

MARCH 2014

Emerging Arctic Security Challenges

POLICY BRIEF



By James Kraska and Betsy Baker

Just 4 million people inhabit the Arctic – half of them in Russia. This population is spread throughout 15 million square miles – an area four times the size of the United States. Russia and Canada occupy 80 percent of the land above the Arctic Circle, whereas the Nordic states account for 16 percent and the United States just 4 percent. Americans’ understanding of the Arctic is often limited to the small community of Barrow, Alaska, population 4,000, which is nestled along the ice-crusting coastline on the Chukchi Sea. In this paper, however, we argue that U.S. interests in the region are far-ranging and that environmental changes mean the region will grow increasingly important to U.S. security and economic interests. While U.S. territory makes up only a small slice of the expansive Arctic landmass, the United States will have to increase its leadership role in the Arctic community to respond to growing challenges.

Because the multidimensional American interests in the region are often congruent with the interests of the other Arctic states, greater U.S. leadership in Arctic security issues would be in most cases welcomed by Arctic neighbors. We believe the United States should move from its current posture as one of the most passive of the eight Arctic states to a leadership position, influencing the trajectory of Arctic security, economy, society and ecology. Doing so, however, will require a tangible presence; economic, military and political investments; and a more active regional posture, both militarily and in terms of commitment to civilian institutions governing Arctic issues.

In large part, the United States must reconsider its investments in Arctic security because of the rapid changes occurring in its natural environment. Scientists believe the Arctic is warming two to three times faster than the rest of the planet.¹ Consequently, there is dramatically reduced spring snow cover over Eurasia and North America; sustained increase in the greening, growing seasons; melting tundra; and evident northward migration of species into the area.² Sea ice extent and thickness have declined. At its historic September 2012 minimum, the summer sea ice extent was some 50 percent smaller than the preceding 30-year average, a loss of ice-pack roughly equal to one-third of the landmass of the United States.³ Less Arctic

ice means less reflectivity and more absorption of heat by the Arctic and other oceans – up to eight times more since 1979, when satellite records began. Absorption in the region represents up to 25 percent of the greenhouse effect of global carbon dioxide and may have triggered an alarming feedback loop that contributes to further warming.⁴ These environmental changes are already threatening existing security, economic and political efforts to achieve a stable, prosperous and secure future in the Arctic region.⁵

Therefore, the principal risks to Arctic security, economy, ecology and society derive from changing climate patterns, which are inherently global and tie the Arctic to the rest of the world. The Arctic is among the last areas on Earth to become plugged into the world economy, yet among the first to have felt the effects of the carbon and other pollutants generated in the planet's industrialized regions. Shorter winters, thawing permafrost and a thinner ice pack invite industrial development and commercial shipping. As those connections grow, Arctic states contend with risks to a fragile ecology that would be hard to overestimate.

In light of these far-reaching environmental trends, this report considers the changing threat environment in the region across four pillars: national security, including the potential to augment U.S. force presence and contribute to the current Arctic security architecture; economic prosperity and opportunity; investments in human capital; and ecological sustainability and social welfare. Each of the following sections evaluates opportunities for greater American engagement across each pillar. The publication concludes with key recommendations for U.S. policymakers to consider as they implement a series of recent national strategies the U.S. government has written on the Arctic, including the White House's 2013 *National Strategy for the Arctic Region*.

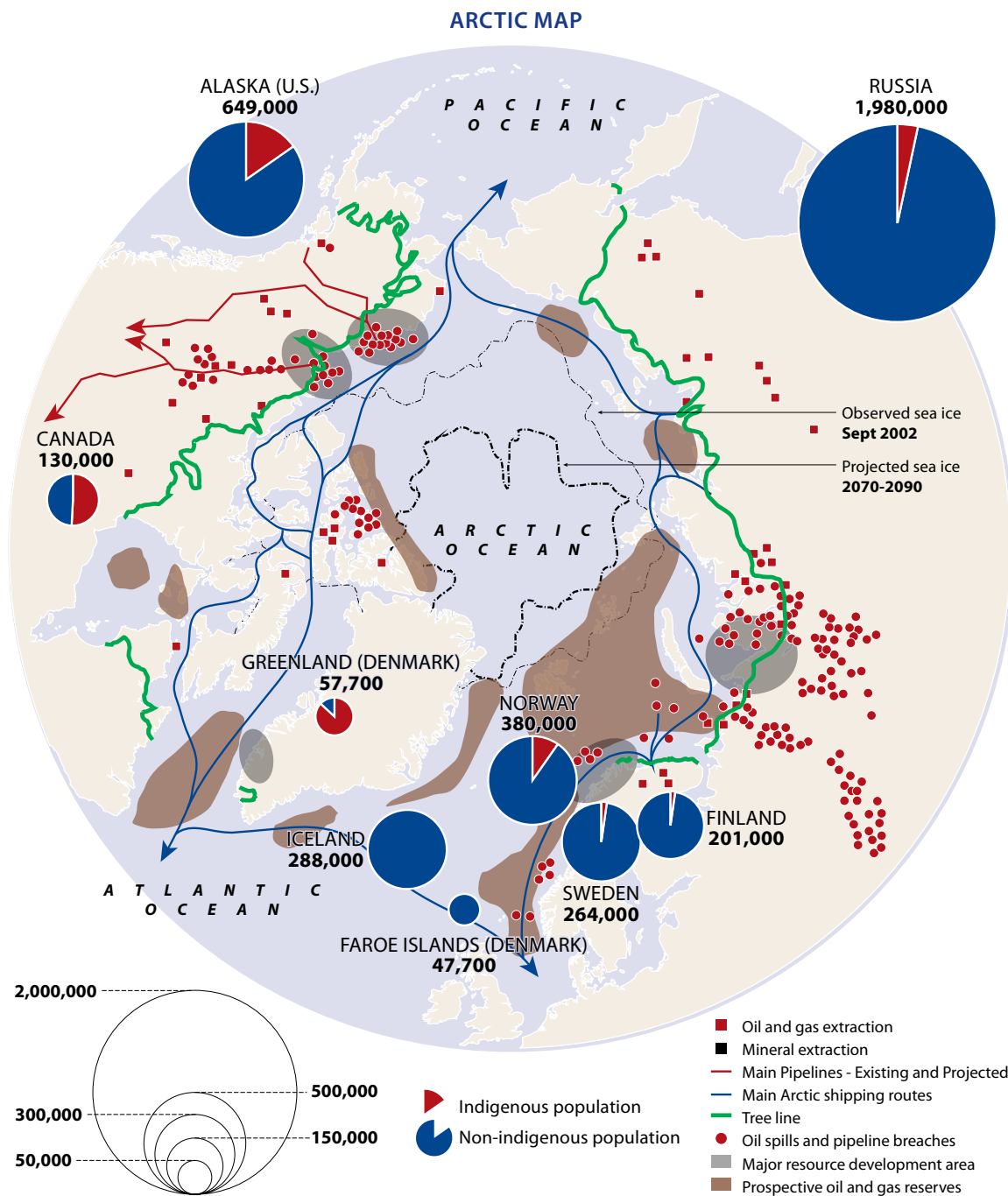
Security

It would be easy to become pessimistic about Arctic military stability; we are not. International conflict in the region is unlikely because the Arctic nations are committed to a rules-based approach to security. Worries about the potential for conflict over seabed rights in the Arctic are misplaced.⁶ War is far less likely above the Arctic Circle than in nearly any other part of the world.⁷ Cooperation is breaking out everywhere in the region; international law is followed; there is no political vacuum.⁸

While elsewhere Russia is exhibiting its propensity toward military displays, in the Arctic, Russia is playing a constructive role in maintaining regional stability. Russia is intently focused on regional security in part because it sees in the Arctic an opportunity to recapture the former influence and superpower standing that it enjoyed during the Cold War. Russia strategically and successfully takes advantage of its dominant geographic position surrounding 170 degrees of the Arctic Circle, and its energy and economic presence in the region dwarfs that of all other Arctic states combined.

The United States and Russia enjoy a pragmatic working relationship in managing the security of the Bering Strait.⁹ The U.S. Coast Guard and Russian Border Patrol have cooperated for nearly two decades under a bilateral treaty to manage safety and security in the 53-mile-wide strait.¹⁰ The neighbors also jointly led negotiations among all eight Arctic states to adopt binding agreements on search and rescue and oil spill preparedness and response. Now the United States and Russia are leading efforts to adopt agreements on marine pollution prevention and marine scientific research in the region.

The remoteness and physical isolation of the Arctic region also reduces military risk. Arctic states find comfort in their exclusive and shared geography. They are united to resist efforts from outside



Sources: Leena S. Cho & Matthew G. Jull, *Urbanized Arctic Landscapes: Critiques And Potentials from a Design Perspective*, George Washington University Institute for European, Russian and Eurasian Studies, Arctic Urban Sustainability Conference, May 2013, Abstract available at https://www.gwu.edu/~ieresgwu/assets/docs/Cho&Jull_UrbanizedArcticLandscapes_final.pdf; Hugo Ahlenius, UNEP/GRID-Arendal, *Projected changes in the Arctic climate, 2090 - with shipping routes* (2006), http://www.grida.no/graphicslib/detail/projected-changes-in-the-arctic-climate-2090-with-shipping-routes_1196; Hugo Ahlenius, UNEP/GRID-Arendal, *Population distribution in the circumpolar Arctic, by country (including indigenous population)* (2005) http://www.grida.no/graphicslib/detail/population-distribution-in-the-circumpolar-arctic-by-country-including-indigenous-population_9ad0; and Hugo Ahlenius, UNEP/GRID-Arendal, *Treeline in the Arctic* (2005) http://www.grida.no/graphicslib/detail/tree-line-in-the-arctic_b2eb.

the region that might erode, let alone upend, the contemporary order. The one thing all Arctic states have in common is a rather circumspect view of states from outside the region that seek to play a greater role in the Arctic.

Furthermore, all Arctic states are invested in a rules-based approach to stability and security, based principally on the United Nations Convention on the Law of the Sea (UNCLOS).¹¹ The consensus among Arctic states that UNCLOS is the framework for distribution of rights and duties in the region minimizes risk of conflict over maritime boundaries. Every Arctic nation is a party to the treaty except the United States, which, since 1983, has made a commitment to adhere to most provisions of the treaty.¹²

Finally, the likelihood of conflict breaking out over the region's vast offshore resources is also remote since Arctic states are pursuing their maritime claims through the multilateral Commission on the Limits of the Continental Shelf (CLCS), an independent international technical body established by UNCLOS. Every Arctic coastal state except the United States has submitted at least partial information for consideration of a claim to sovereign rights over seabed riches of oil, gas and minerals. To the extent that overlapping maritime claims exist, the four other Arctic Ocean coastal states, including Russia, are proceeding with deliberate professionalism in appropriate bilateral forums and with the CLCS to resolve them.¹³ In 2010, Russia and Norway, for example, signed a treaty to resolve their 40-year disagreement over maritime resource boundaries in the Barents Sea. More recently, Denmark and Canada established maritime delimitation in the Lincoln Sea, northwest of Greenland. Similarly, Canada and the United States are exploring a way ahead to resolve a benign disagreement over a single boundary line in the Beaufort Sea.

U.S. FORCE PRESENCE AND THE REGIONAL SECURITY ARCHITECTURE

While the remote and vast Arctic expanse makes international military conflict less likely, the high latitude geography and climate change nonetheless create unique threats to the economy, ecology and society in the region. These threats are increasing, and addressing them will require an increased U.S. military presence. The United States has released an Arctic Policy (the January 2009 National Security and Homeland Security Presidential Directive 66); a White House National Arctic strategy and a Pentagon Arctic strategy (both in 2013); and the latest iteration of the Navy Arctic Roadmap (February 2014). These documents articulate the need, in theory, for a greater U.S. presence but offer few concrete commitments.¹⁴ As policymakers implement these strategies, they must consider the environmental changes and their implications for new risks and threats. The United States should continue increasing its force presence and capabilities in the region, as recommended in the strategies, as well as increase its participation in the Arctic security infrastructure.

Today, greater presence and expanded security infrastructure are needed to enhance U.S. maritime security. These U.S. investments will also serve as international public goods, contributing to regional stability and security. The United States lacks a persistent maritime surface and air presence in the region that would help to normalize interaction and cooperation with other Arctic states, including Russia. Since its virtual presence means actual absence, the United States relinquishes the opportunity to create a more secure and stable region. Russia can operate there; other Arctic states either have the capability to do so or are developing it.

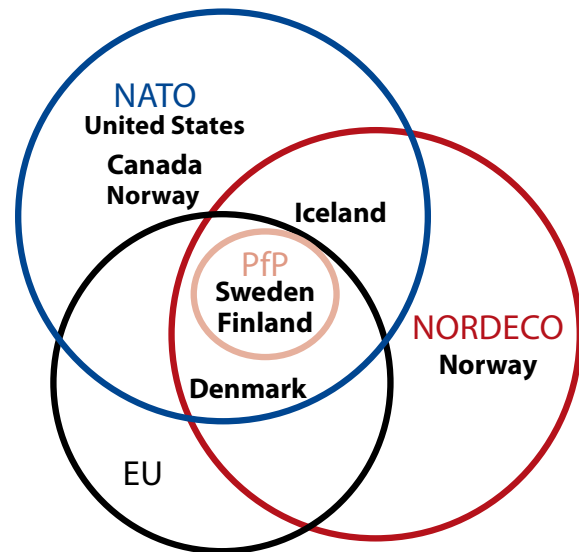
In particular, the U.S. government will have to address the problem that the Coast Guard, with responsibility to respond to the most likely challenges, is woefully undercapitalized. Although the United States continues to operate ice-capable

submarines, it has demurred in developing ice-strengthened patrol boats and icebreakers. The tools needed to maintain a maritime constabulary presence include long-range maritime patrol aircraft; reliable command, control and communications networks; airfields, deep-water ports; aids to navigation and communications; and domain awareness solutions. This infrastructure is almost nonexistent. Only growth in U.S. Coast Guard air and surface forces and associated infrastructure tailored for high latitude operations can keep the United States relevant in the region.

Without an adequate force presence in the region, the United States has become increasingly sidelined in the Arctic. There is no circumpolar arrangement that brings Arctic states together in an integrated regional security system. All eight Arctic states are among the 57 nations that belong to the Organization for Security and Co-operation in Europe (OSCE), but that organization is focused on transparency and cooperation on the continent of Europe and Eurasia. Likewise, although five Arctic states are members of NATO – Iceland, Denmark, Norway, Canada and the United States – importantly, the Atlantic Alliance does not include Russia.

There is potential for the United States to enhance its engagement in, and strengthen, regional security organizations, including some composed exclusively of European member countries. Finland and Sweden, European Union (EU) countries, conduct military exercises with NATO through the Partnership for Peace program. The EU has embarked on a common security and defense policy, but it is not poised to make significant contributions to Arctic security. In 2009, Finland, Norway, Denmark and Sweden established the Nordic Defence Cooperation (NORDEFECO) arrangement. Iceland, despite not having an armed force, is also a member, and Estonia, Latvia and

SECURITY ORGANIZATION MEMBERSHIP



Lithuania are adjunct partners. The pact is informal and so far has focused on air transportation and law enforcement. NORDEFECO complements NATO and the EU. Denmark is the most integrated Arctic state, as it belongs to NATO, the EU and NORDEFECO. As important as NORDEFECO is, however, it does not include the United States, Canada or Russia – the three most powerful Arctic states.

In addition to supporting the work of regional security organizations, the United States should consider increased bilateral security cooperation, in particular with Canada, Denmark and Iceland. The United States currently lacks the surface and air capabilities to be an effective partner with Canada in North American Arctic security. Forty percent of Canada's territory and continental shelf lie in the Arctic region; the Canadian Arctic contains 35,000 islands. Patrolling Canada's Arctic territory is a daunting task, and Ottawa has begun construction of up to eight ice-strengthened ships for that purpose. Greater cooperation with Denmark and Iceland is also crucial for the United States, which

has had a military presence in Greenland since 1940 and an air base at Thule. Moving beyond a sole focus on Denmark, Greenland is now engaging with its neighbors in the United States, Canada and Iceland, while also cautiously managing its newfound ties to Asia. In short, America's Arctic neighbors would respond positively to both an increase in the U.S. presence in the Arctic and greater investment in multilateral and bilateral security cooperation in the region.

Economic Opportunities

The United States has an opportunity to take advantage of the Arctic region for greater trade and economic opportunities for U.S. commercial interests, even as this trade remains sensitive to the environmental risks posed by an increase in economic activity. Currently, Russia has the greatest share of the circumpolar economy; it obtains 12 percent of its gross domestic product (GDP) from the region.¹⁵ High latitude climate change already has had a profound effect on the Russian economy. The development of Siberia – an area seven times as large as Texas – is shifting from the east-west corridor of the trans-Siberian railroad to a south-to-north marine transportation network along three enormous river systems: the Lena, the Yenisei and the Ob. Each of these massive transportation complexes flows northward into the Arctic Ocean and has a drainage basin of about 1 million square miles – on the order of the Mississippi River. These rivers link with the Northern Sea Route (NSR) to connect Siberia to the global economy.

The NSR is booming; it will become a transit corridor of global importance. As the region becomes warmer, the melting ice will accommodate more types of ships and for a longer period of time each year. The passage is particularly attractive for trade from Europe to Asia. The distance from Shanghai to Hamburg is 5,200 kilometers shorter

via the Arctic route than via the Suez Canal. In 2009, two German ships, *Beluga Fraternity* and *Beluga Foresight*, completed the first commercial transit across the Northern Sea Route from Pusan to Rotterdam.¹⁶ The number of ships using the route has risen steadily ever since, from 41 transits in 2011 to 71 ships in 2013.¹⁷ Between 2010 and 2012, there was a tenfold increase in the number of vessels using the NSR.¹⁸ By 2020, Russia estimates that there will be a thirtyfold increase,¹⁹ and China expects 15 percent of its foreign trade to navigate the route.²⁰ Scientists expect the Northern Sea Route and the Northwest Passage to remain open for 110 days each year by 2030, transforming global shipping patterns.²¹ Furthermore, geography and oceanography favor Russia's NSR over Canada's Northwest Passage, since the Beaufort Gyre – a strong western Arctic Ocean current – rotates the icepack into the Canadian archipelago, building up multiyear ice and impeding surface vessel traffic in the North American Arctic.²²

Greater economic development in the Arctic will bring benefits to, and demands on, communities across the region. As the United States and its allies invest in and capitalize on increased tourism, oil, gas and mining activity in the region, they must manage the risks; helping to respond to and prevent new disease vectors, invasive species, loss of culture and burdens on infrastructure. A sustainable economic future is possible, however. Northern societies balance on a precipice between marginalization and modernization. Careful, deliberate and cooperative approaches that accommodate High North stakeholders will put these economies on a sustainable path. Anticipated economic growth in the region will only be successful if it is combined with large and purposeful investments in education and social capital in the region, protection of fragile and unique high latitude environmental services and preservation of local cultures.

Society: Investing in Human Capital

Increased global interest in Arctic resources and shipping routes will directly affect local communities and economies. As the United States and its allies intensify their activity in the Arctic, they must ensure the resilience and adaptability of Northern societies. All eight Arctic nations will strengthen their adaptive capacity by engaging more purposefully with those who know the Arctic best and have adapted to change for millennia.²³ Engagement with the Arctic's indigenous peoples also provides other countries valuable models for getting it right when harmonizing indigenous and majority interests while managing competing uses of land and sea.²⁴

Educating and training those who work in the Arctic or on Arctic issues *about* the Arctic is critical to sustained cultural, technical and political success, which each Arctic state may define differently. Producing a skilled, home-grown work force will be critical to successful Northern development. Northern governments should focus first on educating Arctic youth, promoting engagement in the classroom, on the ice or in the field to spur innovations that Northerners will need to adapt to change. Igniting the spark of ingenuity early on can lead to new ways of governance, harvesting, researching and managing that provide continuity with practices that have sustained Northern societies through time.

Training on Arctic issues is also a driver of, and model for, circumpolar cooperation among industry, indigenous groups, scientific and educational institutions, nongovernmental organizations and governments. For example, Finland can export its expertise in Arctic shipping and oil-ice interactions.²⁵ Alaska has launched the first U.S. training program for ice navigators. With Russia and Norway's comprehensive standards assessment study, Barents 2020, Norway and Russia provide

a model for cooperation in developing regionally-specific offshore oil and gas standards.²⁶ Natural and social scientists from Arctic states pursue interdisciplinary and transnational research that increasingly combines peer-to-peer collaboration with traditional knowledge holders.

As the United States and its allies intensify their activity in the Arctic, they must ensure the resilience and adaptability of Northern societies.

Education, training and research face pound-foolish budget cuts in many states across the Arctic.²⁷ Governments in the region will have to invest greater resources to support Arctic studies, including by using electronic technologies to preserve and expand access to repositories of knowledge, sharing data and libraries and linking geospatial, satellite observing systems and local knowledge bases for next-generation mapping and planning tools.²⁸ States should respond to financial shortfalls through more creative public and private finance that ties education to development.²⁹

INDIGENOUS LEADERSHIP

Arctic indigenous peoples are minorities in their own states. Most live far from the southern capitals where government officials and entrepreneurs, often with little understanding of the north, launch policies and enterprises that have mixed results. On the one hand, they lead to the gradual and cumulative decline of aboriginal languages, ways of cultures, subsistence, health and well-being.³⁰ Yet in many Arctic countries they also bring opportunity in health care and employment and create

workable, if imperfect, mechanisms through land claims and other arrangements to acknowledge and sometimes even strengthen indigenous rights.³¹

To varying degrees, indigenous peoples throughout the High North face a similar dynamic: the prospect of greater financial and civic independence based on anticipated wealth from resource development in their region, contrasted with the uncertainty of its fulfillment and the threats to traditional practices and values. Within Denmark, for example, self-governing Greenland's vast natural resources are key to full independence, should Greenlanders seek it, yet the lack of investment in education and training and the costs of creating frontier infrastructure render development unsure.³² In Canada, indigenous communities are calling for improved implementation of land claims agreements and better education of local youth to create a truly representative civil service. In Alaska, local efforts seek to secure self-governance for rural communities, to ensure resilience and community well-being.³³ Enhanced local control can complement and strengthen the national political order when paired with greater responsibility on the part of tribes, villages and Native corporations, and better structures for information flow to and from the local communities about proposed development.

To make the most of the opportunities presented by the opening Arctic, bold steps are needed to integrate ecological precaution with economic opportunity, and adaptive management. States that can create genuine buy-in from everyone affected by development and conservation projects will achieve more predictability, streamlined regulatory processes, lower costs and greater satisfaction among stakeholders.³⁴ They will also better accomplish development and conservation as complementary, rather than competitive, goals.

Ensuring that economic benefits of resource development flow to those who should profit within

and not just beyond national borders is a challenge in every Arctic state. Alaskans are learning how Norway manages its oil wealth; Iceland's newly established National Energy Authority is doing the same. By contrast, Russia has further to go to implement protections for minority rights in the face of resource development. In planning for economic expansion in the region, northern governments can include incentives to innovate away from energy poverty in indigenous communities and development oriented around the presumed security of traditional energy sources, toward social and economic stability.

Ecology

As the United States and the other Arctic states increase their presence and investments in the High North, they must consider the Arctic's ecological balance. Threats to this balance pose significant and underappreciated challenges to regional and global security. The Arctic will only be more secure when its resource users collectively grasp how environmental changes causing ice melt and greening of the Arctic impact stakeholder interests and responsibilities. The Arctic's natural resources most taken for granted—the ice, snow and cold that play a key role in global climate and ocean circulation—are rapidly disappearing as the region warms at two to three times the rate of the rest of the planet.³⁵ To help ensure the long-term vitality of Arctic ecology and undergird planning for sustainable use of its living and nonliving resources, decisionmakers should integrate scientific and traditional expertise and explore collaboration among new partners.

The Arctic's resources fall within three broad categories: flora and fauna; water and ice; and minerals, oil and gas. Their sustainable use requires intelligent local and national rules, planning and management. Management depends on strong and integrated research and observation networks that

link terrestrial, coastal and marine areas across these three resource groups.³⁶

FLORA AND FAUNA

The attention in the North American Arctic to protecting charismatic mega-fauna, such as polar bears, whales and walrus, has led at times to disagreement among subsistence hunters, conservationists, industry and governments about the balance between use and conservation. These highly visible disputes have, however, also generated more deliberate discussion among these parties, both through mandated consultation and discretionary problem solving.³⁷

The focus on larger Arctic species has meant relative policy neglect of Arctic micro-fauna and macro-fauna such as amphipods, which Arctic cod, birds, and seals eat, and which support a range of life in Arctic ecosystems.³⁸ The entire ladder of trophic interaction depends on these bottom-rung organisms. Understanding habitat changes marked by declining sea ice, ocean acidification and systemic warming is key to promoting healthy trophic interactions throughout the Arctic.

To this and other scientific ends, Arctic states should collectively promote a liberal regime of Arctic Ocean marine scientific research to ensure more reliable access by scientists to the high latitude exclusive economic zones (EEZs) and continental shelves in order to better understand the changing Arctic environment and to inform global and regional responses to that change. Arctic states and scientists should also further examine the 2012 International Union for Conservation of Nature Resolution on the Conservation of marine phytoplankton.³⁹ Even if states cannot agree on conservation measures for areas beyond national jurisdiction, they may still harmonize national efforts to strengthen this essential component of ecosystem resilience.

WATER AND ICE

Ocean acidification is reshaping Arctic ecology, affecting everything from the thickness of mollusk shells to how far sound travels in marine waters.⁴⁰ As ice diminishes and permafrost thaws, salt and fresh water are mixing in unforeseen ways, affecting species that depend on sea ice. Freshwater rivers that flow into the Arctic basin are discharging greater amounts of sediment and nutrients, affecting the flow and course of the rivers and altering Arctic Ocean chemistry.⁴¹ Research toward understanding how salt, fresh and brackish waters relate across the environmental spectrum, from ocean acidification and sea ice melt-ponds to Arctic coastal estuaries, should be a priority.

Existing treaties and institutions that have the capacity to protect the Arctic marine environment are neither uniformly accepted nor consistently applied.⁴² We suggest the single best step forward is for Arctic coastal states to agree upon a uniform interpretation of appropriate management rules for ice-covered areas of the Arctic Ocean under Article 234 of UNCLOS. Doing so throughout the high latitude EEZs will move toward harmonizing the rules for vessel discharge, ice-piloting, navigational aids and other environmental safeguards and will protect a broad swath of the Arctic marine environment. The member states of the International Maritime Organization (IMO) should negotiate Arctic emission control areas under Annex VI of the Marine Pollution Convention. Finally, states bordering the Arctic Ocean must act in concert to address land-based sources of long-range trans-boundary air pollution and marine pollution.

In this area of the world, precaution makes particular sense. It is still not known precisely what living resources exist in the high marine Arctic, either within or beyond areas of national jurisdiction. Arctic states are well-positioned to adopt a regionwide, precautionary approach to the harvest

of Arctic living marine resources, building on the example of the United States and Canada. We believe creation of a commercial fishing moratorium in the High Arctic will help to stabilize the ecosystem until scientists have a better understanding of population characteristics and resiliency.

When Arctic states create marine protected areas (MPAs) in Arctic waters within or beyond national jurisdiction, they should contain time and place parameters flexible enough to accommodate the movement of marine life, the ebb of sea ice and the subsistence uses that depend on both. Dynamic MPAs can also build on efforts by Arctic Council working groups to identify large marine ecosystems and areas of heightened ecological and cultural significance in light of changing climate conditions and increasing multiple marine uses.⁴³

MINERALS, OIL AND GAS

Mineral and hydrocarbon extraction projects also provide an opportunity to improve discourse among stakeholders. Hard issues of social and ecological impact, and benefits to the local communities, are often not raised until exploitation is imminent. Strategic and environmental assessments, and clear articulation of benefits agreements, should occur early in the life of a project, with appropriate revisions if it moves ahead. Combined with improving the quality and availability of information for decisionmakers, phased assessments can lead to better evaluation of a project's cumulative impacts – negative and positive – on all stakeholders.

Arctic Ocean coastal states should implement more aggressively the lessons from the 2010 Deepwater Horizon disaster in the Gulf of Mexico and, at least, convene discussions on their divergent views regarding the desirability of establishing a liability mechanism for marine pollution associated with offshore oil and gas operations in the region. Arctic offshore oil and gas regulators should meet

Existing multilateral environmental agreements can be implemented more effectively to better protect Arctic ecology. Arctic governments should coordinate their positions in multilateral environmental agreement governing bodies to increase focus on the Arctic's environment and development.

regularly as well as informally to compare best practices and develop uniform standards for Arctic energy projects.

Harmonizing regulation of industrial activity in the Arctic on a regional level will introduce certainty for multinational operators. Russia and Norway's Barents 2020,⁴⁴ grounded in industry and regulatory expertise, is a model for offshore oil and gas operations in the Chukchi and Beaufort seas, as well. Furthermore, existing multilateral environmental agreements (MEAs) can be implemented more effectively to better protect Arctic ecology. Arctic governments should coordinate their positions in MEA governing bodies to increase focus on the Arctic's environment and development.⁴⁵

Regardless of the mineral resource in question, Arctic states should use precaution, planning and integrated management at the national level.⁴⁶ National policies should articulate rational bases and criteria for use and conservation of hydrocarbons, addressing their highest and best uses over time. These tools are essential to smart and phased exploitation of mineral resources in the Arctic.

Understanding and protecting the Arctic environment is impossible without science and traditional

knowledge. Policymakers in individual Arctic states should help shape what it means to engage in science-based decisionmaking by funding Arctic science – natural and social – as a national security priority in their respective governments. This approach requires resources to educate non-Arctic populations about why the Arctic matters to national and global security.

Key Recommendations for U.S. Policy

As U.S. policymakers begin to implement a series of high-level strategies on the Arctic, they have an opportunity to exert American leadership. Investing in the Arctic – carefully, thoughtfully and with sensitivity to the region’s ecology and people – holds out the promise of an enterprise with relatively low investments and high rewards in terms of regional prosperity and stability. The announcement of plans to appoint an ambassador-at-large for the Arctic region is a positive step toward greater U.S. engagement in the region.⁴⁷ Additional policy steps should include:

JOIN THE U.N. CONVENTION ON THE LAW OF THE SEA

The first and most important step for the United States to become a serious player in the Arctic maritime realm is to accede to UNCLOS. This recommendation is not new, but its fulfillment will immediately give the United States the authority and credibility it needs to assume greater leadership throughout the Arctic Ocean basin. This action would also permit the United States to obtain international recognition through the CLCS over an immense continental shelf seabed resource area that extends as far as 600 miles off the North Slope of Alaska.

BOLSTER MARITIME SEA AND AIR PRESENCE

The United States must address the critical shortfall in icebreakers, ice-strengthened patrol vessels and long-range maritime patrol aircraft, as well as the infrastructure to support them

Further Research Questions

RUSSIA TRANSFORMED

How will the significant effects of climate change on the Arctic and the subsequent increase in Arctic activity affect the Russian Federation?

SINO-RUSSIAN RELATIONS IN THE ARCTIC

How is the relationship between Moscow and Beijing in Siberia and the Arctic region likely to develop during the next quarter-century?

CHINESE ARCTIC POLICY

How best can the international community anticipate and respond to the direction and goals of Chinese foreign and economic policy in the Arctic region?

INDIGENOUS PEOPLES

How will enhancing or diminishing local governance, fate control and food security of indigenous communities affect local and regional stability?

INTERNATIONAL SHIPPING

How well can we predict the feasibility of Arctic shipping routes and their impact on the global economy?

CONSERVATION BIOLOGY

What are the trends for the health, migration and population fluctuations of indicator species brought about by climate change and industrial development?

STRATEGIC STABILITY

Is there a potential for the region to become a center for strategic deterrence, early warning and ballistic missile defense?

– deep-water ports, airfields, aids to navigation and Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance. The U.S. Coast Guard, in particular, remains the

Once the United States accedes to UNCLOS, it should initiate negotiations with the other Arctic Ocean coastal states to develop a uniform interpretation of rules in the treaty that confers special authority for adoption and enforcement of environmental rules in ice-covered areas.

most undercapitalized of the country's five armed forces. While we commend programs to transfer excess ships to friends and allies in distant waters to strengthen their maritime constabulary presence, we believe the U.S. maritime force structure in the Arctic is on life support. The United States cannot be a leader in the region if it is unable to operate there.

STANDARDIZE RULES FOR ICE-COVERED AREAS

Once the United States accedes to UNCLOS, it should initiate negotiations with the other Arctic Ocean coastal states to develop a uniform interpretation of rules in the treaty that confers special authority for adoption and enforcement of environmental rules in ice-covered areas. Article 234 of UNCLOS extends unique coastal state prescriptive and enforcement jurisdiction over vessel source pollution. We believe that the Arctic coastal states are empowered to apply this provision throughout their entire EEZs in the Arctic region, and adoption of a uniform standard would protect the fragile natural environment while also facilitating international shipping.

BALANCE CONSERVATION AND DEVELOPMENT

The United States should improve the dialogue about the balance between resource conservation and development in the Arctic. It can start

by fully engaging the state of Alaska and Alaska Natives as the federal government implements the U.S. Arctic Strategy, drawing on the Arctic expertise and experience of the country's only Arctic state. Learning from Alaskans' experience in navigating hard-fought debates over competing priorities will be critical to plan proactive responses to change. In this way, the state and the federal government can work together to ensure support for research and education, food security, resource management and ecological conservation in an integrated manner.

PROMOTE AN ECOSYSTEM APPROACH TO ARCTIC SCIENCE

The United States should promote healthy Arctic ecosystems by supporting further scientific research across a range of disciplines. Pressing needs include gaining a better understanding of the regional and global effects of Arctic ocean acidification, the sensitivity of indicator species such as Arctic cod to oil and the critical role of micro- and macro-fauna for the Arctic food chain. The United States can also lead an effort to ensure that scientists have timely and reliable access to Arctic marine areas under the jurisdiction of other states. Further, robust support for science will help to ensure the safety of industrial activity in the Arctic and provide a sound basis for planning and integrated management in the region.

Conclusion

Largely because of the pace of environmental change, the Arctic region is moving headlong into an era of rapid dynamism. This moment offers a rare opportunity for collaboration and shared vision among the eight Arctic states, and the United States is poised to assume a leadership role. These nations lack conflicts of interest in the Arctic Basin that might drive them toward discord. Instead, the circumpolar neighbors have the space and freedom – indeed, we believe, the imperative – to

pursue their collective interest in stability and prosperity. This opportunity is rare among states situated around a shared sea and stands in stark contrast with other maritime regions, such as the Eastern Mediterranean or the South China Sea, where states have shown less adherence to rule of law, disagreements have become linked to competition from outside the region and some states have turned toward intimidation of their neighbors to press their maritime claims. We do not believe the Arctic region will experience this kind of security discord because of the shared interests among its eight states.

The time is ripe for the United States to exercise soft power in the Arctic. By devoting serious human and financial resources to national efforts and international cooperation in the region, the United States can lead and shape, rather than be shaped by, the circumstances of rapid Arctic change.

We would like to thank Elizabeth Rosenberg, Director of the CNAS Energy, Environment and Security Program, and her CNAS colleagues for hosting a series of international meetings on Arctic security, and to thank the meeting participants; together, their valuable feedback informed this paper.

James Kraska is Mary Derrickson McCurdy visiting scholar at Duke University Marine Laboratory and senior fellow at the Center for Oceans Law and Policy, University of Virginia School of Law. Betsy Baker is associate professor of law and senior fellow for Oceans and Energy at the Institute for Energy and the Environment at Vermont Law School.

ENDNOTES

1. Carolyn Symon, Lelani Arris and Bill Heal, eds., *Arctic Climate Impact Assessment* (New York: Cambridge University Press, 2005), <http://www.acia.uaf.edu/pages/scientific.html>; James E. Overland, Muyin Wang, John E. Walsh and Julienne C. Stroeve, "Future Arctic climate changes: Adaptation and mitigation time scales," *Earth's Future*, no. 2 (2013), <http://onlinelibrary.wiley.com/doi/10.1002/2013EF000162/pdf>.
2. The *Arctic Report Card*, prepared by a team of international scientists and issued annually by the U.S. National Oceanic and Atmospheric Administration, tracks the state of the Arctic environment. M. O. Jeffries, J. A. Richter-Menge, and J. E. Overland, Eds., "2013: Arctic Report Card 2013," (National Oceanic and Atmospheric Administration, December 2013), <http://www.arctic.noaa.gov/reportcard>.
3. "On September 16, 2012, Arctic sea ice spread across just 3.41 million square kilometers (1.32 million square miles) — the smallest extent ever recorded by satellites and about half the average minimum from 1981 to 2010." National Aeronautics and Space Administration, *2013 Arctic Sea Ice Minimum* (September 21, 2013), <http://earthobservatory.nasa.gov/IOTD/view.php?id=82094>.
4. Kristina Pistone, Ian Eisenman and V. Ramanathan, "Observational determination of albedo decrease caused by vanishing Arctic sea ice," *Proceedings of the National Academy of Sciences of the United States of America*, 111 no. 9 (March 4, 2014), <http://www.pnas.org/content/111/9.toc.pdf>.
5. The Arctic strategies or policies of each Arctic state are available from the Arctic Council at <http://www.arctic-council.org/index.php/en/document-archive/category/12-arctic-strategies>.
6. National Intelligence Council, *Global Trends 2030: Alternative Worlds*, NIC 2012-001 (December 2012), 64, http://www.dni.gov/files/documents/GlobalTrends_2030.pdf.
7. Department of Defense, *Report to Congress on Arctic Operations and the Northwest Passage*, 5-750938C (May 2011), 8, http://www.defense.gov/pubs/pdfs/tab_a_arctic_report_public.pdf.
8. "The Arctic region is peaceful, stable, and free of conflict." The White House, *National Strategy for the Arctic Region* (May 2013), 1, http://www.whitehouse.gov/sites/default/files/docs/nat_arctic_strategy.pdf.
9. James Kraska, "From Pariah to Partner — Russia-American Security Cooperation in the Arctic Ocean," *ILSA Journal of International & Comparative Law*, 16 no. 2 (2009), 517, 533.
10. Dan Fiorucci, "U.S. Coast Guard Signs Alaska Agreement with Russian Border Patrol," *KTUU.com*, April 4, 2012, http://articles.ktuu.com/2012-04-04/arctic-waters_31290020.
11. United Nations, *United Nations Convention on the Law of the Sea*, 1833 U.N.T.S. 397, 21 ILM 1261 (December 10, 1982), http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.
12. President Ronald Reagan, "Statement on United States Ocean Policy" (March 10, 1983), <http://www.reagan.utexas.edu/archives/speeches/1983/31083c.htm>; The White House, "United States: Proclamation On An Exclusive Economic Zone," *International Legal Materials*, 22 no. 2 (March 1983), 464; Marian Nash Leich, "Contemporary Practice of the United States Relating to International Law," *American Journal of International Law*, 77 no. 3 (July 1983), 619; United States Department of State, Office of Public Communication & Office of Media Services, *Department of State Bulletin*, 83 (April-July 1983), 70–71.
13. Russia, Norway, Denmark (Greenland) and Canada (and Iceland, which does not have coastline on the Arctic Ocean) have made submissions, not all of which are Arctic-specific, regarding their respective outer continental shelves to the Commission on the Limits of the Continental Shelf, under Article 76 of UNCLOS.
14. The White House, *National Security Presidential Directive 66*, NSPD-66/HSPD-25 (January 9, 2009); and the White House, *National Strategy for the Arctic Region*, 1. See also Department of Defense, *Report to Congress on Arctic Operations and the Northwest Passage*. By contrast, the Alaska Arctic Policy Commission's *Preliminary Report to the Alaska State Legislature* offers concrete examples of how the state can and does support national homeland security efforts. Alaska Arctic Policy Commission, *Preliminary Report to the Alaska State Legislature* (January 2014), 48, <http://www.akarctic.com/wp-content/uploads/2014/02/AAPCpreliminaryReportV13final.pdf>.
15. Department of Defense, *Report to Congress on Arctic Operations and the Northwest Passage*, 9.
16. Atle Staalesen, "Northern Sea Route comes to life," *BarentsObserver.com*, August 7, 2013, <http://barentsobserver.com/en/arctic/2013/08/northern-sea-route-comes-life-07-08>.
17. Northern Sea Route Information Office, "Northern Sea Route Transits 2013," http://www.arctic-lio.com/nsr_transits.
18. In 2010, only four vessels used the route; in 2012, 46 vessels sailed through the route. Trude Pettersen, "46 Vessels through Northern Sea Route," *BarentsObserver.com*, November 23, 2012, <http://barentsobserver.com/en/arctic/2012/11/46-vessels-through-northern-sea-route-23-11>.
19. John Vidal, "Russian Arctic city hopes to cash in as melting ice opens new sea route to China," *TheGuardian.com*, February 1, 2014, <http://www.theguardian.com/world/2014/feb/01/arctic-city-new-route-china>.
20. Trude Pettersen, "China starts commercial use of Northern Sea Route," *BarentsObserver.com*, March 14, 2013, <http://barentsobserver.com/en/arctic/2013/03/china-starts-commercial-use-northern-sea-route-14-03>.
21. National Intelligence Council, *Global Trends 2030: Alternative Worlds*, 65.
22. See, for example, Katharine A. Giles, Seymour W. Laxon, Andy L. Ridout, Duncan J. Wingham and Sheldon Bacon, "Western Arctic Ocean freshwater

storage increased by wind-driven spin-up of the Beaufort Gyre," *Nature Geoscience*, 5 (2012), 194-197.

23. Arctic Council Sustainable Development Working Group (SDWG), "Adaptation Actions for a Changing Arctic (a)" (Arctic Council, April 8, 2013); Henry Huntington, "Society, People, Culture" in Protection of the Arctic Marine Environment, The Arctic Ocean Review Project, Final Report, Phase II 2011-2013 (Protection of the Arctic Marine Environment Secretariat, May 2013), http://pame.is/images/126082_pame_sept-2.pdf.

24. Groups promoting greater stability in the geopolitically sensitive Hindu Kush Himalayan/Third Pole region look to the Arctic, and the Arctic Council as a strong model for regional cooperation (between Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan), see for example the panel organized by the Climate Research Fund, the International Centre for Integrated Mountain Development (ICIMOD) and the Skoll Global Threats Fund at the Arctic Circle, hosted by Iceland's President Ólafur Ragnar Grímsson. "Arctic Lessons for the Himalayan/Third Pole Region" (Session held at the inaugural Arctic Circle, Reykjavík, Iceland, 12-14 October 2013), <http://www.icimod.org/?q=11645>.

25. Ministry for Foreign Affairs of Finland, *Arctic expertise in Finland* (2012), 6, http://www.kopijyva.fi/ejulkaisut/ulkoasiainministerio/arctic_expertise/UM_Arktinen_Web_EN_270912_light.pdf.

26. DNV GL, "Barents 2020: Assessment of International Standards for Safe Exploration, Production and Transportation of Oil and Gas in the Barents Sea - Harmonisation of Health, Safety, and Environmental Protection Standards for The Barents Sea," Final Report (DNV GL, 2013), <http://www.dnvusa.com/resources/reports/barents2020.asp>.

27. See, for example Alison Weisburger, "Proposed Cuts to Funding Threaten Arctic Research in U.S. and Canada," (The Arctic Institute, Center for Circumpolar Security Studies, November 7, 2011); and "Fisheries library's closure in Winnipeg worries scientists," CBC/Radio-Canada, 13 December 2013, <http://www.cbc.ca/news/canada/manitoba/fisheries-library-s-closure-in-winnipeg-worries-scientist-1.2464075>.

28. See, for example, National Oceanic and Atmospheric Administration, Alaska ShoreZone Coastal Mapping and Imagery, <http://alaskafisheries.noaa.gov/shorezone/>; National Oceanic and Atmospheric Administration, Distributed Biological Observatory, <http://www.arctic.noaa.gov/dbo/about.html>; Alaska Ocean Observing System, <http://www.aaos.org>; Scenarios Network for Alaska & Arctic Planning, <http://www.snap.uaf.edu/>; and Kotzebue IRA, Kotzebue Sound Bearded Seal Satellite Tagging Project, http://kotzebueira.org/current_projects.html.

29. Such efforts are underway across the Arctic and sub-Arctic; for example, there is support among state, federal, industry and indigenous stakeholders for the Alaska Native Science & Engineering Program at the University of Alaska.

30. Andrey Petrov et al., "Arctic Social Indicators" (Nordic Council of Ministers, 2010), [http://www.svs.is/asi/Report%20Chapters/Report%20Final%20Version/ASI%20umbrot%20final%20lowres%20\(2\).pdf](http://www.svs.is/asi/Report%20Chapters/Report%20Final%20Version/ASI%20umbrot%20final%20lowres%20(2).pdf); see also Sustainable Development Working Group, "Adaptation Actions for a Changing Arctic (a):

Synthesis Report" (April 8, 2013), Annex A.5, 28, <http://www.sdwg.org/media.php?mid=1694>, for several reports addressing these themes.

31. See, for example, Arctic Council, Sustainable Development Working Group Organizing Committee, "Hope and Resilience – Suicide Prevention in the Arctic Conference Report," (March 2010); on fluctuations in health outcomes, see, for example, Alan J. Parkinson, deputy director of Arctic Investigations Program at Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, "The Arctic Human Health Initiative," Statement to the Joint Hearing of the Committee on Commerce and Committee on Foreign Relations, U.S. Senate, September 26, 2006; on land claims see discussion below.

32. The Committee for Greenlandic Mineral resources to the Benefit of Society, "To the Benefit of Greenland," (University of Copenhagen and Ilisimatusarfik, University of Greenland, January 2014), http://nyheder.ku.dk/groenlands-naturressourcer/rapportogbaggrundspapir/To_the_benefit_of_Greenland.pdf.

33. See, for example, Adam Goldenberg and Tony Penikett, "Closing the Citizenship Gap in Canada's North: Indigenous Rights, Arctic Sovereignty, and Devolution in Nunavut," *Michigan State International Law Review*, 22 no. 1 (Fall 2013).

34. Amy K. Lehr and Gare A. Smith, *Implementing a Corporate Free, Prior, and Informed Consent Policy: Benefits and Challenges* (eBook: Foley Hoag, 2010).

35. See Symon, Arris and Heal, *Arctic Climate Impact Assessment; Overland, et al.*, "Future Arctic climate changes: Adaptation and mitigation time scales."

36. See, for example, National Intelligence Council, *Global Trends 2030: Alternative Worlds*, 65.

37. Each of the articles in the *Environmental Law Reporter*, 43, no. 10 (October 2013) <http://elr.info/articles/archive/43/10>, which focuses on the Arctic, touch on diverse aspects of these disagreements and discussions, and the solutions emerging from them.

38. Arctic Biodiversity Assessment 2013: Ch. 8, Marine Invertebrates, Conservation of Arctic Flora and Fauna Working Group of the Arctic Council, 287, http://www.caff.is/publications/view_document/213-arctic-biodiversity-assessment-2013-chapter-8-marine-invertebrates.

39. International Union for Conservation of Nature, *Conservation of marine phytoplankton*, WCC-2012-Res-078-EN (September 6-15, 2012), <https://portals.iucn.org/docs/iucnpolicy/2012-resolutions/en/WCC-2012-Res-078-EN%20Conservation%20of%20marine%20phytoplankton.pdf>.

40. Eddy C. Carmack, Fiona A. McLaughlin, Shigeto Nishino, Koji Shimada and Michiyo Yamamoto-Kawai, "Aragonite Undersaturation in the Arctic Ocean: Effects of Ocean Acidification and Sea Ice Melt," *Science*, 326 no. 5956 (November 2009), 1098-1100; and Center for Ocean Solutions, "Sound Absorption," CenterForOceanSolutions.org, <http://centerforoceansolutions.org/climate/impacts/ocean-acidification/sound-absorption/>.

41. N.R. Bates, W.-J. Cai and J.T. Mathis, "The Ocean Carbon Cycle in the Western Arctic Ocean: Distributions and Air-Sea Fluxes of Carbon Dioxide,"

Oceanography, 24 no. 3 (2011), 186–201, http://www.tos.org/oceanography/archive/24-3_bates.pdf.

42. Protection of the Arctic Marine Environment, The Arctic Ocean Review Project, Final Report (Phase II 2011-2013).

43. Suzanne Lalonde, "Marine Protected Areas in the Arctic," in *The Law of the Sea and the Polar Regions: Interactions between Global and Regional Regimes*, eds. Erik J. Molenaar, Alex G. Oude Elferink and Donald R. Rothwell (Leiden: Brill, 2013), 103.

44. DNV GL, "Barents 2020."

45. See, for example, "Multilateral Environmental Agreements and their relevance to the Arctic" (Conference of Parliamentarians of the Arctic Region, GRID-Arendal and Norden, September 2006), http://www.grida.no/files/publications/arctic-biodiv/Arendal%20Seminar%202006_Overview%20Report.pdf; "8.6 Opportunities for Cooperative Action" in Protection of the Arctic Marine Environment, The Arctic Ocean Review Project, Final Report (Phase II 2011-2013), 91-92.

46. Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska, "Managing for the Future in a Rapidly Changing Arctic," A Report to the President (Department of the Interior, March 2013), <http://www.doi.gov/news/upload/ArcticReport-03April2013PMsm.pdf>.

47. John Kerry, "Secretary Kerry Announces Department Will Establish a Special Representative for the Arctic Region," February 14, 2014, <http://www.state.gov/secretary/remarks/2014/02/221678.htm>.

About the Center for a New American Security



The mission of the Center for a New American Security (CNAS) is to develop strong, pragmatic and principled national security and defense policies. Building on the expertise and experience of its staff and advisors, CNAS engages policy-makers, experts and the public with innovative, fact-based research, ideas and analysis to shape and elevate the national security debate. A key part of our mission is to inform and prepare the national security leaders of today and tomorrow.

CNAS is located in Washington, and was established in February 2007 by co-founders Kurt M. Campbell and Michèle A. Flournoy. CNAS is a 501(c)3 tax-exempt nonprofit organization. Its research is independent and non-partisan. CNAS does not take institutional positions on policy issues. The views expressed in this report are those of the authors and do not represent the official policy or position of the Department of Defense or the U.S. government.

© 2014 Center for a New American Security.
All rights reserved.

Center for a New American Security
1152 15th St., NW
Suite 950
Washington, DC 20005

TEL 202.457.9400
FAX 202.457.9401
EMAIL info@cnas.org
www.cnas.org

Contacts

Liz Fontaine
Acting Director of External Relations
and Creative Director
lfontaine@cnas.org, 202.457.9423

JaRel Clay
Communications Associate
jclay@cnas.org, 202.457.9410

Cover image by iStock.