedents, allowing for states to take measures
The Norway-Russia Maritime Boundary in the Barents Sea

Although Norway and Russia continue to disagree over Russian fishing rights within the territorial waters of Norway’s Svalbard Archipelago, Moscow and Oslo surprisingly resolved their longstanding, and at times belligerent, dispute in the Barents Sea by signing in September 2010 (and ratifying in June 2011) a landmark agreement to divide the vast and resource-rich disputed ocean area between their respective EEZs into two approximately equal parts. For nearly four decades, Russia had vigorously lobbied for use of the sector principle, rather than the median-line principle advocated by Norway and UNCLOS, in drawing this boundary, claiming special circumstances because of the precedent set by a 1926 Soviet decree declaring Russian ownership of the Arctic from a sector line from the Russian-Finnish border up the meridian to the North Pole. Although this declaration was originally intended to distinguish sovereignty over Arctic islands, Russia felt it should be taken into account. Russia also claimed a second special circumstance because of differences between the two nations’ territorial land areas and population sizes. However, the legal stipulations under UNCLOS do not take into account such factors or the large offshore deposits or vast fish stock existing in the overlapping gray zone.

Fortunately, and contrary to the expectations of those who predict a rise in resource rivalry in the Arctic, the existence of natural resources in this particular area seems to have been one of the major drivers behind the recent resolution of the boundary dispute between Russia and Norway, as both countries are eager to begin benefitting from the available resources. Russia’s keenness to swiftly resolve the dispute stems largely from Moscow’s need for Norwegian assistance in exploiting the area’s huge resource potential—which, according to official Russian estimates, could include as much as forty billion barrels of oil and over six trillion cubic meters of natural gas—since Norwegian energy companies are deemed to have the greatest expertise in offshore deep-sea drilling in such harsh climatic conditions. In the past, Norway and Russia reached several agreements to divide resource consumption where their claims overlap. For example, in 1978, Norway and Russia signed a “gray zone agreement” establishing quotas for fishing rights and licensing in the disputed Barents Sea area. In addition, in 1999, Russia and Norway also signed the Loophole Accord determining management of the so-called Loophole in the Barents Sea, which, like the “doughnut hole,” is located beyond and between the terminations of both countries’ EEZs. However, Russia and Norway have not reached an accord on the issue of fishing rights in the two hundred nautical miles around Svalbard, to which Norway claims exclusive rights, but which Russia


92 Dmitry Gorenburg, “Russia’s Arctic Security Strategy,” Russian Analytical Digest, no. 96 (May 12, 2011).

claims was not a right granted by the 1920 Svalbard Treaty that granted Norway sovereignty over that group of islands.

**Delimiting Continental Shelves**
The carving out of national sectors around the North Pole began in the early 1900s. The Canadian government staked its claim based on the sector principle in 1909, and the previously mentioned Soviet decree followed in 1926. Today, seabed ownership around the North Pole remains undecided. In 2007, Russia literally re-staked its claim to its northernmost territory by placing a titanium flag on the ocean floor near the North Pole. According to UNCLOS, however, delimitation of the Arctic will be determined by the geological extent of each littoral state’s continental shelf, which could extend an EEZ from the standard 200 nautical miles up to as far as 350 nautical miles into the ocean. In the balance are the rights to governance and exclusive economic control of that territory and, for Russia, the chance to realize a long sought-after symbolic diplomatic victory.

In 2001, Russia was the first of the Arctic Five to submit an Arctic claim to the UN Commission on the Limits of the Continental Shelf (CLCS). Although the submission was declined for insufficient evidence, Russia is gathering the necessary data to support a bid to expand its EEZ to include the Lomonosov and Mendeleev Ridges, an additional 1.2 million square kilometers of territory. The Lomonosov Ridge, where the Russian flag was planted in 2007, is thought to contain significant oil and natural gas deposits. Although they have not officially made submissions to the UNCLCS, Denmark’s and Canada’s Arctic claims overlap with Russia’s, and recent reports, including an August 2011 policy statement on the Arctic released by the Danish Ministry of Foreign Affairs, indicate that Copenhagen will indeed make a claim for the Pole to bolster its case for at least a portion of the Lomonosov Ridge. Spurred on by their approaching due dates for submission and the Russian flag planting in 2007, which both countries denounced as a publicity stunt, Denmark and Canada have begun jointly exploring and gathering data to support their territorial claims. Canada’s draft submission purportedly includes areas in the Beaufort Sea of the western Arctic, on the eastern Lomonosov Ridge, and on the Alpha Ridge in the central Arctic. Notably, the Canadian media argues that

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94 Hoel, “The High North Legal-Political Regime.”
95 The UNCLCS is empowered by UNCLOS to rule on the validity of any submitted territorial claims. Of the other four littoral states, Norway is the only other one to have submitted an Arctic claim. Denmark and Canada continue to gather data, and the United States has yet to officially ratify the convention (though it, too, is gathering data that could be used to submit a claim if the U.S. Senate ever ratifies UNCLOS.) For more information on these submissions see the UN Commission on the Limits of the Continental Shelf website, http://www.un.org/Depts/los/clcs_new/clcs_home.htm.
96 Oleg Alexandrov, “Labyrinths of the Arctic Policy” Russia in Global Affairs 3 (July–September 2009).
this evidence shows that the Lomonosov Ridge is part of Danish-administrated Greenland. However, this Danish claim is complicated by Greenland's self-rule option, introduced in June 2009, which will give Greenland the benefits of this Arctic territory and its resources, and could in time diminish the Danish government's role in the politics of the Arctic region. Partly because of the distractions caused by these transitions in Greenland's status, Russia continues to underrate Danish rivalry for the Lomonosov Ridge, but, as discussed further in this chapter's section on Denmark, the geological evidence may very well favor Denmark's claim.

In any event, resolution of this and other remaining territorial disputes would clearly remove a significant barrier to enhancing international cooperation in the region, particularly in view of the securitization of Arctic issues among influential policy circles in Russia. Although the UNCLCS is in place to mediate these disagreements, a decision by that body has yet to be tested in the Arctic, and, moreover, the commission's legal powers do not allow it to enforce any of its final recommendations issued to coastal states. Therefore, while the actions of all parties involved have, to date, adhered to international rules of the game, undue confidence in these processes, especially considering what is at stake, should be avoided. The increased attention to, and the fervor surrounding, Arctic shelf claims highlight the issue as a potential flashpoint in Arctic relations. In this respect, affirmation or denial of Russia's vast territorial claims could damage its already tenuous bilateral relations with the other littoral states.

**Politcization and Militarization of the Arctic**

With experts predicting that the Arctic could enjoy ice-free summers as early as 2013, Russian national policy has become increasingly preoccupied with extending governance and control over its northern territory. In large part, this effort is driven by the so-called securitization trend in Russian politics noted above, whereby issues determined to be strategically important are brought under greater governmental (and military) oversight. Energy is one such strategic industry, particularly because of Russia's continued economic dependence on energy exports. However, Russia's ambitious Arctic policy is also a reaction to the various governance and security challenges presented by the potential upsurge in economic activity and access to its Arctic waters. A surge in navigation and resource exploitation raises the probability of environmental and human security hazards, and it increases as well the vulnerability of Russia's northern border, which previously had the benefit of the Arctic ice's natural protection, to illegal immigration and illicit trafficking. As a result, as suggested at the beginning of this section, Russia will require greater customs and border security in its northern territory, together with improved search and rescue capabilities and better communications and surveillance/monitoring systems. Hence, while in the short term Russia may not be able to expect significant economic pay-offs from its development of the NSR and Arctic natural resources, an issue of great near-term importance, particularly for neighboring Arctic states, is the ongoing and anticipated increase in Russia's military presence in the region. While a larger military presence is not necessarily a negative for Arctic security, Russia's increasingly assertive foreign policy and continued criticisms of the United States and NATO are, in combination with this militarization, a cause for some concern. Indeed, it is important not to underestimate Russia's willingness to use military force to defend its national interests, a truth well illustrated by the August 2008 Russian-Georgian war. At the same time, the potential for conventional conflict in the region remains low, particularly because climatic challenges will continue to constrain the mobility and viability of Arctic navies and other forces. Additionally, it is in the interest of all the Arctic Five to keep the region peaceful and stable.

**The Russian Military’s Arctic Role**

100 To the contrary, Russian experts argue that the protection of military forces will make the region more stable and attractive for economic activities and cooperation. For example, see S. Koz'menko and V. Selin, “Kontseptsia Soglasovaniia E'konomicheskoi' Oboronnoi' Deiatel'nosti v Arktike [Approaches to the Coordination of Economic and Defense-Related Activities in the Arctic],” Morskoi’ sbornik 4 (April 2009): 55–60.

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98 For example, see the discussion in Viktor Ruchkin, “Barabany B’iut v Arktike [The Drums Are Beating in the Arctic],” Krasnaia zvezda 165 (September 9, 2009).

Although the Arctic's significant energy potential does play a role, it must be remembered that the Russian Arctic zone holds great military significance in terms of national defense, naval power, and strategic military planning. First and foremost, the military is responsible for defending and monitoring the extensive Arctic territorial and maritime border. Moreover, as transit increases through the NSR and resource exploitation intensifies, the Russian navy and coast guard will be increasingly responsible for protecting, monitoring, and enforcing customs and safety standards. Secondly, Russia's Arctic territory is home to the Northern Fleet, which is the most powerful Russian naval component and holds important symbolism in the Russian psyche because of Russia's long pursuit of a blue-water navy. The maritime opening of the Arctic gives the Russian navy greater access to the high seas, and it also improves connections between the Northern and Pacific Fleets. Third, and perhaps more importantly, the Northern Fleet is responsible for the third, sea-based leg of the Russian nuclear triad. During the Cold War, in particular, the Arctic theater, as the closest border between Russia and the United States, was a hot spot for nuclear rivalry. In this way, the Arctic played, and continues to play, a central strategic role in Russian deterrence planning, because of both Russia's growing emphasis on its nuclear arsenal and its continued perception of NATO and Washington as potential adversaries.

For these reasons, Russia has maintained a significant military presence in the Arctic, which it has ambitious plans to expand. These plans, outlined in The Principles of State Policy of the Russian Federation in the Arctic until 2020 and Beyond and The National Security Strategy of the Russian Federation through 2020, include the modernization and expansion of the Russian navy, border units, and coast guard in order to create a force mixture capable of dealing with new and emerging threats to Russian interests in the Arctic. As part of these efforts, Prime Minister Putin declared in July 2011 that Russia would build a $33 billion year-round port on the Yamal Peninsula, in the Russian Arctic, and the Kremlin has already announced plans to establish by the end of 2011 at least two new Arctic Special Forces brigades, usually numbering a few thousand troops, with one to be stationed barely ten kilometers from Russia's border with NATO member Norway. The new military unit, which will be specially equipped and prepared for armed “warfare in Arctic conditions,” is reportedly an attempt by Moscow to “balance the situation” in the region, according to Russian sources, referring to similar initiatives by the other littoral states (including Norway) to bolster their future forces in the High North.

Moscow’s new security strategy also outlines elements of the radical military restructuring announced by the Kremlin in October 2008. Current Russian military planning seems to be focused on building force projection capabilities not only for the Arctic but throughout areas of historical Russian interest, namely areas of the former Soviet Union. To this end, Russia is redirecting its resources toward building a smaller, more maneuverable and flexible force, but also a navy capable of enforcing Russian interests in the Arctic. However, as noted already, these ambitious plans must surmount the harsh realities of financial constraints, exacerbated by recent oil price fluctuations, the continued effects of the global economic crisis, and the adamant political opposition of entrenched military leadership to the Kremlin’s plans for military reform.

**Russian Military Capabilities and Challenges in the Arctic**

103 There is a considerable ongoing struggle between the Russian military elite and the civilian government on this issue of Russia’s military planning. The reforms proposed in October 2008 run counter to the entrenched culture and interests of the military elite, who believe that Russia must possess a mass mobilization army capable of defeating any state adversary. On the other hand, the civilian elite mean to shape a flexible force capable of confronting the challenges of irregular warfare and counterinsurgency. In this way, Russia’s nuclear element becomes the primary deterrent for state aggressors and perhaps a tool of “controlled escalation,” which might be used to compel the United States or NATO to the negotiating table in the unlikely event of a conflict. The Kremlin has tried to overcome the deep-seated opposition within the military by replacing numerous generals in the upper echelons of the military structure, but it continues to face significant resistance from the military and the public, who view the shrinking of the military force as damaging to Russian prestige and national security. For an excellent discussion of these issues, see Dmitry Gorenburg, “The Ongoing Radical Reform of the Russian Military,” *PONARS Eurasia Policy Memo* no. 78 (September 2009): 113-16.
Although land and air forces are deployed in Russia’s Arctic zone, the natural protection of Arctic ice has previously precluded the need for a significant land-based presence, and the Arctic environment posed significant challenges for aerial navigation and safety. However, in expectation of greater Arctic access, the Russian Federal Security Service (FSB) established the new Arctic Directorate and opened two new border guard stations at Franz Josef Land and Severnaya Zemlya in the Arctic in 2004. In August 2007, then-President Vladimir Putin also ordered Russian strategic bombers as well as surface and submarine elements of the Northern Fleet to resume regular patrols of the Arctic, which had ceased after the fall of the Soviet Union. That same month, Russian bombers also reportedly conducted exercises over the North Pole.104 And in July 2009, two Russian nuclear-powered attack submarines surfaced undetected through sea ice close to the North Pole and test-fired Sineva long-range ballistic missiles.105 This increased Arctic activity is consistent with Russia’s increasingly forward-leaning foreign policy and the renewed emphasis of Russia’s commitment to its Arctic interests, but it has minimal military significance, representing neither new capabilities nor a large increase in Russia’s military Arctic presence. In many respects, it is just posturing, albeit annoying posturing that can’t simply be dismissed.

In addition to the constraints of age, Russia’s Arctic surface ships face the navigational constraints of weather conditions, inadequate mapping, and weak navigational systems shared by air transport. However, these vessels have a long history of facilitating and protecting commercial shipping through the NSR, experience that many of the other Arctic Five lack. At the same time, maritime vessels have been, and remain, the most important element of Russian presence in the Arctic. In large part because of its longstanding commitment to Arctic development, Russia possesses the largest and most powerful Arctic surface force in the world, including the only nuclear-powered icebreaking capability and the largest polar vessel of this type, 50 Let Pobedy (50 Years of Victory). Some experts have even speculated that Russia, with its fleet of superior icebreakers capable of swiftly getting through six feet of ice “without breaking a sweat,” would ultimately be the nation “best suited to control the Arctic Ocean.”106 Additionally, the FSB deploys a coast guard force, consisting of over 250 ships, including frigates, transports, and air cushion vehicles, which Russian authorities plan to expand to fulfill search and rescue, security, and resource and environmental enforcement functions.

The most important Russian maritime presence in the Arctic is provided by the Russian Northern Fleet, based out of Severomorsk, at the northern edge of the Kola Peninsula. In addition to a substantial surface force and aviation assets, which include Russia’s only aircraft carrier and the only nuclear-powered guided missile cruiser in the world, the Northern Fleet possesses a submarine fleet of between twenty-five and thirty vessels.107 This subsurface component of the fleet is a vital part of Russia’s nuclear deterrent, which continues to play a crucial role in Russian strategic planning. Like Russia’s military and civilian surface vessels, the majority of the Northern Fleet’s submarines are remnants of the Soviet era. However, many have been refurbished and upgraded to remain in service for the next

104 Patch, “Cold Horizons.”
107 For further discussion of the composition of Russia’s Northern Fleet, see “Russia and the CIS Navy,” Jane’s Sentinel Security Assessment, April 6, 2009.
ten to fifteen years. In addition to the modernization of the old Delta IV vessels into the new K-18 Karelia submarines, which began sea trials in November 2009, Russia also continues to work on the development and construction of the newer Borei-class ballistic missile submarine (SSBN) and the new Bulava intercontinental submarine-launched ballistic missile (SLBM).108

Along with plans to modernize the Russian submarine force, in recent years Russia's ambitions to build a blue-water navy have inspired the recently announced plans to purchase four Mistral-class landing helicopter docks (LHDs) from France, with the intention to deploy them in its Northern and Pacific Fleets, among others. The ships' northern deployment in particular indicates Moscow's focus on boosting its maritime projection of air power and military might in the Arctic region, while at the same time expanding the fleet's capability to quickly reach the Atlantic if necessary.109 Moreover, plans to build two of the amphibious vessels in Russia promise to secure a much-needed boost to the country's currently stagnant shipbuilding industry, although it remains unclear whether this will in turn trigger the large-scale reform and modernization called for in Russia's new State Armaments Program for 2011-2020.110 In anticipation of greater maritime transit of commercial and military vessels, Russia has also come to recognize the need to improve communication and detection systems in the Arctic.111 However, these plans are fraught with problems when faced with the reality of current financial restraints, technical difficulties, and price overruns in the development of key programs. Such problems appear to have contributed to the repeated launch failures of the Bulava SLBM, which seriously jeopardizes the utility of the new Borei-class subs designed exclusively to carry the Bulava. Reconciling the reality of these constraints with Russian rhetoric and desire for a more potent, state-of-the-art blue-water fleet, will be another unique barrier for the naval aspect of military development.

In spite of these difficulties, the Kremlin still appears to be determined to modernize and reform the defense sector, but it remains unclear to what degree it will succeed in the near or mid-term. As a result, the recent but moderate increase in Russian activity and presence in the Arctic may not be sustainable and should not be viewed as an imminent threat to neighboring states. The apparent advantage of Russia's more developed presence is offset by the limitations of an aging and poorly resourced force and may be short-lived, particularly when (and if) the superior resources of the other littoral Arctic states are leveraged toward expanding their own Arctic military presences.

**Russian Strategic Perspectives and Practices in the Arctic and Beyond**

So, too, an increased military presence in the Arctic is not an inherently negative proposition. As the Norwegian minister of defense pointed out in an interview in April 2009, the presence of Russian and other conventional Arctic forces could lead to better collaboration and greater stability in the region.112 Of greater concern, however, are the security perspectives and military doctrine underlying Russia's military build-up and modernization in the Arctic. While the strategic thinking of the Russian political elite is not monolithic,113 a “defense-driven,” zero-sum orientation has come to dominate recent Russian strategy.


110 Russian officials have even admitted that the purchase of the Mistral effectively demonstrates the lack of critical technical expertise and capacity of Russia’s shipbuilding industry to build a complex and versatile vessel of this type. International Institute for Strategic Studies, “Russian Navy's Regeneration Plans”.

111 The challenges of detecting submarine movement under Arctic ice were illustrated anew by reports in July 2009 that Russian submarines were able to remain undetected prior to test-launching two ballistic missiles. “Russia Outwitted U.S. Strategic Defenses with Missile Test,” RIA Novosti (July 15, 2009).

112 “Russian Arctic Troops ‘No Concern’ for Norway,” Russia Today, April 6, 2009.

113 To the contrary, the Russian elite, although often depicted as a monolith in the media, is made up of many competing factions. This is particularly true with regard to reform of the military industrial complex, an issue that divides the entrenched, defense-driven elite and a more economics-driven faction. The former professes a “securitized” concept and tends to classify more and more national issues as national security issues that necessitate stronger military posture. The latter faction suggests that Russian military planning should be based upon the reality of what is affordable and that Russian policy should aim to incorporate Russia into the global economic architecture. “The Russian Military: Today and Tomorrow,” event held at the Hudson Institute, Washington, D.C., August 24, 2009.
documents and military force posture. This defense-driven approach, outlined in The National Security Strategy of the Russian Federation through 2020, is aggressive-sounding and nationalistic, and it views NATO and the United States as ongoing strategic competitors, if not outright adversaries. Even more alarming, however, is the Stalinist-like threat perception found in these documents that envisions foreign and domestic conspirators working together to undermine Russian interests and internal unity. These signs of growing insecurity within the Russian political elite, combined with Russia’s real internal instability, particularly in the North Caucasus, could complicate efforts on the part of other Arctic nations and stakeholders to promote peaceful military cooperation with Moscow in and around the Arctic region.

Russia, however mistakenly, often feels persecuted by the foreign policy and media coverage of neighboring Western countries. A senior official from the Russian Security Council, for instance, recently remarked that “the U.S., Norway, Denmark, and Canada are carrying out a concerted policy designed to prevent Russia from gaining access to the [Arctic] shelf’s riches,” adding that “if we do not become active now, we will simply be forced out.” From the Russian perspective, militarization in the Arctic is being driven by the increased regional interest and activity of NATO member states. For this reason, Russian experts also frequently argue that Russia is not the only country, nor the first, to point to the Arctic and resource scarcity as potential flashpoints in future Russian-Western relations. On one hand, it is true that NATO and U.S. officials have shown greater interest in the newly opening Arctic territory than they have in the past, and, in recent years, the United States has sponsored and participated in multiple joint NATO exercises in the Arctic. These have included the regular Joint Warrior exercise in the North Sea as well as the annual Baltic Operations (BALTOPS) exercise. In 2009, Joint Warrior included more than thirty warships and ten planes simulating a “northern dispute zone,” countering an adversary characterized as an “interfering neighboring state.” The BALTOPS exercise involves NATO and allied navies and commonly includes participants from Norway, the UK, Germany, Poland, the United States, Sweden, and Finland. On the other hand, Russia’s interpretation of this increased activity as a threat is indicative of its flawed understanding of the Russia-NATO relationship.

The persistent Russian zero-sum attitude toward regional developments has damaged its relations and credibility with its neighbors. In this respect, of the other Arctic Five, Norway and Denmark probably have the most congenial bilateral relations with Russia. Despite their remaining disagreement over access to the waters surrounding Svalbard, Russia and Norway have a long history of cooperation, which extends to upper-level military-to-military visits and exchanges, and the two governments frequently consult on issues related to the High North. As a result, Russia views Norway as a stable and predictable neighbor even in spite of recent Norwegian proposals to form an Arctic military pact among the Nordic countries (Norway, Denmark, Sweden, Finland, and Iceland), which might not serve Russia’s best interests. As for Russia-Danish relations, in spite of its competing claims to the Lomonosov Ridge and the North Pole, Russia does not

116 Russian media made particular note of the 2009 BALTOPS as the first NATO operation ever held in the Swedish Arctic region and interpreted this as a sign of eventual Swedish and Finnish accession to NATO, which would leave Russia as the only non-NATO country with territory above the Arctic Circle. In addition, Russia saw the operation as an unwelcome reminder of increased NATO influence and decreased Russian influence in the Baltic states of Estonia, Latvia, and Lithuania, territory of the former Soviet Union often described by Russian policy makers as an area of “privileged interest.” These interpretations are a snapshot of Russian discussions available on the subject, particularly taken from noted military journals: Viktor Ruchkin, “V Arkitee Staionritis Zhanko [The Arctic Is Becoming Hot],” Krassniaa zvezda 141 (August 5, 2009); S. Koz’menko and V. Selin, “Kontseptsiia Soglasovaniia E’konomicheskoi’ I Oboronoii Deiatel’nosti v Arktike [Approaches to the Coordination of Economic and Defense-Related Activities in the Arctic].” This became quite clear after the August 2008 Russian-Georgian conflict, which seems to have weakened longstanding Russian influence in the Central Asian states, particularly Turkmenistan, which has since sought to diversify its energy exports and increase its diplomatic ties with Europe.

view Denmark as a serious rival in the Arctic. Russia and Denmark's history of diplomatic contact dates back to the 1490s, and over time this has established a sense of predictability in their relationship. As with Norway, Russia has increased its cooperation and consultation with Denmark in the energy sphere, because its ambitious Nord Stream pipeline project requires the agreement of both countries to succeed.

Russian relations with Canada and the United States, on the other hand, have not been quite so cooperative. Canada in particular remains a rival in Moscow's eyes because of its claims to the North Pole and its support for Danish claims to the Lomonosov Ridge, which Russia also claims. Russia also watches Canada carefully because of the resources Ottawa may bring to bear to expand its naval capabilities in the Arctic, and because of the frequent rhetorical skirmishes between the two countries on Arctic matters. Canadian defense minister Peter MacKay has repeatedly referred to Russian resumption of its Arctic military activities as provocative, particularly noting the missile tests near the North Pole in July 2009 and increased warplane patrol missions near Canadian airspace. For their part, Russian authorities have dismissed Canadian criticism as hypocritical and overblown, particularly because of Canada's "use it or lose it" motto with respect to the Arctic. Yet, in spite of these public disagreements, Canada and Russia have continued to hold regular bilateral meetings on Arctic issues to ensure that disagreements are resolved on the basis of international law.

U.S.-Russian relations have been even more inconsistent. The renaissance of bilateral relations immediately following the break-up of the Soviet Union in the 1990s was short-lived, and U.S.-Russian relations often have been held hostage to the resurgence of Soviet-style strategic thinking in Russia and the still emerging dynamics of the post-Cold War strategic environment. After September 11, 2001, there was once again opportunity for increased bilateral cooperation, but the United States and Russia were unable to put their relations fully on the right course. As a result, Russian strategic thinking today continues to be defined by a perceived threat from the United States and NATO, which are viewed as relatively interchangeable, to Russian security interests and national unity. This perception also drives the Russian understanding of increasing American interests in the Arctic region. That said, the recent agreement on a New START Treaty as well as increased bilateral dialogue on other common strategic concerns between Presidents Barack Obama and Dmitry Medvedev have the potential to enable a more lasting "reset" in bilateral relations. Such a shift, moreover, would undoubtedly benefit Arctic cooperation, which has been constrained not only by the various reasons discussed earlier in this assessment, but also by Moscow's desire to prevent what Russia perceives as NATO's encirclement of, and encroachment into, the Arctic.

Still, instead of seeking broader cooperation in the Arctic region, Russia has often sought to restrict participation by "Arctic outsiders" (such as NATO and the EU) in Arctic-related discussions of the Arctic Five or the other Arctic states with territory above the Arctic Circle (Iceland, Finland, and Sweden). As a growing number of actors are increasingly eager to secure a role in High North geopolitics, Moscow has displayed an understandable fear that it might lose influence in a region that is the source of enormous pride and prestige in the Russian psyche. Particularly in terms of boundary disputes, Russia has emphasized direct, bilateral negotiations.

Of course, Russia does participate in many multilateral initiatives and organizations. In addition to promoting the UN as an arena for negotiation, Russia has been a founder and participant in multiple cooperative organizations intended to address limited multilateral issues, like environmental protection. For example, Russia, along with Norway, Finland, and Sweden, participates in biannual rescue and emergency training within the framework of the Barents Cooperation. Russia also discusses Arctic issues with the EU through the Barents Euro-Arctic Council (BEAC) founded in 1993, and Moscow has praised the role of the Arctic Council, which was established by all eight Arctic states in 1996, as a key intergovernmental mechanism for Russian cooperation in the region. In fact, in July 2009, Russia's ambassador to the Arctic Council

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119 See, for example, Randy Boswell, “Polar Posturing: Canada, Russia Tensions in Arctic Part Politics, Experts Say,” CanWest News Service, August 16, 2009); and Vladimir Kreslavskii, “Bo’r’ba za Arkhiku Raskolet NATO? [Is the Battle for the Arctic Splitting NATO?]” Moskovskaia pravda 175 (August 20, 2009).

called for the creation of a combined coast guard and a common emergency policy to deal with increased transit in Arctic waters, and Russia co-chaired with the United States the Arctic Council task force that developed the recent binding agreement on the search and rescue roles and responsibilities of council members.

However, in spite of Russia’s participation in, and endorsement of, these and other multilateral mechanisms, Moscow has continued to try to restrict overall membership in Arctic-related institutions and to steer discussions away from many hard security issues. Russia often uses existing multilateral Arctic institutions to continue pursuing a strategy of control and obduracy rather than cooperation, which ultimately prevents it from confronting more important strategic questions for the Arctic region. This is most clear in terms of NATO-Russia cooperation through the NATO-Russia Council (NRC), where Russia has traditionally refused to put the High North on the agenda. This position has become increasingly difficult to maintain, however, given NATO’s natural stake in Arctic issues and the higher priority afforded those issues in NATO planning circles. Consequently, under increased political pressure Russia has recently agreed to participate in two NRC roundtables on cooperation in the Arctic. From a military perspective, moreover, NATO-Russia cooperation has also progressed considerably since the 1990s, even considering the break in relations after the August 2008 Russian-Georgian war. Among other successes, Russia was a participant in NATO peacekeeping operations in the Balkans from 1996 to 2003, and it participated in NATO’s Active Endeavor, an anti-terrorism operation in the Mediterranean. Both initiatives give hope to those, including the current SACEUR, Admiral James Stavridis, USN, who consider the Arctic a natural locale in which to develop a U.S.-Russian and a NATO-Russian “zone of cooperation.”

123 These workshops were “The Cold War and Its Influence on the USSR/Russian-NATO Relationship in the Arctic” and “The Cold War and Contemporary Problems in the Arctic.” Bartosh, "Arktika v Pritsele NATO [The Arctic Is in NATO’s Sights]."

**Conclusion**

At present, of course, a number of factors are at work against wider cooperation with Moscow in the Arctic region. First, because of the securitization of energy issues in the thinking of Russian military and policy elites, energy security concerns, including those related to Arctic resources, have increasingly constrained Russia’s relations with the West. Secondly, an ability to shape events in the Arctic to its own liking remains a key piece of Moscow’s vision of Russia as a “great power,” an idea based not only on the scale of the Arctic region’s energy resources, but on the symbolism of Russia’s historic triumph over the Arctic’s harsh environment. Furthermore, this great-power element is strongly linked as well to Russia’s history of expansionism, which limits the degree of trust that exists in other Arctic capitals that Russian military modernization is not an attempt to assert (or expand) its ownership through credible displays of power. Third, and most importantly, is the problem of Russia’s ongoing zero-sum analysis of the interests held by the other littoral Arctic states, particularly because of their membership in NATO, as being diametrically opposed to its own national interests. All of these factors may complicate Russian cooperation with the other four littoral states and with NATO, especially in the context of a Russian foreign policy that remains adamant, rhetorically at least, in its willingness to defend Russian national interests wherever and however it is necessary to do so.

That said, in spite of its rhetoric, Russia’s actions in the region have to date been more pragmatic and in line with internationally accepted rules of the game. Moscow’s policy toward the Arctic can thus be described as relatively nuanced, consisting of a highly proactive and “classically Russian” approach to strategic dynamics in the region, combining a more heavy-handed tactic of hard-power rhetoric, demonstrations of military strength, and competition, while simultaneously exploring various avenues for international cooperation and actively participating in multilateral Arctic governance. Thus, while in principle Russia is willing to use its military forces to defend its interests in the Arctic, it seems very unlikely that it will do so in the near future. Indeed, without foreign investment and cooperation, it will be extremely difficult for Russia to realize its ambitious economic plans in its Arctic region.
territories. Additionally, Russian military plans must also contend with the realities of limited budgets and today’s strategic threat environment, which has greater need for platforms to help counter illicit trafficking and terrorism than an idealized blue-water navy to rival NATO power.

Ultimately, future cooperation in the Arctic region will remain closely tied to the quality of overall Russian-Western relations. Deeply entrenched mistrust of the United States and NATO, as well as a penchant for the idea of expansion, which resonates strongly in Russian society, will not allow relations to transform overnight. In the meantime, it should be kept in mind that Russian military presence in the Arctic is neither new nor likely to dramatically increase in the future, in light of domestic constraints on military restructuring and investment. Furthermore, for a variety of reasons, most notably the icy climate, economic and military activities in the Arctic will remain fairly limited in the near term. As a result, there may now be an adequate transition period within which to begin restructuring transarctic relations in a way that fosters cooperation rather than competition with Moscow.
Denmark, whose Arctic policy revolves around its ownership of Greenland, has in recent years adopted an increasingly proactive approach to the promotion of diplomacy and greater policy coordination in the polar region, and, like other Arctic players, it has also strongly cautioned against any undue militarization of the High North. Indeed, the Danish government played an instrumental role in convening, and facilitating the decisions of, the high-level conference of the five Arctic littoral states, held in May 2008 in Ilulissat, Greenland, that led to the release of the Ilulissat Declaration, in which all five states pledged to resolve outstanding disputes in the Arctic area peacefully, in a spirit of cooperation, and within the framework of international law. Conceived largely in response to Moscow’s power demonstration and flag-planting on the North Pole seabed in August 2007, this meeting, held in Greenland’s largest settlement north of the Arctic Circle, was partly intended as a way to de-escalate rising regional tensions. The meeting also served to market Denmark as a front-runner in climate and foreign policy integration and as an active international player in terms of peaceful global crisis management generally and with respect to Arctic security dynamics in particular.  

One of the Ilulissat initiative’s main objectives in this regard was to formally commit the Arctic coastal states to “the orderly settlement of any possible overlapping claims” and problems in the polar region in accordance with the existing UNCLOS regime, irrespective of whether the United States has ratified it. Thus, under the terms of the declaration, “the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other uses of the sea” and therefore “[this framework provides a solid foundation for responsible management by the five coastal States and other users of this Ocean.” In this way, Denmark and the other littoral states sought in particular to countervail recent international suggestions that the Arctic region exists as a terra nullius, or a massive legal void not to be subjected to the sovereignty of any single state, and to counter as well the argument for developing an alternative, treaty-based legal regime for the Arctic Ocean similar to that set forth in the 1959 Antarctic Treaty System. In addition, as proposed by Denmark, the decla-


ration served to recognize the coastal states’ sovereignty and legitimate right to claim control over essential natural resources in the region, firmly rejecting an earlier idea of establishing a moratorium on the exploitation of the Arctic’s resources, though nevertheless emphasizing the crucial importance of ensuring environmental sustainability in the region and the need for shared protection and management of the unique marine ecosystem.

The Ilulissat initiative can also be viewed within the wider context of the increasingly activist foreign policy adopted by successive Danish governments since 2001 and in the framework of the country’s active climate policy pursued since 2005, including other initiatives such as the annual Greenland Dialogue, an informal ministerial gathering launched by Denmark in August 2005 to discuss global climate-related challenges, and the high-profile United Nations Climate Change Conference convened in Copenhagen in December 2009, among others. Furthermore, as part of this more proactive approach, the Danish government released in May 2008 a joint Danish-Greenlandic integrated Arctic strategy paper that examined in detail the two countries’ common interests and tasks in the High North beyond issues of sovereignty and defense, underscoring the significance of further strengthening Greenland’s national rights and self-sufficiency ahead of its transition to self-rule in 2009. Alluding to the island’s future heavy reliance on revenues from any discovered resources in the region, the new strategy document contains a marked shift in Danish-Greenlandic policy on the Arctic, away from an earlier focus on sustainable development and environmental protection toward a more exploitative and economics-centered posture as a result of “a growing awareness that the consolidation and development of the Arctic societies [including Greenlanders] must rest on economic development.”

Not surprisingly, this same basic approach was taken in developing a new ten-year strategy for the Arctic, released in draft form in June 2011 and in final form in August 2011, to be pursued jointly by Denmark, Greenland, and the Faroe Islands. Entitled *Kingdom of Denmark Strategy for the Arctic 2011-2020*, the document argues that “a strategy for the Arctic region is first and foremost a strategy for development that benefits the inhabitants of the Arctic,” and that such development must rest on a “fundamental respect for the Arctic peoples’ rights to utilize and develop their own resources.” More specifically, it stresses that local Greenlandic authorities must have the final word on what environmental standards should apply to oil and gas extraction projects within Greenland’s exclusive economic zone, and that the overarching consideration in such decisions should be the impact they may have on Greenland’s economic development. In many respects, this development-first strategy can be seen as a victory for Greenland’s local government, which has been pushing hard to put the economic interests of the indigenous Arctic peoples ahead of the environmental concerns and fears of climate change that have tended to dominate the international debate over the Arctic. It remains to be seen whether the center-left coalition that won the recent

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128 Petersen, “The Arctic As a New Arena for Danish Foreign Policy.”


Apart from confirming the rights of Greenlandic officials to decide on future resource development questions, the new Arctic strategy cemented as well plans already in the works for a stronger and higher-profile presence in the region by the Danish military. For despite agreeing with the description of the Arctic by Norway’s foreign minister, Jonas Gahr Støre, as a “High North, but low risk [in security terms]” zone, most officials in Copenhagen have come to the conclusion that increased access to the region in the coming years means that Denmark’s current military posture in the Arctic will inevitably have to adjust to take on new roles and capabilities, such as the broader regulation of maritime traffic in Greenland’s territorial waters, an increased capacity for search and rescue operations, a more robust capability to handle ecological disasters in Arctic conditions, and wider-ranging border patrol and domain awareness missions within Greenland’s EEZ, to mention just a few of the more obvious ones. This view was confirmed in early 2009 by a special defense commission, established by the Danish government to conduct an assessment of the potential challenges and geostrategic implications of Arctic developments, which identified Denmark’s security role in the High North as an area of top priority and warned that the country must be prepared to sharply increase its annual defense spending in the next few years if its military’s capabilities are to remain credible in future national and international operations, especially those designed to protect air and maritime sovereignty around Greenland.

Based on the commission’s recommendations, the Danish parliament approved in June 2009, by a near unanimous (175 to 4) vote, an ambitious new defense plan (the Danish Defence Agreement) for the country’s armed forces for the 2010–14 period that included the establishment of the new Arctic Command to be based in Nuuk (and created in part by combining the pre-existing Greenland Command and Faroes Command), as well as the Arctic Response Force to be composed of elements from all branches of the armed forces and specifically adapted (and designated) for Arctic operations. Apart from saving money over the long run, moving the units assigned to Greenland Command from their rather isolated location in Kangilinnguit on the southwest coast of Greenland to the capital Nuuk will make it possible to set up a joint rescue/emergency response center between the new Arctic Command and Greenland’s police force, improving information sharing and overall coordination in mission areas – such as monitoring fish quotas and combating illegal fishing – in which both units play a key role. Additional measures proposed by the commission included the future use of combat aircraft such as F-16 multi-role jet fighters for the protection of sovereign areas in the Arctic, a type of mission that the Danish air force has not previously assigned to this aircraft, as well as the possible expanded use by the Danish military of support and resupply facilities at the American military base at Thule. Among other benefits, closer ties to Thule, located at the northwest tip of Greenland, will allow Danish surface ships and maritime patrol aircraft to sustain and extend their surveillance and emergency response operations much farther to the north than ever before. Moreover, such improvements, the new defense plan strongly emphasized, are necessary as “the melting of the polar ice cap...and the resulting increased activity in the Arctic will change the region’s geostrategic significance and thus entail more tasks for the Danish Armed Forces.”

Danish, which is responsible for Greenland’s defense and foreign affairs, has therefore signaled its intention to proactively invest in and transform its military into a highly useable and deployable force, enabling the country at the same time to prepare for a possible worst-case scenario with respect to Arctic security as well.

There are those, of course, both in Denmark and elsewhere, who worry that such “creeping militarization,” as they call it, will exacerbate the existing state of mistrust in the North and encourage other Arctic states, such as...
Canada and Russia, with whom Denmark has a number of unresolved border disputes, to continue to increase their own military presence and visibility in the region, eventually leading to a more conflict-prone Arctic. One prominent Canadian expert, for example, recently commented that “everybody talks about civilian goals such as search-and-rescue and environmental enforcement, but it’s the military that gets the most attention.”

Although Danish officials have insisted that they do not foresee traditional threats to their security or a full-scale military conflict in the polar region, a national threat assessment released in 2009 by the Danish Defense Intelligence Agency concluded nevertheless that “there is a risk of minor clashes and diplomatic crises between the coastal states of the Arctic, because significant strategic and particularly energy policy interests collide.” Some of the potential confrontations, according to the report, may include “military harassment” by a stronger nation’s armed forces or civilian exploitation of the natural resources in disputed areas. Russia’s interests in the Arctic, more specifically, could pose a serious problem for Copenhagen and other northern states as Moscow continues to expand its regional sphere and capabilities. From Denmark’s perspective, while Russia will likely prefer to maintain stability in the Arctic to better optimize and protect its status as a major energy producer (in part via wider access to investment and technology from Western Europe and the United States), the security situation could quickly change along unfavorable lines if, for example, the final distribution of polar territory and resources, based largely on the decisions of the UNCLOS Commission on the Limits of the Continental Shelf, should widely differ from what it expects.

Largely for that reason, Danish defense planners, most notably a small team at the Danish Institute for Military Studies (DIMS), have been weighing the implications for Denmark’s military role in the Arctic based on a variety of alternative scenarios for Greenland in 2030. These range from one of limited shipping activity along Greenland’s coast and minimal development of its fuel and non-fuel minerals to one in which shipping and fishing in Greenland’s waters and the commercial extraction of its resources have expanded by leaps and bounds, and, in a more extreme case, a situation in which these trends plus an uptick in major-power rivalry in the High North demand the establishment of a sizeable military base by Denmark in Greenland. Each of these scenarios, the DIMS analysts argue, will require some degree of improvement, and in one or two scenarios a significant advancement, in the ability of the Danish military to provide critical support to civil authorities (such as disaster relief and the protection of fisheries) on top of its more classic defense roles (patrolling and defending Danish/Greenlandic territory, for example). Some of the burden on Denmark’s armed forces could be reduced, it is acknowledged, if the Greenlanders, drawing on the revenue they may acquire from tapping the island’s oil, gas, and other mineral deposits, could establish and operate their own coast guard, which could operate in parallel (and share a division of labor) with Danish forces assigned to the Arctic Command. Such an approach, however, may not ever be feasible or, more importantly, cost-effective unless and/or until both the need for civil support tasks and Greenland’s resource-driven earnings rise exponentially and Danish naval and air units stationed on Greenland are increasingly required for “hard security” military tasks. Meanwhile, relying on these units to provide both civil support and military protection in what the DIMS team projects to be the most likely futures for Greenland by 2030 would appear to be the best solution.

Spurred by this and similar analyses, Denmark, as noted above, has already begun to transform significantly its military assets into a modest but state-of-the-art, flexible, and Arctic-ready force, with a special focus on the Royal Danish Navy. In addition to its fleet of smaller, ice-capable patrol ships employed for fishery and environmental monitoring tasks around Greenland, the Danish government maintains several classes of much larger ice-strengthened patrol vessels that have proven quite versatile and useful for maritime traffic and sovereignty patrols in the Arctic. These include the four Thetis-class frigates, which are capable of traveling through ice up to one meter in thickness and designed to carry extensive mis-


sile and torpedo combat systems if necessary, and at least two *Knud Rasmussen*-class patrol vessels that can also be equipped with anti-air or anti-ship missiles and have the ability to support helicopter monitoring operations. Moreover, the Danish navy is acquiring even more substantial, long-range, helicopter-capable, and self-sufficient combatants, such as the *Absalon*-class frigates, with impressive above-water self-defense features and the capability to deploy personnel ashore; the *Ivar Huitfeldt*-class air defense ships, equipped with a full range of anti-aircraft/ship/submarine armaments; and the innovative, albeit smaller, *Flyvefisken*-class multi-role patrol craft, built to employ compartmentalized weapons systems that allow the vessels to rapidly adjust their missions as needed.

Although the navy's new assets are primarily intended for projecting Denmark's blue-water force posture as part of Alliance and other international operations, they certainly provide Copenhagen with an unprecedented ability to rapidly deploy to assert sovereignty in its northern territorial waters if required.

Danish military officials, however, are quick to point out that closer collaboration with other Arctic states, in, for example, surveillance of the waters around Greenland, is key to improving the overall efficiency of polar operations, and that special emphasis should be placed on enhancing the Long Range Identification and Tracking (LRIT) satellite monitoring system maintained by the International Maritime Organization, an intergovernmental tool that could provide the navy with a much more detailed overview of maritime activities in the region. At the same time, Denmark is working with the IMO to develop binding global standards for sailing in the Arctic, including the adoption of a special “polar code” that would require both cargo and cruise ships to adhere to a specific set of best practices when operating in the Arctic. Further on this last point, a major source of concern for Denmark’s armed forces, which currently perform both military and civilian coast guard duties in and around Greenland, is the projected explosion in polar tourism to the area. Already in 2007, over 140 cruise ships carrying thousands of passengers sailed into Greenland’s narrow, icy, and largely uncharted fjords, posing a substantial challenge from a logistical and search-and-rescue perspective due to the almost complete lack of maritime infrastructure and facilities to support ships north of the Arctic Circle. According to the Arctic strategy report released in August 2011, efforts by Denmark over the next ten years to update and digitize charts for the waters around Greenland, including areas that have become newly accessible with the melting of the icepack along the northernmost sectors of the island, should help to reduce these risks to a more manageable level over the longer term. In the meantime, however, navigational safety will remain a challenge.

Given the expected rise in maritime traffic and the need to control future resource exploitation in the area, Danish naval officials have also called for establishing a continuous physical presence of coast guard and naval units in the Arctic (as opposed to episodic rotations). They have argued for increased cooperation among the Arctic nations in the future, most crucially at the operational level, to be accomplished in part through collaborative partnerships such as the North Atlantic Coast Guard Forum (NACGF), an international body that has met annually since 2007 and that includes maritime professionals from all five circumpolar states, as well as from others with a stake in the region. As an early booster of the NACGF, Iceland, for example, has stepped up coordination between its small but quite competent coast guard and Danish naval units in the waters between Iceland and Greenland. In the same vein, in May 2010 the Danish and Canadian militaries signed a memorandum of understanding on Arctic defense, security, and operational cooperation, designed to deepen the two countries’ joint operational efforts in the Arctic region in such areas as information exchange, military operations, and search and rescue (SAR) missions, similar to the joint Arctic military exercises held in April 2010 that brought together Canadian Rangers and Danish SIRIUS dog-sled patrol teams as part of Canada’s Operation Nunalivut. Denmark’s hosting of the May 2011 Arctic Council meeting in Nuuk, where council members signed an historic binding agreement on SAR collaboration, stands as yet another illustration of Copenhagen’s commitment to a regional and multi-

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136 David Rudd, “Northern Europe’s Arctic Defense Agenda,” *Journal of Military and Strategic Studies* 12, no. 3 (Spring 2010).
137 Ibid.
lateral approach to the challenges of operating in the Arctic when such an approach makes the best sense.

**Clarifying Danish Territorial Claims**

Still, while Denmark has repeatedly emphasized the goal of greater international cooperation in the High North and has undoubtedly worked hard to search for political solutions to any rising tensions in the region, it is in the meantime running a large-scale research program with the intent of making its territorial claims in the Arctic as extensive as possible. The Danish government has invested heavily in a series of comprehensive mapping surveys of the Arctic Ocean floor in the hope of demonstrating to the UN Commission on the Limits of the Continental Shelf by the end of 2014 that Greenland’s northern continental shelf continues far beyond the limits of the country’s two-hundred-mile exclusive economic zone, reaching all the way to the North Pole and likely even farther. Indeed, according (again) to the August 2011 Arctic strategy report produced jointly by Denmark, Greenland, and the Faroe Islands, Copenhagen intends to lay claim to the Arctic continental shelf in five areas around Greenland and the Faroes, including the North Pole, and, while the seabed of the North Pole itself is not expected to yield much mineral wealth, the other four areas are thought to hold major oil and gas deposits.\(^{139}\) Ownership of the North Pole, moreover, would be extremely helpful in confirming Danish rights to a good portion of the Lomonosov Ridge, a massive underwater structure that traverses the Arctic Ocean within two hundred nautical miles of the North Pole.

\(^{139}\) Breum, “Denmark Wants to Claim the North Pole.”
is thought to hold a wealth of offshore hydrocarbon resources, and, in Denmark’s view, is geologically similar to, and hence represents a natural prolongation of, the Greenland landmass. The Danish claim, however, is strongly disputed by Canada, which has argued that the ridge is an extension of the North American landmass, and it is even more hotly contested by the Russians, who maintain that their own continental shelf merges with both the Lomonosov and Mendeleev Ridges north of the Siberian shelf and the Russian archipelago of Franz Joseph Land. Nonetheless, if its legal claim is eventually approved, Denmark could acquire the exclusive economic rights to exploit a vast new portion of the ocean seabed north of Greenland and beyond the North Pole, an area as large as 150,000 square kilometers and equivalent to more than three times the size of mainland Denmark.\footnote{140}

The Danish government has thus invested considerable time and money in an effort to collect compelling geological evidence that proves its extended continental shelf claim, and it has developed in the process a particularly close collaborative relationship with Canada. Recognizing that both countries could benefit from sharing costs and personnel, Copenhagen and Ottawa signed a memorandum of understanding in June 2005 that has since produced a series of joint survey trips to the area north of Greenland and Ellesmere Island and that also allowed the Danish continental shelf project to use Canada’s North Pole command center at Alert as its headquarters.\footnote{141} In 2007, for example, a research team of specialists from Denmark, Canada, and Sweden, with the assistance and close support of a Russian nuclear icebreaker, undertook a month-long scientific journey to the Arctic region that successfully obtained extensive bathymetric, gravity, and seismic data to map the seabed around the Lomonosov Ridge, and the results so far appear to be “very promising.” According to Helge Sander, Denmark’s minister of science, technology, and innovation, “There are things suggesting that Denmark could be given the North Pole.”\footnote{142} Again in 2009, the Danish mission, known simply as LOMROG (Lomonosov Ridge off Greenland), completed a further joint mapping expedition together with its Canadian counterparts that focused on conducting aerial and sonar mapping surveys, along with aerogravity sweeps with the help of specially equipped aircraft, over an expanse of Arctic sea ice as far up as the North Pole. Overall, the Danes allocated over $42 million between 2004 and 2010 for the scientific effort under the Danish continental shelf project, and the government has declared its intention to “go on until we have the best data. We’ll have a lot of expenditures until 2014.”\footnote{143}

Despite Canada and Denmark’s regular scientific cooperation and their largely converging interests in the Arctic, however, the two countries’ overlapping seabed claims close to the North Pole, which furthermore clash with Moscow’s own bid for extended jurisdiction in the same area, could pose serious challenges to Danish-Canadian and Danish-Russian relations in the future. In particular, as some Arctic analysts have warned, Ottawa and Copenhagen’s collaborative gathering of evidence about the Lomonosov Ridge’s link to the North American continent is “no guarantee” that the two countries will agree on how the scientific data should be interpreted and ultimately on “who gets what,” since it often “comes down to politics, and (scientific cooperation) doesn’t eliminate a potential political disagreement.”\footnote{144} Perhaps offering a glimpse into official Danish conviction on the issue, Denmark’s then-foreign minister, Per Stig Møller, remarked in a 2009 speech at Chatham House that “we will soon have to discuss and decide: who owns the North Pole. That, by the way, I think we do.”\footnote{145} Although in 2006 Denmark peacefully agreed on its maritime boundary with Norway between Svalbard and Greenland and has since pledged to initiate further negotiations with Oslo as soon as the CLCS has reviewed the Danish claim, Copenhagen has yet to resolve its jurisdictional disagreement with Canada in the Lincoln Sea, north of Greenland, and even more cru-

\footnotesize{\textsuperscript{140} As circumpolar states do not possess full sovereignty beyond their 12-mile territorial limits, they can claim only certain sovereign rights out to 200 nautical miles, or the maximum 350-mile limit. If a country demonstrated that the seabed at the North Pole is a natural extension of its continental shelf, it would have the sole jurisdiction to exploit the resources of that area of seabed only, while the surrounding water and sea ice would remain part of the high seas (Michael Byers, “Cold Peace: International Cooperation Takes Hold in the Arctic,” Carnegie Council, December 16, 2009).}

\footnotesize{\textsuperscript{141} Howard, The Arctic Gold Rush.}

\footnotesize{\textsuperscript{142} Adrian Blomfield, “Canada and Denmark Join Rush to Claim Arctic,” The Telegraph, August 11, 2007.}

\footnotesize{\textsuperscript{143} “Danish Team Heads for North Pole,” BBC News, August 13, 2007.}

\footnotesize{\textsuperscript{144} “Denmark Could Put Canada’s Arctic Ambitions on Ice, Expert Warns,” Canadian News Service, May 26, 2008.}

\footnotesize{\textsuperscript{145} Møller, quoted in Petersen, “The Arctic As a New Arena for Danish Foreign Policy,” 2009.}
cially, has been engaged in a lengthy and bitter ownership dispute with Ottawa over tiny Hans Island, located midway between Ellesmere Island and Greenland in the Nares Strait. In recent years, there has been an escalating number of provocative measures and military posturing from both sides on and around Hans Island, a development that presents yet another complicating factor for Denmark's commitment to the cooperative resolution of disputes.

Rocky and uninhabited, measuring less than a mile across and devoid of natural resources on land, but positioned along a key approach to the Northwest Passage, Hans Island has caused much controversy and heated disagreements between Canada and Denmark, especially since it was discovered that its surrounding waters would likely be rich in oil and gas deposits. Although in 1973 the two countries agreed on delimiting their respective economic zones and on the maritime border between Greenland and Ellesmere Island, the status of the island itself remains unresolved. According to the Danes, Hans Island is a geological extension of Greenland, and Danish politicians have insisted that “relevant evidence in connection with defining the area of Greenland, such as geological and geomorphological evidence, clearly supports this point of view.” The Canadian government, however, has disputed this claim based on legal “use and occupation” considerations, among others, and has instead regarded the island as falling within Canada's sovereign control. Both sides have subsequently engaged in numerous efforts to strengthen their respective positions, and each nation's military has planted flags and landed soldiers on the island. In the summer of 2005, for example, Canadian Defense Minister Bill Graham made an unannounced military visit to Hans Island to reiterate Canada's sovereignty over the islet in response to Denmark's deployment of military forces and its newly commissioned Thetis-class frigates to the area, provoking in turn the Danish Ministry of Foreign Affairs to issue a statement declaring that it considered Hans Island to be “solely Danish territory.” Recognizing the rapid escalation of tensions, the two governments have since agreed to inform each other of any action they plan to take regarding the island, in effect deciding to tacitly adhere to a joint management of the issue until it is ultimately resolved.

Clearly, Hans Island has acquired a significance disproportionate to its size, viewed not only as a symbol of Arctic sovereignty for each country, but also as a territory, possession of which would be crucial for control of the strategic waterway that links Baffin Bay and the Arctic Ocean, a route that could eventually develop into an important shipping channel if the polar ice cap continues its seasonal retreat. As some regional experts have noted, the problem both countries face is that if either one is seen as “being weak on the issue, others will notice.” The Hans Island dispute certainly illustrates the ease with which a seemingly insignificant matter concerning a tiny ocean outcrop, coupled with

146 Danish Ambassador Poul Kristensen, quoted in Michael Byers, *Who Owns the Arctic? Understanding Sovereignty Disputes in the North* (Vancouver: Douglas & McIntyre, 2009).


149 “Denmark Could Put Canada's Arctic Ambitions on Ice, Expert Warns,” *Canadian News Service*. 
the addition of a new military capability to the region such as the Thetis-class patrol ships discussed earlier, can quickly exacerbate a state of mistrust and threaten to spill into a serious (and potentially armed) conflict even in circumstances involving close allied states that have long been on friendly terms, causing many to wonder what might follow when the largest parts of the Arctic Ocean have to be divided. However, officials from both countries have recently sent some positive signs about negotiating a possible “common solution” or a compromise to their land border disagreement in the Nares Strait, and in November 2010 the Danish defense minister, Gitte Lillelund Bech, remarked after a meeting with her Canadian counterpart in Ottawa that “to some extent it is absurd to be collaborating in other areas and fighting over an island.”

**The Issue of Greenland**

Yet another increasingly contentious issue is the question of who should rule Greenland, a sovereign Danish territory since 1721. The ongoing political debate over Greenland’s future has recently become ever more salient to Copenhagen, not least because Denmark’s status as an Arctic state, including a seat on the Arctic Council and a strong presence in the region, is closely tied to its continued control over the sprawling island. At the same time, Greenland, which gained wider political freedoms from Copenhagen in 1979 under the Home Rule Act, has vigorously pushed in recent decades for even greater autonomy and economic self-sufficiency. What is more, largely with an eye on its potential Arctic riches, the Danish province further renegotiated its relationship with Denmark and acquired an extensive new self-government agreement in June 2009 that could eventually prompt a resource-fueled independence movement, adding an entirely new twist to the Arctic sovereignty debate.

Approved overwhelmingly by more than three-quarters of Greenland’s voters in a referendum in November 2008, the Arctic island’s new self-rule “constitution” (the Self-Government Act of June 2009) recognizes Greenland’s predominantly Inuit-origin population as a separate people under international law and allows the local government in Nuuk to take over responsibilities in a number of domestic policy areas such as justice, police, and transportation, among others, which are currently administered and financed by the Danish state. Perhaps most crucially, however, Greenland will also assume full ownership of its on- and offshore natural resources, including a greater share of future revenues earned from the extraction and sale of any hydrocarbons discovered in the region. In the meantime, Denmark will retain control of foreign policy and defense and will continue to supply its Arctic territory with a generous annual subsidy of over 3.4 billion Danish kroner ($630 million), which currently accounts for more than half of Greenland’s total domestic budget revenue. In return, however, Copenhagen is entitled to receive a share of the island’s future proceeds from resource exploitation above the first 75 million kroner ($14 million) until the annual subsidies it pays to Nuuk are reduced to zero. “Greenland can’t both earn a bundle on oil and keep its block grant,” as Danish negotiator Frank Jensen remarked to journalists recently.

Still, achieving economic self-sufficiency does not amount to full autonomy, and the new self-government agreement makes it clear that Greenland’s potential independence will have to be agreed upon by both sides and decided through negotiations rather than declared unilaterally, with the “distribution of revenue from mineral activities in Greenland” featuring prominently on the agenda, leading many analysts to believe that Denmark may insist on continuing to receive a portion of the income generated from resource extraction on the island. After all, the recent surge in commodity prices caused Danish-Greenlandic talks on the Self-Government Act to stall a number of times and, according to Kuupik Kleist, one of two Greenlandic representatives to the Danish parliament and a leading participant in the resource negotiations, “on the Danish side, they have gone from being almost indifferent about the future of Greenland to being very, very much focused on not giving up Danish rights on mineral resources.”

Despite Greenland’s transition to greater self-rule, however, most politicians agree that the nation is still

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150 Ivison, “Hans Island Appears Headed for Joint Custody.”
151 Petersen, “The Arctic As a New Arena for Danish Foreign Policy.”
154 Emmerson, *The Future History of the Arctic*.
155 Woodard, “As a Land Thaws.”
years, and even decades, away from achieving true autonomy. “Whether the Greenlanders can take over more political institutions themselves depends heavily on the natural resources,” as Per Ørum Jørgensen, a member of Denmark’s ruling Conservative Party and chief negotiator in Greenland’s new self-government deal, noted at the time. “It could well be thirty to forty years.” Indeed, according to conservative economic estimates, the government in Nuuk needs to generate a minimum of 306 million kroner (over $56 million) per year alone in order to take over and finance on its own the additional set of domestic policy areas it acquired under the latest self-rule agreement. Nevertheless, for many in Greenland, the long-term objective of independence relies almost mechanically on harnessing the region’s enormous mineral potential on land and at sea. Although there are no proven reserves, a recent assessment from the U.S. Geological Survey (USGS) concluded that the seabed between Greenland and Canada may hold a total of 17 billion barrels of oil equivalent (BBOE) and 1,500 cubic meters of natural gas, with a further 3.3 BBOE located in the North Greenland Sheared Margin. In addition, the data suggest that more than 31 BBOE may be found in the Greenland Sea off the island’s northeast coast, mostly in the North Danmarkshavn and South Danmarkshavn Basins, indicating that northeast Greenland could become a very important supplier of oil and gas in the future, ranking perhaps nineteenth among the world’s five hundred largest known petroleum provinces, above the known reserves of northern Alaska and with a resource volume more than one-third that of the North Sea, which has partially powered the British, Dutch, and Norwegian economies for decades.

Not surprisingly, given the prospect of a future energy bonanza, Greenland’s government has begun awarding exploration licenses to more than a dozen international energy companies, including Chevron, Exxon Mobil, Husky Energy, and Shell, and the island has already seen a significant increase in seismic and geological work offshore, mainly in three promising areas around its western and southern shores. In 2010, Cairn Energy, a small Danish Institute for Military Studies.

UK-based offshore oil and gas operator which has placed the Arctic at the center of its growth opportunities, carried out the first hydrocarbon exploration drilling in Greenland’s waters in ten years, after five wells drilled in the late 1970s and a sixth one in 2000 all came up dry. Cairn raised international expectations for an oil windfall when it announced in August 2010 that it had discovered thermogenic gas, which can indicate the presence of oil, in thin sand layers in one of the company’s test wells located in Baffin Bay off the west coast of Greenland, about 250 miles north of the Arctic Circle.\textsuperscript{159} Despite the discovery, however, Cairn has met with only limited success so far and was later forced to declare losses and to abandon all three wells it drilled as they did not result in viable commercial discoveries. Nevertheless, the company announced recently its plans to drill a further four holes in 2011 at a cost of about $1.2 billion for twelve wells over three years, and it remains optimistic that the eight offshore blocks it has invested in, covering nearly seventy-two thousand square kilometers of sea off the west coast of Greenland, could hold as much as four billion barrels of oil.\textsuperscript{160}

Cairn Energy’s experience, however, underscores the high level of uncertainty surrounding the various figures and forecasts dealing with the potential of Arctic hydrocarbon reserves. For example, USGS estimates for the South Danmarkshavn Basin alone range from a fifty-fifty probability of three billion barrels of oil to a 5 percent probability of fourteen billion barrels of oil and an equal probability of nothing at all.\textsuperscript{161} In addition, the Arctic’s waters can be very problematic and particularly treacherous for drilling because of the extreme cold, long periods of darkness, dense fogs, hurricane-strength winds, and pervasive ice cover, whether firm or in the form of floating ice floes, for most of the year which, combined with the great geographical distances from European and North American markets and the almost complete lack of existing infrastructure, could pose serious challenges to operating a viable energy field in the region. Moreover, recent studies indicate that oil production in Greenland’s resource-rich and highly promising northeastern waters would not be feasible before at least 2030, and experts agree that it could well be several decades before the huge investments required begin to pay dividends. In this particular context, only the most optimistic of forecasts predict that Greenland’s cash-strapped government could receive any royalties from oil extraction concessions before 2030, leaving it to rely in the short term almost exclusively on foreign capital.\textsuperscript{162} Despite the speculative nature of the expected economic boost from oil reserves, however, a 2008 survey by the University of Greenland revealed that close to 80 percent of the Greenlandic people thought the island should (and can) become independent in less than twenty years, exposing a fundamental tension between the general sense of national self-confidence and a “bureaucratic logic of appropriateness,” or the political need to avoid any precipitous moves toward independence that may jeopardize Danish financial support.\textsuperscript{163}

\begin{itemize}
\item \textsuperscript{159} “Black Stuff in a Green Land,” \textit{Economist}, August 28, 2010.
\item \textsuperscript{160} Sylvia Pfeifer, “Cairn Hires Rigs for Arctic Oil Research,” \textit{Financial Times}, January 5, 2011.
\item \textsuperscript{161} Emmerson, \textit{The Future History of the Arctic}.
\item \textsuperscript{162} Jørgensen and Rahbek-Clemmensen, “Keep it Cool!”
\item \textsuperscript{163} The study was conducted in 2008 by Pia Vedel Ankersen, a lecturer at the University of Greenland.
\end{itemize}
Aside from oil, mining activities on land, which have proven lucrative in the past, appear to present a realistic potential for transforming the economy, and dozens of international mining companies are already exploring parts of Greenland’s coast for gold, diamonds, rubies, platinum, lead, zinc, metallic iron, and other rare minerals, increasingly more accessible thanks to the ice cover’s retreat. According to the joint Arctic strategy document released in August 2011, the Greenlandic government hopes that a number of mineral production projects now underway with Danish companies and foreign partners can create over one thousand jobs by 2015.\(^\text{164}\) However, since the mining industry pays no royalties, it remains unclear whether the government in Nuuk will receive taxes or royalties of any significance, for example, from Pittsburgh-based Alcoa’s plans to build a 340,000-tons-a-year aluminum smelting facility and hydroelectric plant on the island’s west coast.\(^\text{165}\)

At the same time, many argue that such enterprises can potentially make Greenland increasingly vulnerable to price volatility, as exemplified recently by a plunge in world commodity prices and a rise in borrowing costs, which forced Canada’s Crew Gold Corporation to shut down its Greenland gold mine in 2008 after the metal lost more than 24 percent in value, and made the British Angus and Ross mining company (now Angel Mining PLC) decide to drop its plans to open a zinc mine the same year.\(^\text{166}\) Similar concerns have caused some Greenlanders to re-evaluate the belief that finding oil will serve the cause of full independence, and, according to Birger Poppel, a social scientist at the University of Greenland, “instead of relying on the Danish state, which is highly regulated, we may end up relying on oil companies over which we have no influence.”\(^\text{167}\) Aqqaluk Lynge, head of the Inuit Circumpolar Council’s Greenland chapter, has pointed out as well that many of the local people are also afraid that “the United States will take over Greenland if the Danes get out,” raising the expectation among a majority of experts that if or when Greenland becomes indepen-

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165 Jørgensen and Rahbek-Clemmensen, “Keep it Cool!”


dent, it will be keen on keeping very close ties to Denmark, in large part because of fears of U.S. hegemony.\(^{168}\)

For its part, the United States, as discussed in detail in this chapter's U.S. section, has long maintained an important military presence at the vast air base at Thule, located in the remote and desolate northwestern part of the island, about 750 miles above the Arctic Circle. Built in secret by the U.S. government in the early 1950s, Thule is home to the advanced and ultra-powerful Ballistic Missile Early Warning System (BMEWS) radar complex. The base is expected to play a central role in Washington's plans for a national missile defense (NMD) system that would allow the U.S. military to detect and track ballistic missiles launched against North America, including the ability to destroy them using ground- and sea-based missile interceptors.\(^{169}\)

John Holum, former U.S. undersecretary of state for arms control and international security, has described the radar base at Thule as a key link in the NMD system, “to warn and track,” and to provide Washington's “eyes and ears” over the North Pole, particularly since the Arctic offers the most direct route of attack for any missile fired from the Middle East or Central Asia.\(^{170}\) Historically, Greenland's strategic position in the High North has been the subject of immense importance for a number of U.S. administrations, and in 1946, U.S. Secretary of State James F. Byrnes reportedly went so far as to propose to Congress that the U.S. government purchase Greenland outright, reviving plans for American ownership of the island that dated back to his nineteenth-century predecessor, William H. Seward.\(^{171}\)

Greenland has retained its geostrategic role for America even after the Cold War, not least because of fears that the island's east coast, much like the Svalbard archipelago nearby, could conceivably be used as a convenient military staging post by a hostile power, potentially allowing it to launch attacks on the American mainland and enabling it to dominate the northern Atlantic and, crucially, Atlantic shipping lanes.\(^{172}\) Moreover, according to some policy analysts, Chinese state companies could begin to invest and establish a strong presence in a resource-rich and strategically important place like Greenland, leading to serious concerns in Washington. Like other Western governments, Washington is already wary of China's Arctic intentions, given Beijing's effective overseas resource diplomacy elsewhere in the world, particularly in the mining sector, and its apparent focus on securing majority stakes in national companies with a view to later influencing important political and commercial decisions.

Denmark, on the other hand, has long viewed its control over Greenland as an important diplomatic asset and a matter of great strategic value. Policy experts generally agree that when Denmark joined NATO in 1949, the government in Copenhagen used the “Greenland card” to gain economically favorable membership in the Alliance, and, as many further argue, an American guarantee of Denmark’s territorial integrity “was subsequently purchased with Greenlandic soil.”\(^{173}\) In the period 1949–50, for example, the Hedtoft administration requested that the U.S. government provide special security guarantees for southern Denmark as compensation for Danish concessions in Greenland that allowed a permanent American presence on the island.\(^{174}\) In a similar vein, throughout the Cold War, Copenhagen regarded Greenland's strategic position as an important bargaining chip in discussions with allies, especially when questions arose regarding Denmark's total contribution to NATO defense or with respect to continued U.S. military aid to Denmark in the 1950s despite the country's failure to meet Alliance strength goals, to name a few. Such decisions, however, can be viewed as American concessions to Danish sovereignty and political sensitivities within the framework of the 1951 agreement on the defense of Greenland signed between the United States and Denmark, which at the same time gave Washington much wider freedom of movement and military activity on the island's territory, especially in comparison to the much more stringent U.S. base agreements with other European countries at the time.\(^{175}\) In recent years, however, Greenlandic politi-

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168 Woodward, “As a Land Thaws.”
171 Emmerson, The Future History of the Arctic.
173 Emmerson, The Future History of the Arctic.
175 A confidential Pentagon report to President Eisenhower in 1957 noted that the deal from 1951 effectively ensured the Danish government's cooperation “in allowing the United States quite a free hand” on the Arctic island.
cians have been eager to get the negotiating card back into their own hands and as a result, the new Danish-American defense agreement from 2004, which updated all previous treaties and allowed the U.S. military to begin a $260 million upgrade of the early warning radar system at Thule, invited Greenland to have a say in the negotiations. Furthermore, it noticeably excluded Denmark from much of the language of the treaty, in part as a clear acknowledgment of the island’s desire to move toward a greater and more equal role in the realm of foreign policy.

Nonetheless, in terms of its potential independence, Greenland remains a wild card in Arctic geopolitics. Although proponents of complete autonomy face little opposition at home, many experts express concern and doubts about whether a small nation of fifty-six thousand people, inhabiting an area that covers more than two million square kilometers, almost the size of Western Europe, and whose only resource at present is fishing, could muster the physical, human, and diplomatic resources to survive on its own, especially if the Arctic region does become an important economic and political area in the future. Of further concern in this particular context is whether Greenland would actually have the necessary personnel to actively represent its interests in the various international forums, such as the Arctic Council, NATO, and the United Nations, given the social problems of low educational standards among parts of the population and the shortage of skilled workers and educational institutions to produce qualified labor. In that regard, many fear that Greenland’s political system will simply be overwhelmed by the sheer scale of investment and that the government in Nuuk will have to instead cater to special interests, thus replacing its longstanding dependence on Denmark with dependence on multinational corporations and potentially losing its cultural traditions in a whirlwind of progress toward self-sufficiency. According to Denmark’s former foreign minister, Uffe Ellemann-Jensen, “the idea that they could move alone in the world is absurd. They would probably make a deal with the Americans.”

Greenland’s future security needs, therefore, will not only revolve around the question of control over its territory and securing its EEZ, but will involve as well important economic security considerations, together with attention to environmental security and cultural integrity. Greenland may of course consider other possible routes to speed up the process, such as joining the European Union, from which it withdrew in 1985 to protect its fishermen from wider European access to Greenlandic fishing grounds, or seeking the protection of and forming an alliance with the United States, including the option of expanding on the 2004 Danish-American agreement on security cooperation. It remains unclear, however, if Greenland’s citizens themselves are ready yet to put an end to Copenhagen’s financial support and its attendant psychological and social safety nets, leading many Arctic experts to conclude that in the end the island would likely choose to keep informal foreign policy ties with Denmark, which has already invested in the country economically and can continue to provide the benefits of its diplomatic connections and limited, but the right sort of, military force. As part of this bilateral relationship, described as “status quo plus” and based on the continued mutual trust and common interests between Copenhagen and Nuuk, Greenlanders could also decide to take complete control (if not the operation) of numerous additional authority tasks that they acquired through the Self-Government Act in June 2009, to include providing the financing for these tasks. As Svend Auken, a veteran Danish politician and former energy minister, recently suggested, “in the long run, the ideal would be for them to be recognized as an independent state in the United Nations, but in close contact with Denmark,” retaining the Danish queen and currency and expanding on their defense cooperation with Copenhagen. Otherwise, he added, Greenlanders “will be very dependent on the Americans,” perhaps even becoming, as suggested by some, a “fifty-first state.”

**Conclusion**

For the foreseeable future, then, Denmark will continue to play a high-profile role with regard to the Arctic, based primarily on its ongoing ties with and financial support of Greenland. Toward that end, and as reflected in the joint Arctic strategy released by the Danish Ministry of Foreign Affairs in August 2011, Copenhagen will seek to sustain a relationship with Greenland that encourages self-rule.

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176 Emmerson, *The Future History of the Arctic*.
177 Ibid.
178 Petersen, “The Arctic As a New Arena for Danish Foreign Policy.”
179 Woodard, “As a Land Thaws.”

(Taagholt and Hansen, *Greenland: Security Perspectives*).
and greater autonomy for the island while still retaining Danish sovereignty and, by extension, a share in future revenues derived from the development of Greenland’s fuel and non-fuel mineral resources. In return, Denmark can be expected to proceed with plans for strengthening its military presence in and around Greenland via the new Arctic Command based in Nuuk, the stand-up of the multi-service Arctic Response Force, and, in particular, the deployment of naval forces better able to operate under Arctic conditions. At the same time, however, and perhaps in part because of the uncertainty surrounding its links to Greenland (and, hence, its future clout on Arctic matters) over the longer term, Denmark can be expected to champion as well multilateral approaches to and mechanisms for Arctic governance, with an emphasis on the value of the Arctic Council, the importance of Nordic cooperation, and an appropriate role for NATO and the EU. With respect to the settlement of any outstanding disputes regarding territorial claims, maritime passage, and environmental security, it will no doubt continue to point to the Ilulissat Declaration and UNCLOS as the two most important guidelines for resolving potential disagreements among Arctic stakeholders. As for other Arctic nations, the challenge for Denmark will be to achieve the best balance and the optimal level of coordination between national interests and the need for regional and international cooperation, a challenge, once again, that will be largely defined for Copenhagen by the future trajectory of Danish-Greenlandic relations.
Canada, with over 1.3 million square miles of Arctic territory, including the vast Canadian Arctic Archipelago, the world's second-largest high-Arctic land area (Greenland's being the largest), has consistently placed a strong focus in the last few years on asserting and protecting its sovereignty within the region. In a marked shift from the 1990s, when the country’s position on the Arctic primarily centered on issues of environmental protection, successive administrations in Ottawa since 2000 have publicly emphasized the need to bolster Canada's ability to defend its Arctic territories, calling in particular for the adoption of a more robust approach to enforcing Canadian sovereignty and territorial security in the High North. In the 2000 report *Summative Evaluation of the Northern Dimension of Canada's Foreign Policy*, for example, the government promised “to enhance the security and prosperity of Canadians” and “to assert and ensure the preservation of Canada’s sovereignty in the North.”\(^{180}\) Similarly, in a seminal speech in 2004, then-Prime Minister Paul Martin pledged to develop a domestic Arctic policy and a “northern strategy” that would, among other things, “protect the northern environment and Canada’s sovereignty and security.”\(^{181}\)

Since 2006, however, the issue has been elevated to the very top of the country’s agenda, and the administration of Prime Minister Stephen Harper has placed enormous emphasis on developing its plans to strengthen and rebuild Canadian northern security capabilities, warning that environmental changes and growing human activity in the Arctic, combined with the increasing interest of “non-Arctic” states in the region, could well lead to future challenges to Canada's authority and “could also spark an increase in illegal activity, with important implications for Canadian sovereignty and security and a potential requirement for additional military support.”\(^{182}\) In this context as well, Harper has frequently pointed out that “the first priority of national defense is to assert your sovereign presence on your territory, to be prepared to defend Canadians from threats of all kinds, whether they be major threats of invasion, or simply minor threats of unauthorized surveillance or potential unauthorized economic activity.”\(^{183}\) Similar sentiments were reiterated...

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ed in the Harper administration’s August 2010 *Statement on Canada’s Arctic Foreign Policy*, which noted that while increased access to the Arctic was a positive development in many ways, it is also likely to trigger an “increase in environmental threats, search and rescue incidents, civil emergencies and potential illegal activities,” all of which have made “exercising sovereignty over Canada’s North... our number one Arctic foreign policy priority.”

Canada has pursued the goal of improving its Arctic defenses and the security of its northern waterways along several lines of activity. In July 2009, the Canadian government released its Northern Strategy, a comprehensive new foreign policy roadmap for the country’s north that underscored the exercise of Canada’s Arctic sovereignty as one of the government’s four key priority areas for the future. Based on objectives set forth in the strategy, and as detailed in Canada’s primary defense policy document, *Canada First Defence Strategy*, Canada has taken steps to expand its surveillance, patrol, and emergency response capabilities in the region, including increased spending over the next decade for offshore patrol vessels that can break up first-year ice, a new full-fledged icebreaker (to replace an aging vessel by 2017), a winter fighting school for Canadian Forces at Resolute Bay in the Northwest Passage, and a deep-water port for the navy on Baffin Island, among other initiatives.

In addition, the government has set aside close to $100 million to invest in mapping Canada’s outer continental shelf boundaries so as to support and legally prove Canadian territorial claims in the Arctic by the end of 2013 via the process approved by the UN Commission on the Limits of the Continental Shelf. In a further step to assert its national sovereignty, Canada’s House of Commons recently renamed the Northwest Passage the “Canadian Northwest Passage,” requiring all vessels that pass through the passage to report to Canadian authorities. All these initiatives accord well with Prime Minister Harper’s oft-quoted statement following the Russian flag-planting expedition to the North Pole in 2007 that the first rule of Arctic sovereignty is “use it or lose it” and that Canada “intends to use it.”

**Canada’s Evolving Northern Strategy**

Still, given that Canada boasts the world’s longest coastline, with the Canadian Arctic Archipelago making up some 65 percent of its shorelines, its resources to police and exercise authority over its northern waters and territories remain somewhat limited. Its six aging icebreak-
ers, for example, which are relatively light polar vessels, unsuitable for all-season operations, are not deemed to be powerful or resilient enough to cope with all of the Arctic’s conditions, and they remain unable to operate in the Northwest Passage during winter. Nor is Canada’s maritime patrol capability much better. Hence, given the likelihood of a steady increase in traffic in and around the waters of Canada’s High North, together with the fact that previously inaccessible portions of this region are becoming increasingly accessible, the Harper administration announced in July 2007 its plans to build between six and eight state-of-the-art Arctic offshore patrol ships (or AOPS platforms) for the Canadian navy, a proposed procurement that has come to be viewed as a centerpiece of the government’s northern strategy.

Designed as Polar Class 5, multipurpose, ice-strengthened (though not icebreaking) patrol ships to guard the Northwest Passage and fulfill “the need to assert our sovereignty and protect our territorial integrity in the north,” as Harper noted at the time, the custom-built vessels could reportedly cost over $5 billion to construct, with at least another $4.3 billion projected for operations and maintenance over their twenty-five-year lifespan.

The new ships’ requirements include an ability to operate in year-round, medium first-year ice in Canada’s EEZ in the north, and to have gun armament sufficient to support the government’s essential constabulary (as opposed to major combat) responsibilities in the area and to ensure a Canadian presence in the Arctic even in contested waters. Unfortunately, while significant progress has been made on the preliminary design stages of this procurement, the project has yet to advance to the implementation phase, leading many Arctic experts to predict that it is highly unlikely that the Canadian navy will meet its preferred schedule for bringing the ships on line, which now calls for the delivery of the first AOPS by 2015. It has been suggested by some informed observers, moreover, that this delay may prompt a wholesale rethinking of the project, perhaps leading to a decision to procure a smaller, less costly vessel that would still be adequate for the coastal patrol and policing missions the navy is most likely to be assigned at that point in time. That said, however it proceeds, this particular acquisition represents one of the few instances in which the Canadian Forces have actually invested in a new capability in the post-Cold War era, and it will likely remain an important element of the military’s overall transformation plan.

Shortly after announcing the construction of the new Arctic patrol vessels, Prime Minister Harper also indicated in August 2007 that a special deep-water port would be developed at Nanisivik, an abandoned lead and zinc mine strategically located in a remote corner of Baffin Island, at the eastern entrance to the Northwest Passage. Although plans to convert the old port and upgrade the existing airstrip could cost in excess of $120 million, the government remains confident that a strong military presence in this vital area would allow Canada to better monitor and to potentially deter any “unwelcome visitors” from entering or passing through its waters. The Nanisivik facility will mainly serve as a staging area and operational base for the new patrol vessels in the High Arctic, once they enter service. In addition, it will also be designed to receive, hold, and distribute cargo and goods from commercial sea vessels during the navigable season of the year, while also providing a vital resupply and equipment storage facility for the Canadian Coast Guard, including for equipment the guard might need in responding to and cleaning up a future oil spill. As with the AOPS program, there have been unforeseen schedule delays in this project, but construction of the port facility is expected to begin by 2012, with full completion targeted for around 2015.

In another step to bolster its offshore Arctic capabilities, Canada declared in late 2008 that it would be allocating some $720 million to build a powerful new icebreaker, the John G. Diefenbaker, to replace the coast guard’s aging Louis S. St. Laurent vessel before it retires in late 2017. While this news generated much excitement and expectation among officials and experts alike, little is known about the project’s parameters or progress, causing some to wonder.

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188 Howard, The Arctic Gold Rush.
189 Byers, Who Owns the Arctic?
191 Byers, Who Owns the Arctic? 63–64. Byers argues that the AOPS vessels were originally conceived as platforms that could stand up to potential challenges posed by foreign (Russian, for example) military forces, but that the real risks in the Canadian Arctic are more likely to come from sub-state smugglers and terrorists, for which smaller ships would be more than adequate.
193 Howard, The Arctic Gold Rush.
der whether it might have a similar fate as Canada’s 1985 plan to construct a robust new all-season icebreaker, the so-called Polar 8, which the government eventually canceled in the face of budgetary constraints. Critics of the Diefenbaker procurement have argued, for example, that acquiring such a powerful ship “would be overkill” by the time it would become available, given the likely melt-out of hard, multi-year ice by 2017, and that mid-sized, multipurpose icebreakers would be far more useful to the coast guard under those conditions. Likewise, a substantial level of uncertainty remains regarding the status of three new joint support ships (JSS’s), initially intended for delivery by 2016 to replace the Canadian navy’s aging replenishment vessels. These double-hulled, multipurpose ships would supply fuel, ammunition, spare parts, food, and water to the Canadian Forces, while also providing helicopter transport support, “a limited sealift capability, and logistics support to forces deployed ashore,” adding strength and flexibility to Canada’s presence at sea. Faced with industry bids significantly exceeding the budget earmarked for the JSS acquisition, however, the government recently decided to undertake a complete re-examination of the project’s design.

Additional fixed-wing aircraft and helicopters to support search and rescue operations – arguably the Canadian military’s most important Arctic mission in coming years – are also considered priorities for the future, but progress has been slow in this department as well. As noted by one Canadian Arctic expert, the four aging and slow Twin Otter fixed-wing aircraft based in Yellowknife – headquarters to Canada Command’s Joint Task Force (North), or JTF(N), which is responsible for Arctic security – are hardly sufficient to the task, and none of the large, four-engine C-130 Hercules and mid-size, twin-engine C-115 Buffalo cargo planes that are often used for SAR missions is based in the Arctic. Hence, a C-130 sent from Trenton, Ontario, for example, could take six hours to even reach the Northwest Passage, “and, once there, can only drop search and rescue technicians (SAR-techs) rather than hoist anyone on board.” Canadian defense officials have discussed funding for up to nineteen new fixed-wing SAR aircraft, but ongoing debates over which platform to choose (and the degree to which Canadian industry would participate) have held up a final decision. Meanwhile, there is some talk of expanding the SAR support provided in southern Canada by private-sector volunteers from the Civil Air Search and Rescue Association (CASARA) to cover portions of the Arctic, when necessary.

As for SAR-capable helicopters, the Canadian Forces do maintain a fairly new fleet of CH-149 Cormorant platforms for this purpose, but, as in the case of the C-130s and C-115s, none is deployed in the Arctic. This means that they must first undertake long and costly flights even to get close to the two areas of the Canadian Arctic – Baffin Bay and the Beaufort Sea – where maritime traffic is expected to be heaviest, and, as a result, the demand for SAR coverage greatest. Deploying just two Cormorants in the Arctic during the summer, it has been argued, would make a world of difference, but that has yet to happen. In a similar vein, proposals have been made to deploy at least one C-130 at Yellowknife year-round, but this also seems to have been put on hold. That said, with the largest SAR area in the world (nearly five times the size of India), Canada, and its Department of National Defence in particular, will need to find a much better solution to provide timely coverage in the Arctic, as maritime traffic and economic activities in the region expand. The long response times – again, anywhere from six to ten hours – required to get SAR assets from southern Canada on location in the Arctic is espe-

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194 Byers, Who Owns the Arctic? 64–65.
196 For comparison’s sake, in 2009 alone SAR crews responded to almost nine thousand calls for help. Standing Senate Committee on National Security and Defence, Sovereignty and Security in Canada’s Arctic, interim report (March 2011), 10.
197 One of four operational commands of the Canadian Forces, Canada Command is responsible for domestic and continental operations (including cooperation with United States). It exercises this authority with regard to the High North and Arctic primarily through the Joint Task Force (North), or JTF(N). The Twin Otters are assigned to the 440 Transport Squadron, which is based full-time at Yellowknife. Standing Senate Committee on National Security and Defense, Sovereignty and Security in Canada’s Arctic, 3.
198 Byers, Who Owns the Arctic? 67.
199 Currently, the C-130s, C-115s, and CH-149s are based primarily at three Joint Rescue Coordination Centers (JRCCs) maintained jointly by the Canadian Air Force and Coast Guard at Victoria (for the Yukon), Trenton (for the central Arctic), and Halifax (for eastern Baffin Island and the Arctic parts of Quebec and Newfoundland-Labrador). One of each type of platform is ready to be airborne in thirty minutes during week days from 0800 to 1600, and within two hours at other times. See Standing Senate Committee on National Security and Defense, Sovereignty and Security in Canada’s Arctic, 10, 11.
cially troubling, given that time is of the essence to ensure survival in Arctic conditions.

Despite these setbacks and shortfalls in the equipment realm, Canada has nevertheless forged ahead with plans to create a multipurpose Arctic training center at Resolute Bay, in Nunavut, a site chosen specifically for its strategic location as the gateway to Canada’s High Arctic. Although the Canadian armed forces have always had a presence in the north, it has often been sporadic, and a census survey conducted in 2006 revealed that Canada’s northernmost military base at Alert, on Ellesmere Island, reportedly had only five inhabitants. The new year-round training facility at Resolute Bay – capable of training up to one hundred personnel at a time and serving as a command post for emergency operations – would thus contribute to the goal of strengthening the military’s overall presence in the Arctic, while at the same time providing Canadian military personnel with vital expertise and knowledge in Arctic operations, skills that will undoubtedly be in high demand as a more accessible Arctic increasingly requires Canadian Forces to conduct search and rescue and disaster relief missions in the frigid, rugged, and highly demanding environment of Canada’s High North.

In that regard, the government is planning to place much greater emphasis on winter warfare training for the Canadian military as a whole, training in which the vast majority of the Canadian Forces has had very little exposure, despite multiple calls in recent years by Canadian authorities for an enhanced national capacity to operate in the Arctic. Reservists from militias based in the south, for example, are being organized into four Arctic Response Company Groups, though their operational capabilities will remain rather limited. In addition, the country’s military is in the midst of an ongoing expansion of the Canadian Ranger program, a part-time reserve force made up of mostly Inuit and First Nations personnel, whose numbers are expected to increase to five thousand by 2012, some nineteen hundred of whom would be assigned solely to Arctic duties with the JTF(N). The Canadian Rangers, who comprise a significant element of the military’s overall northern presence, already fulfill a number of essential functions, such as patrol and search and rescue missions, monitoring activities and changing conditions in Canada’s northern territories (including potential damage to early warning radars deployed as part of Canada’s North Warning System), and conducting overall surveillance in the Arctic. Rangers also teach the Canadian Forces crucial survival and navigational skills they will need to perform “sovereignty ops” across the Arctic ice and tundra. Future initiatives may include developing high-readiness, rapid-reaction Ranger units, creating a new central training facility for Ranger recruits and leadership, and building a coastline watercraft capability for the Rangers.

So, too, while final decisions are being weighed on the hardware procurement and infrastructure investments noted above, Canada has been gradually boosting its military presence in the Arctic through annual summer exercises in the country’s High Arctic, together with

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202 Standing Senate Committee on National Security and Defense, Sovereignty and Security in Canada’s Arctic, 5.
203 The JTF(N) currently employs one Canadian Ranger Patrol Group of around sixteen hundred personnel. Rangers are paid when training or assigned official duties, and they are reimbursed for the use of their personal equipment, such as vehicles, boats, and snowmobiles. Ibid., 6.
204 Byers, Who Owns the Arctic?
205 Standing Senate Committee on National Security and Defense, Sovereignty and Security in Canada’s Arctic, 8.

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200 Formally known as the Canadian Forces Station at Alert (or CFS Alert), this unit, staffed by the air force, collects signals intelligence and supports SAR radio frequency direction finding, among other tasks. Christoph Seidler, “Who is Winning the Arctic Game of Monopoly,” Spiegel Online, June 11, 2009.
more naval patrols and additional service-wide military training within the northern territories. In this regard, Operation Nanook, held annually in the country’s eastern Arctic area, is a major whole-of-government exercise that includes some one thousand personnel from Canada’s armed services, and, for the first time in 2010, participants from the U.S. Coast Guard and the Danish navy. It is designed primarily to assert Canadian Arctic sovereignty over land, sea, and air, to show a visible presence in the region, and to showcase Canada’s ability to act and respond to emergencies in the North. With those goals in mind, the training exercise in 2009, for example, included a special anti-submarine warfare operation, among other drills, prompted in part by Russian air force flights and submarine patrols around Canadian territory at that time, including the surfacing of nuclear-powered Russian submarines through sea ice near the North Pole to test-fire their long-range missiles. Operation Nanook, whose scope has expanded over the years, is one of the main elements in a three-pronged Canadian Arctic training schedule that includes Operation Nunakput, focusing on surveillance missions in the western Arctic, and Operation Nunalivut, held in the Canadian High Arctic with an emphasis on Ranger sovereignty patrols.

Over time, Canada intends to set in place a far more integrated and networked air, space, and maritime surveillance system, composed of advanced ground sensors, new maritime patrol aircraft, unmanned aerial vehicles (UAVs), and next-generation satellites as a way to monitor more comprehensively its Arctic archipelago and associated waters. Apart from tracking potential environmental degradation and assisting in search and rescue operations (demand for which is, again, certain to increase as commercial traffic along Arctic sea lanes grows), enhanced surveillance, it is argued by Canadian officials, will add an important layer of defense against a potential increase in illicit trafficking (of drugs, weapons, and other contraband) and possibly even terrorist activity, as new transit routes open up in the Arctic and existing routes are more heavily utilized. As noted above, Canada’s expansion of military operations in the Arctic appears to be directly tied as well to the increase in Russian military activity in the region – including long-range bomber test flights, nuclear sub cruises, and missile test firings – following the controversial planting of a Russian flag on the seabed floor of the North Pole in 2007, actions by Moscow that many in Ottawa interpret as a direct (if somewhat harmless) challenge to Canada’s national interests in the Arctic.

One of the Harper government’s most prominent recent contributions to Arctic sovereignty in that regard involves the RADARSAT-2 project, an advanced and ultra-powerful remote sensing satellite launched into orbit in December 2007 that has since produced exceptionally detailed satellite imagery from space, making it possible for Ottawa to detect objects as small as a fishing boat and to even “discern individual hydro-transmission cables.” 206 Design specifically with the Arctic in mind, RADARSAT-2 is intended to allow the Canadian government to monitor ship traffic in the North, map sea ice, and potentially detect the wakes of submarines in total darkness or through dense clouds, and is therefore set to play a vital role in safeguarding Canada’s security and economic interests in the Arctic in the future. The new satellite’s surveillance capabilities were effectively put to the test not long after its launch when it supplied imagery showing a “ship-track” through the ice cover in the Beaufort Sea, leading promptly to the discovery of an unannounced Russian icebreaker. 207 A similar initiative, the Northern Watch program, has also made great strides, and it is currently developing and testing a maritime surveillance system using surface, underwater, and space-based sensors for detecting submarines and other vessels operating in Canadian waters, especially at key navigation choke points.

By 2015, three additional satellites will be launched as part of the RADARSAT Constellation series, the first time a multi-satellite approach will be used. These particular satellites are being designed to spot details as small as one meter by three, and they will “provide complete coverage of Canada’s land and oceans offering an average daily revisit.” 208 Additional earthbound situational awareness will be secured via reports from the Northern Canada Vessel Traffic Services Zone (known as NORDREG), monitored by the Canadian Coast Guard, which now requires vessels over three hundred gross tonnes or carrying dangerous cargoes that are operating up to two hundred nautical miles offshore to file reports before enter-

206 Byers, Who Owns the Arctic?
207 Ibid.
ing, while in, and upon leaving the NORDREG. Together with the RADARSAT and Northern Watch programs, the NORDREG – which was extended from one hundred to two hundred nautical miles just in the summer of 2010 – will vastly improve Canada’s indigenously built surveillance capabilities, while at the same time boosting its ability to monitor and protect the country’s maritime approaches, including those in the Arctic region.²⁰⁹

### Cooperation with Other Arctic Nations

Although Canadian officials have largely focused on devising military solutions to emerging Arctic security challenges, Canada has also pursued a fairly wide-ranging strategic engagement program with other nations in the polar region, particularly the United States, as a way to reduce tensions in the Arctic. Since 2008, for example, U.S. and Canadian scientists have jointly conducted a number of research expeditions using icebreakers to map the extent of their continental shelves in potentially resource-rich areas of the Arctic Ocean. Aside from the cost savings involved, close collaboration between the two countries has allowed the shared use of state-of-the-art seismic and sonar equipment as well as autonomous underwater vehicles to obtain detailed data and multi-beam sonar images of the sediments, ridges, and valleys of the ocean seabed in the Canada Basin, which extends some seven hundred miles from the Beaufort Shelf, encompassing areas where Ottawa and Washington have overlapping sovereignty claims.²¹⁰ U.S.-Canadian cooperation on mapping in the Beaufort Sea in particular has already proven its value, having yielded an “astonishing” quality of research data that in turn has made Canada’s case for extended sovereignty in the region “look very promising,” according to Jacob Verhoeof of the Canadian Geological Survey.²¹¹ In recent years, Canadian science teams have also collaborated with their Danish counterparts on a host of joint mapping missions in the Arctic, employing helicopters, ski-planes, and icebreakers to gather valuable geographical and geological information on the structure of the Lomonosov Ridge, an underwater area near the North Pole that the two countries and Russia have all claimed is a geological extension of their own respective shelves.

In addition to its focus on bilateral mapping initiatives, Canada is pushing forward more aggressively on the diplomatic front to reach agreements with Washington on the two major territorial disputes that continue to complicate Canadian-American relations with regard to the Arctic: Canada’s classification of the Northwest Passage as an “internal strait” and its disagreement with the United States over where to draw the boundary line between American and Canadian EEZs in the Beaufort Sea, both of which are discussed in some detail below. So, too, Canada has continued to work closely with the U.S. government on providing effective aerospace warning and common defense for North America through the jointly operated U.S.-Canada North American Aerospace Defense Command (NORAD). In May 2006, moreover, the two countries unexpectedly extended NORAD’s functions beyond the air to incorporate a maritime surveillance component tasked with creating shared situational awareness and an integrated understanding of the activities and potential threats “not just from military vessels at sea” but from non-state actors as well, who might use the maritime domain to threaten U.S. or Canadian ports, maritime approaches, and internal waterways, including in the Arctic.²¹² According to proposals made public in early 2011, NORAD’s future role in the defense of the Arctic is expected to encourage much closer coordination between the operational and command structures of the Canadian and U.S. navies and land forces, reinforcing the two countries’ longstanding practice of cooperation in the north.²¹³

On a broader multilateral front, Canada has been a strong advocate of the Arctic Council’s effort to develop and implement the legally binding Arctic SAR treaty that was signed by the eight Arctic nations in May 2011. Among other features, the treaty clarifies specific responsibilities for individual council members in particular geographic zones, while outlining as well the various res-

²¹¹ Byers, Who Owns the Arctic?

cue and coordination mechanisms they each can rely on when dealing, for example, with a plane crash, cruise ship sinking, big oil spill, or any other serious disaster in the extremely challenging and isolated Arctic environment. For Canada, the need to move in this direction as soon as possible was made clear following the groundings of several ships, including two fuel tankers that had to be rescued in the waters off the coast of Nunavut, in 2010 alone.\textsuperscript{214} It accords as well with the observation once made, perhaps only half in jest, by Canada’s chief of defense staff, General Walt Natynczyk, to the effect that he wasn’t really all that worried about intrusions by hostile forces in the Canadian Arctic because Canada’s first response would, in all likelihood, be “to rescue them.”\textsuperscript{215}

For many Canadians, the fate of the pristine and fragile Arctic marine ecosystem also remains a major consideration, and such concerns prompted the Canadian government to adopt in 1970 the Arctic Waters Pollution Prevention Act (AWPPA), which imposed strict safety and environmental standards on any vessels travelling within one hundred nautical miles of Canada’s Arctic shores. The act was largely conceived in response to the controversial voyage of a massive American supertanker, the SS Manhattan, which had attempted to sail through the entire Northwest Passage the previous year with the intention of testing the viability of a proposal to ship oil from Alaska’s North Slope to American markets on the Atlantic seaboard. Although the Manhattan, whose crew required extensive icebreaker assistance from the Canadian Coast Guard after repeatedly becoming trapped in heavy ice conditions, was eventually unable to complete its journey according to original plans, the voyage infuriated Canadians, sparking considerable anxiety among the general public, particularly since the U.S. government refused to seek official permission from Ottawa to enter the waters of the Northwest Passage, claiming it to be an international strait open to unrestricted use by all, under international law.\textsuperscript{216} Canada, on the other hand, has insisted that the passage constitutes an internal stretch of water that requires prior authorization to traverse, and the U.S.


\textsuperscript{215} In 2010, for example, General Natynczyk noted, “If a country invades the Canadian Arctic, my first challenge is search and rescue to help them out.”

Standing Senate Committee on National Security and Defence, Sovereignty and Security in Canada’s Arctic, 28.

\textsuperscript{216} Michael Byers, Who Owns the Arctic?

\textsuperscript{217} Howard, The Arctic Gold Rush.

\textsuperscript{218} Byers, Who Owns the Arctic?

\textsuperscript{219} The AEPS consists of four working groups: the Arctic Monitoring and Assessment Program (AMAP), Protection of the Arctic Marine Environment (PAME), Conservation of Arctic Flora and Fauna (CAFF), and Emergency Prevention, Preparedness, Response (EPPR). Huebert, The Newly Emerging Arctic Security Environment.
from vessels” and other human activities in ice-covered waters within the limits of their EEZ, much like the regulatory stipulations imposed under the 1970 Arctic Waters Pollution Prevention Act.\textsuperscript{220} Drawing on article 234, the Harper administration went on to announce in August 2008 that the AWPPA’s definition of “Arctic waters” would be amended so as to require ships within two hundred nautical miles to report to Canadian authorities, in the hope that “this would send a strong message to the outside world as an environmental matter, as a security matter, and as an economic matter.”\textsuperscript{221}

**Key Territorial Disputes**

Although the Canadian government has sought to manage, and has recently even made progress on, a number of outstanding disputes in the Arctic, it remains at odds with Washington over a large section of the Beaufort Sea, with the Danes over the maritime boundary in the Lincoln Sea and ownership of Hans Island, and with the United States, the European Union, and other interested parties over the status of the Northwest Passage. Given the importance of all three of these disagreements both to the scope of Canada’s jurisdiction in the High North and to its ability to resolve challenges to its Arctic sovereignty in a peaceful manner, they each deserve to be examined in some detail.

**The Northwest Passage**

Since the summer of 2007, as satellite images revealed an ice-free transport route in the Northwest Passage, new debates have emerged over policing, search and rescue, and legal jurisdictions within its waters. While Canada has the legal right to exploit the passage’s economic resources, many Arctic stakeholders, as briefly noted above with regard to the *Manhattan* incident, have challenged Canada’s authority to impose domestic law throughout the entire passage. For its part, Canada, invoking decisions by the International Court of Justice that predate UNCLOS, draws the baselines of its borders around the outer points of the many offshore islands that define the Canadian archipelago, a practice that places the Northwest Passage squarely within, it is argued in Ottawa, Canada’s “internal waters,” as eventually defined by UNCLOS. Canada’s right to claim these islands and the waters around them out to the twelve-mile territorial sea limit set by UNCLOS is reaffirmed, the Canadians go on to argue, by the fact that the indigenous Inuit people have used these territories for centuries, rendering them “an historic” part of Canada. More importantly, at its narrowest points the passage, Canadian officials claim, is less than twenty-four miles across, which means that any shipping in this area would by definition be passing through overlapping territorial seas under Canada’s jurisdiction. Moreover, based on the number of foreign transits in the passage since the early 1900s, it has never been used, it is emphasized by Ottawa, as an international shipping highway to a degree that could qualify it as an international strait through which all ships may enjoy the “right of transit passage” (again, as defined by UNCLOS).\textsuperscript{222} Indeed, as noted earlier, the Canadian parliament felt so strongly about these issues that it went so far as to rename the passage the “Canadian Northwest Passage” in 2009.

Washington, the EU, and many others who contemplate broader use of the passage in years to come dispute these claims, arguing that the passage is indeed an international strait in accordance with part 3 of UNCLOS, and that the international legal regime governing its use must, as it is for all such straits, guarantee “freedom of navigation, as of right, for the ships of all nations (privately and State owned); a right for submarines to transit submerged; and a right of over flight for every aircraft in the air corridor above the strait.”\textsuperscript{223} That said, in an effort to resolve the matter at least temporarily, the United States and Canada entered into a bilateral Arctic cooperation agreement in 1988 that consists of four clauses that are often condensed to an “agreement to disagree.”\textsuperscript{224} Specifically, the United States agreed to always ask for Canadian consent when traveling in the passage and “Canada agrees always to give that consent.”\textsuperscript{225} So far, this agreement has proven

\textsuperscript{220} UNCLOS, part 12, section 8, article 234, 1982.

\textsuperscript{221} Howard, *The Arctic Gold Rush*.

\textsuperscript{222} The Right of Transit Passage may be defined as follows: “The unimpeded transit of ships, aircraft, and submerged submarines in their normal modes through and over straits used for international navigation, and the approaches to those straits.” Scott G. Borgerson, *The National Interest and the Law of the Sea*, Council Special Report no.46, May 2009, 23.

\textsuperscript{223} Suzanne Lalonde, “Arctic Waters: Cooperation or Conflict?” *Behind the Headlines*, July 1, 2008.


\textsuperscript{225} Samantha L. Arnold and Stephane Roussel, “Expanding the Canada-US Security Regime to the North,” in *Security Prospects in the High North*:
to be satisfactory, but many Arctic stakeholders fear that as the passage becomes more accessible to non-icebreaker ships, the desire to clarify these terms will become an international priority and a source of renewed disagreement.

In that event, some legal experts argue that it might actually be in the interests of the United States and other potential users to accept Canada’s claim that the passage is “internal waters,” as this would at least guarantee that it would be properly patrolled and policed to prevent illicit trafficking and other criminal activity. However, if the passage is accepted as part of Canada’s internal waters, there is also a possibility that other coastal states could make similar claims and redefine the waters adjacent to their territory in ways that could significantly hinder global maritime trade and, of special concern to Washington, the strategic mobility of U.S. naval forces. Perhaps, given the costs and technical complexities that Canada would face in asserting its sovereignty, together with the long history of Canadian-American defense cooperation via NORAD, some kind of special bilateral arrangement with regard to the security of the Northwest Passage and unhindered use of its sea lanes would seem to make sense. But if the price of such an agreement is U.S. acceptance of Canada’s claim with regard to ownership of the passage, a deal along these lines could be well-nigh impossible, not least because of the potential implications it would hold for freedom of navigation through other strategic straits and narrow waterways (such as the Strait of Hormuz and the Straits of Malacca) over which coastal states may wish to extend their authority.


The Beaufort Sea

Canada’s second bilateral dispute with the United States, but one that appears to be showing progress toward resolution, is over who has the right to exploit the resources within a sixty-two-hundred-nautical mile seabed sector of the Beaufort Sea. Canada argues that its EEZ should be extended two hundred miles directly from the 141st meridian that defines the land border between Alaska and the Yukon Territory. However, contrary to Canadian opinion, U.S. policy makers have argued that the Alaska-Yukon border should only follow the 141st meridian up to the coast, and that offshore every point on the border should be equidistant from both coasts, which would produce a southward-leaning maritime boundary (giving more ocean and seabed to the United States) because the coastline of Alaska, the Yukon, and the Northwest Territories slants east-southeast. As a result of these conflicting views, the commercial rights to a controversial triangular shaped section of seabed the size of Lake Ontario, estimated to hold substantial amounts of oil and to be heavily stocked with fish, are now being contested.

In contrast to their disagreement over the Northwest Passage, however, both Canada and the United States are eager to settle this particular dispute, and the prospects of doing so soon appear to be quite high. In May 2010, for example, Canadian Foreign Affairs Minister Lawrence Cannon issued a statement inviting Washington to “begin serious negotiations with Canada to end their decades-old

Craig Wicks, “Canadian Sovereignty: A Pragmatic Look at an Arctic Nemesis and How Surveillance Can Finally Vanquish This Beast,” Canadian Forces College, 65.
territorial dispute in the Beaufort Sea.” Shortly thereafter, in July 2010, U.S. and Canadian government officials met in Ottawa to discuss ways to resolve the longstanding boundary dispute, and the next month, on August 2, the U.S. Coast Guard cutter *Healy* and the Canadian Coast Guard icebreaker *Louis S. St. Laurent* were dispatched on a joint “42-day mission aimed at generating seabed data across a wide swath of the southern, central and Beaufort Sea,” with the express purpose of amassing enough definitive data to reach a final agreement.

According to a number of informed reports, these initiatives were sparked primarily by a March 2010 interpretation of the U.S.-Canadian Beaufort Sea dispute which indicated that the “U.S. would actually benefit from Canada’s interpretation of the offshore boundary, and Canada would gain a greater share of undersea territory using the American approach.” More specifically, as illustrated in the map above, if both positions were accepted, the end result would be that, because of Alaska’s northward-sloping coastline, the southern maritime boundary would veer slightly eastward of the Yukon-Alaska land boundary, giving the United States a greater amount of maritime jurisdiction, while the overlap created to the north would also be much larger than the current disputed area, potentially giving Canada a greater share of the oil-bearing seabed. Of course, while the new northern seabed sector may comprise a larger area, it could be argued that the current disputed bed to the south may prove to be just as valuable, because it is closer to the shore, thus allowing for an easier extraction of whatever oil there is to be found. Nonetheless, the appeal of a larger EEZ for Canada if it agrees to the conclusions reached in March 2010 suggests that its negotiators will eventually move in that direction.

The Lincoln Sea

A relatively minor disagreement, however, persists in Canada’s relations with Denmark over the division of the Lincoln Sea, an area of thick sea ice located in the Arctic Ocean north of Ellesmere Island and Greenland’s northern shores. Although the two countries agreed to delimit the maritime boundary along their respective coasts in 1973, negotiators were unable to reach an agreement on the line of demarcation in the Lincoln Sea, leaving a disputed region of about 220 square kilometers when Ottawa and Copenhagen eventually established their exclusive economic zones and extended their respective boundaries northward. While Canada has chosen the so-called equi-distance principle for its claim to sovereignty, using the low-water mark of the coasts and the surrounding fringing islands as reference points, Denmark has declared straight baselines around Greenland, effectively moving the equi-distance line farther westward and adding two additional, albeit small and isolated, areas to the Danish side.

Because the Lincoln Sea dispute only affects areas within each country’s established EEZ, it holds few if any implications for Canada’s or Denmark’s extended continental shelf boundary in the Arctic Ocean beyond the two-hundred-mile mark, leading many analysts to suggest that the matter could easily be solved by simply splitting the difference and dividing the areas in question along approximately equal lines. In light of the potential for hydrocarbon deposits in the region, Copenhagen and Ottawa could choose to share any revenues derived from resource exploitation in the area, or, perhaps less likely, they could establish a condominium regime for the disputed sections of water, combining shared ownership and sovereignty with a joint regime for the exploitation of oil and gas. A slightly more unorthodox solution, how-

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229 Ibid.
231 Ibid.
232 Byers, *Who Owns the Arctic*?
233 Ibid.
ever, according to a prominent Canadian expert, would involve connecting the Lincoln Sea dispute to Ottawa's wider efforts to gain international support and acceptance for its stance in the Northwest Passage, a move that could bolster Canada's claim by adding Denmark's recognition of the Canadian position in the passage to the support already shown for it by Russia.\textsuperscript{234} It remains unclear, however, whether the other Arctic Ocean states, particularly the United States, would ever accept such a compromise solution, and, even more importantly, whether the Canadian government, having made such a fuss over the claim in the past, could persuade the Canadian public to surrender its national sovereignty claims over disputed areas in the Lincoln Sea, however small or insignificant they may be.

\section*{Hans Island}

A related disagreement between the Canadian and Danish governments, one that has persisted for nearly four decades and stands as Canada's only dispute over land territory above the Arctic Circle, involves the future ownership and control of tiny Hans Island, which measures just 1.3 square kilometers, and is not much larger than a rock, but is strategically located in the Kennedy Channel portion of Nares Strait that lies between northern Ellesmere Island and Greenland. Much like the Lincoln Sea controversy, the islet's fate was left undecided by the 1973 agreement between Canada and Denmark, which used the equidistance-line principle to delimit the ocean seabed and to establish the two countries' maritime border in Nares Strait, running halfway between their national coasts. Although a resolution of the Hans Island dispute would not affect the surrounding waters and maritime boundary, negotiations on the issue have been further complicated by the possible presence of large amounts of oil and gas off the island's shores.

Historically, the Danes, as summarized in this chapter's section on Denmark, have based their claim to Hans Island on certain geological and geomorphological evidence that they insist connects the area to the Greenland landmass and proves the icy knoll belongs to Denmark. This argument, according to former Danish minister for Greenland Tom Hoyem, is additionally supported by the islet's prior use “for centuries by Greenlandic Inuit,” who regarded it as an “integrated part of the Thule-Inuit hunting area.”\textsuperscript{235} In contrast, the Canadian government maintains that its title to the territory was included in the 1880 transfer of the North American Arctic Archipelago from Britain to Canada, and Ottawa has firmly based its longstanding claim on legally accepted “use and occupation” considerations of the island, such as its use as a Canadian scientific base during the Second World War and the subsequent establishment of a scientific camp on the territory in the early 1980s that permitted the Canadian firm Dome Petroleum to conduct geological research on Hans Island's north shore.\textsuperscript{236} Moreover, Canada has hotly disputed the relevance of Denmark's geological and geomorphological argument, which Ottawa maintains is only applicable to cases that involve a country's outer continental shelf beyond the two-hundred-mile limit. Canadian officials have also pointed out that the same Greenlandic Inuit who traversed Hans Island often traveled to Ellesmere Island as well, which is nonetheless universally accepted as sovereign Canadian territory.\textsuperscript{237}

Although few believe that the controversy could ever spill over into a deliberately planned armed conflict between Canada and Denmark, the frequent tension, military posturing, and sometimes sharp public exchanges between the capitals that it has triggered have led some observers to conclude that it has all the markings of a classic unintended “resource war scenario.” In 2005, for example, Canadian defense minister Bill Graham made an unexpected visit to Hans Island and declared

\begin{itemize}
  \item \textsuperscript{234} Ibid.
  \item \textsuperscript{235} Ibid.
  \item \textsuperscript{236} Ibid.
  \item \textsuperscript{237} Ibid.
\end{itemize}
that it “is part of the Canadian territory,” in response to Copenhagen’s earlier dispatch of an ice-strengthened frigate to assert Denmark’s claim over the island.\footnote{238} As tension continued to rise, the two nations’ militaries sent more frigates and an ice cutter, resulting afterward in a diplomatic stalemate. Though sometimes laughingly referred to as a “capture the flag” contest, the rivalry has a more serious side in that a failure to defend a territorial claim, however small, that might in time prove to be rich in hydrocarbons and other mineral resources, is only likely to provoke additional claims by other rivals in other sectors of the Arctic where national jurisdiction is, or may be in the future, disputed. Such “perceived passivity,” it has been argued, could also expose the government in power to considerable political criticism from its domestic adversaries.\footnote{239} Viewed within this context, any unfavorable settlement of the Hans Island disagreement would not only present Canada and its “ability to protect its northern interests as weak,” but could establish as well an important precedent in international law that could have serious negative repercussions for the country’s interests in other, potentially more difficult, disputes, such as those over the Beaufort Sea and the Northwest Passage.\footnote{240} This possibility also makes it unlikely that either side will merely surrender the island in the course of negotiations without the presence of a compelling, mutually beneficial compromise or trade-off.\footnote{241}

Nonetheless, the Hans Island feud is now predominantly being dealt with quietly by diplomats, and officials from both countries have recently emphasized their desire to negotiate a long-term settlement of the dispute. Possible solutions in this regard could include a straight division of the island, which would give Canada a remote land border with Europe, or shared sovereignty over the entire territory, similar to the case of Pheasant Island, for example, situated in an area between France and Spain.\footnote{242} Looking ahead, then, the challenge for Canada, as for other Arctic nations, will be one of how best to balance its ongoing concerns with respect to national sovereignty and resource management in the Arctic with the obvious need for better bilateral and multilateral frameworks for governance in the region as whole.

**Conclusion**

For the most part, Canada has been quick to recognize the long-term strategic importance of the Arctic, and to develop a coherent national plan to protect its interests in those portions of the Arctic where it already can lay claim, or hopes to in the future. This includes the articulation of an Arctic-oriented military strategy and the identification of current capability gaps among Canadian military forces that will need to be addressed if this strategy is to be implemented successfully. That said, Canada, much like other Arctic coastal states, is struggling with cuts and revisions to its defense budget, particularly in the procurement arena, that have slowed (if not halted) progress toward filling those capability gaps so identified. As a result, there is at the moment something of a mismatch

\begin{itemize}
  \item \footnote{239} Howard, The Arctic Gold Rush.
  \item \footnote{241} Byers, *Who Owns the Arctic?*
  \item \footnote{242} Ivison, “Hans Island Appears Headed for Joint Custody.”
\end{itemize}
between Canada’s stated goals for securing its Arctic territories and waterways and the resources currently available to support them. Perhaps for this reason, Canadian officials appear in recent months to have toned down their somewhat nationalistic, unilateralist, “use it or lose it” language regarding the Arctic, emphasizing a bit more the importance of diplomatic solutions to potential disputes and the value of bilateral (primarily with the United States via NORAD) and multilateral approaches (when possible through the Arctic Council) to the conduct of key military and/or emergency response missions (such as SAR and disaster relief) within the Arctic region. Nonetheless, given the stakes involved and the potential economic benefit to Canada, Ottawa will continue to view the security of the Arctic as a national strategic priority, especially under the recently re-elected Harper administration.

243 For example, Canada’s August 2010 Statement on Canada’s Arctic Foreign Policy identified the resolution of outstanding boundary disputes (principally with Denmark and the United States) as Ottawa’s top international priority in the Arctic. So, too, while polls indicate that a majority of Canadians see the protection of Arctic sovereignty as Canada’s top policy priority overall, and believe that military resources should be shifted to the Arctic from operations overseas, when increasing Canada’s military presence in the North is compared to funding for other key priorities (such as improved health care, educational services, environmental protection, disaster relief, and SAR), it ranks last among those priorities for Northern Canadians and next to last for Southern Canadians. Interview with Michael Byers, “Arctic Security: Fighting for True North,” Globe and Mail, January 25, 2011, http://license.icopyright.net/user/viewFreeUse.act?fuid=MT14MzU0NzU%3D.
The United States

Compared to the other four Arctic coastal states, the United States has been slow to react to the new geopolitical dynamics that are transforming the Arctic. Prior to the release of the George W. Bush administration’s “Arctic Region Policy” document, issued on January 12, 2009, as National Security Presidential Directive (NSPD)-66 and Homeland Security Presidential Directive (HSPD)-25 (or NSPD-66/HSPD-25, for short), there was no official U.S. policy statement specifically addressed to the implications of an increasingly accessible Arctic. Nor was there any formal guidance on how the country should respond to this new phenomenon in order to secure vital national interests, be they economic, environmental, scientific, diplomatic, or security-related in origin. Since NSPD-66/HSPD-25 was released, however, much has changed. Over the past three years, the geopolitics of the Arctic has become a hot topic of discussion in U.S. national security policy circles, and a number of important official assessments have been launched with the objective of defining America’s strategic priorities in the new Arctic just emerging and determining what they require in terms of a U.S. capacity to operate in the High North. This section provides a comprehensive overview of the post-NSPD-66/HSPD-25 debate on American policy toward the Arctic, identifying what is at stake, the nature of current proposals for action, and ongoing complications with their implementation. It begins with an in-depth look at American strategic interests in the Arctic, then reviews key U.S. Arctic policy initiatives and defense assessments since 2009, and concludes with an analysis of operational challenges and capability gaps that must be overcome if the United States is to sustain an effective presence in the High North.

American Strategic Interests in the Arctic

While relatively late in developing a detailed set of policies keyed to current developments in the Arctic, the United States did make it clear in the NSPD-66/HSPD-25 document, released during the last days of the Bush administration, that it was indeed “an Arctic nation, with varied and compelling interests in the region.” This included, the document continued, “broad and fundamental national security interests in the Arctic region,” such as an ability to conduct early warning and missile defense operations, deploy air and naval forces in support of strategic deterrence, carry out global airlift and sealift, maintain an overall maritime presence, and ensure freedom of navi-

navigation and overflight rights, as appropriate, throughout the Arctic. Not surprisingly, in the wake of the September 2001 terrorist attacks and subsequent U.S. focus on homeland defense (especially along the borders with Canada), this document also noted America’s “fundamental homeland security interests in preventing terrorist attacks and mitigating those criminal or hostile acts that could increase the United States vulnerability to terrorism in the Arctic region.”

Moreover, the U.S. government, the document stressed, was henceforth prepared to take concerted action, both unilaterally and in conjunction with other nations, to safeguard these multiple interests, and to secure, in particular, its sovereign rights as one of five Arctic coastal states, especially with regard to the exploitation of resources located within its exclusive economic zone and its extended continental shelf off the Alaskan coast.

Though long overdue in view of recent trends in the Arctic, these statements offered nothing very new or earth-shattering. The United States, after all, has been an “Arctic nation” ever since it purchased Alaska from Russia in 1867, and the Arctic region as a whole has long played a prominent role in U.S. national security planning, albeit perhaps in a more muted way, until just recently, after the fall of the Soviet Union. During the early days of World War II, for example, the prospect that Greenland, lying perilously close to America’s Atlantic coastline, might be seized by Germany and used as a staging post for attacks on the U.S. homeland or against transatlantic shipping, prompted President Roosevelt to strike an agreement with the exiled Danish government in April 1941 “to assist Greenland in the maintenance of its present status.” This task was to be achieved in part via the establishment of an American military presence on the island, as “the defense of Greenland against an attack by a non-American power is essential,” the agreement stated, “to the preservation of the peace and security of the American Continent.”

Later, in April 1951, as the Cold War took shape, Denmark and the United States signed a second agreement that paved the way for the construction of the Thule Air Force Base (AFB) on the northwest tip of Greenland, which was to serve throughout the 1950s as a key forward operating base for nuclear-armed long-range bombers assigned to the U.S. Air Force’s Strategic Air Command (SAC), America’s primary means of deterring the Soviet Union until the deployment of land-based intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) in the early and mid-1960s. The construction of Thule was based largely on the fact that the quickest way for SAC bombers to reach Moscow and the northern portions of the Soviet Union was to fly straight over the North Pole, and Thule lies at the halfway point between likely SAC air bases in the United States from which the bombers would otherwise depart and potential targets in the Soviet homeland. In addition, bomber operations launched from Thule were thought to be less vulnerable to attack by Soviet forces than those located along the periphery of the Soviet Union (in Europe, the Middle East, and the Pacific), and they were considered less likely to trigger local political opposition.

Apart from hosting American long-range bombers, Greenland assumed a key strategic defense role as well in 1958, when the Danish government approved the extension of the U.S.-Canadian Distant Early Warning (DEW) radar network (for detecting Soviet strategic bomber attacks) over to southern Greenland. The integration of Greenland into the DEW line (as it was called) was part of a broader upgrade to the system as a whole, linking some sixty radar stations across the northernmost land boundaries of North America from western Alaska through Canada to Greenland. The DEW line itself was eventually consolidated and substantially upgraded via a 4,800-kilometer-long string of fifteen long-range radars, thirty-nine short-range radars, and a number of maintenance and operational control centers, all tied together by means of an advanced communications network based on satellite and ground-based assets. Known as the North Warning System (NWS), these radars and supporting infrastructure have been managed and maintained since they became fully operational in 1993 – as the DEW line was in earlier times – by the

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245 The White House, NSPD-66/HSPD-25, “Arctic Region Policy,” 2. As maritime commerce, trade routes, and associated infrastructure develop in the U.S. and Canadian portions of the Arctic, potential targets and transit routes of interest to terrorist groups and criminal organizations wishing to enter and/or carry out attacks against North America will inevitably increase, posing greater homeland security-related risks. For this reason, the release of a joint NSPD/HSPD made eminent sense.


247 Ibid., 92-94.
U.S.-Canadian North American Aerospace Defense Command (NORAD) based in Colorado Springs, Colorado, and they still serve as an essential component of America’s overall airspace surveillance and air defense network. Moreover, the creation of U.S. Northern Command (USNORTHCOM) in 2002, co-located in Colorado Springs with NORAD and charged with primary responsibility for U.S. homeland defense, established a direct link between this relatively new, but increasingly important, post-9/11 mission area and the future of NWS operations. No doubt, homeland defense requirements also help to explain the decision in 2006 to add maritime warning (including broad coverage of the Arctic) to NORAD’s traditional air-space surveillance and alert responsibilities. Indeed, given that the opportunities for an adversary to enter U.S. and Canadian territory by sea through the Arctic will inevitably increase as the ice cap melts (and previously frozen sectors open up), defending the maritime approaches to North America will become all the more important. USNORTHCOM’s designation in April 2011 as the combatant command (COCOM) thereafter responsible for promoting the acquisition of Arctic military capabilities was simply a logical next step.

Hence, while the end of the Cold War largely eliminated the original reason for developing the North Warning System (to defend, first and foremost, against Soviet strategic bomber strikes sent over the polar region), the possibility of future terrorist-related intrusions by air or sea, or other illicit incursions (such as smuggling) into Alaskan and Canadian airspace and waterways that could pose a threat to the U.S. homeland, has given the NWS a new lease on life. To some extent, of course, Moscow’s decision to reestablish by the early 2000s the practice of conducting strategic bomber test flights close to the outer edge of U.S. and Canadian airspace has also played a role in restoring attention to the value of the NWS, even though such flights are not now considered a serious military threat or provocation by Washington or Ottawa. But whatever the precise mix of reasons, sustaining NORAD’s atmospheric early warning and air defense capabilities appears certain to remain a priority American interest with regard to the Arctic for some time to come (especially as the region as a whole becomes more accessible and more heavily trafficked), with the commander of the Alaskan NORAD Region (ANR), headquartered at Alaska’s Elmendorf Air Force Base outside Anchorage, managing forward defense and early warning operations as they apply to the protection of U.S. territory. The fact that the ANR commander serves concurrently as commander of

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249 While these flights are viewed as somewhat provocative (especially when paired with a number of rather strident comments by Russian officials about the scope of Russia’s claims to Arctic territories), most American and Canadian officials have tended to view them as fairly harmless posturing on Moscow’s part, and as an effort by Russia to signal that, after years of economic struggle, “it was back,” so to speak, as a global military power, buoyed by the higher oil and gas revenues it was receiving in the 2006–08 timeframe. Senior 11th Air Force commanders based at Elmendorf noted in 2008 that a good deal of tension surrounding Russia’s renewed strategic bomber flights could be eliminated if the Russians would simply follow traditional protocols and file a standard international flight plan when the aircraft involved are likely to approach another country’s sovereign airspace. Securing Russian agreement to do so remains an American goal in ongoing mil-to-mil dialogues with Russian Far East Military District commanders. Marc V. Schanz, “Strategic Alaska,” airforce-magazine.com 91, no. 11 (November 2008): 2–3, http://www.airforce- magazine.com/MagazineArchive/Pages/2008/November%202008/1108Alaska.aspx.
Alaska Command (ALCOM), a component command of U.S. Pacific Command (USPACOM), and as commander of the Eleventh Air Force (11 AF), a numbered air force of USPACOM’s Pacific Air Force (PACAF), means that he (or she) can draw on some of the U.S. Air Force’s most advanced fighter jets – including the F-22 Raptor – in the defense of Alaska and, by extension, the lower forty-eight states of the continental United States (CONUS). More specifically, the location of all three commands in Alaska, along with a number of NWS installations, confirms very concretely the importance of America’s Arctic outpost (and the military capabilities it hosts) to the overall security of the United States.

However, in addition to its importance for these early warning, air defense, and airspace/maritime surveillance missions, the Arctic has been, and will remain, central to U.S. defenses against ballistic missile attack, the threat of which increasingly supplanted that of Soviet strategic bombers once Moscow fielded ICBMs and SLBMs. Hence, for example, as Thule’s role in SAC offensive bomber operations came to an end in 1959, it was chosen as the deployment site for one of the three high-powered radars that made up America’s first Ballistic Missile Early Warning System (BMEWS), the other two sites being in Alaska (at the Clear Air Force Station near Anderson) and in Great Britain (at the Royal Air Force’s base at Fylingdales). Operational since 1961 and upgraded in the late 1980s (as were the other two sites shortly thereafter) with a more advanced phased-array radar, the BMEWS at Thule, together with the facility at Clear Air Force Station, solidified the Arctic’s key and ongoing role in U.S. strategic defense planning in the era of ballistic missiles. Moreover, both facilities, along with the more recent deployments of an X-band radar (able to track and identify warheads, decoys, and debris in space with very high precision) on the island of Shemya in the Aleutians and some twenty ground-based mid-course interceptor missiles at Fort Greely in Alaska, are (or soon will be) contributing directly to the U.S. national missile defense program, elevating still further the importance of military assets based in the Arctic and High North to the strategic defense of CONUS. Thule Air Base also hosts an Air Force satellite network control facility, the world’s northernmost deep-water port, a ten-thousand-foot runway with radar approach control, and a twenty-million-gallon fuel farm, all unique and central to a range of U.S. military operations both within and beyond the Arctic.

A principal vector for medium-range and intercontinental ballistic missile attacks originating from Russia, China, North Korea, or even Iran, the Arctic – and Alaska in particular – is, as the deployments noted above suggest, an ideal location for missile defense systems designed to handle current and emerging threats, and future upgrades to existing missile defense systems in Alaska can almost certainly be expected. Given that the Arctic is principal...

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**Geostrategic Advantages of Alaskan Missile Defenses**

Alaska is the closest part of the United States to potential North Korean and Iranian ICBMs

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250 ALCOM is assigned a variety of active and reserve units forces from across the military services, many of which have an Asia-Pacific focus (given that ALCOM is a component of PACOM), but participate as well in numerous training and civil support activities within Alaska. The key point here is that whatever their other duties these forces, based on where they are located, constitute an important first line of defense for the United States as a whole. In this sense, Alaska serves in the Arctic, as Japan does in the Far East, as the “unsinkable aircraft carrier,” hosting a powerful combination of forward-deployed forces in a region of longstanding (and now rising) strategic importance. Interestingly, perhaps triggered by USNORTHCOM’s designation as the lead COCOM advocate for Arctic capabilities, exploratory staff talks have begun between USPACOM and USNORTHCOM to discuss, among other topics, the potential transfer of ALCOM to USNORTHCOM jurisdiction.

ly a maritime domain, it is also likely to be viewed as an especially attractive operating environment for sea-based missile defense platforms (such as the U.S. Navy’s Aegis-equipped cruisers and destroyers) as they come on line and as the Arctic seas expand and become more navigable. This, in turn, will reinforce the need to ensure maritime mobility and freedom of navigation for U.S. ships throughout the Arctic Ocean, including the right of transit passage through international straits (such as the Northwest Passage and parts of the Northern Sea Route). This requirement, of course, has long been a priority insofar as ballistic missile submarines (SSBNs) are concerned, in view of the fact that the Arctic Ocean, situated among the continents of North America, Europe, and Asia, and in close proximity to U.S. territory, makes it particularly attractive as well for submarine patrols. SSBNs, the most survivable leg of America’s offensive nuclear deterrent, have, in fact, operated in Arctic waters and under the ice cap (where they are virtually undetectable) ever since the first transarctic voyage by the USS Nautilus in 1958. In this sense, the Arctic remains as important for the offensive leg of the U.S. nuclear deterrent as it does for the defensive leg, if not more so. This most likely accounts as well for the fact that of all of America’s strategic interests outlined in the January 2009 NSPD-66/HSPD-25, “freedom of the seas” was the only one singled out as “a top national priority.”

For the moment, of course, “submarine navigation is still the safest, quickest, and most efficient method” of maritime passage through the Arctic. Surface ships, both military and commercial, remain highly vulnerable to the harsh weather conditions that prevail in the Arctic (including extreme wind chill, topside icing, and freezing fog), and few have the capacity to operate with confidence in ice-infested waters, let alone force their way through thick pack ice. However, as temperatures continue to warm, the ice melts, and new waterways open up in the Arctic Ocean, strategic mobility and maneuverability throughout larger portions of the Arctic will become a more realistic option for surface ships, a development of global importance to the military in particular, “since the seas are interconnected and form a single world ocean” highway. Under such conditions, steaming through the Arctic, for example, could cut days or weeks off the transit times for U.S. heavy sealift operations, significantly enhancing America’s capacity to surge forces to virtually any corner of the globe and to sustain them once there. In addition, using “increasingly ice-free” Arctic routes could greatly improve “crisis response times and accelerate time-phased force deployment schedules for moving military forces from one theater to another.” Over time, therefore, power projection in and through the Arctic will almost certainly become a higher priority interest for the U.S. Navy, just as transarctic shipping routes are expected to attract a larger proportion of the world’s seaborne trade by 2030 and beyond.

That said, power projection from and through the Arctic, in part via bases in Alaska, is not now, and will not in the future be, solely (or even primarily) a naval consideration. Alaska’s geostrategic position near the polar intersection of three continents makes it a near perfect location as well for deploying modern airlift and fighter/bomber platforms for intercontinental missions. From Alaskan bases, the Air Force can be assured of quick access to both the Pacific and European theaters, an operational responsiveness that continues to place Alaska at the top of the list for Air Force infrastructure investment. Crossing the Arctic, F-22s, for example, can reach Europe faster than flying from the east coast of the United States. Operating from bases in Alaska, moreover, they are closer to Japan, South Korea, and China than they would be operating from the west coast of the United States, and no more than eight hours’ flight time from anywhere in the Northern Hemisphere. This is most likely the reason why the Air Force currently plans to deploy at least 25 percent of its F-22 fleet in Alaska, and that number will almost certainly increase in years to come if sufficient funding can be found.

Similar advantages of time and space also apply to Alaskan-based C-17 Globemaster transport aircraft, which can reach Germany in eight hours by going over the North Pole, and can reach virtually any other critical location in

253 Ibid., 261.
the world in less than ten hours flying from Elmendorf AFB. In earlier days, C-17s flying from CONUS would have to lay over in Alaska or Hawaii before heading to Asia to allow for crew swaps or rest, so deploying directly from Alaska brings them at least a day closer to most destinations across the Pacific. It is small wonder then that a substantial portion of the relief supplies sent to China after the May 2008 Sichuan earthquake and to Japan after the March 2011 tsunami were transported by C-17s based in Alaska. These and similar examples offer at least partial contemporary proof to the claim made back in 1935 by early American airpower enthusiast Brigadier General Billy Mitchell that Alaska was “the most strategic place in the world.”

It has, in any event, become a key hub in the American military’s global force management system, and its value in that regard can only grow as the Arctic becomes more accessible and as it plays host to an expanding array of military and commercial activities. The fact that Alaska, with its small population, limited commercial air traffic, sprawling airspaces, and wide room for maneuver, has also emerged as a unique and highly prized training area for joint military exercises is simply an added bonus.

Moreover, the advantages that Alaska and the Arctic as a whole appear to offer with regard to maritime and airpower operations are likely to work to the relative benefit of the United States (in comparison to other major powers), given that America currently maintains (and is likely to maintain into the foreseeable future) the most sophisticated logistical capabilities in the world, especially in the military realm. Effectively exploiting these advantages, however, will also impose additional requirements and obligations on U.S. military forces. Insofar as requirements are concerned, those forces most likely to be operating in the Arctic—especially the maritime services (including the U.S. Coast Guard)—must develop a more robust capacity to operate in Arctic conditions, including greater cold-weather training and at some point the procurement of ice-strengthened ships (if not icebreakers). Further, with increased activity in and over Arctic waters, the U.S. military’s knowledge base will need to be improved significantly with regard to the evolving operational environment in the Arctic (including newly accessible, uncharted waterways), as will the military’s ability to conduct search and rescue, disaster response and relief, and environmental security operations, among other essential missions, within the Arctic region. In this context, building a greater capacity for maritime domain awareness (MDA)—broadly defined as the ability to detect, track, and understand, on a 24/7 and year-round basis, any developments in the maritime domain that may affect the safety, security, economy, or environment of the United States—looms as an especially critical requirement and obligation for U.S. forces assigned to the Arctic. These and related operational needs are covered in far greater detail later in this section, the key point here being that establishing an Arctic-capable military is, in and of itself, an American strategic interest of rising importance.

Finally, beyond these military-related issues, identifying, protecting, and assuring proper access to (and, under the right circumstances, the safe exploitation of) the bountiful natural resources located in the Alaskan Arctic are also matters of strategic priority. As the Bush administration’s 2009 “Arctic Region Policy” document put it, “defining with certainty the area of American strategic interest of rising importance.

### Notes

256 Schanz, “Strategic Alaska,” 4–5. According to Schanz, Alaska has become “premier fighter training ground,” especially for the F-22 Raptor. Partly for this reason, annual Alaska-based joint exercises in which the Raptor is featured, such as Northern Edge and Red Flag-Alaska, are prompting increased investment in a network of training facilities (largely Air Force-oriented) known as the Pacific Alaskan Range Complex.


indicate that the United States may be eligible to claim one of the largest ECS sectors in the world, measuring two to three times the size of California, extending as much as 240 nautical miles beyond the EEZ, and covering what is believed to be some of the richest undiscovered hydrocarbon reserves in the whole Arctic. Indeed, according to the U.S. Geological Survey, the Alaskan Arctic zone may contain over thirty billion barrels of technically recoverable oil (or almost twice as much as has already been produced from the North Slope), and some 221 trillion cubic feet of conventional natural gas. Another 85.4 trillion cubic feet of undiscovered but recoverable natural gas resources may also be found in Alaskan gas hydrate deposits located on the North Slope and just offshore (as shown on the map above), though a good deal of these deposits likely lies within the National Petroleum Reserve-Alaska (NPRA) – where drilling and production are very strictly controlled and limited – and the Arctic National Wildlife Refuge (ANWR), where all drilling and production activity is currently prohibited.

Moreover, in addition to these oil and gas reserves, the Alaskan Arctic holds sizeable coal and, as the “Arctic Region Policy” quotation above suggests, non-fuel mineral deposits when gas and water are locked into an icy solid that is formed at very low temperatures. Until recently, hydrates were considered an unconventional source of gas that could not be easily produced, but new technologies now make their extraction feasible and increasingly cost-effective. According to a 2010 USGS estimate, the NPRA and adjacent state waters may contain as many as 896 million barrels of conventional, undiscovered oil (substantially less than the 10.6 billion barrels estimated by the USGS in 2002), as well as 53 trillion cubic feet of conventional, undiscovered natural gas (down from the 621 trillion cubic feet estimated in 2002). See USGS, “USGS Oil and Gas Resource Estimates Updated for the National Petroleum Reserve in Alaska (NPRA),” October 26, 2010, http://www.usgs.gov/newsroom/article.asp?id=2622. Estimates for the ANWR are less precise, with a 1998 USGS projection ranging from 5.7 billion to 16 billion barrels of technically recoverable crude oil and natural gas liquids, with a mean estimate of 10.4 billion barrels. See USGS, “Arctic National Wildlife Refuge Petroleum Estimate 1998,” http://pubs.usgs.gov/fs/fs-0028-01/fs-0028-01.pdf.


260 Gas hydrates (commonly found in the form of methane hydrates) are created when gas and water are locked into an icy solid that is formed at very low temperatures. Until recently, hydrates were considered an unconventional source of gas that could not be easily produced, but new technologies now make their extraction feasible and increasingly cost-effective.

The United States

The Atlantic coastline, and elsewhere (including in parts of Alaska) following President Obama’s proposals announced in May 2011 to boost domestic production, oil imports may well decline to around 50 percent of consumption by 2015, but they are expected to rise again to about 55 percent (and possibly higher) by 2030. Being able to tap into the extensive hydrocarbon reserves of the Alaskan Arctic, therefore, may be the only way to cap and hopefully reduce America’s reliance on foreign oil, developments that would hold, for obvious reasons, wide-ranging implications as well for U.S. foreign policy and national security planning.

In summary, then, the importance of Alaska and its associated airways and waterways to the forward defense of CONUS, together with its utility as a key staging area and launch point for U.S. military operations both within and well beyond the Arctic, provides the primary rationale for maintaining a relatively robust American military presence in Alaska and for developing a greater capacity to operate more effectively in the Arctic more generally. Added to these considerations is the rising importance of Arctic sea lanes to future maritime commerce, as well as the projected value of the oil, gas, and other natural resources likely to be found in the Alaskan Arctic, all of which simply reinforces the incentives for America to sustain such a presence and around Alaska, to assert (where appropriate) its sovereignty within the Arctic, and to improve its overall ability to conduct a variety of civil support and more traditional military missions under Arctic conditions. None of this, of course, is to suggest that the United States now faces or soon will face any serious security challenges in the Arctic.


What it does point to, however, is the need for prudent, forward-looking planning on how best to protect American strategic interests in or associated with the Arctic against an array of risks and emergency situations— including oil spills and other disasters at sea, as well as piracy, illicit trafficking, terrorism, and possibly even more traditional military challenges (such as ballistic missile threats)— that are likely to come to the fore over the longer term, as the geophysical and geostrategic trends currently at work in and around the Arctic take a more concrete shape. At the diplomatic level, establishing a stronger capacity to influence events in the Arctic will also place the United States in a better position to engage effectively with Russia over Arctic policy, and to facilitate cooperation in the Arctic with the Nordic states, NATO, the European Union (EU), and other key institutional stakeholders, as well as with Canada and major Asian powers (such as China) with a rising interest in the Arctic.

**Recent U.S. Policy Initiatives and Service Assessments**

While slow to develop (compared to the efforts of other Arctic coastal states), American policy making with regard to the Arctic has quickened significantly, particularly insofar as military requirements are concerned, since the release of NSPD-66/HSPD-25 in January 2009. For its part, the NSPD-66/HSPD-25 document offered a long overdue, whole-of-government and, where appropriate, multilateral approach to protecting American interests in the Arctic, including the promotion of a cooperative regional governance structure based largely on a strengthened Arctic Council and the eventual ratification of the UN Convention on the Law of the Sea by the U.S. Senate (about which more is said later). Top billing is given to more concerted efforts by the Departments of State, Defense, and Homeland Security, in coordination with other relevant executive agencies and offices, to “meet national security and homeland security needs” within the Arctic region, but to do so in ways that also protect the Arctic environment, conserve biological resources, ensure sustainable development of natural resources, facilitate safe and reliable maritime transportation, and encourage cooperation among the eight Arctic nations and other key stakeholders. 

At the same time, NSPD-66/HSPD-25 states quite clearly that the United States is prepared to operate independently if the situation requires to safeguard its many interests in the Arctic, which requires, in turn, “a more active and influential national presence...to project sea power throughout the region.” In this context, freedom of the seas is singled out, as noted earlier, as “a top national priority,” and both the Northwest Passage and parts of the Northern Sea Route are defined as “straits used for international navigation” where the rights of transit passage apply. Moreover, to preserve America’s rights in that regard, and to implement the policy outlined above, the Departments of Defense and Homeland Security in particular were directed to increase Arctic maritime domain awareness and to develop greater capabilities to operate in the Arctic on land, in the air, and at sea.

Not surprisingly, second billing in the NSPD-66/HSPD-25’s list of priorities was reserved primarily for matters of economic and energy security, especially the identification of oil and gas reserves and their commercial exploitation in an environmentally sound and responsible manner. With regard to protecting U.S. sovereign rights to hydrocarbons and other resources in the Arctic seabed and subsoil, the secretary of state, in concert, again, with the heads of other relevant executive agencies and offices, was tasked with defining, “to the full extent permitted under international law,” the outer limit of America’s extended continental shelf and with resolving the boundary dispute with Canada in the Beaufort Sea, an area, as noted earlier, thought to be rich in oil, gas, and other mineral deposits. With an eye no doubt on the prospect of more fully tapping unconventional gas hydrates located along Alaska’s North Slope, NSPD-66/HSPD-25 also emphasized identifying opportunities for international cooperation on the production of gas supplies from methane hydrates and the cost-effective transport of those supplies, most likely by ship, to U.S. and other gas distribution systems. Given that the future extraction and shipment of Arctic-based fuel and non-fuel minerals are likely to generate a significant increase in maritime traffic within and through the Arctic, the NSPD-66/HSPD-25 also devoted considerable attention to the need to develop a more

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268 Ibid.
269 Ibid., 4.
sophisticated Arctic waterway management and safety system, to include traffic management schemes (especially for the Bering Strait and other Arctic chokepoints), navigation aids for ice-infested trade routes, response agreements for oil spills at sea and potential pollution by other hazardous materials, and, perhaps most importantly, search and rescue capabilities optimized for cold-weather conditions.

However, as an eight-page guidance document, the NSPD-66/HSPD-25, while a real breakthrough for U.S. policy on the Arctic, was rather long on generalities and short on details. Insofar as national security policy is concerned, this is also the case with respect to the Department of Defense’s February 2010 Quadrennial Defense Review (QDR) and May 2010 National Security Strategy (NSS), both of which took note of the 2009 NSPD-66/HSPD-25, affirmed the existence of broad and fundamental U.S. national interests in the Arctic region, and called on the Department of Defense (DoD) and its interagency partners to work together to address key capability gaps—especially in communications, domain awareness, and search and rescue—that may hamper Arctic operations and complicate homeland defense.270 Similar to NSPD-66/HSPD-25, the QDR and the NSS also stressed the importance of international collaboration with other Arctic nations and institutions to ensure that the Arctic was more likely to become a zone of cooperation than a zone of competition, with the QDR pointing in particular to “the future of the Arctic” as an issue on which U.S.-Russian cooperation was not only desirable, but increasingly feasible.271 That said, the task of translating such basic guidance into operational details and ensuring proper cross-departmental coordination was delegated to a number of interagency committees, the most important being the Arctic Policy Group (APG) led by the Department of State and focused on developing unified U.S. policy positions at the Arctic Council, the Ocean Policy Task Force led by the White House Council on Environmental Quality (CEQ) and charged with ensuring good stewardship of the oceans and U.S. waterways, and the Arctic Interagency Policy Committee, which is run jointly by the National Security Council and the CEQ and has assumed, as of 2010, the lead role for “putting meat” on the NSPD-66/HSPD-25’s “bones.”

Much of what this committee approves, moreover, is the product of in-depth assessments undertaken by individual federal departments and constituent organizations with a primary interest in (and responsibility for) creating a safe, secure, and stable environment in the Arctic that safeguards U.S. national interests and helps to protect the U.S. homeland. Given, again, the largely maritime nature of the Arctic environment, the U.S. Navy and the U.S. Coast Guard were among the first governmental stakeholders to take a serious lead in that regard, just as they were (along with the U.S. Marine Corps) among the first to acknowledge the strategic importance of an increasingly accessible Arctic. Indeed, in a joint document on maritime strategy released in October 2007, the three maritime services explicitly noted that the gradual opening up of new waterways in the Arctic was paving the way “not only to new resource development, but also to new shipping routes that may reshape the global transport system,” and that “while these developments offer opportunities for growth, they also are potential sources for competition and conflict for access and natural resources.”272 For its part, the Navy benefited from an additional push to examine more closely the security implications of a more navigable Arctic following the publication of a much-discussed February 2009 article in the U.S. Naval Institute’s Proceedings magazine by the oceanographer of the Navy that called upon the Navy to address the new challenges it would soon face in “an increasingly ice-free Arctic...that will, no doubt, see fewer barriers to access by potential adversaries in the future.”273 Some three months after this article was published, the chief of naval operations (CNO), Admiral Gary Roughead, convened a meeting of the CNO Executive Board to discuss the likely impact of a changing Arctic on future naval policy, strategy, force structure, and investment, the upshot of which was the creation of Task Force Climate Change (TFCC) in May 2009 charged with developing an Arctic roadmap for the Navy. The result of TFCC’s efforts, aptly named the U.S. Navy Arctic Roadmap and approved by

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271 Department of Defense, QDR Report, 62.
the vice CNO, Admiral J.W. Greenert, in November 2009, laid out a chronological list of Navy action items, strategic objectives, and desired outcomes regarding the Arctic for the five years through fiscal year (FY) 2014.274

274 Formally established on May 15, 2009, TFCC consists of a flag-level executive steering committee led by the oceanographer of the Navy, the Navy Climate Change Coordination Office, and several action-oriented working groups. A core group is composed of representatives from various offices within the CNO’s staff, the fleet, the Coast Guard, and the National Oceanic and Atmospheric Administration (NOAA). Additional support as needed is drawn from the joint staff and various interagency, international, scientific, and academic organizations, all working in an advisory capacity. The chair of TFCC briefs the CNO on a regular basis, generally at least once a month, on progress made to date.

More specifically, the roadmap lays out a science-based, phased strategy to ensure that Navy decisions are taken and investments made in accordance with sound scientific judgments about likely changes in the Arctic and what those changes mean for Navy missions in the Arctic and the capabilities needed to execute those missions. The overall aim, as described by the current oceanographer, Rear Admiral David Titley, who chairs TFCC, is to establish a timeline for action, tempered by fiscal

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<th>FOCUS AREA</th>
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<th>FY 14</th>
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<tr>
<td>Strategy, policy, missions, and plans</td>
<td>Analysis of the strategic environment</td>
<td>Mission analysis</td>
<td>Navy UCP position</td>
<td>ID strategic objectives</td>
<td>Discussions with USCG and Arctic nation navies</td>
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<td>Operations and training</td>
<td>CS-21 implementation plan for the Arctic</td>
<td>Arctic considered in Navy strategic plan</td>
<td>Formalize new/expand existing agreements with USCG and Arctic nation navies</td>
<td>Implement new/revised agreements with USCG and Arctic nation navies</td>
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<td>Investments</td>
<td>Naval Arctic capability CBA</td>
<td>ID S&amp;T needs</td>
<td>Sponsor program proposals for POM-14 consider Arctic requirements</td>
<td>POM-14 execution</td>
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<td>Strategic communications and outreach</td>
<td>Strategic communications plan</td>
<td>Communication implementation: consistent message to media and public</td>
<td>POM-14 Arctic environmental assessment and outlook report</td>
<td>Expand Arctic UUV ops for observation</td>
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<td>Environmental assessment &amp; prediction</td>
<td>CBA for Arctic observation and prediction</td>
<td>Numerical prediction agreement and implementation with NOAA, NASA, DOE</td>
<td>Environmental planning documentation</td>
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<td>National ocean policy/marine spatial planning development</td>
<td>Continue SCICEX Science Accommodation Missions when operationally feasible</td>
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at that time, interstate tensions and the potential for conflict could, of course, increase, but the recent Norwegian-Russian agreement on the borders of their respective EEZs in the Barents Sea was a welcome sign, in TFCC’s view, that such longstanding disagreements could, and probably will, be resolved peacefully. In the meantime, the low probability of any serious rivalry in the Arctic before 2030, and the still manageable (if nonetheless rising) prospect of serious emergencies requiring military assistance in that same timeframe, gave the Navy, according to TFCC analysis, sufficient time to determine the range of missions it might plausibly be called upon to perform in the Arctic and, perhaps more importantly, to develop the skills and field the capabilities that might be needed.

Further on the last point, TFCC has already conducted a fairly detailed Arctic-oriented mission analysis, and it is scheduled to complete an Arctic capability analysis –

![U.S. Navy Arctic Mission Analysis](image)

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<tr>
<th>U.S. Navy Arctic Mission Analysis</th>
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<tr>
<td>strategic deterrence</td>
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<td>ballistic missile defense</td>
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<td>HA/DR</td>
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<td>DSCA</td>
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**High**  
Navy has primary role in Arctic, and mission is very relevant in Arctic

**Medium**  
Navy has secondary role in Arctic, and mission is very relevant in Arctic or

**Low**  
Navy has primary role in Arctic, and mission is somewhat relevant in Arctic

Mission not likely to be relevant in Arctic


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commonly referred to as the capabilities-based assessment, or CBA — by 2012. With regard to the mission analysis, the chart below summarizes TFCC’s judgments about which particular missions are likely to become more important between 2010 and 2040, and the degree to which the Navy will be expected to play a primary, secondary, or minimal role in their execution. Not surprisingly, those missions that are expected to rise in importance and require a greater contribution from the Navy by 2030 and thereafter include basic maritime security, maritime domain awareness, search and rescue, regional security cooperation (including more exercises with allies), ballistic missile defense, and humanitarian assistance/disaster relief (HA/DR) operations, with the Navy slated to play a primary role in missions related to regional security cooperation and HA/DR and largely a secondary (but still important) role in the others. As for strategic deterrence and force projection missions, these were considered primary roles for the Navy but less relevant in the Arctic than the others during the 2010–2040 period. All of the missions listed, however, were viewed as important to achieving the Navy’s overarching strategic objectives in the Arctic as approved by the CNO in May 2010: to contribute to safety, stability, and security in the Arctic; to safeguard U.S. maritime interests in the region; to protect the American people, critical infrastructure, and key resources; to strengthen existing cooperative relationships in the Arctic and foster new ones; and to ensure Navy forces are capable and ready to operate in the Arctic when needed.276

Based on the Navy’s Arctic mission analysis, the CBA includes a needs assessment for the performance of priority missions, with an emphasis on identifying a range of options (rather than a single solution) to address key capability gaps. To ensure as realistic an assessment as possible, TFCC is examining likely mission requirements in the context of a plausible Arctic security scenario in the areas of responsibility (AORs) of each of the three Arctic-oriented combatant commands — namely, USNORTHCOM, USEUCOM (U.S. European Command), and USPACOM.277

Few details have been made publicly available, but it is known that the CBA has identified twelve mission areas where a capability gap is likely and that it has gone on to rank the potential severity of each gap for priority mission performance in the three COCOM scenarios. The results are illustrated in very broad terms in the chart above, with four mission areas — specifically, the Navy’s ability to provide deployed forces with timely and accurate environmental information, the ability of maritime aircraft to maneuver safely in the air, the ability of surface ships to maneuver safely at sea, and the Navy’s overall capacity to conduct effective training, exercises, and education in Arctic conditions — standing out as particular causes for concern. As these four examples suggest, a good deal of these and other capability gaps identified so far are tied to the harsh climatic conditions of the Arctic, though difficulties also arise, the CBA stresses, from the general lack of ground-based infrastructure and related facilities in the Arctic that would be needed to support maritime operations and from the lack of adequate satellite coverage at the Arctic’s high latitudes.

Based on Mission Area Impact

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<th>Mission Area Impact</th>
<th>Average Score</th>
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<tr>
<td>provide environmental information</td>
<td>![Rating]</td>
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<tr>
<td>maneuver safely in air</td>
<td>![Rating]</td>
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<tr>
<td>maneuver safely on sea surface</td>
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<tr>
<td>conduct training, exercise, education</td>
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<tr>
<td>sustain the force</td>
<td>![Rating]</td>
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<tr>
<td>establish lines of communication</td>
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<tr>
<td>provide reliable high data rate communications</td>
<td>![Rating]</td>
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<tr>
<td>provide accurate navigation information</td>
<td>![Rating]</td>
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<tr>
<td>maneuver safely or quickly on ground</td>
<td>![Rating]</td>
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<td>operate kinetic weapons</td>
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<td>disrupt enemy weapon systems</td>
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277 With the COCOM changes announced in April 2011, USPACOM is no longer responsible for an Arctic AOR, but the USPACOM scenario certainly remains relevant, given that the USPACOM AOR abuts Russian Far East territory and waters that lead into the Arctic.
Within this context, a recent Senate hearing on U.S. economic interests in the Arctic, held in late July 2011, briefly discussed some of the High Latitude Study’s preliminary findings, noting in particular that the service’s review of critical capability gaps in persistent icebreaker coverage in the high Arctic has determined that the Coast Guard would require a minimum of three medium and three heavy icebreakers to meet all of the agency’s statutory missions, together with four additional icebreakers required to maintain a continuous American presence in the polar regions. The Coast Guard’s commandant, Admiral Robert Papp, testified during the hearing that another crucial concern examined in the service’s study involves the current lack of preparedness to respond to a major oil spill in the Arctic Ocean. Papp warned that although Coast Guard forces have exercised the Vessel of Opportunity Skimming System (VOSS) and the Spilled Oil Recovery System (SORS) in Alaskan waters, the crews have yet to conduct exercises north of the Arctic Circle and that, furthermore, the agency at present has no base from which to mount a response to an oil-spill emergency in the icy waters of the Beaufort and Chukchi Seas, located north and northwest of Alaska, where Royal Dutch Shell plans to drill exploratory wells beginning in 2012. As traditional mechanical responses to offshore spills are deemed unusable in broken-ice conditions, new methods would need to be developed and used, and while America does have a National Oil Spill Response Test Tank Facility, where new techniques for dealing with oil spills are being introduced and tested, officials point out that “it’s not exactly Arctic conditions; it’s New Jersey conditions.”

In an effort to alleviate this gap somewhat, Alaska senator Mark Begich recently proposed a bill that would increase the per-barrel fee for oil production by three cents for domestic oil and seven cents for foreign oil, potentially raising as much as $300 million annually to fund Coast Guard and other government agencies’ efforts to research, prevent, and respond to oil spills in areas of the extended continental shelf.

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281 Papp, “Defending U.S. Economic Interests in the Changing Arctic: Is There a Strategy?”

282 Emmerson, The Future History of the Arctic.
Although a preliminary draft version of the Coast Guard’s polar operations High Latitude Study has been distributed for internal and congressional review, it remains unclear as to when the document might be publicly released, in large part because White House budget officials are reluctant to endorse the study’s apparent call, however sensible it may be, for a dramatic increase in Coast Guard funding and icebreakers, given the high costs associated with vessel procurement, particularly at a time when the government at large is looking to shrink the budget in the face of severe financial constraints. At the same time, congressional lawmakers have expressed increasing frustration with what they have termed as the Coast Guard’s bureaucracy and its “inability to provide up-to-date budget and fleet plans and mission studies,” and have repeatedly tried to compel it to issue a plan to recapitalize the aged icebreaker fleet, deciding to withhold as much as $75 million in Coast Guard appropriations in May 2011 until the service provides Congress with the High Latitude Study and several other reports. As one Capitol Hill analyst described the situation succinctly, Coast Guard officials sorely need to ask for more assets to carry out the vastly expanded set of missions the agency has acquired over the past decade, but “they don’t want to be insubordinate,” as they have been told “to support the president’s budget.”

To further illustrate this point, though not specifically related to the Arctic, a comprehensive Coast Guard fleet-mix analysis published in April 2011 showed clearly that despite the agency’s procurement of some new planes and vessels in recent years, its current force of ships and aircraft in latitudes below the Arctic Circle remains insufficient to fulfill its missions, indicating the need for more assets that would naturally cause a further cost growth. As the commandant recently remarked, “The challenge is that these proposals that are in the fleet-mix analysis are based on an unconstrained budget environment, which we are not in,” leading to “some consternation for folks” that Coast Guard officials are trying to work through, sometimes by looking for possible trade-offs for their needs due to fiscal constraints, as with the current fleet-mix review, or by delaying decisions on hard issues as a deflection strategy.

As for other Arctic-oriented initiatives, however, the Coast Guard has continued to update its Waterways Analysis and Management System to determine navigational requirements, vessel traffic density, and appropriate ship-routing measures. As part of this effort, the service initiated in 2010 the so-called Bering Strait Port Access Route Study (PARS), which aims to analyze navigational and vessel traffic in the Bering Strait to determine the need for new vessel-routing measures and safety requirements that could decrease the likelihood of, and attendant need for Coast Guard response to, potential collisions, oil spills, and other emergencies, including possible accidents by foreign-flagged ships that traverse the narrow Bering Strait. The study is not scheduled for completion until at least the end of 2012, especially since the Coast Guard would need to coordinate with Russia before forwarding any conclusions to the IMO for consideration. In the meantime, the Department of Homeland Security’s Science and Technology Directorate, in cooperation with the U.S. Arctic Research Commission, is also assisting the Coast Guard in examining its future needs for Arctic infrastructure, communications, and sensors.

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284 Ibid.
285 Ibid.
A third study that deserves specific mention is the Department of Defense’s May 2011 Report to Congress on Arctic Operations and the Northwest Passage, which was mandated by the House Armed Services Committee as part of the FY 2011 National Defense Authorization Act (NDAA). Prepared by the Office of the Under Secretary of Defense for Policy and formally sent to Congress in early June 2011, the report provides a useful summary of U.S. national security objectives in the Arctic as seen from a DoD-wide perspective, and it identifies a number of current and potential gaps in military capabilities and infrastructure that could hamper operations in support of these objectives in the near-term (2010–20), mid-term (2020–30), and long-term (beyond 2030) future. Not surprisingly, key gaps singled out in the report (all of which are discussed in greater detail later this section) are similar to those mentioned in the Navy’s Arctic Roadmap and in recent press reports and congressional testimony on preliminary conclusions of the Coast Guard’s High Latitude Study. They include, most notably, ongoing shortfalls in ice and weather forecasting that could provide more precise data on the operating conditions military forces are likely to face in the Arctic; limitations in C4ISR due both to a lack of assets in and/or dedicated to the region and to the effect of the Arctic’s harsh climatic conditions; America’s still limited inventory of ice-capable ships, including both icebreakers and ice-strengthened surface vessels, none of which exist in the Navy’s current inventory and only a few in the Coast Guard’s; and the spotty nature of shore-based infrastructure and support facilities that would be required for safe and persistent military operations.286

Some of these shortfalls, the report suggests, could be eased by sustained cooperation with Canada, which shares many interests in the Arctic with the United States and remains a vital partner in the region, in part via its joint leadership of NORAD and Canada Command’s close collaboration with USNORTHCOM. The challenge, however, given competing demands on a shrinking defense budget, will be, the report goes on to say, to invest in potential solutions, either unilaterally or in coordination with others, in a way that tracks with the pace of change and increased human activity in the Arctic, but also remains sensitive to (and in sync with) the demands for additional investment to support U.S. operations in other important regions and military domains. In this sense, the United States, it was argued, must “balance the risk of being late-to-need with the opportunity cost of making premature Arctic investments.”287 Over the near to mid-term, moreover, DoD, it was further suggested, will probably be able to make do with its current force posture in the Arctic, which is judged by the report to be adequate to handle most likely contingencies, at least until 2020 and perhaps until 2025 or 2030. Indeed, precisely because the changes now in process in the Arctic that will eventually make it an increasingly important strategic crossroads are, in the words of a key DoD official responsible for the report, “slow onset, [U.S. planners] have the ability to shape how that happens…and to move forward in a measured and strategic way.” The downside, however, the report acknowledged, is that it is likely to remain difficult as well “to mobilize public or political support for investments in U.S. Arctic capabilities or infrastructure absent a clear and immediate need for them,” given that “the extent, impact, and rate of climate change in the Arctic are uncertain, and may not unfold in a linear fashion.” The danger here, which the report does not directly address and for which it can be legitimately criticized, is that the current tendency within much of the U.S. national security community to view the Arctic as a “peripheral interest” may become more permanent and influential than would otherwise be prudent, and that needed investments – be they ice-strengthened ships, essential onshore facilities in the High North, or the fielding of adequate cold-weather technologies – will indeed be “late-to-need.”

Better news for those who advocate a more robust American posture in the Arctic was the recent decision by the secretary of defense and the chairman of the Joint Chiefs of Staff, approved by President Obama in April 2011 and explained in some detail in the DoD report released in June, to adjust, as part of Unified Command Plan 2011 (UCP 2011), the geographic areas of responsibility (AORs) of the three COCOMs – USPACOM, USNORTHCOM, and USEUCOM – that had been responsible up to that point for the defense of portions of the Arctic. More specifically, as illustrated in the map on the next page, USPACOM was relieved of its Arctic responsibilities, leaving USNORTHCOM and USEUCOM as the only

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286 See Department of Defense, OUSD (Policy), Report to Congress on Arctic Operations and the Northwest Passage, 3.

287 Ibid.
COCOMs with a dedicated Arctic AOR, decisions that led, among other things, to a significant improvement in unity of command and in overall command and control in the vicinity of the Bering Strait, which is destined to become a critical chokepoint for transarctic shipping and maritime traffic. At the same time, USNORTHCOM was assigned sole responsibility to advocate for Arctic capabilities, primarily because America's only Arctic territory is included in its AOR and in view of its historic relationships with Canada and NORAD. So, too, as the primary COCOM in charge of homeland defense, USNORTHCOM already enjoys close working relationships with the Department of Homeland Security and the U.S. Coast Guard, relationships that remain critical to ensuring human and environmental security and defending U.S. national interests in the Arctic via search and rescue, maritime safety, law enforcement, and disaster response missions.\textsuperscript{288}

Given USNORTHCOM's expanded role in Arctic matters, the commander of USNORTHCOM has identified the Arctic as one the command's eight principal focus areas, and has tasked his staff with developing an Arctic concept of operations (CONOPS) in coordination with Canada Command, a fairly comprehensive draft of which should be complete by 2012. Both initiatives will bring a greater degree of coherence and consistency to U.S. policy planning for the Arctic at the national military, U.S. whole-of-government, and international cooperation levels. One possible development that has some merit would be the creation of a U.S.-Canadian combined joint task force for the Arctic (a CJTF-Arctic), given USNORTHCOM's current experience with a number of JTFs, some regional (such as JTF-Alaska) and others functional (such as JTF-Civil Support), and the UCP's recommendation that JTFs be formed when missions significantly overlap national, COCOM, and/or agency boundaries of responsibility.\textsuperscript{289} According to one advocate of this idea, a CJTF-Arctic would allow the United States and Canada to maximize the effectiveness and efficiency of their collective, but still limited, Arctic capabilities to address in a more timely manner what will soon be a growing and diverse range of Arctic missions. Led by rotating U.S. and Canadian commanders (with both deputy commanders drawn from each nation's Coast Guard), such a unit could interface quite easily with NORAD's two northern sectors (the Alaskan NORAD Region and the Canadian NORAD Region), while providing a sustained sense of common purpose in the High North that would no doubt help these longtime allies work through the few somewhat contentious Arctic-related security issues that still exist (or may emerge) between them.

The CJTF-Arctic approach could also prove useful as a mechanism for strengthening coordination between USNORTHCOM and USEUCOM, which, as America's other Arctic command, retains responsibility for the largest Arctic AOR, stretching from the eastern shore of Greenland across the North Atlantic and Northern Europe to the Kara Sea in Northern Russia.\textsuperscript{290} Inevitably, there

\textsuperscript{288} Ibid., 20.

\textsuperscript{289} On the issue of a CJTF-Arctic, the authors are indebted to the work of Lieutenant Colonel Tarn M. Abell, USAF Reserve, who discussed the idea of an Arctic JTF in a March 2010 research paper submitted to the U.S. Army War College's Strategy Research Project under the title “Arctic Security in a Warming World.”

\textsuperscript{290} While the UCP 2011 announced in April 2011 eliminated USPACOM's Arctic AOR and assigned USNORTHCOM “singular advocacy responsibility for Arctic capabilities,” there was no desire to place the Arctic entirely within the AOR of a single command (either USNORTHCOM or USEUCOM) because to do so, DoD argued, would “disrupt progress made in theater security
New Strategic Dynamics in the Arctic Region

While the United States largely observes UNCLOS as customary law, and even though the Clinton, George W. Bush, and Obama administrations have all championed its ratification, bills calling for ratification have twice failed to reach the Senate floor for a full-up vote, and the prospects remain uncertain that one will in the near future. At this point, therefore, some focused discussion of the pros and cons for ratification as reflected in the ongoing U.S. debate over UNCLOS accession is warranted. Taking the con side first, it is often argued, not without some merit, that by submitting to the terms of the treaty the United States would be ceding unnecessarily a degree of sovereign authority over the development of seabed resources found in its extended continental shelf – and, most importantly, over the revenues generated by such development – to the autonomous International Seabed Authority (ISA) set up by UNCLOS, the decisions of which could be unduly influenced, as those of the UN General Assembly often are, by coalitions of countries quite unsympathetic to U.S. interests. More specifically, under article 156 of UNCLOS, the United States would be required, if it became a party to the treaty, to “share” with the ISA a portion of its royalty revenue (possibly amounting to billions of dollars) from all oil, gas, and other mineral resources extracted from its ECS, monies that the ISA would then distribute to other UNCLOS members with a specified preference for developing countries, particularly those that are landlocked or the “least developed,” and “to peoples who have not yet attained full independence or other self-governing status.”

As a result, critics of UNCLOS ratification conclude that the United States could easily end up contributing as much as 25 percent of the ISA’s budget, and that the ISA, which they view as an overly politicized institution with little transparency and major management weaknesses, could potentially alienate important partners. But even on the pro side, critics note that the United States would receive a share of the revenues generated by such development – to the autonomous International Seabed Authority (ISA) set up by UNCLOS, the decisions of which could be unduly influenced, as those of the UN General Assembly often are, by coalitions of countries quite unsympathetic to U.S. interests. More specifically, under article 156 of UNCLOS, the United States would be required, if it became a party to the treaty, to “share” with the ISA a portion of its royalty revenue (possibly amounting to billions of dollars) from all oil, gas, and other mineral resources extracted from its ECS, monies that the ISA would then distribute to other UNCLOS members with a specified preference for developing countries, particularly those that are landlocked or the “least developed,” and “to peoples who have not yet attained full independence or other self-governing status.”

Finally, one more theme that runs through all of the studies and reports examined above deserves specific mention: their universal call for ratification of the UN Convention on the Law of the Sea by the U.S. Senate. While the United States largely observes UNCLOS as customary law, and even though the Clinton, George W. Bush, and Obama administrations have all championed its ratification, bills calling for ratification have twice failed to reach the Senate floor for a full-up vote, and the prospects remain uncertain that one will in the near future. At this point, therefore, some focused discussion of the pros and cons for ratification as reflected in the ongoing U.S. debate over UNCLOS accession is warranted. Taking the con side first, it is often argued, not without some merit, that by submitting to the terms of the treaty the United States would be ceding unnecessarily a degree of sovereign authority over the development of seabed resources found in its extended continental shelf – and, most importantly, over the revenues generated by such development – to the autonomous International Seabed Authority (ISA) set up by UNCLOS, the decisions of which could be unduly influenced, as those of the UN General Assembly often are, by coalitions of countries quite unsympathetic to U.S. interests. More specifically, under article 156 of UNCLOS, the United States would be required, if it became a party to the treaty, to “share” with the ISA a portion of its royalty revenue (possibly amounting to billions of dollars) from all oil, gas, and other mineral resources extracted from its ECS, monies that the ISA would then distribute to other UNCLOS members with a specified preference for developing countries, particularly those that are landlocked or the “least developed,” and “to peoples who have not yet attained full independence or other self-governing status.”

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291 Admiral Stavridis’ thoughts about developing the Arctic as a “zone of cooperation” between the United States and Russia (but including other Arctic stakeholders as well) were outlined during a classified workshop, “U.S.-Russian Relations Beyond New START: What’s Next, What’s Possible, What’s Necessary,” organized in Washington, D.C., on March 6, 2011, by IPFA for Admiral Stavridis.
It is also argued that U.S. accession to UNCLOS could encumber important U.S. military and intelligence operations. For example, article 19, section 3, part 2 of the treaty proscribes ships from “collecting information to the prejudice of the defense or security of the coastal State,” and, in reference to the Right of Innocent Passage, UNCLOS art. 19, section 5 part 2 states, “In the territorial sea, submarines and other underwater vehicles are required to navigate on the surface and show their flag.” Detractors state that this broad rhetorical sweep, which applies as well to autonomous underwater vehicles (AUVs) and remotely operated underwater vehicles (ROVs), precludes crucial mine detection, surveillance, and topographical mapping missions. Some UNCLOS opponents, such as David A. Ridenour, vice president of the National Center for Public Policy Research, go on to argue that article 110, section 1, part 7 even obstructs America’s fight against terrorism as well as the Proliferation Security Initiative (PSI) that endeavors to prevent the transfer of weapons of mass destruction (WMD). As evidence, he points to the fact that the unstable circumstances for at-sea interdiction, boarding, and detention of foreign ships do not explicitly include the presumed presence of terrorists or WMD traffickers. Additionally, Ridenour criticizes both article 88, section 1, part 7, “the high seas shall be reserved for peaceful purposes,” and article 301, part 16, “parties shall refrain from any threat or use of force against the territorial integrity or political independence of any State,” as potentially hindering legitimate and necessary U.S. military activities.

Edwin Meese III, former counselor to President Reagan, also fears that mandatory information-sharing and obligatory technology transfers under UNCLOS rules would arm U.S. enemies with data and equipment that could be used to facilitate attacks. On the other hand, advocates of U.S. accession, which include, again, the senior leadership of the current administration and the two before it, have argued that U.S. ratification of UNCLOS soon is critical in order to advance America’s three main strategic interests in the Arctic: national security, economic sovereignty, and essential environmental protections. By neglecting these strategic imperatives as they relate to UNCLOS, the United States, it is further suggested, is effectively marginalizing itself and ignoring a chance to mobilize the convention in a way that would safeguard and promote U.S. interests, incurring in the process an unwelcome degree of international opprobrium. With respect to national security, UNCLOS, its American proponents point out, provides binding international law ensuring the strategic and operational mobility of U.S. military forces and the free flow of international commerce at sea. It enshrines, in particular, the Right of Innocent Passage, the Right of Transit Passage, the Right of Archipelagic Sealanes Passage, and Freedom of the High Seas. For warships

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300 Ridenour, "Ratification of the Law of the Sea Treaty: A Not-So-Innocent Passage."
304 “The unimpeded transit of ships, aircraft, and submerged submarines in their normal modes through and over straits used for international navigation, and the approaches to those straits.” Ibid.
305 “The unimpeded transit of ships, aircraft, and submerged submarines in their normal modes through and over all normal passage routes used for international navigation of "archipelagic waters." Ibid.
306 “The freedoms of navigation, overflight, and use of the seabed for laying

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295 Ibid.
297 Boarding is only acceptable if there is reasonable ground for suspecting that the ship is engaged in piracy, the ship is engaged in the slave trade, the ship is engaged in unauthorized broadcasting and the flag state of the warship has jurisdiction under article 109, the ship is without nationality, or through flying a foreign flag or refusing to show its flag, the ship is, in reality, of the same nationality as the warship. United Nations, "United Nations Convention on the Law of the Sea of 10 December 1982."
298 Ibid.
299 Ibid.
and government-operated non-commercial ships, UNCLOS also secures the Right of Visit\textsuperscript{307} and Right of Sovereign Immunity.\textsuperscript{308} Together these rights, the U.S. chairman of the Joint Chiefs of Staff, Admiral Michael Mullen, has testified, help to lower the costs of projecting U.S. power abroad\textsuperscript{309} and solidify internationally recognized (and U.S. preferred\textsuperscript{310}) definitions of a coastal state’s territorial sea and its jurisdiction within its exclusive economic zone. Successive chairmen of the Joint Chiefs of Staff and U.S. chiefs of naval operations, moreover, have explicitly asserted that UNCLOS would bolster, not hamstring, the U.S. chief of naval operations, moreover, has explicitly stated before Congress that “the Convention supports U.S. efforts in the war on terrorism, while leaving unaffected intelligence collection activities.”\textsuperscript{311} Hence, to reject the treaty on national security grounds would appear to ignore the counsel of America’s most senior military leaders.

Most importantly, however, as mentioned a number of times in this study, UNCLOS codifies internationally respected rules relating to the heated issue of defining national jurisdiction over a nation’s extended continental shelf. By not acceding to the convention, the United States is effectively forfeiting its right to nominate or elect expert commissioners who run UNCLOS’ Commission on the Limits of the Continental Shelf, the group that ultimately determines the legitimacy of ECS’s claimed by coastal states in the Arctic and elsewhere. This, in turn, diminishes America’s ability to challenge effectively or seek recourse against disputed territorial claims by other coastal states, such as those advanced by Russia with regard to the Arctic in 2001.\textsuperscript{312} Finally, standing apart from UNCLOS precludes the United States from making its own submission to the CLCS under article 76 of the treaty, a submission that could significantly expand U.S. territory by as much as one million square kilometers of ocean (and some 240 miles beyond the Alaskan Arctic EEZ), an area half the size of the Louisiana Purchase. There remains, of course, the question of how the ISA chooses to manage the exploitation of mineral resources located in seabed areas that lie outside national jurisdiction, but amendments made to the 1994 Agreement on UNCLOS Implementation have eased concerns in this regard, requiring the ISA to approve efforts to develop these resources on the basis of “free market principles.”\textsuperscript{313} Hence, by refusing to accede to UNCLOS and passing up a permanent seat on the ISA (and the veto power that would come with it), the United States could end up harming the prospects for American deep-sea mining companies who wish to gain access to ISA-managed areas. The fact that such companies are less likely to invest in mining activities within these areas without explicit legal protections guaranteed by the ISA adds yet another compelling reason for the United States to become involved in the leadership of the agency.

Finally, with regard to environmental protection, UNCLOS’s living-resources articles\textsuperscript{314} establish an important cooperative framework for the sustainable management of fish stocks and the conservation of marine mammals.\textsuperscript{315} In so doing, it strengthens a number of existing tools – such as the 1995 UN Fish Stocks Agreement – for protecting Arctic fisheries that are of immense potential importance to the U.S. commercial fishing industry. As a party to UNCLOS, therefore, the United States, it is argued, would be far better positioned to advance the environmental priorities outlined in NSPD-66/HSPD-25 and to assist in the broader stewardship of the world’s oceans in accordance with the ocean management policy still being developed by the Ocean Policy Task Force led by the White House Council on Environmental Quality.\textsuperscript{316}

\begin{footnotes}
\item[307] “Warships may visit and board vessels reasonably suspected of being stateless or engaged in piracy.” Ibid.
\item[308] “Warships and government-operated noncommercial ships enjoy complete immunity from the jurisdiction of any state other than the flag state.” Ibid.
\item[313] Ibid.
\item[316] Ibid.
\end{footnotes}
On balance, then, the arguments supporting U.S. accession would appear to outweigh those against, especially with regard to safeguarding and legitimizing America’s claim to an Arctic ECS that is projected to be among the richest in resource wealth. This, in any event, is (and has been) the view consistently held by successive U.S. administrations, which explains as well why it has been so strongly endorsed by each of the official studies and policy reviews examined above. It is also the reason why Washington was quick to endorse the reference made in the 2008 Ilulissat Declaration that UNCLOS provided “a solid foundation for responsible management [of the Arctic] by the five coastal States and other users.” However, precisely because of the economic stakes involved, legal arguments in favor of UNCLOS ratification are likely to have far less influence on Senate holdouts than the case that can be made by American companies, large and small, that stand to benefit from fishing, tourism, mineral production, and seaborne trade within and through a U.S. Arctic ECS officially recognized by the CLCS. For this reason, the pro-UNCLOS community in the United States is increasingly looking to the private sector to bring sufficient pressure to bear to force a full Senate vote on ratification sometime in the next few years.

**Key Operational Challenges and Capability Gaps**

Whatever happens regarding UNCLOS, the United States, given the cautious approach to Arctic-related investments embraced by DoD’s May 2011 *Report to Congress on Arctic Operations and the Northwest Passage*, is likely to remain well behind the curve for some time to come, compared to other Arctic nations (but especially Russia and Canada), in assembling an effective capacity for Arctic operations. Indeed, although the U.S. Navy has been operating in the Arctic for nearly a century, and Marines received regular training for deployment in northern Norway until the early 1990s, maritime surface presence and air operations in the high latitudes have ceased being a priority for the Navy since the Cold War ended, and the naval service’s budget and well-established Arctic research program from that time, which in the 1990s spent as much as $30 million each year on polar research, have since dramatically diminished. As a result, with a largely inadequate operational infrastructure north of the Arctic Circle and with only a limited surface-ship presence in true cold-weather conditions, today’s naval forces lack the vital competence, experience, and capabilities required for operating in the challenging conditions of these high-Arctic environments, and, not surprisingly, the Navy recently warned that its current precision weapons, ships, and procedures are “completely ill-suited to the extreme climatic conditions of the High North.” At the same time, growing international interest in the region’s more accessible resources, combined with a steady increase in commercial and military traffic through (and over) Arctic waters and the potential for contested territorial claims, have led experts to conclude – including those responsible for the Navy’s Arctic Roadmap and the Coast Guard’s High Latitude Study – that the future requirements and security needs for America’s presence in the Arctic region are destined to grow significantly in the coming decades.

With respect to current and projected capability needs more specifically, naval and Coast Guard forces face a number of unique operational challenges in their high-latitude missions, including, as briefly noted earlier, limited information, minimal assets and infrastructure, lack of logistics and maintenance support, extreme wind chill and months-long darkness, environmental hazards such as drifting sea ice and icing on exposed surfaces, communications difficulties, antiquated nautical charts, and a dearth of electronic and visual navigation aids, among others. While the number of days with ice-free waters may rise in the future, this will not result in a less risky or inherently safer environment. The increase in open water, for example, will only add to frequent storms and already gale-force winds in the area that produce high waves of

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318 Funding for the Office of Naval Research’s program on the Arctic, for example, has dropped to only about $3 million per year as of 2010. Naval Studies Board, *National Security Implications of Climate Change for U.S. Naval Forces* (Washington, D.C.: National Research Council, 2011).


320 Titly and St. John, “Arctic Security Considerations and the U.S. Navy’s Roadmap for the Arctic.”
Even in summer, the frigid weather, when combined with the increased atmospheric moisture from diminishing ice, can create dangerous freezing fog or freezing spray that limits visibility and can accumulate on ship superstructures and equipment, causing ice buildup on the topside of vessels and greatly increasing the risk of buoyant instability and capsizing.\textsuperscript{322}

Aside from the negative impact of ice on propellers, rudders, fin stabilizers, and bow-mounted sonars, the region's extreme conditions affect a ship's more mundane systems as well, “weakening steel hulls, exceeding hydraulic temperature tolerances, and cracking or shedding protective coatings and insulators.”\textsuperscript{323} To be sure, the combination of free-drifting icebergs, bigger waves, and shifting pack ice can present a hazardous and demanding environment for any vessel, and ships operating in the area would need to be ice-strengthened or reinforced at the waterline to withstand potential encounters with light or thinner ice, though even that adjustment is no guarantee, as exemplified by the experience of the \textit{Seabulk Pride}, a double-hulled oil tanker that was struck by an ice floe and ran aground consecutively in 2006 and 2007 near Cook Inlet, Alaska.\textsuperscript{324}

\textbf{Polar conditions, moreover, can degrade and render useless even the most sophisticated weapon systems and sensors, while equipment and personnel casualties can quickly transform into dire emergencies in the Arctic’s vast and sparsely populated spaces.}\textsuperscript{325} At the same time, maritime patrol aircraft, which are generally less affected by Arctic surface conditions, are nonetheless extremely susceptible to the dangers of aircraft in-flight icing and unheated tank fuel turning into slush, with aviators in the northern latitudes routinely having to operate “at the edge of the safety envelope.”\textsuperscript{326}

One key capability gap that will likely continue to hamper Arctic operations in the coming decades is in maritime domain awareness in the polar region. MDA – the effective ability of U.S. forces to locate, identify, and track vessels or any other activity in the maritime domain that could affect national security interests – remains extremely limited, largely because of the remoteness of the region, inadequate Arctic Ocean and weather data, lack of communication and navigation infrastructure, insufficient intelligence information, and the lack of a consistent U.S. government presence in the High North.\textsuperscript{327} Given the very limited sensor coverage of the area, great distances from main bases, and harsh, rapidly changing atmospheric conditions, even collecting and maintaining a basic awareness of other ships, submarines, and aircraft in the Arctic becomes a nearly impossible task.\textsuperscript{328} Not long after the start of the Coast Guard’s 2008 summer deployment in the polar region, for instance, District 17 officials based in Alaska complained of a working lack of Arctic domain awareness that severely constrained the service’s ability to fully understand the risks of operating in or monitoring the icy waters around Alaska and beyond. As a senior U.S. Coast Guard official pointed out after the agency’s 2008 operations, “We had almost no idea, no maritime domain awareness, of what was actually happening on the waters of the Arctic.”\textsuperscript{329}

A major impediment to achieving better domain awareness in the High North is the current lack of accurate data

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\textsuperscript{321} Lance Bacon, “Icebreaker,” \textit{Armed Forces Journal}, March 2010.  
\textsuperscript{322} Ibid.  
\textsuperscript{323} Kraska, “Northern Exposures.”  
\textsuperscript{324} Gove, “Arctic Melt: Reopening a Naval Frontier.”  
\textsuperscript{325} Patch, “Cold Horizons.”  
\textsuperscript{326} Ibid.  
\textsuperscript{328} Patch, “Cold Horizons”  
\textsuperscript{329} Ibid.
for Arctic navigation, including nautical charts for areas previously covered by ice, shoreline mapping, tides, water levels, currents, sea-ice conditions, and meteorological information. Experts agree that there is still very little knowledge about the Arctic’s unique and ever-changing ocean patterns, especially since only less than 5 percent of the polar area has been mapped to current standards. Nautical charts of the Alaska region, for example, are of low resolution and mostly based on soundings from the 1940s or 1950s, showing vast areas that have not been surveyed using modern instrumentation or have never been surveyed at all. The problem of producing reliable nautical charts for the Arctic is further compounded by America’s insufficient number of hydrographic survey vessels and their limited capability when it comes to operating in and around the ice. The lack of real-time information on weather, ocean conditions, and ice characterization (for example, depth or thickness) has had a particularly negative effect on the Coast Guard’s ability to conduct routine and emergency missions in the polar region, as smaller pieces of sea ice are frequently missed by current technology, posing a significant threat to most ships observed in the area, including the Coast Guard’s fleet of non-icebreaking boats. For their part, icebreakers attempting to operate in the deeper reaches of the Arctic Ocean are themselves extremely vulnerable to so-called sea-ice pressure ridges, formed when massive sheets of ice collide with one another, and in the absence of reliable data, even experienced mariners may be unable to sufficiently assess the “deceptive appearance of sea ice,” as illustrated by Coast Guard cutter Healy’s experience during its summer 2008 operations off Barrow, Alaska, when it struck what to the crew appeared to be thin, first-year ice only to discover that it was a fifteen-foot thick iceberg of multi-year ice, well beyond the ship’s icebreaking capabilities.

As noted in the May 2011 DoD report, a further challenge that hampers MDA capabilities in Arctic operations involves the extremely limited communications architecture in the far north, which, while somewhat adequate for single ships, may be problematic for precision surveying and certain aircraft missions, and is insufficient to support the normal operational practices of a surface action group or any large-scale joint force operations. Long-haul high-frequency radio communications, in that regard, are unreliable and often ineffective in latitudes above 70 degrees north mainly because of magnetic and solar phenomena that degrade high-frequency radio signals. As a result, Coast Guard C-130 aircraft and icebreakers assigned to the Arctic may find themselves unable to communicate with one another using traditional high-frequency radio, despite being in relatively close proximity to each other. In addition, high-data-rate satellite communications in the north are sparse, and Global Positioning System (GPS) constellation coverage has not been optimized to support operations in polar regions, leading to a dramatic reduction in its accuracy. More specifically, GPS performance is degraded in the Arctic due to the low elevation of satellites, poor satellite geometry and visibility, larger ionospheric effects, and multipath interference, resulting in the frequent reflection of GPS signals off the surfaces of the ocean and ice. Although the overall effect of this phenomenon may be minor for surface navigation, it can be very problematic for precision surveying and navigation tasks (precise tracking and targeting, for example), as well as search and rescue and certain aircraft missions, leading to position miscalculations or speed and altitude errors, which in turn can adversely affect a host of Navy operations by further degrading system, targeting, and guided munitions performance, among others.

The Arctic environment, moreover, with its vast, uninhabited expanses and long distances between outposts, precludes most of the usual support U.S. military forces take for granted in non-polar regions. Thus, as noted in the DoD report as well, shore-based infrastructure capable of supporting surface and air operations is sparse at best, particularly in Alaska and the western Arctic waters, which especially affects the Coast Guard’s ability to operate

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330 Bacon, “Icebreaker.”
331 Naval Studies Board, National Security Implications of Climate Change for U.S. Naval Forces.
332 Report to Congress: U.S. Coast Guard Polar Operations.
333 Ibid.
334 Department of Defense, OUSD (Policy), Report to Congress on Arctic Operations and the Northwest Passage.
335 Ibid.
336 U.S. Government Accountability Office, Coast Guard: Efforts to Identify Arctic Requirements Are Ongoing.
337 Naval Studies Board, National Security Implications of Climate Change for U.S. Naval Forces.
effectively in the Bering, Chukchi, and Beaufort Seas. As one senior official warned in early 2011, current U.S. forces “don't have the infrastructure available to operate for an extended period of time in the Arctic in the summer, much less in the winter when it’s more critical for logistical purposes.” A lack of coastal installations also contributes to the difficulty of search and rescue (SAR) operations, with the only American-owned deep-water port near the Arctic basin located in Dutch Harbor in the Aleutian Islands, well below the Arctic Circle. In addition, again according to the May 2011 DoD report, melting permafrost and coastal erosion can present serious structural challenges to current infrastructure that may in turn threaten the full mission readiness of the existing early-warning radar sites and communications infrastructure in Alaska and Greenland.

Although the Coast Guard's 17th District regularly monitors the polar region, the great distances from main Alaskan operating bases and home ports to the North Slope in deep winter severely reduce on-station time. What is more, there are currently no designated Coast Guard air stations north of Kodiak, Alaska, a city that is located nearly 1,000 miles, or eight helicopter flight hours (under favorable weather conditions), from the service’s summer forward-operating location at Point Barrow, Alaska’s northernmost settlement, about 320 miles above the Arctic Circle, rendering the outpost well beyond the range of any land-based search and rescue helicopter. Although the commandant has expressed the need to establish hangars capable of housing helicopters and perhaps a C-130 in northern cities such as Barrow and Kotzebue, funding limitations remain a concern.

With all of the Coast Guard’s assets in Alaska stationed below 66 degrees north, and given the predominantly icing conditions and substantial transit times involved in reaching the Arctic Circle alone, surface vessels (other than icebreakers), and even aircraft, are only capable of operating for a very limited number of days or sometimes only for a few hours on scene before they need to return for fuel. While helicopters such as the MH-65 and MH-60 provide invaluable support to every mission in the Arctic region and are critical to extending the Coast Guard's reach in law enforcement, SAR, and MDA, the extreme conditions and likelihood of frequent unpredictable storms, snow, and ice severely constrain the use of rotary-wing assets, despite their specific designation and capability to operate in the higher latitudes. During recent Coast Guard operations in the region, for example, the MH-65, which can be deployed from shore facilities or from a flight deck-equipped cutter, was considered “ineffective” for operations in the North Slope area, located at the top of Alaska, between the Chukchi and Beaufort Seas, and MH-60 helicopters, outfitted with both anti-ice and de-icing systems for operating in light to moderate icing conditions, could only be deployed in tandem so as to ensure vital backup self-rescue resources in the remote polar areas.

Of the Coast Guard's current inventory of fixed-wing aircraft, only the HC-130 surveillance and transport airplane operates in the harsh conditions of the Arctic, and although it can remain on scene for longer periods and can also serve as a communications platform capable of detecting, identifying, and tracking vessels on the high seas, the aircraft would require major modifications to its structures, hydraulic and electrical systems, landing-gear skis, and fuel properties to be able to operate in the polar region throughout the entire year. With little justification for constant Arctic patrols, current flights are usual-

338 Ibid.
341 Department of Defense, OUSD (Policy), Report to Congress on Arctic Operations and the Northwest Passage.
342 Patch, “Cold Horizons.”
343 Report to Congress: U.S. Coast Guard Polar Operations.
344 U.S. Government Accountability Office, Coast Guard: Efforts to Identify Arctic Requirements Are Ongoing.
345 Report to Congress: U.S. Coast Guard Polar Operations.
ly associated with brief exercises or scientific expeditions, and naval P-3C maritime patrol aircraft equipped with advanced submarine detection sensors only rarely venture north, despite increasing demand.\(^{346}\) Coast Guard aviators, on the other hand, who operate more frequently in the Arctic than their Navy counterparts, have been conducting Bering Sea C-130 patrols periodically out of Kodiak, located south of the Alaska mainland, but special Arctic maintenance requirements, airframe shortages, and the lack of divert fields continue to limit the persistence and reach of their missions.\(^{347}\)

Meanwhile, the Navy’s current surface capability in the Arctic is limited to the marginal ice zone, defined as the transition from open water to the ice pack, and naval vessels, none of which are currently ice-strengthened, would need to be substantially reinforced or ice-hardened to cope with the dangers of floating ice, which can present mariners with some of the most hazardous conditions conceivable at sea. Effective ship operation in sea ice, moreover, even in ice concentration of less than 10 percent, requires not only hull protection, but also strengthened and upgraded propellers, rudders, seawater intakes, and hull-mounted sensors. Indeed, recent findings by the Center for Naval Analyses, which suggested that current surface combatants might be “modified or retrofitted” for Arctic missions by adding steel around the waterline, noted as well that this adjustment would give the vessels only marginal capability.\(^{348}\) In this context, according to the Naval Studies Board’s 2011 National Security Implications of Climate Change for U.S. Naval Forces, a major review of naval assets, it would be far “better to build ice-capable ships from the keel up,” either by incorporating the capability into current designs or by designing a new class of patrol vessels, much like other nations, such as Canada, have chosen to do.\(^{349}\) As for the service’s air assets, as alluded to above, although Navy aircraft can operate in the Arctic, the lack of divert airfields substantially reduces their persistence and range, and aircraft carrier operations may be similarly constrained in the face of rapidly changing ice conditions.

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\(^{346}\) Patch, “Cold Horizons.”

\(^{347}\) Ibid.

\(^{348}\) Naval Studies Board, National Security Implications of Climate Change for U.S. Naval Forces.

\(^{349}\) Ibid.
conditions and the restricted cross-wind operating envelopes for both fixed-wing and rotary aircraft.350

The Navy’s Arctic underwater capabilities, however, remain unmatched, and the service continues to maintain several classes of polar-capable submarines, such as the 688i Los Angeles-class and the Seawolf-class attack submarines, specially designed for under-ice operations.351

Significantly, thanks to longstanding subsurface warfare requirements dating back to the intense military competition of the Cold War era, the U.S. naval submarine force boasts the highest level of experience in Arctic operations, having also collected in the last few decades much of the bathymetric and hydrographic measurements of the Arctic Ocean that mariners rely on today. Nevertheless, submarine operations in the Arctic are not easy, as the presence of a reflective, contoured ice canopy tends to disperse sound, which limits detection and torpedo performance, and the combination of melting ice and river runoff entering the sea contributes to large variations in the acoustic profile of the ocean that distort active and passive sonar signatures.352

Specifically, the continuous changes in temperature and salinity of the Arctic’s waters exert a significant effect on sound speed, and current data on such noise, or the way in which Arctic sedimentation interacts with acoustics, is sorely lacking.353 At the same time, U.S. antisubmarine warfare (ASW) operations in the High North, which are projected to become an “inevitable national imperative” in the future, will likely face some new challenges as well, given that the naval service’s extensive ASW infrastructure that provides crucial support to active submarine operating areas is generally deployed in the temperate oceans and currently does not operate in the Arctic Ocean, where essential tactical oceanographic data collection and analysis are still sparse or nonexistent.354

These shortcomings may become even more prominent in the future, as many of the highly trained personnel who had acquired the vital institutional expertise and knowledge about operating in the Arctic have gradually retired or otherwise left the ASW community, and no formal training program currently exists that aims to develop the Arctic skill sets required for operating in polar climates.355 While there are no significant ASW activities in the polar region at the moment, the Naval Studies Board’s 2011 study concluded that America’s diminished polar research program and its declining submarine and ASW experience in the Arctic “put U.S. naval forces’ capability to operate as needed in the Arctic at risk if the United States does not keep pace with the capabilities of other Arctic nations,” particularly Russia, which has claimed ownership over large parts of the High North, as well as with eager non-Arctic stakeholders such as China.356

To complicate matters, since the U.S. Navy transferred all of its icebreakers to the Coast Guard in 1966, the overall fleet has declined from ten to three icebreakers, only two of which – the USCG Polar Star and USCGC Polar Sea – are able to handle heavy ice. Both ships, moreover, are over thirty years old, and the Polar Sea is expected to be decommissioned in 2011, while the Polar Star is currently in caretaker status, requiring at least two years to get ready once again for active service in 2013. With both heavy icebreakers sidelined, according to the commandant of the Coast Guard, Admiral Robert Papp, the service is at risk of being unable to support national interests and sovereignty in the north and would clearly be unprepared to respond to a major incident in the Arctic region.357

In contrast, Russia maintains a large oceangoing fleet of about eighteen icebreakers, including a number of recently built ships and seven that are nuclear-powered. Not surprisingly, in the spring of 2008, the commanders of USPACOM, USNORTHCOM, and USTRANSCOM (U.S. Transportation Command), all of whom – together with the commander of USEUCOM – shared some responsibility at that time for security operations in the Arctic, urged the joint staff to support the Coast Guard’s call for an upgraded icebreaker fleet, but so far only very limited federal funds have been allocated in support of that goal.358 In fact, the FY 2011 budget request for the Coast Guard ignored the need for more icebreakers and seasonal operational locations in the Arctic, and the agency’s FY 2012 proposed budget has set

351 Patch, “Cold Horizons.”
353 Bacon, “Icebreaker.”
354 Naval Studies Board, National Security Implications of Climate Change for U.S. Naval Forces.
355 Ibid.
356 Ibid.
aside a modest $39 million both to keep its medium-sized icebreaker, the Healy, running and to complete the reactivation of the Polar Star.\textsuperscript{359} Moreover, even if a decision were made to design and build one or more new polar icebreakers, estimated to cost more than $900 million each in 2008 dollars, the new replacement vessel might not enter service until a decade later, by which time the Polar Star would be more than forty years old.\textsuperscript{360} With only a single operational icebreaker, designed for limited medium-duty operations primarily as part of scientific missions, and given the likely increases in resource development, maritime traffic, and international competition in the High North, the present U.S. icebreaking fleet and resources are clearly inadequate to optimally support national needs in the region. As one prominent Arctic expert recently suggested, the U.S. government has “grossly undercapitalized the capabilities needed to confront future missions in the Arctic, including critical infrastructure protection for ports, waterways, and fixed and floating platforms on the continental shelf, search and rescue, and maritime security.”\textsuperscript{361}

Equally important, however, the Coast Guard’s limited icebreaker resources are gradually contributing to the service’s diminishing Arctic fleet experience and expertise for operating in polar conditions. In July 2008, for example, the Coast Guard commandant testified that even though the service was able to conduct Arctic patrols and fisheries enforcement using icebreakers in May and June of that year, he was worried that Coast Guard personnel were unable to train longer and go deeper into the ice, because “these competencies atrophy over time, and I am concerned that at a certain point, there won’t be a baseline level of competency to operate these ships.”\textsuperscript{362} According to a major study by the National Research Council, both operations and maintenance of the polar icebreaker fleet have been greatly underfunded for many years, and the resultant delay in long-term maintenance and replacement of the nation’s old and obsolete icebreaking ships has placed U.S. ability to train, operate, and project an influential presence in the polar region at serious risk.\textsuperscript{363} Funding streams for future Arctic requirements, however, remain uncertain, and, given budget constraints outlined in the May 2011 DoD report on Arctic operations, new procurement efforts will likely have to be funded through a reallocation of existing resources, barring “some external forcing event, such as a major environmental or human disaster” in the Arctic that could threaten U.S. interests in the region.\textsuperscript{364}

At the same time, Coast Guard officials point out that having only one heavy polar icebreaker, let alone a single medium-weight one, is acutely insufficient, since regardless of how technologically advanced or efficiently operated the ship may be, it simply cannot be in more than one location at a time, and together with the risk of potential failure and lack of ensured backup assistance, a single icebreaker “could not meet any reasonable standard of active and

\textsuperscript{359} Larter, “Coast Guard Funds Fifth NSC.”

\textsuperscript{360} Ronald O’Rourke, Coast Guard Polar Icebreaker Modernization: Background, Issues, and Options for Congress, Congressional Research Service, April 21, 2011.

\textsuperscript{361} Kraska, “Northern Exposures.”

\textsuperscript{362} U.S. Government Accountability Office, Coast Guard: Efforts to Identify Arctic Requirements Are Ongoing.


\textsuperscript{364} Department of Defense, OUSD (Policy), Report to Congress on Arctic Operations and the Northwest Passage.
influential presence and reliable, at-will access” throughout the polar region. Nonetheless, both Coast Guard and defense officials agree that, despite the availability of support from submarines and aircraft capable of operating in the harsh northern climate (weather permitting), only U.S.-flagged ice-capable ships, notably icebreakers, can provide America with assured Arctic access and a visible sovereign maritime presence across the polar region. Indeed, the presence of a surface ship is vital for the majority of search and rescue missions, or even in an environmental response. As Commandant Admiral Robert Papp recently explained, “You cannot clean up oil from a plane. You cannot carry heavy equipment on a plane. And, you certainly cannot break another ship out of the ice and tow it with a plane.”

In that regard, the inadequacy of current search and rescue capabilities in the Arctic has become a cause for concern, given that the location of the Coast Guard’s operating bases could delay aircraft several hours, and Coast Guard cutters days or weeks, before they can reach a ship in distress in the area’s icy waters. In the spring of 2010, for instance, when a Russian ice-flow-based research camp, North Pole 37, unexpectedly broke up in the Arctic Ocean, 630 miles north of Point Barrow, a Russian nuclear-powered icebreaker was swiftly dispatched to rescue the stranded scientists. Had the Russians needed help, however, there was no icebreaker presence in the U.S. SAR coordination area to respond. In a similar example, Admiral Papp recalled in January 2011 how the Canadian Coast Guard had come under fire when its crews took six days to rescue a cruise ship and an oil tanker that had both run aground in its northern waters, lamenting that U.S. forces “wouldn’t be able to make it in six days,” as “it’d probably take us six weeks to get adequate resources up for a similar thing in our waters.” For the time being, however, given the current lack of response assets, the United States will likely depend on partnerships with allied nations for necessary shore-side support, as is the case in the eastern Arctic, and U.S. naval forces will continue to rely on leasing icebreakers from countries such as Russia and Sweden, which they have done over the last decade in order to complete resupply missions.

On the plus side, there have been a few efforts in recent years to deploy to the region, on a temporary basis, what limited assets do exist for Arctic operations as a way to test plans, procedures, and equipment for conducting Coast Guard missions under Arctic conditions. For example, in early August 2008 the Coast Guard established its first forward operating location (or FOL) on Alaska’s North Slope, conducting a variety of exercises over a two-week period that involved helicopters, small boats, deployable communications gear, and a safety recreational boating team. Later that same month, the Coast Guard extended its high-endurance cutter operations from the Bering Sea into the Chukchi Sea, the Beaufort Sea, and the Arctic Ocean, focusing primarily on maritime security and search-and-rescue operations. As part of Coast Guard efforts to engage with the local indigenous communities, moreover, service crews have begun carrying out the Arctic Crossroads program across northern Alaska that aims to incorporate local knowledge with expertise from military and humanitarian responders, while conducting tests and exercises to determine the service’s operational effectiveness in accident-response missions under extreme conditions, especially its capabilities for small response-boat operations in treacherous shallow waters.

In another initiative, the Coast Guard’s Alaskan district command recently began air patrols by HC-130 aircraft flying from an FOL at Nome, primarily as a way to test the aircraft’s endurance in the Arctic’s harsh operating environment. Ongoing phasing-in of the J model C-130 aircraft, which boasts improved endurance, range, and anti-icing, would also somewhat enhance Coast Guard air capabilities in the Arctic. An important development as well is the Obama administration’s recent proposal to transfer funding authority (for operating polar icebreakers) from the National Science Foundation back to the Coast Guard, which would allow the service to start building icebreaking competency among its sailors. The Coast Guard’s much-anticipated High Latitude Study, apparently completed in draft form but still not publicly released,
is also expected to address critical support infrastructure issues and operational gaps, as will the service’s new Arctic Maritime Campaign, scheduled to begin in summer 2012, which is intended to further define the Coast Guard’s growing mission activities in the northern Arctic region, help determine key capability requirements, and more fully prepare Coast Guard personnel for operations in the area. In addition, the Department of Homeland Security has announced plans to lead a new effort in 2012 to study future icebreaking needs and options.

In a similar vein, and as discussed in some depth already, the Arctic capabilities-based assessment initiated by the Navy’s Task Force Climate Change, or TFCC, aims to identify core maritime needs for High North operations that the Navy can at least begin to factor into its POM 14. Meanwhile, the Navy’s surface, aviation, and special warfare forces are increasing their participation in a host of joint and combined exercises with an Arctic focus, such as Northern Edge, which includes as many as fourteen thousand participants from all elements of the U.S. forces, the annual trilateral SAREX exercises, which focus on improving U.S., Canadian, and Russian SAR coordination in the region, as well as operations Nanook, Arctic Edge, and Arctic Care, among others. In addition, the Navy Arctic Submarine Laboratory leads a series of ICEX exercises on the edge of the perennial ice in the Arctic Ocean, which are key to ensuring that U.S. submarine forces remain trained and ready to support American interests in the polar region. Aside from projecting a powerful symbol of U.S. military power, the exercises, designed to test submarine operations beneath the ice fields, have also produced unique three-dimensional under-ice oceanographic data, including very valuable upward-looking sonar ice-draft measurements. Because of recent budget pressures, however, Navy officials announced in March 2011 that the service will begin hosting the ice camps once every three years instead of every two years and not all ice exercises will include an on-ice presence.

Since many of these initiatives, however, are conducted during the optimal time of the year, mostly in the summer, American forces are usually not exposed to the real challenges of Arctic winter conditions, and because the Navy would not deploy any of its carriers into icy waters, their deployments during such exercises remain strictly for summer operations in northern waters. Hence, the Navy will almost certainly need to develop new concepts of operation for the conduct of key naval tasks in Arctic waters, as the ice pack recedes and more open (and uncharted) water becomes accessible to a greater number of ships. Given the Arctic’s harsh climate and its constrained operating environment (which could limit operations by aircraft carriers and other large-deck ships), helicopters, rather than fixed-wing platforms, are likely to be required for a wider variety of roles. This would include ice scouting and reporting (in view of America’s miniscule icebreaker fleet), and a major role in ship-to-shore (or ship-to-ice) transport and logistical support operations. Procedures may also be required for using shore-based aircraft able to operate in Arctic conditions to fly supplies to remote staging areas in the Arctic from which sea-based helicopters could resupply their mother ships. The long distances between ports with refueling capabilities may force the Navy to develop a stationary refueling capability as well. A number of U.S. senators, in this regard, have called for studying the feasibility of establishing a deep-water seaport in the Arctic, which would significantly increase the capabilities of icebreakers and other vessels, given that U.S. icebreaking assets can currently spend only four to six days on station before needing to return to Point Barrow or Dutch Harbor for refueling. Coast Guard officials, for their part, have emphasized the importance of increasing maritime collaboration in the higher latitudes, particularly with Canada, with which the United States currently shares facilities and capabilities to gather and analyze data through the U.S. Extended Continental Shelf Project.

373 Naval Studies Board, National Security Implications of Climate Change for U.S. Naval Forces.
These limited forays in the maritime operations arena have been paralleled by some intriguing first steps in the area of subsurface and airborne surveillance. In particular, unmanned undersea systems are fast becoming the leading pioneers in the search for sensitive Arctic data, as was reaffirmed in the Navy’s Arctic Roadmap, largely thanks to the systems’ relatively low cost, remote operability, minimal power usage, and longevity at sea. There has been growing demand for small and agile underwater gliders, for example, which are capable of operating for up to six months and can collect vital salinity, depth, temperature, ambient noise, and optical properties data that is then fed real-time into ocean models.\textsuperscript{377} Such difficult-to-obtain information is critical to naval operations in the high Arctic area, especially considering the Navy’s future needs for antisubmarine warfare. A glider released from the \textit{Healy} in 2009, for example, recorded temperatures dropping from 3.5 degrees Celsius at the surface to -1.5 degrees at 100 meters, only to rise again to 0.5 degrees in deeper waters, uncovering a variation that, according to naval experts, is “a pretty significant change” that is also of key importance to acoustic propagation.\textsuperscript{378} Not surprisingly, the Navy is looking to augment its glider fleet, which is projected to expand from 20 to roughly 170 by 2015, with about 50 percent to be deployed at any given time in ocean areas of tactical significance and areas of interests including any ice-free parts of the Arctic.\textsuperscript{379} Equally promising for the longer term have been USNORTHCOM’s efforts to use unmanned aerial vehicles (UAVs) for wide-area surveillance, a mission that has grown in importance with respect to the Arctic as the command takes on greater responsibilities for monitoring all approaches – air, land, and sea – to the U.S. homeland. Compared to patrol aircraft, UAVs may eventually offer a safer and less costly means for conducting intelligence, surveillance, and reconnaissance (ISR) operations in the Arctic region, where adverse weather conditions might at times ground manned platforms or force them to operate on the edge of the safety envelope.\textsuperscript{380} If linkages could be established with forward-deployed remote sensors and data buoys, as well as with satellite systems, the data stream generated by UAVs would be better yet. In time, moreover, advanced hunter-killer platforms, such as the Navy’s Unmanned Combat Air System (N-UCAS) now in development, could offer extended-range and persistent options in the ISR realm – capable perhaps of fifty- or even one-hundred-hour missions – that would be ideal for the strategic environment in the Arctic.\textsuperscript{381} If necessary, such platforms could also deliver targeted ordnance against distant and time-urgent targets located in remote or hard-to-reach parts of the Arctic. In the near term, however, UAV activity will be limited to joint U.S.-Canadian experiments using \textit{Predator} drones operating from a base in Grand Forks, North Dakota, to patrol common borders. And even this initiative, USNORTHCOM has acknowledged, will proceed slowly, as much work still needs to be done to train \textit{Predator} operators to fly the drones over the more heavily wooded terrain found in Canada, Alaska, and the High North, and to ensure that UAV missions do not conflict with civil aviation activities throughout this area.\textsuperscript{382}

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\textit{For an overview of the N-UCAS and its potential ISR and strike roles, see Charles Perry, Eric McVadon, and Bobby Andersen, “Sending UCAS to Sea: A Superior Carrier through the Unmanned Combat Air System,” an unpublished IFPA working paper, April 2009, soon to be posted on the IFPA website at www.ifpa.org.}
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Given the expanse of the Arctic and the fact that so little is really known about its current and emerging maritime environment, technologies and related capabilities that can be used to increase transparency with regard to the overall maritime picture in the Arctic will be in high demand, as will an ability to share that picture – in terms of both the Arctic’s physical and its operational conditions – with a variety of stakeholders in the region. This is an area, moreover, where private sector-public sector cooperation and the assistance of intergovernmental organizations (IGOs) that deal with maritime issues can be especially helpful. According to senior Coast Guard officials, for example, some progress has been made, in collaboration with the International Maritime Organization, toward developing long-range tracking devices – based largely on automated identification systems first perfected by the commercial shipping industry – that could be

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\item \textsuperscript{377} Bacon, “Icebreaker.”
\item \textsuperscript{378} Ibid.
\item \textsuperscript{379} Ibid.
\item \textsuperscript{380} Several recent Arctic Council and other initiatives of note on the use of UAVs in the Arctic region are summarized in the minutes of the 22nd Meeting of the Arctic Monitoring and Assessment Program (AMAP) Working Group held in Canada in December 2008, available at http://www.amap.no.
\item \textsuperscript{381} As Ice Melts, NORTHCOM Eyes Arctic Patrols,” Army News, May 12, 2008, http://www.armytimes.com/news/2008/05/ap_northemborder_051208.
\end{itemize}
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placed on cargo and cruise ships to transmit information about a vessel and its position from as far away as two thousand nautical miles.\textsuperscript{383} The Coast Guard already has a contract with the Marine Exchange of Alaska, a non-profit vendor of real-time Automatic Information System (AIS) data, which supplies the service with information on vessel traffic, such as position, speed, course, and destination, for certain parts of Alaska. The challenge is how to design and set in place a comprehensive information coordination and sharing system that could receive such data and rebroadcast it back out to those who need it. Clearly, the capacity to create in this way a common operating picture that could be distributed across the Arctic in real or near-real time would be enormously helpful for the full range of Coast Guard and broader military missions that might be required in the Arctic in the years to come, including search and rescue, disaster response, and basic ISR operations, as well as efforts to detect and interdict smugglers and others engaged in illicit trafficking.

In sum, although cold-weather operations and an increase in Arctic presence have become a priority for the U.S. Coast Guard, which has the lead role in ensuring maritime security, safety, law enforcement, and stewardship in the polar region, significant operational gaps and limitations remain, particularly with respect to surface capabilities, infrastructure, and domain awareness, and the May 2011 DoD assessment of Arctic-related requirements projected that these challenges will likely persist well into the next two decades and perhaps beyond. Anticipating a low likelihood of significant conflict in the High North in the foreseeable future, Pentagon officials have also concluded that there would be no need to construct additional bases or a deep-sea port in Alaska between now and 2020, as the existing defense infrastructure in the area is considered adequate to meet near-term national security needs, even though demand for Coast Guard missions is already increasing. This and similar decisions reflect Washington’s current preoccupation with balancing “the risk of being late-to-need with the opportunity cost of making investments in the Arctic before they are needed,” especially in view of the many competing demands on defense resources in the current constrained fiscal environment.\textsuperscript{384}

At the same time, naval officials have stressed that “the time for doing more with less is over,” warning that the Navy and Coast Guard, which dwarf all other countries’ warship fleets in size and capability, have fallen well behind several Arctic nations when it comes to patrolling the Arctic’s icy waters, and that acting too late is certain to result in mission failure.\textsuperscript{385} In recent years, many leading Arctic experts have expressed concern that current U.S. Arctic forces are insufficient to accomplish the projected net increase in Arctic security missions, much less standing tasks,\textsuperscript{386} in a region that is sure to see a rise in both commercial and military interest in the coming years, including by potential adversaries. Moreover, the lack of operating experience by naval surface and air forces in Arctic conditions, especially in the marginal ice zone and pack ice, has resulted in a generation of naval personnel that is unfamiliar with the demands of operating in the higher latitudes, both at sea and ashore. So, too, the Coast Guard’s rare sustained presence in the region will continue to affect that agency’s ability to project U.S. sovereignty, gather intelligence, respond to incidents, and operate independently if necessary. As a result, the combined effect of degraded navigation, communications, and charting systems, along with limited basic awareness and sensor coverage, could severely impact the safety of operations and military systems’ performance in the region, leading the National Research Council to conclude in early 2011 that “the U.S. military as a whole has lost most of its competence in cold-weather operations for high-Arctic warfare,” leaving America’s ability to patrol and safeguard its interests in the Arctic very limited. Looking ahead, though, given the long lead time associated with capability development, including the procurement of space-based assets and ships,\textsuperscript{387} the U.S. government is expected to continue conducting further service-specific studies and assessments of American force structure, capabilities, and posture in the Arctic, with

\begin{itemize}
  \item \textsuperscript{384} Department of Defense, OUSD (Policy), \textit{Report to Congress on Arctic Operations and the Northwest Passage}.
  \item \textsuperscript{385} Standifer, “Coast Guard Commandant: Service Still Committed to Eight NSCS”; Austin Wright, “Coast Guard Examines Future of Patrolling the Arctic,” \textit{National Defense}, January 2010.
  \item \textsuperscript{386} Patch, “Cold Horizons.”
  \item \textsuperscript{387} Department of Defense, OUSD (Policy), \textit{Report to Congress on Arctic Operations and the Northwest Passage}.
\end{itemize}
the ultimate goal of ensuring that U.S. forces will continue to improve their readiness to meet the full array of polar challenges and national strategic objectives in the future.

Conclusion

Even in the face of the ongoing challenges just described, then, the United States is now in a far better position with regard to Arctic policy and operational planning than it was just a little over two years ago. While budget constraints (especially with regard to defense) will make it very difficult to make serious headway in the near and mid-term on key military procurement and infrastructure development needs, DoD, the military services (particularly the Navy), the relevant COCOMs, and the Coast Guard all have – or soon will have – fairly detailed roadmaps for phasing in necessary improvements over the longer term. That said, the understandable inclination in a period of tight finances to view Arctic-related investments as a secondary or, perhaps even more likely, tertiary priority that can be pushed off for the foreseeable future must be resisted. Those investments and related preparations that can be made now, together with those that have been identified by the various studies examined in this section as being important to make over the next twenty years or so, must be implemented, if at all possible, according to schedule, if America’s presence in the High North is to have any chance of being as robust as it needs to be by 2030 or 2035, by which time the strategic dynamics in the Arctic are expected to demand significant attention in the United States. Otherwise, required capabilities will unquestionably be, in the words of the May 2011 DoD report on Arctic operations, “late to need,” and U.S. Arctic policy will be needlessly crisis-driven.
### DoD Missions in the Arctic

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<tr>
<th>Mission</th>
<th>Objectives</th>
<th>Relevant Arctic Capabilities</th>
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| **Maritime Domain Awareness†** | - Persistently monitor in the global maritime domain:  
  - Vessels and craft  
  - Cargo  
  - Vessel crews and passengers  
  - All identified areas of interest  
  - Access and maintain data on vessels, facilities, and infrastructure.  
  - Collect, fuse, analyze, and disseminate information to decision makers to facilitate effective understanding. This includes a range of activities and capabilities referred to as Intelligence, Surveillance, and Reconnaissance (ISR). | - National/Naval Ice Center  
- USN Maritime Patrol Aircraft (P-3 Orion, P-8 Poseidon)  
- USAF aviation assets  
- USAF supports maritime patrol aircraft (e.g., USN P3) operations out of Thule Air Base  
- Enhanced Polar System (EPS) satellites  
- Space and aerial reconnaissance  
- USCG HC-130 and HH-60 aircraft out of Air Station Kodiak, Alaska  
- USCG polar-capable icebreakers |
| **Search and Rescue** | - SAR is a primary mission for the USCG on the high seas and waters subject to the jurisdiction of the United States and for the USAF in terrestrial Alaska.  
- SAR is a secondary mission for the USN. USN SAR consists primarily of self-rescue, SAR of opportunity, and SAR in support of the USCG. | - USAF aviation assets  
- USAF LC-130 Hercules (ski-equipped) aircraft from the 109th Air Wing Stratton ANGB, Scotia, New York  
- USAF can support search and rescue basing, staging, and operations from Thule AB  
- EPS satellites  
- USCG HC-130 and HH-60 aircraft from Air Station Kodiak, Alaska  
- USCG polar-capable icebreakers |
- Advance constructive security initiatives and build transnational and partner nation capacity and capabilities in the region.  
- Thwart the emergence of specific security threats (national or transnational) in the region. USA ground and aviation units from Fort Wainwright and Joint Base Elmendorf-Richardson, Alaska  
- Enable and improve cooperative security arrangements for improved multinational operating performance. | - USA Cold Weather Training and Test Center, Fort Greely, Alaska  
- U.S. Army Corps of Engineers’ Cold Regions Research and Engineering Lab (CRREL), Hanover, New Hampshire  
- USN surface vessels (primarily Second, Third, and Sixth Fleet assets)*  
- USAF aviation assets  
- USAF McKinley Climatic Laboratory, Eglin AFB, Florida  
- USAF supports basing operations for Canadian and Danish forces from Thule AB  
- USMC Special Purpose Marine Air Ground Task Force (SPMAGTF)‡  
- USCG surface vessels (primarily homeported in Alaska, California, Hawaii, New England, and Washington)  
- USCG Polar capable icebreakers |
| **Humanitarian Assistance/Disaster Response (HA/DR) & Defense Support of Civil Authorities (DSCA)** | HA/DR: Respond to foreign disasters and catastrophes:  
- Establish and maintain a safe, secure environment  
- Deliver humanitarian assistance  
- Reconstruct critical infrastructure and restore essential services  
- Support economic development  
- Establish representative, effective governance and the rule of law  
DSCA: Maintain the ability to provide Defense Support of Civil Authorities during domestic events, incidents, emergencies, and disasters, regardless of the cause. | - U.S. Army Corps of Engineers’ Cold Regions Research and Engineering Lab (CRREL), Hanover, New Hampshire  
- USA ground and aviation units from Fort Wainwright and Joint Base Elmendorf-Richardson, Alaska  
- USN surface vessels  
- USAF aviation assets  
- USAF LC-130 Hercules (ski-equipped) aircraft from the 109th Air Wing Stratton Air National Guard Base, Scotia, New York  
- USAF can support basing, staging, and operations from Thule AB  
- USMC SPMAGTF and/or USMC Marine Air Ground Task Force (MAGTF)  
- Marine Corps Prepositioned Program, Norway (MCPHN)  
- USCG aircraft and surface vessels  
- USCG polar-capable icebreakers |
| **Maritime Security** | - Protect sovereignty and maritime resources. Support freedom and open seaborne commerce. Counter maritime-related terrorism, weapons proliferation, transnational crime, piracy, environmental destruction, and illegal seaborne immigration.  
- Freedom of navigation and access support maritime security, power projection, sea control, and, if required, strategic deterrence. | - USN surface vessels  
- USN submarine assets  
- USAF aviation assets  
- USAF air assets from Kulis ANGB, Anchorage, Alaska  
- USAF can support search and rescue basing, staging, and operations from Thule AB  
- EPS satellites  
- USCG aircraft and surface vessels  
- USCG polar-capable icebreakers |
### Power Projection
- Deploy and sustain forces in and from multiple dispersed locations to respond to crises, contribute to deterrence, and enhance regional stability.
- USA ground and aviation units from Fort Wainwright and Joint Base Elmendorf-Richardson, Alaska
- USN submarine assets
- USN surface vessels
- USAF and USN aviation assets
- USAF can support basing, staging, and operations out of Thule AB
- EPS satellites
- USMC MAGTF
- MCPPN
- USCG aircraft and surface vessels
- USCG polar-capable icebreakers

### Sea Control^†
- Protection of vital sea lanes.
- Destruction of enemy naval forces.
- Suppression of enemy sea commerce.
- Establishment of military superiority in areas of naval operations.
- USN submarine assets
- USN surface vessels
- USAF and USN aviation assets
- USAF can support basing, staging, and operations from Thule
- EPS satellites

### Strategic Deterrence
- Decisively influence an adversary’s decision-making calculus in order to prevent hostile actions against U.S. vital interests.
- Nuclear triad assets
- USN submarine (SSN) assets
- USN surface vessels
- USAF and USN aviation assets
- EPS satellites
- USAF Ballistic Missile Early Warning System (BMEWS)

### Air and Missile Defense
- Protect U.S. deployed and multinational forces as well as critical assets and areas of vital interest or political importance from attack by air and missile threats.
- Detect and target aircraft, unmanned aerial systems (UAS), and missiles; detect, warn, and report an aircraft, UAS, or missile launch; and coordinate a multifaceted response to such an attack while integrating that response with other combat operations.
- Detect, target, and warn of aircraft, UAS, and missile overflights or transits of the AOR.
- Reduce the probability of and/or minimize the effects or damage caused by aircraft, UAS, or missile attack.
- 49th Missile Defense Battalion (ARNG), Fort Greely, Alaska
- Cobra Dane, Shemya Island, Alaska
- UEW Radar, Thule, Greenland
- BMEWS
- Ground-Based Midcourse Defense (GMD) units based in Alaska and California for defense against Intercontinental Ballistic Missiles (ICBMs) attack directed at North America
- USAF intercept, surveillance, and tanker aircraft at ground-based interceptors out of Joint Base Elmendorf-Richardson and Eielson AFB
- USN surface vessels

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Complete analysis of the USCG’s missions in the Arctic is not included in this table; however, key USCG capability contributions to DoD missions are included.

† MDA is one component of the Department’s all-domain awareness, which involves the integration of maritime, air, and land domain surveillance, intelligence, and all-source information. This table focuses on the maritime component as the most stressing case for the Arctic Ocean; many of the same assets are also used to build awareness in other domains, and contribute to all-domain awareness.

* The U.S. Navy has no ice-strengthened surface combatants, so operating areas are limited, for other than submarines, to ice-free waters (less than 10 percent ice). This caveat applies throughout.

‡ SPMAGTF - A Special Purpose MAGTF is task organized to accomplish a specific mission, operation, or regionally focused exercise. As such, SPMAGTFs can be organized, trained, and equipped to conduct a wide variety of expeditionary operations, ranging from crisis response to training exercises and peacetime missions.

¤ MAGTF - The Marine Air Ground Task Force is the Marine Corps’ principal organization for conducting missions across the range of military operations. MAGTFs provide combatant commanders with scalable, versatile expeditionary forces able to respond to a broad range of crisis and conflict situations. They are balanced combined-arms force packages containing organic command, ground, aviation, and sustainment elements.

^ In the event of hostilities, currently assessed as unlikely due to low threat, but included for sake of comprehensiveness.

In addition to the Arctic Five, three other Arctic nations – Iceland, Sweden, and Finland – are poised to exert a significant degree of influence over the future development and overall management of the Arctic region. As full-fledged, founding members of the Arctic Council, each country has already played a key role in establishing “rules of the road” for the Arctic with regard to environmental protection, maritime shipping, and, most recently, search and rescue operations. Building on the work of the council, as well as that of other prominent multilateral forums to which they belong (including, among others, NATO for Iceland, and the EU and the Barents Euro-Arctic Council for Sweden and Finland), all three are likely to continue their efforts to promote mechanisms for regional cooperation in the Arctic that will help to ensure appropriate access to the region for coastal and non-coastal states alike. This would include supporting such access for relatively distant countries as well – such as China and Japan – that nonetheless have legitimate and growing interests in the potential use of future Arctic sea lanes and in the eventual import of oil, gas, and other resource supplies drawn from the Arctic region. A primary aim for their advocacy of a regional approach, moreover, seems to be a shared desire among the three to facilitate, to the furthest extent possible and sensible, an open architecture for economic and political engagement in the Arctic that recognizes the rightful stakes of countries and institutions that want (and should have) a say in how the Arctic evolves, even if they cannot claim territorial ownership of, or sovereign jurisdiction over, any part of the Arctic coastline and its adjacent waters and continental shelf. This is an objective, no doubt, that countries well beyond the Arctic (such as the economic powerhouse of Asia noted above) also share, and that regional organizations with Arctic members (most notably NATO and the EU) certainly would endorse.

No assessment of strategic dynamics in the Arctic would be complete, therefore, without a more thorough analysis of the Arctic policies, programs, and priorities of these other stakeholders that are determined to play a role alongside the Arctic Five. Toward that end, this chapter
examines in some depth the perspectives of three influential groups, beginning, not surprisingly, with the three non-coastal Arctic states. The second group to be studied consists solely of NATO and the EU, thereby allowing for a comparative review of the institutional capacities and interests of each to contribute to a safe, secure, and intelligently developed Arctic region. Finally, the chapter concludes with an overview of the Arctic interests of China, South Korea, and Japan, three major Asia-Pacific powers that are, to one degree or another, currently active in the Arctic region, and are likely to expand their activities in the High North as its maritime passages and resources (especially hydrocarbon deposits locked in the Arctic seabed) become increasingly accessible and exploitable.

While the views of the Arctic Five will remain paramount (particularly in the near term), having a fuller grasp of the concerns and aspirations of these somewhat secondary but still quite capable and vocal Arctic stakeholders is absolutely essential, if the potential for unproductive competition is to be defused, and the prospect for multinational collaboration enhanced, over the longer term.

As its debt-laden economy continues to emerge from a severe banking and currency crisis, Iceland is increasingly aware of its projected future significance within the Arctic, thanks to what some Icelandic politicians have described as the ongoing transformation of the Arctic Ocean into another Mediterranean or middle sea. With this transformation, a host of new (and potentially more economical) maritime transport routes will open, likely traversing the seas around Iceland and making the island nation an increasingly important hub for the support of seaborne trade. Since the tiny Nordic nation does not possess territorial claims in the Arctic Ocean, it has taken great pains in recent years to avoid being marginalized in international deliberations on the High North, a concern that probably increased following two high-profile meetings among senior officials of the five Arctic coastal states—the first in Ilulissat, Greenland, in May 2008, the second in Chelsea, Canada, in March 2010—to establish guidelines for resolving territorial disputes and for promoting international cooperation in the Arctic. Icelandic officials have warned in no uncertain terms that such gatherings had the potential to overlook (if not intentionally dismiss) the legitimate interests of other Arctic stakeholders, and to undermine the role of the Arctic Council, which Icelanders view as the most important forum for circumpolar cooperation. One of Reykjavik’s main worries in that respect revolves around the prospect that the five Arctic rim countries, which are claiming rights to the continental shelf in the polar region, will eventually gain a privileged position in the area at the expense of the non-coastal Arctic states (Iceland being one, along with Sweden and Finland) and other members of the Arctic Council.¹

Consequently, with an eye to strengthening Iceland’s status and securing its interests with respect to future Arctic governance and activities, Icelandic officials recently declared the High North as one of the country’s top foreign policy priorities, and in March 2011, Iceland’s

parliament, the Althingi, approved a detailed resolution, establishing Reykjavik’s official, overarching policy on the Arctic. Significantly, a main goal of the new strategy is for the government to focus on gaining recognition for Iceland as a “full-fledged coastal state,” on a par with the Arctic Five, leading some local analysts to suggest that if this were to happen Reykjavik might not be so opposed to small, rather exclusive meetings similar to those in Ilulissat and Chelsea in an “Arctic Six” format where Iceland would presumably have more sway. That said, fears of marginalization continue to prompt Iceland to advocate a more prominent role for NATO in the High North, arguing (much as Norway does) that developments in this region of rising strategic importance unquestionably deserve the attention of the Alliance, especially insofar as they may affect the security of member states (such as Iceland) that lie within or adjacent to the Arctic Circle. Opinions along these lines no doubt contributed to Iceland’s decision to host in January 2009 the first high-level NATO conference on Arctic security matters, a meeting that one senior Icelandic diplomat later confirmed was meant to illustrate that NATO retained “a key role, if not the key role, in the Arctic” and that the region as a whole had always been (and would remain) within NATO’s geographic area of operations.

Reykjavik’s new approach to the Arctic will also involve a renewed emphasis on strengthening the rights and role of the region’s indigenous inhabitants, including those in Greenland and the Faroe Islands, both of which are pushing for complete independence from Denmark. Iceland’s own recent experience, however, and in particular the massive collapse of the country’s financial system and explosion of its national debt, may have resonated across the Arctic in Nuuk, the capital of Greenland, as a warning of the risks to small economies within the global economic system. Iceland, which stands on the periphery of the Arctic, once represented the “epitome of small-state independence” and was considered a “model for aspiring small countries” such as Greenland. During the early to mid-2000s, for instance, the Icelandic economy thrived, expanding aggressively by more than one-third between 2000 and 2007, causing many to laud it as a “Nordic tiger, more akin to the high-growth economies of East Asia than its more staid European cousins.” Meanwhile, assets at Iceland’s three biggest commercial banks grew five-fold in less than four years and their balance sheets became larger than Iceland’s entire economy, as the financial companies looked to expand their operations internationally, beyond the limits of an island with a population of 320,000. In 2007, a bold Reykjavik even initiated negotiations for a bilateral free trade agreement with China, a country whose population is over four thousand times the size of Iceland’s. When the global credit markets began to freeze up in the second half of 2008, however, international confidence in the ability of such a small country’s central bank to support such an outsized banking system quickly plummeted, prompting foreign investors to flee the island and causing the value of the country’s currency to drop more than 50 percent in a single week. The resulting capital flight sent Iceland into a financial crisis that some economists have described as “unprecedented in scope for any advanced industrial country relative to the size of the economy,” forcing the government to turn to the International Monetary Fund for support.

Having historically avoided membership in the European Union (EU), which the local fishing industry fears would demand control over its prized fishing grounds, in July 2009 Iceland nonetheless decided to apply to join the Union, hoping to exchange “freedom outside a broader alliance of European states” for the international protection and security of being inside a powerful and stable currency union. Many local experts, however, have challenged the proposed advantages to Iceland of EU membership and the euro, pointing out that the “equation of economic size with economic strength” is flawed, and that while higher levels of economic volatility are natural for small economies, their “average growth rates may actu-

4 Interview with Minister-Counsellor Jorundur Valtysson, deputy permanent representative of Iceland to NATO, September 30, 2009.
6 Ibid.
7 Ibid.
9 Emmerson, The Future History of the Arctic.
ally be higher than those of larger economies” over time.\textsuperscript{10} Moreover, with respect to the euro, although membership might serve to mitigate some of the currency risk involved in business and investment decisions, it would also take away an important tool in Iceland’s ability to manage its monetary policy, including the setting of interest rates. Without the ability to influence the value of a country’s currency and allow it to fluctuate, any negative changes in its economic circumstances may require the adoption of harsh austerity measures with respect to wages and prices to restore fiscal stability,\textsuperscript{11} as the painful experience of EU members Greece, Portugal, Ireland, and Italy has made clear throughout the 2010-11 eurozone crisis.

Iceland’s accession to the EU would, however, undoubtedly strengthen Europe’s position in the Arctic and would give the Union a larger say and influence in developments in the High North. Indeed, Brussels, which is working to develop its own Arctic policy and is pushing for permanent observer status on the Arctic Council, views the North Atlantic island’s membership bid very favorably. This, in turn, has led some Icelandic politicians to voice concerns that the country’s initiative to be accepted as an Arctic coastal state is meant to secure the overall interests of the EU in the region, which officially declared Arctic matters as one of the top benefits of Iceland’s membership.\textsuperscript{12} Popular support for joining the EU, however, remains insufficient among Icelanders, and the country’s accession negotiations recently threatened to stall in the face of a brewing trade war between the two sides over mackerel fishing quotas in the North Atlantic.\textsuperscript{13} The situation escalated in January 2011 when the European Union, which had been demanding that Iceland dramatically cut its fishermen’s allowed catch for weeks, simply banned Icelandic mackerel boats from pulling into any EU ports of call.

Fish, however, which accounts for more than 60 percent of Iceland’s exports, is considered an integral element of national culture as well as the country’s most valuable economic asset, and many see the issue as a matter of survival, bristling at EU allegations of overfishing.\textsuperscript{14} The mackerel dispute, which remains unresolved, has renewed general fears about the EU and allowing Brussels to take control of Iceland’s most precious resource, its waters. Further, Europe’s current debt crisis has prompted many Icelanders to rethink their views on joining the European Union, especially given that the country’s economic situation has improved significantly since 2008, while the EU’s has become steadily worse.\textsuperscript{15} Iceland’s uncertain position was put to a further test in April 2011, when the population voted down a deal to assume responsibility for the private debt of its banks and refused to repay Britain and the Netherlands over €4 billion ($5.8 billion) lost in the island’s 2008 financial collapse, prompting London and Amsterdam, both of which could veto Iceland’s pending EU application, to threaten legal action against Reykjavík.\textsuperscript{16}

Icelandic thinking has thus increasingly focused on the economic potential of the island’s own substantial natural resources, including geothermal energy and hydroelectric power. The possible presence of oil and gas reserves in the waters off the northeast coast of Iceland has also begun to attract attention, with the licensing of the promising Northern Dreki area between Iceland and the Norwegian island of Jan Mayen, above the Arctic Circle, already underway.\textsuperscript{17} These particular waters are gaining in importance, as geologists feel reasonably sure that the ridge and reservoir rocks that lie far beneath the surface share numerous geological characteristics with important petroleum-rich areas such as western Norway and eastern Greenland. As Össur Skarphéðinsson, Iceland’s minister of foreign affairs, remarked not long ago, “we have high expectations of finding oil in the Dreki area, since scientific research has indicated that valuable resources may be found there.”\textsuperscript{18} Icelandic authorities’ eagerness to exploit these waters as quickly as they can does not arise from a need to use the oil at home. In fact, Iceland is far ahead of most of the world with respect to energy independence, since about 90 percent of all its homes are heated with geothermal energy and more than 80 percent of its electricity

\textsuperscript{10} Emmerson, \textit{The Future History of the Arctic}.

\textsuperscript{11} Ibid.

\textsuperscript{12} Arctic Portal, “Icelandic Arctic Policy under Development.”

\textsuperscript{13} “Iceland—the EU’s New Arctic Link,” \textit{Barents Observer}, July 28, 2010.

\textsuperscript{14} Carsten Schymik, “Iceland on Course for the EU,” German Institute for International and Security Affairs, May 2009.

\textsuperscript{15} “Icelanders Stand Firm against EU on Fishing Mackerel,” \textit{NPR}, January 14, 2011.


\textsuperscript{17} Emmerson, \textit{The Future History of the Arctic}.

is generated by hydropower. But as its economy remains heavily reliant on the fishing industry, Iceland plans to capitalize on the potentially substantial revenues it could earn “from auctioning untapped fields of petroleum to the international energy companies that have the necessary expertise and infrastructure” that the island lacks itself, and the government has publicly expressed its optimism that the exploration efforts “will strike black gold.”

While natural resources are of critical importance to Iceland, Reykjavik sees that the country may eventually play a strategic role, as suggested earlier, as a shipping hub in the region as Arctic sea lanes become more important for global maritime trade. In recent years this has led to closer relations with a number of non-Arctic countries with expanding economies, most notably China, which is keen on gaining more regular access to the port facilities in Iceland’s deep-sea harbors to support its future trading activities in the High North. Furthermore, according to some estimates, by 2015 the United States is expected to import about fifteen million tons of oil from Norway and around ninety million tons of oil from Russia, much of it transported on vast supertankers that will likely have to pass through Iceland’s exclusive economic zone (EEZ).

Iceland has recognized that increased economic activity and traffic may greatly affect its future economic development, and the government has started to actively prepare for these changes. Among Iceland’s greatest national concerns, however, is the increased possibility for an environmental disaster in the area as maritime traffic in the waters near Iceland expands, a turn of events that would impact the fishing sector especially hard. As a result, Icelandic officials strongly emphasized environmental research during the country’s chairmanship of the Arctic Council in 2002–04, and the government has accepted Canada’s regime for tighter national control over maritime traffic within the Northwest Passage, including more strictly enforced standards for the handling of hazardous cargo.

The country is also worried that its small, though growing, coast guard is not equipped to respond to the projected increase in search and rescue, disaster response, and maritime surveillance needs for the seas within its EEZ, particularly given the large gap in capabilities that was left following the departure of American military personnel (especially the maritime air patrol units) from Keflavik air base in September 2006. With no armed forces of its own, Iceland is completely dependent on its coast guard – and, more specifically, the guard’s Joint Rescue Coordination

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Ibid. In June 2011, the president of Iceland, Olafur Ragnar Grimsson, noted that geothermal and hydropower were then covering closer to 100 percent of Iceland’s home heating and electricity needs, and that both energy sources were likely to save Iceland the equivalent of a year’s GNP every decade from now on. President Olafur Ragnar Grimsson, “Why the Arctic Matters,” keynote address to the Arctic Imperative Summit, June 20, 2011, www.arcticimperative.com.


President Grimsson recently commented that China has sent high-level delegates to Reykjavik each year for the past six years, while not one delegation of equal stature has visited from the United States. See Grimsson, Why the Arctic Matters. Earlier in 2011, Icelandic Foreign Minister Skarphéðinsson also noted China’s trade-driven courtship of Iceland, remarking that if one is shipping goods from and to the Pacific over the Arctic “Iceland would be a natural place to redistribute cargo.” Andrew Ward, “Arctic Sea Lane Could Open by 2035, Says US Navy,” Financial Times, January 25, 2011.

Center (JRCC) – for twenty-four-hour support in these critical mission areas, but there is only so much that a force composed of some 150 personnel, two off-shore patrol boats (with another more powerful vessel due by 2012), a hydrographic survey ship, two rescue helicopters, and one maritime surveillance aircraft (albeit one equipped with an airborne environmental monitoring capability) can do in an area as large as Iceland’s combined EEZs. In an effort to bolster the capacity and geographic reach of the coast guard (which is administered by the Ministry of Justice), Icelandic officials have focused in recent years on boosting regional collaboration with other Arctic and North Atlantic states, especially via the North Atlantic Coast Guard Forum (NACGF). Reykjavik and Copenhagen, for example, have agreed to coordinate more closely on maritime surveillance and search and rescue (SAR) in the waters between and surrounding Iceland, Greenland, and the Faroe Islands, and additional initiatives along these lines are likely to be launched in the wake of the May 2011 signing of the Arctic Council’s new treaty on SAR cooperation among council members.

At the broader NATO level, Iceland, in concert with Norway and Denmark, seeks to promote allied training and exercises in the High North as a way to retain and improve the Alliance’s ability to operate in the severe weather conditions that prevail in this region. This is partly related to the fact that Iceland has become increasingly dependent, following the 2006 withdrawal of U.S. forces from Iceland, on the NATO air policing program, conducted under the auspices of the NATO Integrated Air Defence System (NATINADS), to patrol and protect Icelandic airspace. But Iceland’s support for NATO operations in the High North springs as well from the conviction held by many officials in Reykjavik that the Alliance adds significant value to contingency planning for civil emergencies (accidents at sea, for instance) and other soft-security scenarios in the Arctic. A NATO presence would help to compensate for the Arctic Council’s limited ability to date to address security-related issues and the current constraints on EU operations within the Arctic, constraints that could in theory limit civil emergency support for EU member states, not the least because Iceland and Norway still remain outside of the Union. For Iceland, it would make sense as well for the Alliance to pursue a dialogue with Russia on High North security matters in the NATO-Russia Council (NRC), which would add yet another justification for a larger NATO role in future deliberations on Arctic policy.

Looking ahead, it seems clear that Iceland will try to strike a careful balance among contending national priorities with regard to the Arctic. Politically, Reykjavik will continue its efforts to be recognized as a core Arctic state (ideally on par with the five circumpolar nations), while also arguing for Arctic cooperation at the broader regional and Alliance-wide levels to avoid a situation where key decisions on the management of the Arctic are made primarily by just a handful of Arctic coastal states. Economically, Iceland is likely to advance an approach to commercial activity in the Arctic that offers Reykjavik greater opportunities for economic growth, but does so in a sustainable way that will not threaten the country’s fragile marine ecosystem, the risks to which are bound to multiply as shipping and resource exploitation in the waters within or adjacent to Iceland’s EEZ inevitably expand as the Arctic itself becomes increasingly accessible. Time will tell if such a balance can really be achieved.

24 Brynjolfsson, “Iceland—A Small State in High Seas.”
MUCH LIKE ICELAND AND NEIGHBORING FINLAND, Sweden lacks an Arctic coastline and is not one of the Arctic Five countries, although it nonetheless enjoys the status of an Arctic nation by virtue of the fact that its northernmost land area extends above the Arctic Circle. The Swedish government, however, has rarely, if ever, emphasized the importance of High North affairs in the past, and, until very recently, the Arctic did not feature prominently on Stockholm's foreign policy agenda. Indeed, Sweden was the last Arctic state to issue and approve a single strategy on the Arctic, and, despite the country’s longstanding participation on the Arctic Council, it had not convened an Arctic-oriented conference at home until April 2011, when the Swedish Institute of International Affairs (UI) and the Stockholm International Peace Research Institute (SIPRI) jointly organized and hosted a one-day event that centered on identifying the emerging priorities for countries in the Arctic and on exploring ways to better manage regional dynamics through the promotion, for example, of cooperative governance frameworks like the Arctic Council. In light of increasing international and domestic pressure on Sweden to devise a proper policy on the High North ahead of its impending chairmanship of the Arctic Council, and citing the growing need for Stockholm to take a stance, and exert an influence, on a range of challenges in the northern latitudes, the Swedish government announced somewhat hurriedly on May 12, 2011, the adoption of its first official strategy for the Arctic region as a whole, the same day it formally began its two-year term as chair of the Arctic Council. Not surprisingly, according to foreign policy officials, the government’s new strategy aims to clarify Sweden’s current priorities and future outlook for the Arctic, given the shifting conditions with respect to northern shipping, hunting, fishing, trade, and energy extraction, as well as to respond to stronger domestic expectations that the nation should and will have a key role to play in managing this area of increasing strategic importance.

As many regional observers have pointed out, however, Sweden’s strategy for the Arctic region is rather traditional, “without any big surprises,” and can be viewed more as an extension of the country’s Chairmanship Programme for the Arctic Council 2011–2013, which gives priority to “issues that will promote environmentally sustainable development” of the High North. Nevertheless, the Swedish Arctic strategy does emphasize three specific substantive areas: the environment and climate, economic development, and the living conditions of people in the region. With regard to living conditions, the government’s High North strategy gives particular attention to the local indigenous population, the Swedish Saami, many of whom still inhabit the region and depend on reindeer herding, hunting, and fishing. The strategy document also discusses in depth Sweden’s status as an Arctic state and its deep-rooted historical, economic, cultural, and security-related ties to the region, pointing out the country’s continued involvement in international cooperative initiatives on the Arctic and its longstanding contribution to polar research. The Abisko Scientific Research Station, for example, located some two hundred kilometers north of the Arctic Circle and now administered by the Swedish Polar Research Secretariat, has been conducting research on the Arctic’s environmental and meteorological conditions since 1903. In addition, well over three-quarters of Europe’s production of iron ore continues to take place in the Arctic, much of it in the iron mines of Swedish Lapland in the northern parts of the country.

Although the Swedish strategy for the Arctic centers heavily on biodiversity and environmental protection in the region, it also places a strong emphasis on the facilitation of free trade in the entire High North, on industrial policy (particularly in the Barents region), and on Swedish economic interests in a number of specific areas, such as Arctic mining, petroleum extraction, forestry, tourism, and transport, as well as shipping, icebreaking, and reindeer-herding activities in the north. Sweden’s fleet of seven icebreakers, for example, which normally operates in the Baltic Sea during the winter months, is being spe-

27 Heininen, “Arctic Strategies and Policies.”
29 Heininen, “Arctic Strategies and Policies.”
cially refitted for harsh Arctic conditions, in anticipation that international demand for the services of Swedish ice-breakers will dramatically rise in the future, particularly in support of polar research, seabed mapping, commercial shipping, and oil and gas prospecting. Moreover, and somewhat uncharacteristically, within the Arctic strategy’s emphasis on regional economic development, the government appears to place great importance on developing the hydrocarbon resources of the Barents Sea, perhaps even more so than on mining, which has long been, and remains, the predominant industry in northern Sweden.\textsuperscript{30} The Swedish policy’s overarching objective, however, is to ensure and “promote economically, socially, and environmentally sustainable development” within the Arctic realm, advocating the use of Swedish expertise in environmental technology, among other strengths, and highlighting the importance of adhering to international law, especially when exploiting the region’s likely vast energy resources.\textsuperscript{31}

One of the most concrete goals presented in the strategy document is to contribute to the improvement of security and surveillance in the area, especially when it comes to the expected increase in maritime transport across the Arctic region. The Swedish government, for instance, has praised Thorvald Stoltenberg’s proposals, discussed earlier in this report, which promote the coordination of the Nordic countries’ national programs (in maritime surveillance or sea and air rescue, for example) and the pooling of resources to develop key capabilities (such as observation/communication satellites or multi-purpose icebreakers) that the partner states might not have the resources to fund on their own.\textsuperscript{32} One of Stockholm’s current initiatives in this regard involves an effort to achieve better maritime domain awareness and “a shared operational picture” with fellow Nordic countries Denmark, Norway, and Finland, focused initially over the Baltic Sea, which Sweden borders, but ultimately to be extended to the High North.\textsuperscript{33} In addition, Swedish armed forces envision that Sweden’s airborne early warning capability, with six radar-equipped Saab 340 aircraft that can contribute decisively to a regional air picture, would have many useful applications for northern security and the monitoring of maritime traffic in the region’s fragile ecosystem.\textsuperscript{34} Interestingly as well, the Swedish government’s most recent Statement of Foreign Policy, adopted in February 2011, states unequivocally that “Sweden will not remain passive if another EU Member State or Nordic country suffers a disaster or an attack. We expect these countries to act in the same way if Sweden is similarly affected.”\textsuperscript{35} Thus, although officially non-aligned and despite the lack of legally binding security guarantees with other EU, Nordic, or NATO Partnership for Peace states, Stockholm has begun to take an open and increasingly keen interest in further military collaboration with Alliance members, especially as part of efforts to promote security in the Arctic. In June 2009, for instance, Sweden

\textsuperscript{30} I b i d .


\textsuperscript{32} David Rudd, “Northern Europe’s Arctic Defense Agenda,” Journal of Military and Strategic Studies 12, no. 3 (Spring 2010).

\textsuperscript{33} I b i d .

\textsuperscript{34} I b i d .

hosted the Loyal Arrow war games, a major air exercise of NATO forces held in the far north, and Swedish troops annually train in northern Norway during exercises such as Cold Response, Cold Challenge, and Joint Winter. Such concerted efforts, according to Swedish defense analysts, can be seen as recognition of the changing situation in the High North, and although officials in Stockholm maintain that future security threats in the region will likely be non-military in nature, “we have noted more military activity in the north and this is something we’ll have to react to,” especially if a confrontation should occur in the Barents Sea, just miles from Sweden’s northern border with Norway.36

Nevertheless, as stated in the country’s Arctic strategy as well, Swedish foreign policy has traditionally endeavored to keep tensions low in the higher latitudes, and, as part of this approach, the government has consistently pledged to promote efficient multilateral coordination in the polar region, especially in the areas of oil-spill prevention, sea and air rescue, and other emergency responses. It is not surprising then that Sweden has resolved to exercise its new policy on the Arctic mainly through the use of various international forums and organizations that can address, to one degree or another, a wide array of regional challenges, most notably the Arctic Council, but also the Nordic Council of Ministers, the European Union, the Barents Euro-Arctic Council (BEAC), appropriate United Nations agencies and bodies, and international organizations for indigenous peoples, such as the Saami Parliamentary Council and other similar organizations.37 In addition, according to Swedish foreign minister Carl Bildt, Sweden’s current chairmanship of the Barents Council ensures that the country will have an important role to play in managing the continued cooperation on environmental issues between Stockholm and fellow BEAC members Norway, Finland, and Russia. Sweden, however, does not share Finland and Norway’s view that close collaboration with Russia will remain crucial in developing the Barents region, and Stockholm has traditionally displayed a more critical attitude and frequent reservations with regard to Russia’s future role in the High North.38 Similarly, unlike fellow EU mem-

37 Heininen, “Arctic Strategies and Policies.”
**FINLAND**

Although it lacks a frontage to the Arctic Ocean or the Barents Sea, Finland is a founding member of the Arctic Council, and the Finnish government has increasingly expressed in recent years its intention to become a “versatile and influential actor in Arctic matters,” not least because one-third of the country’s territory extends north of the Arctic Circle. While certain factors, including Finland’s desire to secure vital national interests within the Baltic region and its long-held geopolitical sensitivities with respect to Russia, have at times hindered Helsinki’s active participation and involvement in Arctic matters, Finnish politicians have nonetheless maintained a de facto northern policy since the early 1990s. In January 1989, for example, Finland initiated a regional multilateral dialogue on environmental protection in the Arctic that later led to the adoption of the 1991 non-binding Arctic Environmental Protection Strategy (AEPS). Signed in Finland by the eight Arctic states and hailed as a political breakthrough of the post-Cold War era, the AEPS aims to monitor, assess, and protect the High North’s fragile ecosystem. Similarly, in late 1997 Finnish officials launched the Northern Dimension initiative, a partnership involving the European Union, Russia, Norway, and Iceland, and succeeded in getting it placed on the EU’s political agenda. The Northern Dimension initiative, formally approved in 2000 and further updated in 2006, has since emerged as an important framework for regional cross-border cooperation and serves as a common policy among the partner countries on a range of northern issues. Despite the obvious success of these efforts, however, the Finnish government did not initiate a formal process to develop a national agenda on the Arctic until late 2009, when Finland’s foreign minister, Alexander Stubb, declared in a keynote address in Rovaniemi, Finland, that the country “needs a comprehensive and ambitious Arctic strategy of its own,” sparking a series of parliamentary initiatives that culminated in June 2010 when Finland announced the adoption of its first official strategy on the entire Arctic region.

The Finnish strategy defines the nation’s interests and policy objectives in the High North and strongly reiterates the dominant view in Helsinki that Finland’s geography and history ensure its status as an Arctic state, with “significant economic, political, and security interests in the region.” The new policy discusses as well a number of strategic national goals with respect to Arctic security, the environment, the economy, infrastructure, and the future of the nearly ten thousand indigenous Saami people who occupy the northernmost parts of the country. The strategy document, however, appears to place a heavy emphasis on business development and economic activities in the polar region, focusing more specifically on the need to promote and strengthen Finland’s expertise in Arctic know-how, particularly as this relates to winter shipping, Arctic technology, northern sea transport, shipbuilding, and Finnish experience in the mining and metals industry and in cold-weather research. Indeed, within this context, the Finnish government singles out the importance of developing and expanding its Arctic-oriented transport, communications, and logistics networks and corridors in the Barents region and in northern Finland, especially given the country’s heavy dependence on foreign trade and shipping. Finnish politicians, in that regard, have increasingly promoted the idea of an Arctic railway that would effectively extend Finland’s railway network, which currently ends in Rovaniemi, some five hundred kilometers from the Barents Sea, all the way up to the deep-water port of Kirkenes, on the Norwegian Arctic coast. Officials from northern Lapland in particular have pushed hard for the railway project, which will help establish an important corridor for Finnish industries to the Arctic by allowing the country to take advantage of increased maritime activity along the Northern Sea Route through access to Kirkenes, the western end point of the route. In a similar vein, a joint Swedish-Finnish study in 2009 strongly recommended the development of new railway infrastructure between the two countries’ Arctic regions in order to facilitate the shipment of iron ore from:


41 Heininen, “Arctic Strategies and Policies.”

42 Ibid.

43 Prime Minister’s Office, Finland, *Finland’s Strategy for the Arctic Region*, August 2010 (in English), http://www.arcticportal.org/images/stories/pdf/Finland_Arctic_Strategy.pdf.

mines outside Pajala, in Swedish Lapland and close to the border with Finland.\(^{45}\) The need for better transport infrastructure for routes to the Arctic’s maritime areas was further demonstrated in October 2010, when mining and exploration company Northland Resources, which operates in northern Finland and Sweden, chose to transport iron ore from Pajala to the Arctic port of Narvik in Norway, which is large and remains ice-free year-round, rather than the smaller but much closer Finnish port of Kemi, in the Baltic Sea, which remains frozen all winter.\(^{46}\)

Interestingly, one of Helsinki’s top economic priorities for the High North involves improving the chances that Finnish companies may benefit from the large oil and gas projects currently under development in the Barents Sea and parts of the Yamal Peninsula in the Russian Arctic. As part of Helsinki’s goal to further develop its political and economic ties with Moscow, for example, Finland’s foreign minister revealed in early February 2011 a series of “Arctic Partnership” initiatives designed to increase Finnish visibility in the region, including calls to work together with the Russians on marketing the Northern Sea Route, a proposal to free cooperation between the two countries from red tape, and a pledge to upgrade Finland’s diplomatic office in Murmansk to a full-fledged consulate general.\(^{47}\) In December 2010, moreover, Helsinki and Moscow announced that Finnish shipbuilding giant STX Finland and Russia’s state-owned United Shipbuilding Corporation (USC) would form a new shipbuilding enterprise, establishing an equal-share company that will unify the Finnish and Russian maritime clusters.\(^{48}\) The joint venture, known as Arctech Helsinki Shipyard Oy, will focus primarily on Arctic maritime technology, specializing in the construction of Arctic and other specialized vessels, such as multipurpose icebreakers and research ships. Finland already has technological experience in that arena, having previously built two of Russia’s nuclear-powered icebreakers, based in Murmansk, as well as the Mir deep-sea submersible used in Moscow’s flag-planting stunt at the North Pole in 2007.\(^{49}\)

Helsinki’s ambition to take part in Arctic energy development on the Russian and Norwegian continental shelves, however, was recently dismissed by some experts as more of a “hopeful expectation” than a realistic objective, even though at least one Finnish company, the SteelDone Group, which provides steel structures and equipment for the energy sector, has been able to secure a contract with the giant Shtokman gas condensate project in the Barents Sea.\(^{50}\) Skeptics point out that Finnish companies in the north had similarly high expectations dur-


\(^{46}\) Heininen, “Arctic Strategies and Policies.”


\(^{49}\) “Finland Expands Arctic Cooperation with Russia,” *BarentsObserver*.

\(^{50}\) Heininen, “Arctic Strategies and Policies.”
ing the development of the Snøhvit natural gas field on the Norwegian side of the Barents Sea, although their eventual gains from the project turned out to be considerably smaller than projected. In that regard as well, the Finnish strategy on the Arctic reveals a fundamental inner contradiction of priorities by strongly emphasizing on the one hand how crucial it is for northern Finnish industries “that all types of economic activity increase both in large seaports and in the land-based support areas of oil and gas fields in Norway and Russia,” while at the same time noting that “increased human activity in the region also raises the risk of environmental pollution.”

While the strategy discusses the safety of navigation in Arctic waters as a major environmental concern, it does not emphasize the potentially bigger ecological threat of large-scale oil and gas drilling in the area, focusing instead on the need to ensure nuclear safety in the Barents region and especially on the Kola Peninsula, which is home to the world’s greatest concentration of nuclear reactors, even though, as some have argued, the management of radioactive waste in the north has already been “under control” for several years.

With respect to overall security in the Arctic, the Finnish strategy firmly underscores Helsinki’s commitment to adhere to the oft-cited “High North, low tension” approach to developments in the area as a whole. Despite its strict non-aligned policy, however, Finland has begun of late to strengthen its security partnerships with Nordic neighbors and with international organizations, in part by actively participating in multilateral forums, such as the EU and NATO’s Partnership for Peace, as a way to enhance and ensure the country’s security. Finland’s forces, moreover, much like Sweden’s, also take part in a NATO strategic airlift program, which provides Helsinki with a capability that some observers argue “could very well be called upon” and deployed in the nation’s north at some point in the future.

Although the Baltic region remains a major area of interest, and Finnish naval assets have been configured for operations in the Baltic Sea, stability in the High North is widely regarded as crucial for commercial and economic reasons.

expressed support for the Stoltenberg proposals, discussed in chapter 2, which aim to improve security cooperation among the Nordic states. Given the country’s longstanding fear of provoking Russian countermeasures, however, and in light of political concerns about high costs and sensitive data exchange with NATO’s air defense system, Helsinki recently decided not to participate in one of Stoltenberg’s initiatives, which would have seen Finnish fighter jets patrolling the air space over NATO member Iceland along with those of fellow Nordic nations.

Perhaps in an attempt to strike a prudent balance between soft and hard security issues, the Finnish strategy on the Arctic heavily emphasizes the role of the European Union in High North developments, referring to it as a “global Arctic player.” Aside from offering concrete suggestions for improving the EU’s own emerging Arctic policy, Finland has pledged to champion the Union’s case for gaining permanent observer status on the Arctic Council and will work to ensure that the EU’s Northern Dimension, together with its “Arctic Window,” becomes

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51 Prime Minister’s Office, Finland, Finland’s Strategy for the Arctic Region.
52 Heininen, “Arctic Strategies and Policies.”
53 Rudd, “Northern Europe’s Arctic Defense Agenda.”
54 Ibid.
55 Prime Minister’s Office, Finland, Finland’s Strategy for the Arctic Region.
a central tool for implementing European policies related to the Arctic area. What is more, the Finnish government is working hard to convince European officials of the need to establish an EU Arctic Information Center at the University of Lapland in Finland, which will serve as a hub for a network of EU agencies and research institutions with an Arctic focus. In addition, Finnish foreign minister Stubb recently proposed the organization of a high-level Arctic summit that would address, among other issues, the sustainable use of the Arctic's vast natural resources and the future mandate and expansion of the Arctic Council. While Finland's new role as advocate for and defender of the EU in Arctic affairs is understandable, it may nevertheless prove to be a risky strategy for the country, as some have argued, particularly with respect to its membership on the Arctic Council and in the context of wider multilateral cooperation in the High North. This is especially true given the vast differences of opinion about the EU's possible role and influence in the polar region among the Arctic states themselves, as reflected in the largely hesitant response the organization has received for its efforts in that regard, particularly among the Arctic's indigenous peoples.

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56 Heininen, "Arctic Strategies and Policies."
57 Ibid.
ancing role along these lines might also make it less likely that one or another party in a future dispute might choose to escalate matters in response to a decision by NATO to deploy military forces from outside the Arctic into the region.

While current Alliance discussion is careful to avoid talk of any immediate threats of consequence to NATO interests in the Arctic, NATO’s core functions of strategic deterrence, intelligence, and early warning in the High North remain important, and the Alliance continues to maintain some degree of presence in the Arctic area. For example, the Alliance conducts annual military exercises in Norway and Iceland, and the capabilities of the NATO Integrated Air Defense System (NATINADS), including sensor installations, fighter aircraft on quick reaction/interception alert (QRA), and regular early-warning (AWACS) surveillance flights, extend to the High North. In addition, the Arctic holds enduring geostrategic value to NATO members and for continued transatlantic cooperation, especially since the proximity of the Arctic region to allied territory in the north (on both sides of the Atlantic) makes it a particularly attractive location through which to launch ballistic missile attacks against NATO member states, and, conversely, from which to defend against such attacks. As noted elsewhere in this report, the area’s ice-covered landscape also provides ideal conditions for the concealed patrols of nuclear submarines, as well as shorter flight paths between North America and Europe and the additional prospect, once Arctic waterways become more accessible and navigable, of quicker transatlantic response times by surface ships. It should hardly come as a surprise, then, that NATO, as Europe’s critical provider of hard security, would be looking to define its future role, however low-key or peripheral it may be, within the Arctic region.

However, NATO’s efforts in this regard have been hampered in recent years by America’s gradual disengagement from the northern theater and by the Alliance’s increased attention to remote armed conflicts in the Caucasus and Central/South Asia and to a growing array of transnational threats, such as terrorism, trafficking, piracy, failed states, and proliferation, all of which have resulted in a shift of Alliance operational responsibilities away from NATO’s traditional Euro-Atlantic defense zone. At the same time, the European Union has taken bolder steps toward developing its own common approach to “non-war-like contingencies,” and it recently adopted stronger policies that could markedly increase its operational readiness to contribute to its members’ internal territorial security, especially in crises such as major terrorist attacks or natural disasters. This protective umbrella includes the provision of military personnel and assets in a civil support role, which could, in turn, lead to a serious overlap with NATO missions and make for confusion between EU and NATO responsibilities. Moreover, the EU’s growing ambitions to establish its own capacities in the security policy realm have led some Alliance members, including the United States, to express concern that a rival EU operational role could eventually “undermine and confuse” the primacy of NATO actions, weaken solidarity within the transatlantic community, provoke mistrust, and present dual capability standards for future missions, all without necessarily expanding the pool of member-state capabilities that could be tapped in a crisis.

Yet, interestingly, as the Alliance ponders what role it ought to play in support of member-state security concerns in the Arctic, it has simultaneously displayed a relatively passive and laissez-faire approach with respect to strategic High North dynamics. To a large extent, this cautious stance reflects the desire held by a number of NATO member states that the Alliance avoid any moves toward excessive regionalization that might threaten the indivisibility of Alliance security, perhaps leading to an unwelcome decoupling between or among various allies. It has highlighted as well the emerging debate within NATO policy circles over the wisdom of giving priority to expeditionary, out-of-area operations versus a home-territory focus, a trend that some fear could erode the continued credibility of the Washington Treaty’s article-5 collective defense mechanism. This growing tension between an in- or out-of-area focus could also explain why, despite a fair amount of discussion among the Allies about the strategic importance of the High North, including suggestions that

60 Ibid.
63 Ibid.
64 Rudd, “Northern Europe’s Arctic Defense Agenda.”
the Alliance might have a stronger role and larger future presence in the Arctic, the new NATO Strategic Concept adopted in November 2010 surprisingly failed to make an appropriate reference to the region (despite the urgings of Norway and a number of other Nordic and Baltic allies that it do so), pointing once again to the ongoing struggle and lack of agreement within the Alliance over the exact way in which (and how strongly) it ought to articulate its mission in the High North.

Meanwhile, some members of the Euro-Atlantic community have been much more vocal than others in discussing their views and possible measures for raising NATO’s profile on Alliance territory and on its periphery. As noted above (and in this report’s Norway section), the Norwegians in particular have been consistently pushing the issue of Arctic security onto the NATO agenda, calling for accelerated efforts to develop a new conceptual and operational strategy for the High North that is better suited to the emerging security environment. From Norway’s perspective, while NATO’s distant, out-of-area operations (notably in Afghanistan and increasingly in the Middle East) are clearly critical to Alliance security, they have also led to a lower than desirable NATO profile within Alliance territory and along its periphery. Hence, if NATO is to retain its political relevance and public legitimacy among member states, it should, the Norwegians go on to argue, take steps to improve its ability to provide for the collective defense of NATO countries, especially those along the flanks (such as Norway) which are themselves confronting new security challenges (such as defense of sovereign interests in the Arctic). According to this logic, mentioning the importance of the High North in NATO’s strategic roadmaps and calling for greater allied efforts to enhance its security would help to reconfirm that the Alliance still has the capacity and the will to address the individual and regional security concerns of its members. In this sense, “NATO’s relevance,” it has been argued by Norway’s foreign minister, Jonas Gahr Støre, “begins at home,” and public support for “away missions” (such as Afghanistan) will be stronger if the Alliance is seen to be central to the security of its member states.

Among the other steps, Norway argues, that NATO could take – all of which could help boost its profile in the High North – would be NATO command-structure reforms to link SHAPE and the joint force commands more closely to national military authorities (giving them a larger regional role), greater efforts to improve geographic expertise and situational awareness with respect to the Alliance area (especially in the maritime arena), and developing ways to engage “NATO central” more directly in national exercise and training activities. In addition, according to Norway’s proposal, members should also consider the possible “dual hatting” of national headquarters to establish better formal links to NATO’s military command and control structure, especially since national units are constantly developing critical competence and regional expertise that the Alliance as a whole currently lacks.65 The Norwegians also point out that given the long distances involved in conducting Arctic operations, NATO exercises and training missions in the High North would help to build up, rather than detract from, Alliance readiness to undertake distant expeditionary operations elsewhere within or well beyond NATO territory. Indeed, deployable capabilities, they stress, are as important for NATO missions at home as they are for more distant, away missions.

To be sure, a number of NATO allies have criticized this initiative as simply a ploy by Norway to use the debate over the new Strategic Concept and related organizational reforms as a way to deal with national security concerns that few other allies really share. Norway has replied that it is simply trying to make clear that the High North and much of the Arctic is, and always has been, an integral part of NATO territory that needs to be defended. As Norway’s state secretary for defense has pointed out, NATO’s complex expeditionary operations have caused it to become

“in a sense over-focused and over-adapted to a scenario in which our armed forces will only meet enemies that are asymmetric,” as in Afghanistan for example, while at the same time it is not inconceivable that a major crisis in one region may lead – by design or by coincidence – to armed aggression or the escalation of tensions on Alliance territory, including in the Arctic, requiring adequate NATO collective defense capabilities to defend against other states.66 The main point Oslo wants to make, however, is that Russia really has little ground to stand on when it complains (as it has several times in the recent past) that NATO, in contemplating a wider and more frequent presence in the High North, is somehow trying to extend its authority into areas where it does not belong.

Nevertheless, both Norwegian and NATO officials agree that Russia will likely play a key role in ensuring the Arctic region’s future long-term stability, and thus the challenge for NATO will be to devise appropriate policies that meet the fundamental security interests of its members while simultaneously taking into account legitimate Russian sensibilities and concerns in the polar area. According to a number of observers, this could prove to be a very difficult task, as “Russia may be expected to respond negatively to almost any aspect of an increased Alliance presence in the region.”67 Indeed, Moscow has frequently displayed its preference for dealing with the circumpolar states and with other regional stakeholders strictly bilaterally, and Russian president Dmitry Medvedev was clearly dismissive of NATO’s presence and security role in the High North when he declared in September 2010 that “our view is that the Arctic can manage without NATO,” adding that “the presence of military factors can raise additional questions.”68 In that respect, Norway has had, and will continue to play, a crucial part in convincing the Russians of the value of long-term cooperation with NATO and its resulting benefits to regional security dynamics. One mission area where it should be able to do this is in the search and rescue realm, where no single nation could hope to have sufficient response capabilities to handle all potential incidents in the Arctic, and for which both the Arctic Council and the Barents Euro-Arctic Council already have established strong precedents and/or mandates for cooperation between Russia and NATO member states.

Indeed, the overall prospects for NATO-Russia collaboration in the High North appear markedly better now and in the immediate future than they did in the 2007–09 timeframe, when the Russians planted their flag on the sea floor of the North Pole, re instituted long-range bomber runs along northern Norway’s coastline and close to U.S. and Canadian airspace, and released security policy documents implying that the Arctic and its resources were something of a special preserve for Russia. Tensions have eased considerably with the signing of the Ilulissat Declaration in May 2008 (which identified the UN Convention on the Law of the Sea as the appropriate mechanism for determining sovereign rights in the Arctic), followed in April 2010 with a surprise Russian-Norwegian compromise agreement that settled their longstanding border dispute in the Barents Sea and parts of the Arctic Ocean. Hence, while establishing a presence and a capacity to operate in the increasingly accessible Arctic is important for all five Arctic nations (four of which, as mentioned earlier, belong to NATO), none in the policy community sees any imminent security challenges in the High North, and what challenges do exist are primarily of the soft (as opposed to hard) security variety, related to protecting the fragile Arctic ecosystem and dealing with the effects of increasing human activity and thus conducive to cooperative planning.

However, a key challenge for the Alliance with respect to the High North (as in other areas under NATO responsibility) will revolve around operationalizing and implementing NATO’s “comprehensive approach,” formally approved in November 2006, which aims to create (and leverage) functional synergies among, and establish NATO partnerships with, a wide range of states and institutional actors, including welcoming input from the EU. Through these partnerships and working relationships, civil and military resources and capabilities can be pooled, for the benefit of common security, to address a host of non-traditional, transnational security risks now coming to the fore (such as illicit trafficking, piracy, and weapons proliferation).69 In line with the Alliance’s new Strategic Concept, moreover, NATO foreign ministers agreed in

66 Rudd, “Northern Europe’s Arctic Defense Agenda.”
67 Holtsmark, “Towards Cooperation or Confrontation?”
April 2011 to reinforce this cooperative, multidimensional policy by offering NATO partners, be they public or private stakeholders, even “more political engagement with the Alliance, and a substantial role in shaping strategy and decisions on NATO-led operations to which they contribute.”70 As part of NATO’s call for a “true strategic partnership” with Russia, for example, NATO’s Supreme Allied Commander, Europe, Admiral James Stavridis, noted in March 2011 that one of his top priorities for the near future will include the search for “zones of cooperation” with Moscow that could be managed via NATO or U.S. European Command (USEUCOM), focusing especially on areas such as counter-piracy, counter-narcotics, missile defense, and, equally important, High North policies.71

More specifically, NATO’s Arctic involvement could include at least a limited role in the practical provision of surveillance to safeguard energy and other trade routes, as well as in the development of more robust capabilities for search and rescue at sea, maritime domain awareness (MDA), humanitarian or disaster relief, and the provision of critical defense support in civil emergency situations, all in Arctic conditions. Moreover, in addition to the Arctic nations’ recent progress on establishing overlapping SAR regions under the auspices of the Arctic Council, various NATO forums, such as NATO’s Euro-Atlantic Disaster Relief Coordination Centre and perhaps even the NATO-Russia Council (NRC), could be used more effectively to exchange lessons learned and to sponsor joint exercises structured around High North disaster relief, environmental security, MDA, or incident-at-sea scenarios. With its focus on providing a shared NATO-Russia radar picture of air traffic and early warning of any suspicious, potentially terrorist-related, air activities, and in view of the fact that it already includes linked coordination centers in Moscow, Murmansk, and Bodø (in Norway), the NRC’s Cooperative Airspace Initiative (CAI) offers at least one example of how a common operating picture for the Arctic might be built through a joint effort.72 The fact that such operations require the type of civil-military and cross-organizational coordination called for under the Alliance’s new comprehensive approach makes them ideal prospects for inclusion in a joint NATO-Russian endeavor, for example. Alternatively, they could be usefully pursued in other multilateral formats – such as a less formal Nordic-Baltic exercise or in collaboration with the BEAC and its Barents Rescue exercises – that might be more acceptable to Moscow. In either case, as suggested by Admiral Stavridis, the Arctic region could increasingly serve as a laboratory for testing a wide spectrum of NATO-Russian cooperation scenarios in the years ahead.

As NATO continues to study the Arctic role it can (and should) have in the future, allied governments have also focused increasingly on maritime security as an especially suitable area for High North cooperation with strategic partners. Indeed, adequate maritime situational awareness, much like intelligence, is a key factor in the maintenance of regional security in the Arctic.73 Not surprisingly, therefore, Alliance officials have stressed the need for improving member-state MDA capabilities, particularly with respect to the Arctic’s largely maritime environment. In fact, NATO’s new Alliance Maritime Strategy, released in March 2011, singled out maritime security as a separate core task for the allies and emphasized the need to better align NATO’s maritime capabilities with the requirements of future missions in all of its areas, including those on its periphery. According to a senior NATO spokesman, for example, future Alliance tasks in the High North, such as vessel escort, search and rescue at sea, or dealing with accidents on oil platforms, will require “new kinds of equipment and new operational procedures to deal with the [Arctic] environment,” and most allied navies currently lack the capacity or are simply not accustomed to operating in these conditions.74

While some of the duties, such as real-time surveillance of civilian and military activities, may present useful avenues for cooperation with Russia, NATO would also need to explore to what degree its resources can supplement ongoing efforts by the Arctic states in maritime and aerial surveillance and patrolling, among other key mission areas.75 In light of current defense budget constraints,

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73 Holtsmark, “Towards Cooperation or Confrontation?”
75 Holtsmark, “Towards Cooperation or Confrontation?”
NATO allies may also choose to further pool their skills and resources to provide key capabilities over allied territory in the north, and the Alliance Ground Surveillance (AGS) system, scheduled for delivery by 2012, could offer a useful solution by deploying its radar-equipped unmanned aerial vehicles to different parts of the Arctic so as to “promote domain awareness” along the coastlines of member states or within their territorial seas. Such missions, moreover, could be particularly helpful in the prevention or handling of regional conflicts that may arise over resource management or sovereign rights in disputed areas of the Arctic Ocean, including cases that may threaten to escalate to military involvement.

Looking ahead, NATO planners will almost certainly be exploring more closely the operational requirements for a range of Arctic-related crisis response and conflict scenarios. Better preparations for operating in the High North should provide the Alliance with a greater capacity to deter conflict in the region and to control escalation when such conflict can’t be deterred. That said, apart from improving allied capabilities for responding to an Arctic crisis, NATO can also help reduce tensions by providing a forum where all the major Arctic nations can more openly discuss their legitimate national interests in the Arctic and their concerns over how best to protect those interests over the long term, concerns that are still difficult to air in the Arctic Council. Moreover, if NATO were to apply, as the EU has, for observer status on the Arctic Council, the council might use such a tie, if it were ever granted, as a way to link up informally with a security-oriented forum that could address High North issues.

Here, again, the NATO-Russia Council could play an especially important supporting role, even though discussions on Arctic-related issues within the NRC’s framework do not appear to be high on Moscow’s agenda at the moment. Nevertheless, using the NRC for a serious dialogue about the Arctic makes eminent sense, some have argued, given the importance of Russia’s cooperation to the success of any future international regime for managing (and protecting) the commercial use and development of the Arctic. Greater transparency between and among potential rivals for leverage in the Arctic, most if not all of whom are likely to deploy some level of military forces to the region. In time, such transparency might even open the door to NATO-Russian cooperation in harder security mission areas of common interest, such as assuring the safety and security of key Arctic sea lanes. On initial consideration, this may seem quite unlikely, but Russia’s participation in NATO’s Operation Active Endeavor in the Mediterranean (an article-5 operation aimed at detecting, deterring, and protecting against acts of terrorism at sea), as well as its support for counter-piracy operations with NATO countries off the Horn of Africa, shows that it might indeed be possible.


76 Rudd, “Northern Europe’s Arctic Defense Agenda.”

77 Holtsmark, “Towards Cooperation or Confrontation?” 10.
Yet another institutional stakeholder that has emphasized the need to ensure access for all to the High North is the European Union, whose growing interest in Arctic developments is hardly a surprise, given that three EU countries – Denmark, Sweden, and Finland – sit as permanent members at the Arctic Council table, and two non-EU Arctic countries are members of the European Free Trade Association (EFTA) – Norway and Iceland – as well as parties to the European Economic Area (EEA) Agreement signed between the EU and EFTA. In 2009, moreover, Iceland formally applied to join the EU, and if its application is approved, the geographic scope of the EU's policy influence would extend automatically into a maritime zone that is expected to play a central role in the future seaborne trade (if not off-shore resource development) of the Arctic region. It is true, of course, that Greenland, which provides Denmark with its status as an Arctic coastal state, withdrew from the European Economic Community (EEC), the EU's predecessor organization, in 1982 in order to exclude its fisheries from EU management, and that sometime in the future Greenland could become an independent country without EU membership. Nonetheless, whatever happens to Greenland, the EU's ties with current and potential member states, and with key partners, that are at least partially situated above the Arctic Circle provide more than enough justification for the Union to seek a larger role in Arctic affairs.

That said, the EU's authority in the Arctic in coming years is likely to be determined more by the legislative and regulatory clout that it has acquired (and will continue to acquire) in a number of policy sectors that are central to current and future developments in the Arctic than by the geography or territorial sovereignty of its member states and partner countries. This is especially true with respect to policies affecting environmental protection, commercial fishing, maritime shipping, and energy security, to name but a few issue areas where the EU has established considerable legal competence that is broadly recognized by the international community. Hence, the EU perspective on these matters as they relate to the Arctic, it is increasingly argued, cannot be ignored, even if it is sometimes opposed by one or another of the primary Arctic states. Of course, the legitimacy and power of the EU's voice on Arctic issues will be strengthened significantly if its application for permanent observer status on the Arctic Council is approved, which Sweden, as the current chair of the council, hopes will happen soon. But whatever transpires on this front, the EU's institutional links with numerous other intergovernmental organizations – such as the International Maritime Organization (IMO) – that are involved in Arctic policy making, as well as the EU's own decisions in policy areas where it has extensive legal competence (shipping and fishing, for example), guarantee that it will be able to influence developments in the Arctic region to one degree or another, however limited its relationship with the Arctic Council may be.

It is worth noting, nonetheless, that the EU does not have a very long history of involvement in Arctic affairs, and it has not played a very active role in the polar region so far, despite the so-called Arctic Window it established as part of its Northern Dimension initiative, which brings together the EU, Russia, Iceland, and Norway to work as equal partners on projects of common interest. Established in the late 1990s, the Northern Dimension program was itself primarily intended as a mechanism to boost relations between and among Russia, EU members, and the Baltic states that were then candidates for EU admission,

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79 EFTA was established in 1960 as a trade-bloc alternative for European states that were either unable or unwilling to join the then-European Economic Community (EEC), which has since become the EU. Current members are Liechtenstein, Switzerland, Norway, and Iceland. For more on EFTA, see http://www.efta.int/about-efta.aspx. Established in 1994, the EEA allows three EFTA members – Liechtenstein, Norway, and Iceland – to participate in the EU's internal market without a conventional EU membership. In return, these three EFTA members must abide by EU laws regulating that market, except with respect to agriculture and fisheries. For more on the EEA, see “EEA Fact Sheet,” http://www.efta.int/~media/Files/Publications/Fact%20sheets/EEA%20factsheets/FS_EEA.pdf.


81 A prime example is the opposition of Canada, Norway, Iceland, and Denmark (on behalf of Greenland) to the EU’s ban on the trade in seal products. See Koivurova et al., “The Present and Future Competence of the European Union in the Arctic,” 7.

and the cooperative activities of the program, which extend across the Barents region, have generally remained a “low-key policy area” since the initiative began. To the extent that there has been a sustained, long-term EU focus on the Arctic, it has mainly centered on the need to ensure stable and secure energy supplies from the Arctic, since the EU is a major importer of oil and gas drawn from Russia’s and Norway’s High North reserves, and it remains an obvious market of any future supplies produced from Arctic fields.

More recently, however, European institutions have started to pay greater attention to the broader geostrategic dynamics now at work in the Arctic region, particularly with respect to their implications for EU policy and European security interests. In 2007, for example, the European Commission issued an integrated maritime policy report that specifically discussed the Arctic Ocean’s transformation in the context of climate change, and while the European Security Strategy (ESS), initially drafted and approved by the EU in 2003, made no specific mention of the Arctic, it did highlight the security implications of climate change and the need for the EU to address them in cooperation with other regional and international organizations, points that were repeated forcefully in a 2008 report on ESS implementation. More specifically, a March 2008 strategy paper prepared by the European Commission on climate change and international security, also known as the “Solana Report,” warned of future security risks for Europe arising from the melting of the polar ice cap. The report pointed in particular to the likelihood of a contest between Russia and the West for control of the Arctic’s vast mineral resources, while underlining as well the EU’s unique capacity to respond to and, to some extent, alleviate “the impacts of climate change on international security, given its leading role in development, global climate policy, and the wide array of tools and instruments at its disposal.”

In proposing the establishment of an EU-wide Arctic policy, the report also demonstrated that the Union was becoming increasingly aware of the need to defend its strategic interests in the region by, for instance, improving Europe’s monitoring, research, and crisis response capabilities, and by developing a dialogue with relevant Arctic and non-Arctic stakeholders alike. The issue was further discussed in an October 2008 resolution by the European Parliament (EP), which strongly emphasized the need for a more pro-active EU presence in the region by “at least, as a first step, taking up observer status” in the Arctic Council and setting up a dedicated Arctic desk, and, most controversially, by calling for the adoption of a binding, multinational political or legal Arctic charter modeled on the Antarctic Treaty.

As a result of this growing Arctic awareness, the European Commission, in its most recent and extensive communication on the Arctic region released in November 2008, outlined a host of initial guidelines for developing an Arctic strategy, ushering in a new era of EU involvement in High North geopolitics, even though its main policy objectives, according to Arctic experts, remain rather general, with a primary focus on the EU’s scientific research interests, its climate change concerns, the options and priorities for multilateral Arctic governance, and (again) the need to ensure energy security. At the same time, the commission text was clearly assertive in areas where tangible EU interests might be threatened, and the report notably emphasized the importance for the Union of continued “freedom of navigation and the right of innocent passage” in Arctic waters, an argument that could challenge Canada’s moves to control and regulate shipping through the Northwest Passage and would likely clash as well with Russian claims of sovereignty over much of the Northern Sea Route. Other clauses in the proposed guidelines warned against “discriminatory practices...by any of

86 Roderick Kefferpütz and Danila Bochkarev, “Expanding the EU’s Institutional Capacities in the Arctic Region,” Heinrich Böll Stiftung, November 18, 2008.
the Arctic coastal states towards third countries’ merchant ships,” effectively demanding a level playing field and equal commercial access to Arctic opportunities for EU businesses, including those based in non-Arctic EU countries. European shipping companies and shipbuilders, in particular, have a strong interest in the Arctic’s opening sea lanes given the “current lack of demand [for their products and services] on other fronts,” and EU energy firms, such as Shell, Total, and Cairn Energy, among others, are eager to obtain licenses for offshore exploratory drilling in the resource-rich Arctic seabed. Unlike the European Parliament’s earlier proposal, however, the commission carefully stressed the continued utility of existing laws and agreements for the Arctic, such as UNCLOS and decisions of the Arctic Council, and rejected the EP’s idea of supplanting them with a separate, new legal governance structure.

The European Commission’s 2008 approach to polar governance was subsequently reinforced in the European Council’s Conclusions on Arctic Issues, adopted by the member states in December 2009, which were subsequently endorsed at a March 2010 plenary meeting of the European Parliament, where the High Representative of the Union for Foreign Affairs and Security Policy, Baroness Ashton, issued a formal statement on the EU’s Arctic interests. In so doing, she underlined the new EU position that “governance in the Arctic region could not be developed along the lines of the Antarctic Treaty regime” (as called for by the EP’s October 2008 resolution), not least because of the inherent dissimilarities between the two areas, and she went on to say that any efforts to replicate the Antarctic system in the Arctic “would be unrealistic and even detrimental” to the positive and principled role that the EU aims to project. A similar message was echoed in the parliament’s latest “Report on Sustainable EU Policy for the High North,” released in December 2010, which, while demonstrating that the Arctic is now firmly on the EU’s political agenda, noted as well that Iceland’s potential accession to the EU would allow the Union to assume an even more active role in regional geopolitics and would crucially “consolidate” the presence of Brussels within the Arctic Council.

With an eye on the Arctic’s rising importance to European security concerns as well, the EU – and, more specifically, its security policy arm, the Western European Union (WEU) – released an in-depth study as early as December 2008 that concurred with the conclusions others have reached regarding the overall value of the Arctic, the potential for greater tension and possibly conflict over ownership issues, the need for better mechanisms to ensure stability in the region, and the limitations of existing frameworks for cooperation among major stakeholders. The report calls, among other things, for a strengthening of the EU’s Northern Dimension policy, which has established a good track record on matters of health, the environment, and social affairs, but is unlikely to be of much use when it comes to security issues. Norway, in particular, the report points out, believes that the EU, “with its culture of regulation and avoidance of military might as a means of resolving difficulties,” would be no match for Russia in situations where Moscow decided it could only reach its objectives, be they in the Arctic or elsewhere, from a position of strength. In the end, the report could do little more than encourage the Arctic Council, NATO, and the EU to explore more fully the emerging security environment in the Arctic and to pursue where possible closer coordination with Russia on Arctic issues.

Nevertheless, although it remains a relative newcomer to the High North game, the EU already spends “hundreds of millions of euros” on Arctic-relevant research, and some European observers have compared its potential role in the Arctic with that of NATO. On one hand, unlike NATO, the Union has failed to establish a strategic military role for itself in the region, and its defense ambitions remain comparatively modest, in large part because

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90 Bailes, “How the EU Could Help Cool Tempers over the Arctic.”
92 Andreas Maurer, “The Arctic Region – Perspectives from Member States and Institutions of the EU,” working paper, German Institute for International and Security Affairs, September 2010.
95 Bailes, “How the EU Could Help Cool Tempers over the Arctic.”
many Nordic and other states would not welcome efforts to supplant NATO’s role as “the continent’s ultimate security guarantor.” However, whereas the Alliance is forced to tread carefully in parts of greater Europe for fear of escalating tensions with Russia, the EU, by contrast, enjoys more freedom of action due to its “soft, non-threatening image” militarily, and some suggest that this soft power might allow the Union to create for itself a role as a cushion or a lead mediator between great-power interests in the High North. In time, it is not inconceivable that Nordic and non-Nordic EU member states could even coordinate coast guard and/or naval activities in Arctic waters under an EU banner, much as various EU countries have banded together to promote maritime security in the Indian Ocean as part of Operation Atalanta. Critics, however, point out the drawbacks of the EU’s vast scope and varied member interests, which have hindered the creation of a consolidated EU Arctic policy and complicated collective action. Simply addressing the commission’s modest list of policy objectives for the Arctic, for example, would require complex coordination among dozens of different agencies scattered throughout the entire collection of EU institutions and bodies, a process that is inevitably time-consuming and cumbersome.

Adding to the overall bureaucratic challenge of coordinating among the EU’s many constituent parts are the political demands of establishing and maintaining consensus among the EU’s twenty-seven member states, as well as with key non-EU partners (such as Norway), on a range of sensitive policy issues, including the overall and specific priorities, goals, and funding to be allocated for Europe’s Far North. Furthermore, in establishing a role for itself, the EU has to consider its relations with a host of other Arctic-minded institutions and stakeholders, including NATO, that consider themselves to be at least as deserving of a place at the negotiating table as the EU is when it comes to Arctic matters. As some European experts warn, only when its lofty ambitions are reflected in solid organizational measures with a capacity for concrete action will the EU have a more significant role to play in the region. In the meantime, the organization can still contribute to Arctic affairs, especially with regard to vital shipping and fishing regulation in the Arctic’s international waters, by providing, for example, intellectual input, which is always in high demand, and by establishing important standards, procedures, and rules for the large maritime fleets that operate under EU jurisdiction.

One group that is likely to play an increasingly helpful role in organizing and coordinating EU policy on the Arctic is the EU Arctic Forum. Based in Brussels and created in 2010 to help support the European Parliament’s effort to develop a more coherent EU policy on the High North (the results of which were released, as discussed above, in December of that year), the EU Arctic Forum has emerged as an EU clearinghouse of sorts for up-to-date information on Arctic developments, and as a champion of wider dialogue among EU policy planners, and between them and other stakeholders, on Arctic matters of importance, including emerging security-related concerns. Toward that end, the forum has organized and facilitated a number of valuable workshops on EU relations with the five Arctic coastal states, as well as targeted exchanges with politicians, diplomats, scientists, educators, businessmen, and NGO leaders from around the Arctic region to air their views on issues where further consensus-building is required. Not surprisingly, this has included discussions on the development and secure supply of Arctic mineral resources, rules of the road for commercial shipping along Arctic waterways, priorities for environmental protection, and ways to improve living conditions for indigenous Arctic communities.

Nonetheless, despite the EU’s progress in developing a more explicit Arctic policy, in part through the work of the EU Arctic Forum and various elements of the larger EU community with which it works, a number of additional challenges remain for the EU to navigate if its efforts to boost EU power and presence in the Arctic Ocean are to prove more successful. While it already participates in emergency and rescue activities as part of the Barents Euro-Arctic Council and pursues Arctic-relevant issues with other intergovernmental forums (such as the IMO), which is currently developing a binding Arctic shipping

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96 Rudd, “Northern Europe’s Arctic Defense Agenda.”
97 Bailes, “How the EU Could Help Cool Tempers over the Arctic.”
98 Rudd, “Northern Europe’s Arctic Defense Agenda,” 67.
99 Bailes, “How the EU Could Help Cool Tempers over the Arctic.”
100 Ibid.
101 Ibid.
code), the EU lacks any formal authority with respect to continental shelf claims, and it does not possess control over the management of Arctic fishing or energy resources. Further, its only direct link to the Arctic Five group is via Denmark, whose continued participation in coastal state meetings solely depends, as noted already, on Copenhagen’s tenuous relationship with semi-autonomous Greenland. To avoid being marginalized in regional geopolitics, the EU has therefore been especially eager to secure the approval of the Arctic Council for its bid to become a permanent observer, but this goal has proven elusive so far, in large part because of the EU’s ongoing disagreement with Canada, Iceland, Norway, and Denmark (on behalf of Greenland) over sealskin exports and whaling issues, with some European Parliament officials refusing to back down on the controversy.103 Moreover, the EU’s heavy emphasis on multilateral governance in the High North presents a further complicating factor that may eventually set Brussels on a collision course with the sovereignty-driven interests and ownership claims of the Arctic powers themselves, further jeopardizing the Union’s foothold in the region.

Russia, in particular, has only rarely, if ever, shown support for an enhanced EU presence within the Arctic Council, and, like most other Arctic states, it has been sensitive to outside interference in the region. For this reason alone, Moscow has been very selective in its reliance on international institutions for managing Arctic-related issues, preferring instead to deal on bilateral terms with EU member states, as it did in developing the Russo-German Nord Stream gas pipeline project on the Baltic seabed.104 Although the EU has tried in recent years to strengthen its relations with Russia, partly by adopting the 2005 Common Spaces initiative105 and by launching other bilateral partnership and trade agreements with Moscow, Brussels has at the same time been pushing hard for equal treatment with Russian firms on various Arctic-related issues, including access to energy resources, search and rescue, and transport, with regard to which the Russian government has been less than willing “to allow outsiders such [equal] treatment.”106

Clearly, while the Arctic remained until recently a relatively peripheral policy concern for the EU, it has simultaneously transformed into a region of central importance to the national priorities of both Russia and the other Arctic coastal states, and, given Moscow’s power to veto EU permanent observer status in the Arctic Council, as well as its current position as Europe’s top oil and gas supplier, many experts on the EU expect that the Union will continue to hold a relatively weak hand in Arctic affairs for the foreseeable future.107 Given its growing influence and regulatory authority in policy realms that have an Arctic

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103 Archer, “An EU Arctic Policy?”

104 Ibid.

105 Initial agreement on four “common spaces” for EU-Russian cooperation (in the areas of economics; freedom, security, and justice; external security; and research, education, and cultural exchange) were outlined at the May 2003 EU-Russia summit in St. Petersburg, and specific roadmaps to implement these common spaces were approved at the May 2005 Moscow summit. See Council of the European Union, press release for the 15th EU-Russia Summit, Moscow, May 10, 2005, http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/84811.pdf.

106 Archer, “An EU Arctic Policy?”

107 Ibid.
dimension, the EU’s views and interests cannot be ignored, but it is unlikely to have a decisive say on how the future of the Arctic unfolds.

**Major Asian-Pacific Powers**

**CHINA**

As the Arctic ice cap continues to recede, rising power China, though not an Arctic coastal nation itself and without a membership seat on the Arctic Council, has nevertheless begun devoting increasing attention to the political, commercial, and security implications of a much more navigable Arctic, and, according to recent reports, the country can be expected to seek an active role in determining the “political framework and legal foundation” for future activities in the High North. In the absence of an official Arctic strategy, Beijing has largely displayed a wait-and-see approach to Arctic developments, advocating cautious Arctic policies so as not to alarm other countries by appearing revisionist or threatening, while at the same time striving to position itself as a “decisive power” so that it will not be excluded from access to Arctic opportunities or “forced into a passive position.”

Indeed, the Chinese government maintains a strong and well-coordinated polar scientific research program, and it is working systematically on expanding its polar exploration capabilities. In recent years, Beijing has allocated large amounts of money to polar research. Its icebreaker *Xuelong* (Snow Dragon) has already completed several prominent expeditions in the High North, and plans are in place for it to make other trips to conduct reconnaissance on shipping routes and basic polar research. Significantly, *Xuelong* made a trip north of Alaska in the summer of 2010, and a notable voyage is scheduled for 2012 or soon thereafter that aims to sail to Iceland through the Northern Sea Route over Siberia and Norway and then traverse the Northwest Passage over Canada back to China. If this proposed effort is successful, the Chinese ship could become the first such vessel to have sailed between the Pacific and Atlantic coasts through both of the Arctic’s passages in the same summer.

China justifies its Arctic activities by claiming that because the Arctic has climatic significance to the world

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109 Ibid.
in general, and to China in particular, the Chinese and other governments should have free access to explore it.\textsuperscript{111} This claim, while lacking a basis in international law and having an unclear scientific footing, may form the framework upon which China hangs its Arctic interests should they ever come into question. Chinese scholars, furthermore, hint at a more expansive view of Chinese Arctic interests, claiming that the Arctic should be open to navigation and exploitation by all nations, regardless of legal sovereignty. Such claims are comparable to public statements by Chinese officials in recent months indicating a more expansive view of China’s maritime sovereignty than had previously been thought, including in the Arctic. In this way, one might say that China has in recent years become a much more activist power with respect to the Arctic, while still maintaining an inclination toward the status quo.

Although traditional Chinese interest in the Arctic region has been rather narrow and technical, primarily focused on the climatic and environmental consequences of a decreasing Arctic sea-ice cover, in recent years Chinese researchers and officials have started to examine and assess as well the economic and military implications of shorter shipping routes and untapped energy and mineral resources, among other issues.\textsuperscript{112} China’s primary interest in the Arctic is probably freedom of navigation. Because China’s economy is dependent on foreign trade, with close to half of Chinese gross domestic product (GDP) reliant on shipping, any changes to the key maritime transport routes will have a substantial commercial impact and could prove to be a significant benefit for China, which overtook Germany in January 2010 as the world’s largest exporter.\textsuperscript{113} As noted in chapter 2, the receding ice cap promises to make commercial navigation of the Northwest Passage (over Canada) and the Northern Sea Route (over Russia) viable, significantly reducing shipping costs to the American Atlantic seaboard and to Europe. A trip through the Northern Sea Route (along the northern coast of Russia), for example, is sixty-four hundred kilometers shorter than the current shipping route from Shanghai to Europe via the Strait of Malacca and the Suez Canal, greatly reducing costs and the need for vessels to sail through the piracy-plagued waters of the Middle East, the Indian Ocean, and the South China Sea.\textsuperscript{114}

These advantages in transit time and safety, according to Chinese thinking, will in turn advance the development and economic prosperity of China’s northeast and eastern coastal area, such as the struggling Manchuria region, especially if commercial goods are shipped directly from the country’s most northerly points. In this context as well, China, as also noted in this report’s section on Iceland, has recently given special attention to its relations with Iceland, in anticipation that the tiny Nordic country will play a key role in the future as a shipping hub in the region, and with a view to potentially using Iceland’s deep-sea ports as bases of operation.\textsuperscript{115} Beijing’s increased interest in Iceland has fueled speculation that China may be seeking to establish what some analysts have called a “northern pearl” in the Arctic as a way to boost its maritime reach and geopolitical presence in the region – an initial contribution to a High North variant of the “string of pearls” network of port and airfield access developed by Beijing in Southeast and South Asia.\textsuperscript{116} Such a move would signal a desire on China’s part to extend to far more distant regions its established “string of pearls” approach to overseas operations, which to date has served to increase Chinese access to a host of foreign facilities across the Indian Ocean and on to the Persian Gulf, thereby securing a forward presence for Beijing along important sea lines of communication that now anchor China to vital energy resources and strategic mineral supplies in the Middle East and Africa.\textsuperscript{117} While more difficult to accomplish in the High North given the distances involved and the greater socio-cultural differences, applying the same basic strategy to the Arctic and its approaches could be appealing to China if Arctic sea lanes and resource supplies take on the commercial and strategic importance that many now project.

\textsuperscript{111} Shijie Zhishi, “中国对北极事务的看法” [China’s Perspective on Arctic Matters] 55, no. 15 (2009).
\textsuperscript{112} Jakobson, “China Prepares for an Ice-Free Arctic.”
\textsuperscript{113} Bill Schiller, “China Warming Up to Be an Arctic Player,” The Star, March 1, 2010.
\textsuperscript{114} Jakobson, “China Prepares for an Ice-Free Arctic.”
\textsuperscript{115} Joseph Spears, “China and the Arctic: The Awakening Snow Dragon,” China Brief 9, no. 6 (March 18, 2009).
\textsuperscript{116} Lee Willett, “Low Risk but High Consequences?” Presentation to 3rd Symposium on Impacts of an Ice-Diminishing Arctic on Naval & Maritime Operations, Annapolis, Maryland, June 2009.
\textsuperscript{117} For more on China’s “string of pearls” strategy, see Christopher Pehrson, String of Pearls: Meeting the Challenge of China’s Rising Power Across the Asian Littoral, Strategic Studies Institute, July 2006; and Chris Devonshire-Ellis, “China’s String of Pearls Strategy,” China Brief, March 18, 2009.
The Arctic's maritime passages, however, are not yet commercially viable, even in summer, nor is it clear when they will be. Moreover, the shallow waters of the Bering Strait and portions of the Northwest Passage may in fact never admit large shipping vessels, thereby eliminating the economies of scale that are essential to much seaborne cargo traffic. Nonetheless, given China's dependence on seaborne trade, the potential for Arctic navigation is a compelling interest for Beijing that it cannot easily ignore. That said, Chinese experts do speculate that Russia may seek an exorbitant fee for passage over its Northern Sea Route, though they do not comment on whether such an act would, from a Chinese perspective, violate the freedom of navigation promised under the United Nations Convention on Law of the Sea (UNCLOS). Canada also asserts certain privileges over the Northwest Passage, which it considers internal waters. Hence, China might see these claims by Russia and Canada as contrary to its navigational interests, potentially leading to future disputes over navigation. In that event, of course, it might find some common ground with the United States, which, as noted elsewhere in this report, is eager to preserve “freedom of the seas” and unfettered rights of transit passage in potential shipping lanes (such as the Northwest Passage) that may also be claimed as “internal waters.”

As for its rising military value, the Arctic has become strategically important in the Chinese psyche, particularly in terms of military deployment, concealment, deterrence, achieving the element of surprise, and a keen interest in keeping the Northern Sea Route open for military as well as commercial traffic. In particular, Chinese military literature notes Beijing’s concern that its strategic nuclear submarine fleet is overly exposed and vulnerable in the shallow Yellow and East China Seas, given U.S. and Japanese anti-submarine and anti-missile capabilities, all of which has boosted China’s ambitions to deploy nuclear submarines (presently based at Hainan Island in the South China Sea) as far north as possible. Beijing would therefore probably see Arctic navigation for its submarines as an important interest, although it would seem that such an assertion is not linked to changes in the ice cap. Meanwhile, in light of recent efforts by the five Arctic coastal states to strengthen their military capabilities and presence in the High North, officials in the Chinese military have warned that complex geopolitical disputes could arise over the right of passage as well as over raw material extraction rights in the region and that the possibility of the use of force cannot be ruled out.

China appears to be particularly wary of Russian intentions in the Arctic, viewing the ongoing territorial disputes as “Russia and some other states’ challenge” to the international order after the end of the Cold War. Beijing’s unease partly stems from the notion that China’s interests, along with those of other countries, would be put at a serious disadvantage if Russia’s claims over the Arctic seabed between the Lomonosov and Mendeleev Ridges were accepted, giving it exclusive rights to an enormous area thought to hold a wealth of hydrocarbon resources, and possibly adding as well to the problem of high service fees that Moscow is expected to charge for shipping elsewhere in the Russian exclusive economic zone, or EEZ. Thus, in a sense, it is Russia that most directly stands in the way of China’s access to these resources. It is clear, however, that China has little or no legal basis to challenge Russia’s or other nations’ claims in the Arctic, and thus, in the absence of legal standing, that Beijing must rely largely on moral arguments. It may be that these arguments will merit mollifying gestures by the Arctic powers aimed at wearing down China’s international support on this issue, but it is unlikely that the Arctic powers will acquiesce, either to Beijing’s arguments or to its bluster.

Beyond the promise of shorter lines of communication to large markets, however, wider use of Arctic sea lanes will also grant access to petroleum and mineral resources as well as to new fishing grounds. Of course, China, lacking any Arctic coastline, can lay no direct claim to these. Moreover, as noted already, the vast majority of suspected petroleum deposits lie entirely within areas already


119 Jakobson, “China Prepares for an Ice-Free Arctic,” 12.


121 Jakobson, “China Prepares for an Ice-Free Arctic.”

122 Ibid., 12; from an interview with P. Guo and K. Xie, “极地未来对中国影响重大” [The Future of the Polar Region is Crucial to China], Cankao Xiaoli, November 8, 2007.

123 Jakobson, “China Prepares for an Ice-Free Arctic.”
claimed by Arctic nations. On the other hand, China does have the ability to benefit from these through investment and cooperation: China can provide capital and form joint ventures with key West European oil and gas producers and with Russia to secure valuable access to Arctic opportunities and to gain the experience it needs to work with advanced oil extracting technologies and methods in Arctic conditions. As part of this agenda, China may seek a part in the ongoing collaboration among major energy players Statoil, Total, and Gazprom to develop the first phase of the lucrative Shtokman gas field in the Barents Sea. However, some of China's most revisionist voices have begun to assert that no nation has a claim to full sovereignty throughout the Arctic, the unspoken message being that a more serious Chinese interest and presence in the region should not be viewed as unusual or inappropriate.

While China's obvious area of interest is in Arctic research, the country is acting in Arctic matters on several fronts. Indeed, an integral part of its public claim to any interest in the Arctic at all is based on the need to “better understand Arctic climate change and the effects of this change on China,” because “environmental changes in the Arctic will have consequences for the entire world, in particular northern hemisphere nations.” It is in this spirit that China has acquired, for example, the world's largest non-nuclear icebreaker, the Xuelong, which it sends on periodic expeditions in the Arctic, and has committed to building a new, high-tech polar expedition research icebreaker, expected to be operational in 2013. The plan is to build a joint Arctic-Antarctic maritime research team around the two icebreakers, with one operating at the North Pole and the other operating concurrently at the South Pole for a combined expedition time of more than two hundred days per year. While this will expand China's icebreaking capability (matching America's ability to deploy just one icebreaker in the Arctic), it will not make China a dominant player in this realm, a position in which Russia has and will continue to maintain a significant lead.

Additionally, China has established a research station on Norway's Svalbard Islands, maintains numerous domestic institutions dedicated to studying the Arctic, and regularly participates in international Arctic-related forums. Aside from its research activities, China has sought observer status in the Arctic Council, though its application has yet to be accepted. Politically, Beijing has focused on working bilaterally to develop the Arctic with Norway, Canada, and Russia, among other nations. Clearly, China's declared need to “better understand Arctic climate change” and its actions in the Arctic are intended as a way to get its foot in the door, creating channels to ensure China's future navigational rights in the Arctic and a role in the exploitation of Arctic resources.

128 Ibid.  
130 Jakobson, "China Prepares for an Ice-Free Arctic," 2–5; the most prominent institutions are Ocean University of China (Qingdao), Dalian Maritime University, Xiamen University, Tongji University (Shanghai), the Chinese Arctic Centre of Surveying and Mapping (at Wuhan University), the Norwegian Arctic Forum (2007), and the Research Centre for Maritime Developments of China (Qingdao).  
131 Jakobson, "China Prepares for an Ice-Free Arctic," 2–4; these forums include the International Arctic Science Committee (IASC, since 1997); the Ny-Ålesund Science Managers Committee (since 2005); hosting the Arctic Science Summit in Kunming (2005); the International Polar Year program (2007–09); and seminars on Arctic environmental, scientific, and climatic issues for the past decade or longer.  
133 Jakobson, "China Prepares for an Ice-Free Arctic," 11.  
in whatever fashion China ultimately is able to arrange. Moreover, championing the rights of all nations regarding climate change issues furthers Beijing's claims to leadership of the third world, a position to which it has traditionally laid claim.

China's fundamental interest in the Arctic is therefore evident and growing. In 2007, for example, the Shanghai Society for Pacific Rim Economic Development (SSPRED) hosted the Harmonious Oceans Conference in Shanghai, applying Chinese president Hu Jintao's theme of "harmonious world" to the world's oceanic economy. The core tenet of this theme is that no single nation should exercise supremacy, but should be subject to settling disputes internationally. This stance would tend to limit the ability of member nations of the "Arctic club" to take full advantage of their claims without first creating some international consensus. Naturally, if implemented, such claims could benefit China, but of course Arctic nations will not assent to them. And this is representative of China's Arctic policy as a whole: mild but steady urging to allow China a greater say than its geography might otherwise allow. Some Chinese leaders, while conceding China's inferior claim to Arctic involvement, nevertheless insist that Beijing should have some say in Arctic matters. Whatever validity such claims may have, it seems clear that the desire to access potential navigation routes and resources underlies China's overall Arctic strategy.

That said, statements by certain Chinese military officials indicating a more expansive view of Chinese Arctic interests than those described above also bear some examination. These assertions might best be summarized by Chinese Rear Admiral Yin Zhuo's statement to China's officials Xinhua News Agency in March 2010 which claimed that "the Arctic belongs to all the people around the world in whatever fashion China ultimately is able to arrange. Moreover, championing the rights of all nations regarding climate change issues furthers Beijing's claims to leadership of the third world, a position to which it has traditionally laid claim.

China's fundamental interest in the Arctic is therefore evident and growing. In 2007, for example, the Shanghai Society for Pacific Rim Economic Development (SSPRED) hosted the Harmonious Oceans Conference in Shanghai, applying Chinese president Hu Jintao's theme of "harmonious world" to the world's oceanic economy. The core tenet of this theme is that no single nation should exercise supremacy, but should be subject to settling disputes internationally. This stance would tend to limit the ability of member nations of the "Arctic club" to take full advantage of their claims without first creating some international consensus. Naturally, if implemented, such claims could benefit China, but of course Arctic nations will not assent to them. And this is representative of China's Arctic policy as a whole: mild but steady urging to allow China a greater say than its geography might otherwise allow. Some Chinese leaders, while conceding China's inferior claim to Arctic involvement, nevertheless insist that Beijing should have some say in Arctic matters. Whatever validity such claims may have, it seems clear that the desire to access potential navigation routes and resources underlies China's overall Arctic strategy.

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Such statements also appear to run counter to recent descriptions of Beijing's attitude by prominent China watchers as a wait-and-see posture, displaying instead evidence of an increasingly assertive stance by Beijing with respect to Chinese influence in High North affairs. Of course, Admiral Yin's statement may be nothing more than his personal opinion, as opposed to a reflection of official policy, and thus may not merit undue attention. Some suggest as well that while Beijing's political leadership privately sympathizes with Yin's statement it is more inclined to adopt a less forward-leaning posture publicly in order to avoid blowback. Indeed, on more than one occasion in recent years China's neighbors have banded together against what they see as Chinese revisionism when Beijing has pressed its case too aggressively. But there is also a certain utility for Beijing in the public but unofficial expression of controversial views by a

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135 That said, China's diplomatic relations with Norway have become hugely complicated since October 2010, and may even jeopardize Beijing's application to be a permanent observer on the Arctic Council, after the Oslo-based Nobel committee awarded the 2010 Nobel peace prize to imprisoned Chinese democracy activist Liu Xiaobo.


137 See Senator Pamela Wallin, "Harper Plans to Make 'Northern Vision' a Reality," Hill Times online, November 15, 2010, http://hilltimes.com/page/printpage/wallin-11-15-2010. Commenting on China's interests in the Arctic, Canadian senator Pamela Wallin notes, "We are now seeing players like China claiming that because they have one-fifth of the world's population, they deserve one-fifth of the Arctic's resources..." A similar description of China's claim can be found in a command brief entitled USCG D17 Arctic Brief presented on January 27, 2011, by Rear Admiral Christopher C. Colvin, USCG, Commander, 17th Coast Guard District, Coast Guard Forces Alaska. http://www.uscg.mil/d17/Arctic%20Overview%20Feb2011.pdf.

138 Chang, "China's Arctic Play".

139 Rear Admiral Eric McVadon, USN (Ret.), interview with authors, May 22, 2010.

senior PLA commander, in that the specter of having to deal with such a hawkish approach from the Chinese military might make foreign powers more receptive to the entreaties of a comparatively dovish civilian leadership.\footnote{Roderick MacFarquhar, email message to authors, August 4, 2010.} Moreover, introducing these concepts unofficially allows for official deniability while still testing the international waters for promising areas to advance China’s interests.

In this sense, it is instructive to make a comparison of Beijing’s Arctic stance and its actions in the South China Sea. In March 2010, China for the first time told the United States that the South China Sea was a “core interest,” on a par with Tibet and Taiwan.\footnote{For the First Time, China Tells the U.S. that the South China Sea Is a Core interest, China Times, July 4, 2010.} Using the term “core interest” to describe China’s claims in the South China Sea is significant not so much for the claim itself, which the PRC has essentially maintained since its founding, but for the fact that the government is consciously increasing the vigor of its assertion. For China to assert its weaker claims more forcefully represents a precedent, an attempt to enlarge the Chinese span of control and to indicate the lengths to which it might go to consolidate that control. In the same way, its Arctic claims, while at present appreciably milder in tone, leave open the possibility of later revision and expansion, as circumstances dictate. As stated, however, avoiding unnecessary blowback is likely to be a significant consideration for Beijing in weighing the value of any act or statement that could be perceived by others as an inappropriate expansion of China’s interests.

In sum, China’s current Arctic philosophy is to slide its foot quietly in the door by making vague claims of interest based on the Arctic’s importance to the environment. It remains unclear if and when China will issue an official Arctic strategy, but Chinese scholars and officials will continue to argue that the Arctic ought to be accessible to all (at least in spirit) and to repeat the notion that China has legitimate rights in the Arctic, all in the hopes that this perspective, regardless of the legal claims of the five Arctic nations, will gradually gain acceptance in the wider international community. So, too, while changes in the High North could create tension in China’s relations with Russia (especially over maritime transit rights), the emergence of a seasonally ice-free Arctic could also give rise to new opportunities to deepen ties and cooperation between China and other non-Arctic states in East Asia.\footnote{Jakobson, “China Prepares for an Ice-Free Arctic.”} Given the sizable benefits each of them stands to gain from shorter trade routes and possible access to new fishing, energy, and other natural resources, a more closely coordinated Arctic strategy among the key Asian powers – most notably, China, Japan, and the ROK – may be in their mutual interest, if nonetheless difficult to achieve.\footnote{Ibid.}

Practically speaking, it seems likely that Beijing will content itself over the near to mid-term to take part in the economic development of the region, maintaining its moral argument in support of wider Chinese access as insurance to drum up domestic and perhaps international support should its Arctic ventures encounter resistance. It is conceivable that Beijing may eventually expand the definition of its interests – and capabilities – to include a role in assuring the security of Arctic resources (and their transport), in which case Chinese officials could again deploy their moral arguments regarding the rights and, by extension, responsibilities of non-Arctic nations who nevertheless have a sizeable stake in the future of the region. That said, such a scenario seems unlikely at the moment: China as yet has a great deal of developmental work to accomplish before it will be ready to match the Arctic powers, and making expansive claims that could trigger opposition and/or unwelcome defensive moves by others will not help it to proceed along that path. Only when Beijing is able to mobilize significant international support behind its own national power, or is willing to exercise that power come what may, is Beijing likely to feel comfortable in expanding its Arctic claims and taking more forceful steps – perhaps including occasional military deployments to the region – to protect them.
THE REPUBLIC OF KOREA

The Republic of Korea (ROK, or South Korea), like other non-Arctic players with an emerging stake in the region’s economic potential, has begun to devote increased attention to the High North’s promise as a lucrative energy reservoir and an important seaway for commercial shipping. Although to date it has not announced an official policy on the Arctic, the Korean government, along with relevant private sector industries, has nonetheless expressed in recent years its ambitions to become more actively involved in various polar developments and regional discussions. With that goal in mind, for example, in April 2002 South Korea established a dedicated Arctic research station at the Ny-Alesund research base in Svalbard, which has since regularly monitored climatic conditions and marine ecosystems in the north, and the country’s first Korean-built icebreaker, the Araon, became operational in 2009 and completed a successful research trip to the Arctic area in July 2010. In addition to these initiatives, in early 2011 the Korea Polar Research Institute (KOPRI), a key government-funded organization that currently overseas the nation’s polar research activities, convened more than three hundred experts from nineteen countries during the 2011 Arctic Science Summit Week (ASSW) in Seoul, further expanding its scientific ties to a host of other international organizations engaged in the management and research of climate-related Arctic issues.

So, too, as part of the government’s wider international efforts, South Korea has participated in a number of Arctic Council meetings in the past few years, albeit as an ad hoc observer, and in May 2008, the Korean government formally applied for permanent observer status on the council. Although its application, together with those of China, Japan, the EU, and others, has been put on hold for the moment, Seoul has remained optimistic about the Republic of Korea’s future entry as an observer country, reportedly receiving positive signals from Arctic Council members. According to Korean thinking, as a government official explained in 2008, “being an observer of the Arctic Council will help us enter the discussion among the Arctic nations over preservation and development of the area [and] that will also help our government brainstorm policies on the development of marine transportation.” With respect to maritime navigation and safety issues in particular, Korea has continued to take part in discussions at the International Maritime Organization on the creation of a relevant polar code and regulations, and it is closely following the Arctic Five’s extended continental shelf submissions to the CLCS for any legal and political implications their cases might have for Korea’s own unresolved maritime delimitation disputes with neighboring countries such as China and Japan.

For shipping power South Korea, however, the main interest in the polar region centers on the economic benefits of new maritime transport routes in the Arctic’s waters, especially since the country operates the largest shipbuilding yards in the world. Samsung Heavy Industries (SHI), for instance, the world’s second-largest shipyard, has established itself as a global leader in the construction of several types of highly specialized ships, such as icebreaking oil tankers and ultra-large container ships, liquid nitrogen gas (LNG) carriers, and drillships, as well as other high value-added, special-purpose vessels for navigating in the Arctic. In addition to helping build the Araon, SHI has also constructed three enhanced ice-class tankers, including the world’s first multi-directional oil tanker, designed to operate in the harsh conditions of the Barents Sea, transporting crude oil from Lukoil’s Varandey terminal in the Arctic to Murmansk, and now operated by the Sovcomflot Group, Russia’s largest shipping company. Significantly, SHI’s Arctic shuttle tankers incorporate the most advanced next-generation technologies, making them capable of navigating in extremely low temperatures, rotating in all directions (180 degrees) if trapped by icebergs, and breaking through ice as much as five feet thick without the help of icebreaker escort, thereby surpassing the capabilities of the Araon (which can break through about three feet of ice) and rivaling those of many of the world’s most able medium icebreakers. In 2004 alone, SHI received as many as eleven of the seventeen orders

placed during that year from around the world, giving it a 65 percent share of the global ice-class tanker market and prompting the company’s CEO to remark that “the polar region-running icebreaking tanker market is a blue ocean for us,” and, therefore, that SHI will strive “to take the lead in the icebreaking LNG ship construction market as another alternative for crude oil transportation ships.”

Meanwhile, Korea’s STX Offshore & Shipbuilding, the world’s fourth-largest shipbuilder, was able to secure in 2009 a sizable order worth almost $200 million to deliver polar supply and research vessels. The company has since accelerated its efforts to produce ships with sophisticated icebreaking technology, culminating in June 2011 when STX signed a new contract with Sovcomflot and Gazprom to construct and deliver two massive and ultra-modern ice-class LNG carriers by 2014. STX has already demonstrated its success with this type of vessel design when it unveiled in 2010 that it had constructed an Arctic LNG shuttle tanker and a large icebreaking container carrier, both equipped with the breakthrough Double Acting System (DAS) technology and an advanced hybrid propulsion system, allowing them to operate independently through the Northern Sea Route and elsewhere in the Arctic with the added benefit of high propulsion efficiency. Moreover, Aker Arctic Research Center (AARC), the Helsinki-based research subsidiary of STX Europe that collaborated on the project, has been able to acquire an impressive number of original technology patents related to icebreaking technology.

Given the private sector’s shipbuilding advances, some of Korea’s local governments, such as Busan, Ulsan, and Pohang, all of which are located in the southeastern part of the country, are now keen to develop their ports as possible hubs for future Arctic shipping, a need that has become all the more important in light of the ROK’s rising interest in the large energy reserves of the High North. In January 2011, for example, a group of South Korean executives from several natural gas companies, including Korea Gas Corporation (or Kogas), visited Canada’s High Arctic to investigate the feasibility of constructing an LNG port on the Beaufort Sea, not far from the oil and gas fields of the resource-rich Mackenzie Delta, that would make possible the shipment of natural gas produced in the region to the resource-dependent countries of East Asia. Kogas, which has become a major investor in Canada’s Arctic gas, already holds a minor stake in the area’s resources after a deal, signed in December 2010, in which the Korean company decided to invest $30 million to acquire 20 percent ownership of a Northwest Territories gas field operated by Canada-based MGM Energy Corp. Importantly, according to the Korean Ministry of Knowledge Economy, the 2010 Kogas deal “is significant as it is the first resource development in the North Pole by a South Korean firm, which will establish a bridgehead to enter the promising frontier,” while at the same time securing some 1.45 million tonnes of LNG for South Korea’s economy, the world’s second-largest importer of LNG (after Japan), equaling roughly 6 percent of the country’s annual imports. What is more, emerging Korean plans to export LNG from the Arctic could seriously threaten the viability of the stalled $16 billion Mackenzie Valley gas pipeline project, approved by Canada in early 2011, in part by offering an alternative resource transportation method that could also allow producers to tap into Asian energy markets where gas prices remain strong. This is an export option that is becoming ever more attractive amid an already saturated natural gas market and lower prices in North America, caused by the recent discovery and development of huge shale reservoirs across the United States and Canada.

To be sure, future progress on Korea’s Arctic LNG scheme could still be hampered by a number of issues, including the high estimated cost for constructing special reinforced-hull, polar-class tankers for year-round operations in Arctic conditions, the fact that such an advanced ship has yet to be built by any country, the problematic case where a foreign vessel might have to break through sea ice above Alaska on its way to Asia, and the equally controversial issue of whether Ottawa should even allow

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152 Korea Shipbuilders’ Association, Shipbuilding Korea 2010.


155 Vanderklippe, “South Koreans Eye Arctic LNG Shipments.”
its natural gas reserves to be exported by others.\textsuperscript{156} It is clear, however, that South Korean companies are eager to become more active in exploration ventures in the Arctic region and that, in this regard, Korean industries have a vested economic interest in the opening and establishment of commercial transarctic maritime transport lanes. Politically, the Korean government’s official interest in the Arctic remains focused on scientific and economic initiatives, largely overseen by policy institutes such as KOPRI and the Korea Maritime Institute (KMI), under the supervision of the Ministry of Land, Transport, and Marine Affairs, while environmental, safety, and legal issues are managed by the Korean Ministry of Foreign Affairs and Trade. Although Seoul remains watchful of its close neighbors (China and Japan) and their growing involvement in polar activities, keeping a particularly close eye on the increasing rivalry between Korean and Chinese businesses in the shipbuilding sector, the ROK has nevertheless emphasized its interest in maintaining a stable political and regulatory environment in the Arctic, which would ultimately facilitate the export of northern resources.\textsuperscript{157} Korean strategy of late has thus increasingly focused on expanding the government’s contacts with other Arctic stakeholders, and since 2003, KOPRI has been actively engaged in a joint multinational venture with Russia and Japan, among others, on surveying gas hydrate reserves in the Sea of Okhotsk, and, more recently, the institute has managed to develop a close relationship with Canada in the area of scientific research.

\textbf{JAPAN}

Japan, which currently lacks a single stated Arctic policy, has certainly expressed an interest in gaining greater access to discussions and negotiations with respect to Arctic developments. Japan’s aims in general revolve around maximizing scientific cooperation with other nations and preserving the openness of, and access to, the polar region for commercial activity. Like China and the ROK, Japan, whose economy is heavily dependent on trade, could benefit substantially from the new transarctic sea lanes north of Russia and over North America, and Japanese shipping companies in particular have been among the country’s first private-sector stakeholders to display a strong interest in the potential opening up of the Arctic. Commercial shipbuilders, such as the politically influential Japanese Shipowners’ Association (JSA) and the Shipbuilders’ Association of Japan (SAJ), are interested not only because of the advantages of shorter maritime routes, but also because of the implications for new shipbuilding technologies and design, including innovative “double-acting” Arctic tankers that would be capable of sailing through the High North region without the aid of icebreakers.

Similarly, Japanese energy firms have expressed a growing interest in the future development of resources in the polar region and have pushed for exploration into methane hydrate and hydrothermal sulfide deposits in the Arctic as a potential fuel source for the future. What is more, Tokyo’s recent nuclear plant shutdowns following the massive earthquake and tsunami in March 2011 are expected to further increase Japan’s heavy reliance on imported liquefied natural gas, and the country, already the world’s largest importer of LNG, would likely focus even more on the growing stream of oil and gas shipments from the High North, as a way to make up for the loss and to diversify its imports.\textsuperscript{158} With regard to diversifying imports, two major Japanese trading firms, Mitsui & Co. and Mitsubishi Corp., announced in January 2011 their plans to participate in Russia’s largest-ever LNG project to be developed on the Yamal Peninsula in the Arctic Ocean, a location that is projected to markedly reduce the time sea shipments of LNG would take to reach the Japanese coast.

\textsuperscript{156} Ibid.
\textsuperscript{157} Bennett, “South Korea’s Growing Role in Arctic Economic Development.”
\textsuperscript{158} Chikako Mogi, “Japan LNG Reliance Grows with Latest Nuclear Setback,” Reuters, May 9, 2011.
Japan’s more focused interest in the Arctic has developed slowly over the last decade or two, mostly via a growing web of linkages between Japanese institutions with an Arctic focus and similar organizations throughout Northern Europe, Canada, the United States, and, to some extent, Russia. However, as Arctic issues are rarely viewed as a high priority in Japanese affairs, coordination among key governmental departments and bureaucratic players tasked with crafting an Arctic strategy remains ad hoc at best. Nevertheless, the Ocean Division of the Ministry of Foreign Affairs’ (MOFA’s) International Legal Affairs Bureau, which has come to be the primary office for following relevant Arctic policy issues, has been keeping a close eye on related developments in the ROK and China, with which Japan shares both a sense of cooperation (given that the three are outsiders to Arctic policy issues and have common interests vis-à-vis the coastal states) and a sense of competition. Since joint projects among the three nations are difficult for both political and bureaucratic reasons, Japan has focused its efforts instead on working with various other Arctic players. One example in this regard includes collaboration between the International Arctic Research Center (IARC) at the University of Alaska at Fairbanks and the Japan Aerospace Exploration Agency (JAXA) on a geo-informatics facility for satellite image analysis and for computational modeling/visualizations in support of international collaboration on Arctic-related and wider-ranging global climate change research. In addition, the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), an independent administrative organization, is already conducting a series of scientific surveys in collaboration with Arctic coastal states such as Russia and Canada as part of the country’s concerted efforts to maintain good relations with all relevant stakeholders and to gather accurate and up-to-date information on any issues involving the region.

Although to date the Japanese Ministry of Defense (MoD) has remained minimally involved in Arctic policy issues, some Japanese officials have begun assessing the possible security implications for Japan if potential contests for naval presence in and sea control over the Arctic Ocean escalated in the future, causing parts of the U.S. Pacific Fleet to be allocated to the Arctic Ocean. Such a scenario would greatly affect the existing collaboration system that is based on the U.S.-Japan Security Treaty, and the Japan Maritime Self-Defense Force (JMSDF) would likely have to implement redeployment measures to bolster defenses in the north of the country. Furthermore, a deployment of the U.S. and Russian navies in the Arctic region could potentially shift the balance of naval power in the western Pacific to such an extent that JMSDF operations in the Japan Sea and the Northwest Pacific would rise to entirely new levels of importance. According to Japanese thinking, given the lure of commercially viable Arctic shipping lanes, a new sea lane would likely emerge in the western Pacific, connecting maritime traffic from the Indo-Pacific to the Arctic Ocean via the Bering Strait, a narrow choke point that separates Russia from the United States, also known as the “Ice Curtain” during the Cold War. Defense of this new sea lane, which would fall to some extent under the mandate of the JMSDF, could also trigger a larger Chinese naval presence around this Arctic gateway, a turn of events, some Japanese strategists suggest, that could lead to additional security problems in the area over the long run.

Presently, however, Japan’s primary initiative is to become better integrated and more fully represented at global and regional forums involved in Arctic governance. In July 2009, for instance, Japan applied for permanent observer status at the Arctic Council, although its application, together with those of China and the EU, has been put on hold for the moment. Meanwhile, the United States has been supportive of Japan’s Arctic Council aspirations and has encouraged it to join the U.S. Arctic Research Commission and other nations in developing a commercial shipping regime for Arctic maritime routes. Not unlike U.S. policy in the High North, Japan’s approach to Arctic issues favors a broader interpretation of free shipping and maximizing the areas of the Arctic Ocean rec

163 Ibid.
164 Spears, “China and the Arctic: the Awakening Snow Dragon.”
ognized as international waters. In fact, Japan views the region legally as “high seas” as defined by UNCLOS. In addition, Japanese experts regard the “rules of the road” developed for the Persian Gulf and the Indian Ocean as appropriate models for a future governance system for the Arctic Ocean, especially in terms of the rights and contributions of non-coastal states vis-à-vis coastal states and the potential role of international organizations.

In this sense, Japan is interested in proposing the creation of a commercial fishing (and possibly a broader resource development) moratorium in the central Arctic, similar to U.S. actions in August 2009, when the U.S. government imposed a controversial moratorium on fishing in the Beaufort Sea during its maritime boundary dispute with Canada in the Arctic waters north of Alaska. Moreover, Japan is also considering the formation of a coalition of states that would work to provide operational support for commercial activity in the Arctic region, including emergency response, surveillance, safety, and enforcement capabilities. Although it would probably not become involved in actual operational activities for some time, Japan has expressed its desire to play a role in the construction of icebreakers to facilitate the passage of ships through the Arctic Ocean, and, in addition, Tokyo would likely contribute early on to the development of policies and protocols for multilateral cooperation with an emphasis on technology development, information sharing, and quite possibly in the financial realm.

Chapter 5

Above all else, this study paints the picture of a new Arctic that is still emerging, but one that is already viewed by a growing number of countries, both near and far, and by important non-state actors, as a zone of strategic opportunity to which access must be secured and protected. In just the last few years, interest in things Arctic has boomed, inspiring articles, books, studies, and conferences on all aspects of current and potential developments in the High North. Countries with territorial claims to the Arctic have invested considerable time and money to confirm and expand (and if need be defend) those claims, while countries and institutions with no territorial claims to make but with a rising interest in using future Arctic sea lanes and in tapping the region’s strategic resources do what they can to be seen as credible players in the broader geopolitics of the Arctic. Private sector interests, which are numerous and diverse in the Arctic, especially with respect to shipping and oil and gas extraction, add yet another layer of complication to the issues of resource management and overall governance in the High North. Precisely what the Arctic of 2035 or 2040 will look like in the face of these multiple, and sometimes contending, interests and priorities remains to be seen. It seems safe to conclude nonetheless that the following considerations will have a major impact on the end result.

The Promise of New Sea Routes and Resources

Looking ahead, the High North region seems destined to become an increasingly attractive market for investment and trade, based in part on the opening of new, larger, and ever busier Arctic sea lanes linking Europe and Asia that could, in the view of numerous maritime experts, substantially reduce travel distances, transit times, and overall transportation costs by the 2030–35 timeframe. Wider use of Arctic sea lanes, however, will also bring new challenges with regard to freedom of navigation in contested waters. For example, Russian and Canadian claims to sovereignty over much of the Northern Sea Route north of
Eurasia and over the Northwest Passage within Canada’s Arctic Archipelago, respectively, are strongly disputed by the United States and other Arctic stakeholders who maintain that the two waterways are international straits through which the right of innocent passage is assured. Of course, given the extremely harsh and icy northern environment and all the hazards that go with it, it may take some time before transarctic seaborne trade reaches the scale anticipated in the most optimistic projections currently available. So, too, the very real possibility that the boundaries of national jurisdiction in contested extended continental shelf (ECS) sectors may take more time to determine than expected could also reduce the annual volume of trade and slow the pace of oil and gas exploration and production in promising offshore locations. What is beyond dispute, however, is the fact that the Arctic’s sea lanes and its strategic resources will become increasingly accessible to, and more broadly used by, a growing list of trade-dependent and energy-hungry nations, Arctic and non-Arctic alike, within the next twenty years and beyond.

Adding to the Arctic’s importance even before then is the prospective extraction of significant strategic mineral supplies from the northernmost territories—especially those offshore in the Arctic seabed—of Norway, Russia, Denmark, Canada, and the United States, commonly referred to as the Arctic Five. Most prominent in this context are the Arctic’s oil and gas supplies that are currently projected to account for upwards of 22 percent of the world’s undiscovered but technically recoverable hydrocarbon reserves, the development of which will become increasingly feasible and cost-effective over the next decade. Indeed, for this reason alone, the Arctic Five have quickened their efforts to secure their sovereign rights over extended continental shelves where some of the most promising deposits are believed to be located, while other countries with a strong interest (but, again, no territorial claim) in the Arctic or to its resource riches—including distant, but energy-hungry economic powerhouses like China, Japan, and South Korea—do their best to retain access to the Arctic and to avoid being marginalized in policy debates over its future. This is not to suggest that oil and gas exploration and production in the High North will be an easy or affordable task, whatever the level of technology available or the projected size of recoverable reserves. However, there is no question that the Arctic’s natural resources are vast, and, as the region becomes more accessible, the urge to explore these reserves more fully will become hard to resist, and the potential payoffs from successfully tapping them difficult to ignore.

### An Arctic “Gold Rush”

That said, time, cost, and technology constraints appear to be working against any competitive “rush to the Arctic” fueled in part by the lure of an oil and gas bonanza beyond compare as some have suggested. Far more likely is a slow and methodical push into the High North, not the least because there is so much yet to learn (or, in some cases, to relearn) about operating safely in the harsh Arctic landscape, so little infrastructure already (or soon to be) in place to support such operations, and such limited capacity even among the Arctic Five to undertake and sustain Arctic operations of any kind, be they commercial or military in nature. Moreover, while access to—if not control over—offshore Arctic resources remains a strategic goal shared by quite a few influential countries located both within and beyond the Arctic region, the probability of serious interstate rivalry or, in the worst case, open conflict in pursuit of this objective seems quite low, at least in the near- to mid-term future. In the first place, the vast majority of hydrocarbon deposits locked in the Arctic seabed are concentrated within the sovereign territory of one or another of the Arctic Five, where ownership is clear and undisputed. Secondly, while there are disagreements over who owns various resource-rich areas where two or more exclusive economic zones and potential ECS’s appear to overlap, the 2010 agreement between Norway and Russia over how best to divide a sector they both claimed in the Barents Sea, together with a commitment by the Arctic Five in 2008 to abide by procedures set forth in the UN Convention on the Law of the Sea (UNCLOS) for determining the dimensions of each country’s ECS, suggest that a peaceful settlement of any territorial dispute is more likely than not. Third, and finally, the sheer expense and technical challenges involved in extracting oil, gas, and other strategic resources from the Arctic ocean floor argue for a joint, collaborative effort among interested parties, Arctic and non-Arctic alike, as opposed to a “go it alone,” unilateralist approach.

To be sure, in light of the wide array of shared challenges and concerns in the region, there are likely to be
many opportunities for international cooperation in the foreseeable future. In addition to various initiatives aimed at addressing environmental protection, for example, the need to vastly expand air and maritime surveillance in the north clearly looms as another key area for closer cooperation among some or all of the Arctic players. Efforts in this regard could prove quite fruitful, given that the international sharing of observations of vessel traffic made by satellite systems and patrol aircraft will form an important step towards assuring a sufficient degree of ship safety, as both commercial and tourist-related traffic along Arctic sea lanes increases. No doubt, such considerations played a role in the decision by members of the Arctic Council to sign the first legally binding agreement on search and rescue responsibilities in the Arctic at the council’s May 12, 2011, ministerial meeting in Nuuk, Greenland. Similar efforts are also underway to upgrade the 2002 voluntary guidelines that govern commercial shipping in the Arctic’s ice-covered or ice-infested waters into a mandatory Polar Code under the auspices of the International Maritime Organization (IMO). What is more, growing international interest in the Arctic’s bountiful energy reserves is likely to prompt the emergence of a new type of diplomacy, termed “geodiplomacy” by some observers, of which geological, meteorological, and other scientific evidence and expertise would form an increasingly important part, especially when it comes to resolving future disputes over sovereign rights and extended continental shelf limits in the polar region.  

Security Concerns and the Potential for Conflict

While these and similar considerations are likely to preserve the Arctic as a “High North, low tension” arena for some years to come, it is not axiomatic that the region as a whole will remain trouble-free as its resources and sea lanes become increasingly accessible. For one thing, as noted in chapter 1 of this study, it remains unclear what would happen if an Arctic Five country whose ECS claim was rejected under UNCLOS procedures refused to abide by the ruling. Given the resource wealth that could be at stake, the resulting standoff could indeed lead to disputes and military posturing by rival claimants that could eventually trigger a crisis in the Arctic that might even end up with shots being fired. At the same time, a steady melting of the polar ice cap could provide fishermen with access to previously unreachable fishing grounds where ownership is unclear, and warmer Arctic water temperatures could encourage a migration of fish from one state’s exclusive economic zone (EEZ) to that of another or to disputed regions within the High North. Both developments could increase the possibility for rivalry or conflict – similar, for example, to the brief but bitter “cod wars” between Iceland and Norway in the mid-1990s – between fishing fleets from a growing number of competing countries, especially as global fish stocks plummet.

As a result, it cannot be dismissed that localized episodes in the Arctic could still develop into armed clashes despite the original intentions of the parties involved, especially given local asymmetries of military strength (principally in Russia’s favor) which could potentially encourage the use of limited force by one or another state actor in the region, based on the conviction that the other side(s) would avoid at all costs escalating the conflict into a major confrontation. In addition, given their track record, it is possible to imagine as well countries like China and Russia deciding at some future date to exploit the natural resources found in pockets of “high seas” in the region, particularly those in the central Arctic Ocean, without acknowledging their obligations under UNCLOS and rejecting the legal control of the areas by the International Seabed Authority (ISA). Despite having ratified UNCLOS, for example, China has at times taken liberties with the letter and spirit of the law, laying controversial claims over much of the resource-rich South China Sea and attempting to limit U.S. freedom of navigation even in areas of “high seas,” outside Chinese waters and any restrictive regime. That said, a key conclusion of this study is that it remains unlikely that any of the five Arctic littoral states would risk a large-scale, interstate military conflict, particularly to press for its preferred solution to

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2 Howard, The Arctic Gold Rush.

3 China has already had several tense interactions with the United States in the South China Sea, culminating in March 2009, when Chinese vessels surrounded and harassed the USNS Impeccable, an unarmed U.S. Navy mapping ship, operating in international waters off of China’s coast. (“Pentagon: Chinese Ships Harassed Unarmed Navy Craft in International Waters,” Fox News, March 9, 2009)
regional clashes of interest, since the resulting political and economic costs of doing so would likely outweigh any conceivable gain. Their military forces are far more likely to be used in the Arctic to support search and rescue, disaster relief, and other civil emergency/civil support operations than for combat-related missions.

**Additional Arctic Five Considerations**

Indeed, whatever the source and level of regional tension at any particular time, the future of the Arctic and its strategic importance will be determined first and foremost by decisions made and actions taken by the five circumpolar states, each of which has a significant Arctic coastline, EEZ, and potentially resource-rich ECS to protect and over which to assert its sovereign rights. Each is also likely to witness a substantial increase in economic activity, along with seaborne trade, in and through Arctic waters under its jurisdiction in the 2030 to 2040 timeframe. These trends, in turn, will require more concerted efforts by all five, singly and, where possible and appropriate, collectively, to improve maritime domain awareness and safety in and around the areas they control, to acquire an enhanced capacity to respond to accidents and disasters at sea under Arctic conditions, and to counter any threats to security that may arise in the region, including the need to prevent disputed areas from becoming a flashpoint for escalating tension or rivalry in the High North. Moreover, how the Arctic Five handle these challenges will define in large part what is possible and necessary with regard to broader multilateral cooperation within the Arctic region as it transforms from a strategic backwater to a new strategic crossroads.

Within this context, clarifying who owns what in those areas where that is still unclear, providing security (and protecting strategic interests) in resource-rich areas where ownership is not disputed, and establishing international rules of the road for those who wish to transit Arctic waterways and/or help to tap the region’s mineral wealth and fisheries are certain to remain priority tasks for the five coastal states in the future of the Arctic. Significantly, despite Russia’s sometimes belligerent stance in the north, including provocative naval maneuvers and increased incursions by Russian bombers into Arctic neighbors’ air space, Moscow will likely choose, at least in the near term, to act with, not against, other Arctic countries such as Norway and the United States, that can provide it with the necessary expertise for deep-water offshore drilling in icy conditions that Russian firms sorely lack. At the same time, as discussed in depth in the Denmark section of chapter 3, Greenland’s extensive new self-government agreement and its growing aspirations for even greater autonomy and economic self-sufficiency vis-à-vis Denmark could potentially add an entirely new twist to the Arctic sovereignty debate and regional geostrategic dynamics. Should current explorations for oil and gas off the Greenland coast hit pay dirt, talk of independence among Greenlanders will certainly increase, a turn of events that some experts believe could push Greenland (together with its hydrocarbon riches) into an ever closer association with the United States. More likely, others argue, would be an effort by an independent Greenland to retain formal but much looser ties to Copenhagen to counterbalance an overly dominant Washington, but, in either case, resource politics in the High North would become more fluid.

Canada will also keep a watchful eye on developments in Greenland, given the obvious implications for the final resolution of overlapping territorial claims related to Hans Island and portions of the Lincoln Sea, areas where offshore oil and gas deposits could be substantial. With a view toward protecting its national interests and affirming its sovereignty throughout the Canadian Arctic, Ottawa can be counted on as well to continue its “use it or lose it” approach to the High North, especially under the newly re-elected Harper administration, albeit in a somewhat less jingoistic, unilateralist manner than has prevailed in recent years. Canada will still pursue a military strategy aimed at strengthening its presence in the Arctic, but, in part thanks to cuts in its budget for defense procurement, it will seek greater opportunities going forward to cooperate more closely with the United States on Arctic security matters. Building on Canadian-American collaboration at NORAD and Canada Command’s links to U.S. Northern Command (USNORTHCOM), this could eventually lead, as mentioned in the U.S. section of chapter 3, to a bi-national, combined joint task force (CJTF)-Arctic.

**The Role of Other Arctic Players**

While the views of the Arctic Five will remain paramount (particularly in the near term), the three non-
coastal Arctic states—Iceland, Sweden, and Finland—are poised to exert as well a significant degree of influence over the future development and overall management of the Arctic region. As full-fledged, founding members of the Arctic Council, each country has already played a key role with regard to establishing international tools for environmental protection, maritime shipping, and, most recently, search and rescue operations in the High North. Moreover, building on the work of the council, along with that of other prominent multilateral forums to which they belong, all three are likely to continue their efforts to promote mechanisms for regional cooperation in the Arctic aimed at ensuring appropriate access to the region for coastal and non-coastal states alike. Such initiatives, of course, could strengthen the case for greater and more assured access to the Arctic for relatively distant countries as well—such as China, Japan, and South Korea—that nonetheless want a say in how the region evolves, given their growing interests in the potential use of future Arctic sea lanes and in the eventual extraction of resource supplies from the region. Broader global access is an objective, no doubt, that key regional organizations with Arctic members (most notably NATO and the EU) are likely to endorse as well, in part to help reinforce their own status as legitimate Arctic stakeholders.

In this context, NATO and the EU have both increasingly begun to ponder what role they ought to play with regard to future developments in the Arctic region. However, while the EU has growing influence and regulatory competence in policy realms that have an Arctic dimension, it currently lacks any formal authority or control over continental shelf claims or the management of Arctic fishing and energy resources. Given as well its ongoing bureaucratic challenges and the varied interests of its member states, Brussels is unlikely to have, as suggested earlier in this study, a decisive say on how the future of the Arctic unfolds. Nevertheless, the organization can still contribute to Arctic affairs, especially with regard to vital shipping and fishing regulation in the Arctic’s international waters, by establishing, for example, important standards, procedures, and rules for the large maritime fleets that operate under EU jurisdiction. To the extent that it can coordinate such initiatives with the Arctic Council and other regional and sub-regional organizations with a pre-existing role in High North affairs, the EU’s contributions are likely to be both more effective and more welcome.

In a similar way, NATO, which has been careful to avoid talk of any immediate threats of consequence to Alliance interests in the Arctic, could do more to buttress efforts by the Arctic Council, the Nordic Council, and individual Arctic nations in the areas of aerial surveillance, maritime situational awareness, and disaster relief missions in the Arctic, including search and rescue at sea. Better preparations for operating in the High North should also provide the Alliance with a greater capacity to deter conflict in the region and to control escalation when such conflict can’t be deterred. That said, apart from improving allied capabilities for responding to an Arctic crisis, NATO can also help reduce tensions by providing a forum where all the major Arctic nations can more openly discuss their legitimate national interests in the Arctic and their concerns over how best to protect those interests over the long term, concerns that are still difficult to air in the Arctic Council. Moreover, if NATO were to apply, as the EU has, for observer status on the Arctic Council, the council might use such a tie, if it were ever granted, as a way to link up informally with a security-oriented forum that could address the strategic and defense policy aspects of High North issues. Given that Russia will likely play a key role in ensuring the Arctic region’s future long-term stability, a major challenge for NATO will be to devise appropriate policies that meet the fundamental security interests of its members, while simultaneously taking into account Russian sensibilities and concerns in the polar area.

U.S. Strategic Interests in the Arctic

Situated atop three continents, the Arctic has been and will continue to be, in geostrategic terms, extremely valuable to U.S. national security planning. This is particularly true with respect to America’s ability to conduct early warning and missile defense operations, deploy air and naval forces in support of strategic deterrence, carry out global airlift and sealift, maintain an overall maritime presence, and ensure freedom of navigation and overflight rights, as appropriate, throughout the Arctic. The United States has long viewed the Arctic Ocean as an ideal loca-

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tion for ballistic missile submarine patrols, and its importance for the strategic mobility of American naval forces, including surface and subsurface platforms, will almost certainly grow as Arctic waterways expand and become more navigable. In addition, the High North region remains central to U.S. defenses against ballistic missile attack, and upgrades to the existing missile defense systems in Alaska, designed to handle both current and emerging threats, can almost certainly be expected in the years ahead. In that regard as well, sustaining NORAD’s atmospheric early warning, air defense, and airspace/maritime surveillance capabilities is likely to remain a priority.

Added to these considerations is the projected strategic value of the oil, gas, and other natural resources likely to be found in the Alaskan Arctic, with preliminary results indicating that Washington may be eligible to claim one of the largest and richest ECS sectors in the world, measuring two to three times the size of California, all of which simply reinforces the incentives for America to sustain a relatively robust military presence in and around Alaska, to assert (where appropriate) its sovereignty within the Arctic, and to improve its overall ability to conduct a variety of civil support and more traditional military missions under Arctic conditions. None of this, of course, is to suggest that the United States now faces or soon will any serious security challenges in the Arctic. What it does point to, however, is the need for prudent, forward-looking planning on how best to protect American strategic interests in or associated with the Arctic against an array of risks and emergency situations – including oil spills and other disasters at sea, as well as piracy, illicit trafficking, terrorism, and possibly even more traditional military challenges (as detailed in chapter 3) – that are likely to come to the fore over the longer term, as the geophysical and geostrategic trends currently at work in and around the Arctic take more concrete shape. At the diplomatic level, establishing a stronger capacity to influence events in the Arctic will also place the United States in a better position to engage effectively with Russia over Arctic policy, and to facilitate cooperation in the Arctic with the Nordic states, NATO, the EU, and other key institutional stakeholders, as well as with Canada and major Asian powers (such as China) with a rising interest in the Arctic.

Of central importance in this context, according to most senior U.S. officials, is the need for speedy ratification of the UN Convention on the Law of the Sea by the U.S. Senate. While the United States largely observes UNCLOS as customary law, and even though the Clinton, George W. Bush, and Obama administrations have all championed its ratification, the prospects for U.S. accession to the treaty remain uncertain, at least in the near future. This has left American officials at a severe disadvantage, compared to their counterparts in other Arctic countries, in their efforts to advance (and secure international recognition of) U.S. national claims – and to review those made by potential competitors – with respect to offshore resources located beyond the country’s two-hundred-mile EEZ. Moreover, in the absence of legal certainty with regard to U.S. jurisdiction over a vast and likely lucrative Arctic ECS, American deep-sea mining companies will be far less likely to invest in, and bear the risks associated with, offshore development within these areas. Hence, as argued throughout this study, until ratification occurs, Washington would have far less leverage than it should over a management regime for the Arctic based principally on UNCLOS rules, and it would not have a seat at the table equal to that of the other ECS claimants, a position that could very well diminish America’s future operating flexibility in a strategically vital region and hinder its ability to lead.

Key U.S. Operational Challenges

That said, effectively exploiting the economic, maritime, and airpower advantages that Alaska and the Arctic as a whole appear to offer will also impose additional requirements and obligations on U.S. military forces. Insofar as operational needs are concerned, those forces most likely to be operating in the Arctic – especially the maritime services (including the U.S. Coast Guard) – must develop a more robust capacity to operate in Arctic conditions, including greater cold-weather training, a better communications architecture, additional shore-based infrastructure and support facilities that would be required for persistent maritime operations in the region, and, at some point as well, the procurement of ice-capable ships, including both icebreakers and ice-strengthened surface vessels,
none of which exist in the Navy's current inventory and only a few in the Coast Guard's. Further, with increased activity in and over Arctic waters, the U.S. military's knowledge base will need to be improved significantly with regard to the evolving operational environment in the Arctic (including newly accessible, uncharted waterways), as will the military's ability (as noted above) to conduct search and rescue, disaster response and relief, and environmental security operations, among other essential missions, within the Arctic region. In this context, building a greater capacity for maritime domain awareness (MDA) looms as an especially critical requirement and obligation for U.S. forces assigned to the Arctic.

Fortunately, the Department of Defense and the military forces are in a much better position today to determine what is required than they were in January 2009, when the NSPD-66/HSPD-25 “Arctic Region Policy” document was first released by the White House calling for a more concerted, whole-of-government effort to protect American strategic interests throughout the High North. Since then, the U.S. Navy’s Task Force Climate Change, or TFCC, has conducted a detailed assessment of Arctic mission requirements and a roadmap for initial implementation; the Coast Guard has completed a three-volume High Latitude Study of its needs; the Unified Command Plan has been adjusted to improve unity of command and overall command and control in the Arctic; USNORTHCOM has been assigned sole responsibility to advocate for Arctic capabilities, and, on that basis, is developing a first-ever Arctic concept of operations in coordination with Canada Command, and the Office of the Under Secretary of Defense for Policy (OUSDP) published a report summarizing current and potential gaps in military capabilities required to conduct key Arctic operations up to and beyond 2030. Taken together, these several initiatives provide a rather authoritative listing of the military platforms and technologies, supporting infrastructure, and training activities and exercises that should ideally be made available and/or undertaken during that timeframe, if U.S. commercial and military activities in the Arctic are to be safe, secure, and effective.

Nevertheless, while creating and maintaining an Arctic-capable military is increasingly viewed as an American strategic objective of rising importance, the prevailing view in Washington at the moment is that the country must (in the words of the OUSDP report noted above) “balance the risk of being late-to-need with the opportunity cost of making premature Arctic investments.” At a time of competing demands on a shrinking defense budget, therefore, it is likely to remain difficult “to mobilize public or political support for investments in U.S. Arctic capabilities or infrastructure absent a clear and immediate need for them,” especially given that “the extent, impact, and rate of climate change in the Arctic are uncertain, and may not unfold in a linear fashion.” The danger, however, is that the current tendency within much of the U.S. national security community to view the Arctic as a “peripheral interest” may become more permanent and influential than would otherwise be prudent, and that needed investments—be they ice-strengthened ships, essential onshore facilities in the High North, or the fielding of adequate cold-weather technologies—will indeed be “late-to-need.” Hence, those investments that can be made now must be implemented according to schedule if America’s presence in the High North is to have a chance of being as robust as it needs to be by 2030 or 2035. Further delays across the board due to budget cuts, while perhaps understandable, will simply ensure that U.S. Arctic policies remain poorly supported and needlessly crisis-driven.

New Mechanisms for Arctic Governance

As for the existing architecture of international governance, the situation in the Arctic remains somewhat muddled and undeveloped, especially with respect to security-related issues. While the jury is still out on the best system of governance for the Arctic region as a whole, current trends suggest that a patchwork of relevant private, public, intergovernmental, and nongovernmental organizations could present the best approach, centered perhaps around a core group of interested parties such as the Arctic Council. Thus, rather than a single, overarching, and legally binding regime for managing Arctic affairs, what is likely to prevail for some time to come is a mix of collaborative frameworks, including bilateral, sub-

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6 Ibid.
regional, regional, and broader multilateral mechanisms, depending on the issue or issues to be addressed. As this approach matures, moreover, the Arctic could serve as a valuable laboratory for testing how best to establish and maintain a safe, stable, and secure environment in regions where a diversity of interests, ambitions, and expectations could easily clash, possibly in a violent manner, absent an effective mechanism for multinational and multilateral governance.

In view of the Arctic Council's increasing purview on search and rescue and environmental issues, moreover, a growing number of U.S. officials and experts have begun to embrace the idea of establishing the Arctic Council Plus (also referred to as an A8 Plus) structure discussed in chapter 2 that would allow governance to gradually evolve from within the region and outward, beginning with an inner core group of Arctic countries and key stakeholders that would expand as necessary, adding more nations and/or institutional players depending on the requirements of the particular issues at hand. In this way, the council could help to promote joint research and multilateral cooperation on fairly non-controversial (but still quite important) projects of common interest, such as the commercial development of methane hydrates extracted from Arctic waters, disaster relief preparedness in the Arctic region, and new tanker designs for transporting oil and gas in the High North environment. Moreover, by taking additional steps to improve communication and information sharing among its members and affiliates, the council can become the primary repository for knowledge on Arctic affairs and play an even greater role than it already does “in amplifying the voice of the Arctic in global settings.”

A Security Dialogue for the Arctic

The situation becomes much less clear, however, when matters of national and international security are involved, with regard to which the eight Arctic nations – most particularly, the five coastal countries – remain highly sensitive. At the multinational level, NATO appears to be the one organization that is able to address Arctic security in a serious manner, though its attempts to do so – detailed in chapter 4 of this report – are still in the earliest stages and viewed with suspicion by Russia, which could play, if it chose to, a very disruptive role vis-à-vis Arctic policy. Aside from its ability to meet Western needs in the realm of military security, NATO's unique expertise and assets for addressing possible civil emergencies and large-scale search and rescue problems in the circumpolar area could also prove indispensable in the years and decades ahead. Future security risks in the Arctic are probably best handled by what is known in NATO circles as a “comprehensive approach” strategy, according to which the diverse array of national, international, IGO, and NGO institutions that have a stake in the Arctic would take more concrete steps to coordinate and integrate their individual efforts in support of a common plan. It is also possible that a new multilateral mechanism could be established to facilitate Arctic-wide discussions of emerging security concerns and military challenges. In that regard, promoting and developing an informal, unofficial forum for an Arctic-oriented security dialogue – similar perhaps to the annual Munich Security Conference in Germany and the Shangri-La Dialogue in Singapore – might be an ideal way forward. Indeed, given the traditional reluctance of the Arctic Five to address security policy issues at the Arctic Council, such a forum, which could be open to all parties interested in contributing to a stable and secure Arctic region, is long overdue.

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7 Oran Young, “The Future of the Arctic: Cauldron of Conflict or Zone of Peace?” *International Affairs* 87, no. 1 (January 2011).

Obviously, any study effort of this magnitude has benefited from the support of numerous individuals and organizations both from the public and private sector. First and foremost, we want to thank the Smith Richardson Foundation of Westport, Connecticut, and especially Marin Strmecki, the foundation’s senior vice president and director of programs, and Nadia Schadlow, a senior program officer for international security and foreign policy at the foundation. Without their initial encouragement and the foundation’s generous financial support, this study would never have been possible.

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ty). At the European Commission, a roundtable discussion was arranged with a number of senior commission officials and experts, including Lars-Gunnar Wigemark, head of the Security Policy Unit in the Directorate-General for External Relations (RELEX); Lars Gronberg, head of Northern Dimension policy (which includes Arctic matters) at RELEX's Unit for Relations with Russia; and Petteri Vuorimaki, a Northern Dimension policy expert also assigned to RELEX's Unit for Relations with Russia.

IFPA project leaders were also able to interview a number of prominent experts and senior officials from the major Arctic coastal states. In Norway this included Barbro Hugaas, assistant director general for security policy, Ministry of Defense; Kirsti Skjerven, deputy director general for policy Planning, Ministry of Defense; Tom Holter, director general, Ministry of Defense; Commander Geir Iden, Norwegian Navy, Norwegian Defense staff; Jostein Mykelton, head of the High North, Resources, and Russia Project, Ministry of Foreign Affairs; Otto Mameland, High North Project, Ministry of Foreign Affairs; Asbjorn Braanaas, High North Project, Ministry of Foreign Affairs; Dr. Paul Hilde, senior research fellow and head of geopolitics in the High North Project, Norwegian Institute for Defense Studies; and Svein Melby, senior fellow and head of the Center for Transatlantic Studies, Norwegian Institute for Defense Studies. Those interviewed in Denmark included Lars Bo Moller, head of the Department for Security Policy, Ministry of Foreign Affairs; Ole Samsing, counselor and head of the “Arctic Team,” Department of Northern Europe, Ministry of Foreign Affairs; Mikaela Engell, counselor for Greenland affairs, Department of Northern Europe, Ministry of Foreign Affairs; Louise Auken, head of section, Department of Security Policy, Ministry of Foreign Affairs; Jens Oddershede, deputy head of the Policy Department (NATO and EU), Ministry of Defense; Captain Aage Buur Jensen, Danish Navy, assistant chief of staff for policy and concepts, Danish Defense Command; Commander Claus Andersen, Danish Navy, head, plans and policy, Ministry of Defense; Henrik Jørgensen, director, Danish Institute for Military Studies; and Jon Rahbek-Clemmensen, research fellow, Danish Institute for Military Studies. Canadian views and priorities were outlined by Vice Admiral Dean McFadden, Canadian Navy, chief of Canada’s Maritime Staff, at a Washington, D.C., conference attended by senior IFPA staff.

Field trips and workshop participation in Japan, South Korea, and China allowed the IFPA team to survey views in those specific countries as well, all three of which have a strong interest in Arctic developments. In Tokyo, for example, interviews were conducted with Kato Kikuko, director of the Ocean Division in the International Legal Affairs Bureau of the Ministry of Foreign Affairs (MOFA), which is emerging as the key office for coordinating Japan’s Arctic policies, as well as with Ishii Masafumi, deputy director general of MOFA’s Foreign Policy Bureau, and Tokuchi Hideshi, director general for operations at the Ministry of Defense (MoD). In Seoul, discussions with Dr. Choi Kang, director general of the American Studies Department, Institute for Foreign Affairs and National Security (IFANS), Ministry of Foreign Affairs and Trade (MOFAT), and with Dr. Cho Jung Hyeon, a visiting professor at IFANS responsible for conducting a MOFAT-sponsored study of Arctic developments and their implications for South Korea, were most helpful. Helpful advice on China’s perspectives was provided by Professor Zhuang Jianzhong, deputy director, Center for National Security Studies, Shanghai Jiaotong University.

U.S. officials and policy experts who proved to be especially helpful included Admiral James Stavridis, USN, SACEUR and commander, U.S. European Command; General Gene Renuart, USAF, commander, U.S. Northern Command; Mead Treadwell, lieutenant governor of Alaska and former chairman, U.S. Arctic Research Commission; Captain J.J. Fisher, U.S. Coast Guard (USCG), chief, emerging policy staff, USCG Headquarters; and Commander Blake McBride, USN, Task Force Climate Change, Office of the Oceanographer of the U.S. Navy. The IFPA project team also benefitted from the opportunity to hear the perspectives of other influential U.S. officials and specialists on Arctic matters at several high-level workshops dedicated in part or whole to current trends in the Arctic region. This included James Steinberg, deputy secretary of state; John Bellinger, former legal advisor, U.S. Department of State; Alexander “Sandy” Vershbow, assistant secretary of defense for international security affairs; Amanda Dory, deputy assistant secretary of defense for strategy; Lawson Brigham, deputy director, U.S. Arctic Research Commission; Dana Goward, director, assessment, integration, and risk management, U.S. Coast Guard; Admiral Gary Roughead, USN, chief of naval operations; Admiral
Jonathan W. Greenert, USN, vice chief of naval operations; Senator Mark Begich (D-Alaska), Senate Armed Services Committee; Arne Fuglvug, legislative assistant, Office of Senator Lisa Murkowski (R-Alaska); and Scott Borgerson, visiting fellow for ocean governance, Council on Foreign Relations.

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<tr>
<th>Abbreviation</th>
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<td>AARC</td>
<td>Aker Arctic Research Center</td>
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<td>AC</td>
<td>Arctic Council</td>
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<td>ACIA</td>
<td>Arctic Climate Impact Assessment</td>
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<td>AECO</td>
<td>Association of Arctic Expedition Cruise Operators</td>
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<td>AEPS</td>
<td>Arctic Environmental Protection Strategy</td>
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<td>AGS</td>
<td>Alliance Ground Surveillance</td>
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<td>AIS</td>
<td>Automatic Information System</td>
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<td>Alaska Command</td>
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<td>AMSA</td>
<td>Arctic Marine Shipping Assessment</td>
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<td>Alaskan NORAD Region</td>
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<td>AOPS</td>
<td>Arctic offshore patrol ship</td>
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<td>APG</td>
<td>Arctic Policy Group</td>
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<td>Arctic search and rescue</td>
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<td>ASW</td>
<td>antisubmarine warfare</td>
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<td>ATS</td>
<td>Antarctic Treaty System</td>
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<td>AUV</td>
<td>autonomous underwater vehicle</td>
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<td>AWACS</td>
<td>airborne warning and control system</td>
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<td>AWPPA</td>
<td>Arctic Waters Pollution Prevention Act</td>
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<td>BBOE</td>
<td>billion barrels of oil equivalent</td>
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<td>BEAC</td>
<td>Barents Euro-Arctic Council</td>
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<td>BEAR</td>
<td>Barents Euro-Arctic Region</td>
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<tr>
<td>BMEWS</td>
<td>Ballistic Missile Early Warning System</td>
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<tr>
<td>BRC</td>
<td>Barents Regional Council</td>
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<tr>
<td>C4ISR</td>
<td>command, control, communications, computers, intelligence, surveillance, and reconnaissance</td>
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<tr>
<td>CAI</td>
<td>Cooperative Airspace Initiative</td>
</tr>
<tr>
<td>CARA</td>
<td>Circum-Arctic Resource Assessment</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>CASARA</td>
<td>Civil Air Search and Rescue Association</td>
</tr>
<tr>
<td>CBA</td>
<td>capabilities-based assessment</td>
</tr>
<tr>
<td>CBSS</td>
<td>Council of the Baltic Sea States</td>
</tr>
<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
</tr>
<tr>
<td>CJTF</td>
<td>combined joint task force</td>
</tr>
<tr>
<td>CLCS</td>
<td>Commission on the Limits of the Continental Shelf</td>
</tr>
<tr>
<td>CNO</td>
<td>Chief of Naval Operations</td>
</tr>
<tr>
<td>COMON</td>
<td>concept of operations</td>
</tr>
<tr>
<td>CONUS</td>
<td>continental United States</td>
</tr>
<tr>
<td>DAS</td>
<td>Double Acting System</td>
</tr>
<tr>
<td>DEW</td>
<td>Distant Early Warning</td>
</tr>
<tr>
<td>DIMS</td>
<td>Danish Institute for Military Studies</td>
</tr>
<tr>
<td>DoD</td>
<td>Department of Defense</td>
</tr>
<tr>
<td>EADRCC</td>
<td>Euro-Atlantic Disaster Response Coordination Centre</td>
</tr>
<tr>
<td>EBM</td>
<td>ecosystem-based management</td>
</tr>
<tr>
<td>ECS</td>
<td>extended continental shelf</td>
</tr>
<tr>
<td>EEA</td>
<td>European Economic Area</td>
</tr>
<tr>
<td>EEC</td>
<td>European Economic Community</td>
</tr>
<tr>
<td>EEZ</td>
<td>exclusive economic zone</td>
</tr>
<tr>
<td>EFTA</td>
<td>European Free Trade Association</td>
</tr>
<tr>
<td>EP</td>
<td>European Parliament</td>
</tr>
<tr>
<td>ESS</td>
<td>European Security Strategy</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FOL</td>
<td>forward operating location</td>
</tr>
<tr>
<td>FSB</td>
<td>Federal Security Service (Russia)</td>
</tr>
<tr>
<td>FSU</td>
<td>former Soviet Union</td>
</tr>
<tr>
<td>GDP</td>
<td>gross domestic product</td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
</tr>
<tr>
<td>HA/DR</td>
<td>humanitarian assistance/disaster relief</td>
</tr>
<tr>
<td>HSPD</td>
<td>Homeland Security Presidential Directive</td>
</tr>
<tr>
<td>IAATO</td>
<td>International Association of Antarctica Tour Operators</td>
</tr>
<tr>
<td>ICBM</td>
<td>intercontinental ballistic missile</td>
</tr>
<tr>
<td>ICJ</td>
<td>International Court of Justice</td>
</tr>
<tr>
<td>IGO</td>
<td>intergovernmental organization</td>
</tr>
<tr>
<td>IHO</td>
<td>International Hydrographic Organization</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
</tr>
<tr>
<td>ISA</td>
<td>International Seabed Authority</td>
</tr>
<tr>
<td>ISR</td>
<td>intelligence, surveillance, and reconnaissance</td>
</tr>
<tr>
<td>IUU</td>
<td>illegal, unregulated, and unreported</td>
</tr>
<tr>
<td>JAMSTEC</td>
<td>Japan Agency for Marine-Earth Science</td>
</tr>
<tr>
<td>JAXA</td>
<td>Japan Aerospace Exploration Agency</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>--------------</td>
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</tr>
<tr>
<td>JLSS</td>
<td>Joint Logistics and Support Ship</td>
</tr>
<tr>
<td>JMSDF</td>
<td>Japan Maritime Self-Defense Force</td>
</tr>
<tr>
<td>JRCC</td>
<td>Joint Rescue Coordination Center (Iceland)</td>
</tr>
<tr>
<td>JSA</td>
<td>Japanese Shipowners’ Association</td>
</tr>
<tr>
<td>JSS</td>
<td>joint support ship</td>
</tr>
<tr>
<td>JTF(N)</td>
<td>Joint Task Force (North) (Canada)</td>
</tr>
<tr>
<td>KMI</td>
<td>Korea Maritime Institute</td>
</tr>
<tr>
<td>KOPRI</td>
<td>Korea Polar Research Institute</td>
</tr>
<tr>
<td>LHD</td>
<td>landing helicopter dock</td>
</tr>
<tr>
<td>LNG</td>
<td>liquefied natural gas</td>
</tr>
<tr>
<td>LRIT</td>
<td>Long-Range Identification and Tracking</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships</td>
</tr>
<tr>
<td>MDA</td>
<td>maritime domain awareness</td>
</tr>
<tr>
<td>METAREA</td>
<td>meteorological area</td>
</tr>
<tr>
<td>MOFA</td>
<td>Ministry of Foreign Affairs (Japan)</td>
</tr>
<tr>
<td>NACGF</td>
<td>North Atlantic Coast Guard Forum</td>
</tr>
<tr>
<td>NAMMCO</td>
<td>North Atlantic Marine Mammal Commission</td>
</tr>
<tr>
<td>NATINADS</td>
<td>NATO Integrated Air Defense System</td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
</tr>
<tr>
<td>NAVAREA</td>
<td>navigational area</td>
</tr>
<tr>
<td>NCM</td>
<td>Nordic Council of Ministers</td>
</tr>
<tr>
<td>NCS</td>
<td>Norwegian continental shelf</td>
</tr>
<tr>
<td>NDAA</td>
<td>National Defense Authorization Act</td>
</tr>
<tr>
<td>NGO</td>
<td>nongovernmental organization</td>
</tr>
<tr>
<td>NJDS</td>
<td>Nordic joint declaration of solidarity</td>
</tr>
<tr>
<td>NMD</td>
<td>national missile defense</td>
</tr>
<tr>
<td>NORAD</td>
<td>North American Aerospace Defense Command</td>
</tr>
<tr>
<td>NORDREG</td>
<td>Northern Canada Vessel Traffic Services Zone</td>
</tr>
<tr>
<td>NPRA</td>
<td>National Petroleum Reserve—Alaska</td>
</tr>
<tr>
<td>NRC</td>
<td>NATO-Russia Council</td>
</tr>
<tr>
<td>NSPD</td>
<td>National Security Presidential Directive</td>
</tr>
<tr>
<td>NSR</td>
<td>Northern Sea Route</td>
</tr>
<tr>
<td>NSS</td>
<td>National Security Strategy</td>
</tr>
<tr>
<td>N-UCAS</td>
<td>Navy Unmanned Combat Air System</td>
</tr>
<tr>
<td>NWS</td>
<td>North Warning System</td>
</tr>
<tr>
<td>OUSDP</td>
<td>Office of the Under Secretary of Defense for Policy</td>
</tr>
<tr>
<td>PACAF</td>
<td>USPACOM Pacific Air Force</td>
</tr>
<tr>
<td>PAME</td>
<td>Protection of the Arctic Marine Environment</td>
</tr>
<tr>
<td>PARS</td>
<td>Port Access Route Study</td>
</tr>
<tr>
<td>PSI</td>
<td>Proliferation Security Initiative</td>
</tr>
<tr>
<td>QDR</td>
<td>Quadrennial Defense Review</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Definition</td>
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<td>--------------</td>
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<tr>
<td>QRA</td>
<td>quick reaction/interception alert</td>
</tr>
<tr>
<td>RNN</td>
<td>Royal Norwegian Navy</td>
</tr>
<tr>
<td>ROK</td>
<td>Republic of Korea</td>
</tr>
<tr>
<td>ROV</td>
<td>remotely operated vehicle</td>
</tr>
<tr>
<td>SAC</td>
<td>Strategic Air Command</td>
</tr>
<tr>
<td>SACEUR</td>
<td>Supreme Allied Commander, Europe</td>
</tr>
<tr>
<td>SAJ</td>
<td>Shipbuilders’ Associations of Japan</td>
</tr>
<tr>
<td>SAR</td>
<td>search and rescue</td>
</tr>
<tr>
<td>SHAPE</td>
<td>Supreme Headquarters Allied Powers Europe</td>
</tr>
<tr>
<td>SHI</td>
<td>Samsung Heavy Industries</td>
</tr>
<tr>
<td>SIPRI</td>
<td>Stockholm International Peace Research Institute</td>
</tr>
<tr>
<td>SLBM</td>
<td>submarine-launched ballistic missile</td>
</tr>
<tr>
<td>SOLAS</td>
<td>International Convention for the Safety of Life at Sea</td>
</tr>
<tr>
<td>SORS</td>
<td>Spilled Oil Recovery System</td>
</tr>
<tr>
<td>SSBN</td>
<td>ballistic missile submarine</td>
</tr>
<tr>
<td>SSPRED</td>
<td>Shanghai Society for Pacific Rim Economic Development</td>
</tr>
<tr>
<td>START</td>
<td>Strategic Arms Reduction Treaty</td>
</tr>
<tr>
<td>TAC</td>
<td>total allowable catches</td>
</tr>
<tr>
<td>TEK</td>
<td>traditional ecological knowledge</td>
</tr>
<tr>
<td>TFCC</td>
<td>Task Force Climate Change</td>
</tr>
<tr>
<td>UAV</td>
<td>unmanned aerial vehicle</td>
</tr>
<tr>
<td>UCP</td>
<td>Unified Command Plan</td>
</tr>
<tr>
<td>UNCLOS</td>
<td>UN Convention on the Law of the Sea</td>
</tr>
<tr>
<td>USEUCOM</td>
<td>U.S. European Command</td>
</tr>
<tr>
<td>USGS</td>
<td>U.S. Geological Survey</td>
</tr>
<tr>
<td>USN</td>
<td>U.S. Navy</td>
</tr>
<tr>
<td>USNORTHCOM</td>
<td>U.S. Northern Command</td>
</tr>
<tr>
<td>USPACOM</td>
<td>U.S. Pacific Command</td>
</tr>
<tr>
<td>VOSS</td>
<td>Vessel of Opportunity Skimming System</td>
</tr>
<tr>
<td>WEU</td>
<td>Western European Union</td>
</tr>
<tr>
<td>WMD</td>
<td>weapons of mass destruction</td>
</tr>
<tr>
<td>WMO</td>
<td>World Meteorological Organization</td>
</tr>
<tr>
<td>WWF</td>
<td>World Wildlife Foundation</td>
</tr>
<tr>
<td>WWNWS</td>
<td>World-Wide Navigational Warning System</td>
</tr>
</tbody>
</table>