Center for American Progress

# Safeguarding the Arctic

## Why the U.S. Must Lead in the High North

By Cathleen Kelly and Miranda Peterson January 22, 2015

> *"As the United States assumes the Chairmanship of the Arctic Council, it is more important than ever that we have a coordinated national effort that takes advantage of our combined expertise and efforts in the Arctic region to promote our shared values and priorities."*
>
> *— President Obama, Executive Order on Enhancing Coordination of National Efforts in the Arctic, January 21, 2015*[1]

While many Americans do not consider the United States to be an Arctic nation, Alaska—which constitutes 16 percent of the country's landmass and sits on the Arctic Circle—puts the country solidly in that category.[2] Consequently, it is with good reason that the United States has a seat on the Arctic Council. As Arctic warming accelerates, U.S. leadership in the High North is key not only to the public health and safety of Americans and other people in the region, but also to U.S. national security and the fate of the planet.

In just three months, U.S. Secretary of State John Kerry will become chairman of the Arctic Council. The two-year position rotates among the eight Arctic nations[3]—Canada, Finland, Iceland, Norway, Russia, Sweden, the United States, and Denmark, including Greenland and the Faroe Islands—and is a powerful platform for shaping how the risks and opportunities of increasing commercial activity at the top of the world are managed.

To ready the administration for Secretary Kerry's turn to hold the Arctic Council gavel from 2015 to 2017, President Barack Obama recently issued an executive order to better coordinate national efforts in the Arctic.[4] The executive order is the latest signal from the White House that President Obama and Secretary Kerry are focused on preparing the nation for dramatic changes in the Arctic and protecting U.S. national interests in the region—even more so than their predecessors—and that the Arctic Council U.S. chairmanship is a priority for the administration.

The executive order creates an Arctic Executive Steering Committee, chaired by White House Office of Science and Technology Policy Director John Holdren and vice chaired by National Security Advisor Susan Rice or their designees. The steering committee will improve coordination of federal Arctic policy across the government and, where applicable, with state, local, and Alaska Native tribal governments and organizations, the private sector, and other stakeholders. The steering committee will meet quarterly to shape priorities, strategic direction, and activities in the region. The steering committee will also guide agencies supporting the Arctic Council U.S. chairmanship in priority setting and resource spending for their Arctic efforts. The executive order directs the steering committee to establish a working group to deliver recommendations by May 1, 2015, on how to strengthen agency Arctic policy coordination, reduce any duplication of efforts, and address potential gaps in implementing Arctic priorities. In essence, the steering committee will aim to ensure that agencies are fully leveraging and aligning the government's Arctic expertise, research, and policymaking capabilities.[5]

The U.S. Department of State released a draft U.S. chairmanship agenda in October 2014 aimed at improving economic and living conditions in the Arctic, addressing climate change, and strengthening Arctic Ocean stewardship.[6] With Secretary Kerry set to take the Arctic Council helm in April, federal agencies must move quickly to implement the president's executive order. The White House and Congress must also provide adequate funding to agencies in the fiscal year 2016 budget to monitor and reduce black carbon and methane emissions that accelerate warming in the region, expand research on climate change and marine biodiversity, improve the resilience and living conditions of Arctic communities, and strengthen Arctic search and rescue capacity. Lastly, Secretary Kerry and the White House should show leadership in the Arctic by working with key federal agencies to set world-class standards for Arctic oil spill prevention and response, to identify and protect important marine areas in the Arctic, and to support vulnerable communities on the front lines of devastating climate change effects.[7]

The National Oceanic and Atmospheric Administration, or NOAA, released its ninth annual "Arctic Report Card," which tells a grim tale of rapid temperature rise in the region—double the rate of the rest of the planet.*

## Climate change puts communities at risk

The health, safety, and prosperity of Alaskans, as well as communities across the Arctic and around the globe, are inextricably tied to what is happening in the High North. In December 2014, the National Oceanic and Atmospheric Administration, or NOAA, released its ninth annual "Arctic Report Card," which tells a grim tale of rapid temperature rise in the region—double the rate of the rest of the planet—triggering melting across 40 percent of the Greenland ice sheet's surface.[8]* Snow cover and sea ice are fast declining, along with the number of polar bears.[9]

Experts also blame Arctic climate change for winter heat waves in Alaska and northern Europe, bone-chilling cold snaps across the lower 48 states, and dangerous global sea-level rise.[10] Melting sea ice that once protected Alaska's coastal communities is giving

way to fierce storms and surging icy waters that carry away chunks of coastline, putting Native communities that are close to the Arctic Circle, such as Shishmaref, Kivalina, and Newtok, on the brink of falling into the sea.[11]

The U.S. Army Corps of Engineers estimates that moving each of these communities—three of the more than 180 Alaska Native villages threatened by climate change—to more secure locations would cost between $80 million and $200 million.[12] For Newtok, this means as much as $380,000 per each of its 340 residents.[13]

The high costs of climate change in Alaska are not limited to remote Native villages. In fact, almost 10,000 miles of roads, 819 miles of railroad, and 253 airports are beginning to buckle and crumble as once-frozen permafrost thaws under 70 percent of the state.[14] The authors of the 2014 National Climate Assessment estimate that the growing instability of Alaska's permafrost will add between $3.6 and $6.1 billion to infrastructure maintenance over the next 20 years.[15]

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## With ice melt, threats of risky commercial activity rise

Receding ice invites commercial activities that can increase the threat of oil spills, shipping accidents, and other mishaps requiring emergency response and search and rescue operations. According to the Pew Charitable Trusts, "In the event of an oil spill or other incident, inadequate infrastructure and punishing weather could delay the arrival of vessels, equipment and people. Major highways, airports and ports, which most Americans take for granted, do not exist in the Arctic."[16] The Center for American Progress supports halting Arctic Ocean drilling until the oil and gas industry and federal agencies meet top-tier standards for preventing oil spills in the region and can demonstrate the ability to identify and immediately respond to a spill.[17]

Shell's long string of failures in its Arctic drilling ventures, including a drilling rig grounded in rough seas—despite billions of dollars of investment and preparation—show how ill prepared even the largest, most technically competent oil companies are for operations in the Arctic.[18] As Rear Adm. Jonathan White, oceanographer of the U.S. Navy, put it at a recent Center for American Progress event, "It seems to me that the exploration by the resource companies may be outpacing the Arctic Council's work on oil spill response."[19]

Chevron recently shelved plans to drill in the Arctic's Beaufort Sea citing "economic uncertainty in the industry."[20] Yet Imperial Oil—along with Exxon Mobil and BP—is forging ahead with its Beaufort Sea drilling ambitions despite the dearth of oil-spill-response capacity for this harsh and remote area.[21] The partners in this joint venture are seeking regulatory approval of their plans, which include drilling at water depths of up to 1,500 meters—22 times deeper than the deepest well ever drilled in the Canadian portion of the Beaufort Sea.[22] In 2011, the Pew Charitable Trusts called on

Canadian Prime Minister Stephen Harper to suspend all new Arctic oil leasing until Canada's offshore drilling regulations are reformed to require operators to meet standards for drilling performance and environmental protection before bids are accepted, among other changes. The Canadian government updated its offshore drilling rules based on a 2011 National Energy Board review, but key reforms that are needed to minimize Arctic oil spill risks have yet to be adopted.[23]

Recognizing that an oil spill in or near the Arctic would be disastrous for the region's people and environment, including indigenous communities whose livelihoods rely on healthy populations of fish and other wildlife, President Obama recently and wisely withdrew Alaska's Bristol Bay, which sits below the Arctic Circle, from any future oil and gas development in perpetuity.[24]

## Few boundaries for the impact of Arctic melt

The consequences of a melting Arctic stretch far beyond the boundaries of the High North. Melting glaciers, ice caps, and the Greenland ice sheet are major drivers of global sea-level rise, leaving coastal and low-lying areas around the world vulnerable to flooding. According to the U.S. Arctic Research Commission and The Arctic Institute:

> *The 1,000-mile stretch of the highly populated coastline from Cape Hatteras, North Carolina, to Boston, Massachusetts, is a sea level rise "hotspot," with the greatest projected sea level increase to occur on the shores of New York City. Significant storm surges, such as the one that occurred during Superstorm Sandy in 2012, will likely be more frequent.*[25]

The authors of the 2014 National Climate Assessment report that "global sea level has risen by about 8 inches since reliable record keeping began in 1880" and project that seas will rise roughly another 1 foot to 15 inches by midcentury and up to 4 feet by 2100.[26] Two new studies—one published in the *Proceedings of the National Academy of Sciences* and the other in *Nature Climate Change*—reveal that global sea-level-rise models likely underestimate the rate at which the Greenland ice sheet is melting and contributing to sea-level rise.[27] This means that the National Climate Assessment's sea-level-rise projections may be too low. (see text box)

The U.S. Geological Survey reports that 50 percent of the U.S. coastline is at high or very high risk of sea-level-rise impacts, threatening many of the 16.4 million Americans that live in the coastal floodplain.[28]

Bangladesh, where 17 million people live less than one meter above sea level; large low-lying cities in Southeast Asia, such as Bangkok, Bombay, Calcutta, Dhaka, and Manila; and low-lying islands in the Pacific and Indian oceans are also at high risk of flooding from rising sea levels accelerated by Arctic melting.[29]

## Greenland ice sheet loss would raise global sea level 23 feet

The Intergovernmental Panel on Climate Change, or IPCC, estimates that an increase in global temperatures ranging from 1 degree Celsius to 4 degrees Celsius, relative to pre-industrial temperatures, will trigger unstoppable melting of the Greenland ice sheet.[30] The disintegration of the Greenland ice sheet will ultimately lead to 7 meters, or 23 feet, of sea-level rise.[31] Average global temperatures have already risen .85 degrees Celsius since 1880. Leading experts estimate that without additional emission-reduction commitments from world leaders, the world is on track to warm 4 degrees Celsius, or 7.2 degrees Fahrenheit, above pre-industrial temperatures by 2100.[32] In other words, staying on the current global warming path is likely to trigger the irreversible disintegration of the Greenland ice sheet.[33]

At the Cancun climate conference in 2010, world leaders agreed to limit global warming to 2 degrees Celsius relative to pre-industrial levels and to consider lowering that limit to 1.5 degrees.[34] Many scientists believe that warming beyond 2 degrees Celsius could be catastrophic, and even this level of warming may prove dangerous. According to a 2014 U.N. Environment Programme report, to stay within the 2 degree Celsius limit, total global greenhouse gas emissions need to shrink to net zero between 2080 and 2100.[35] A recent analysis in the journal *Nature* determined that limiting global warming to less than 2 degrees Celsius will require keeping all of the Arctic's oil and gas resources in the ground or under the sea and, globally, one-third of oil reserves, half of gas reserves, and more than 80 percent of coal reserves.[36]

Experts conclude that nations could achieve the emission reductions needed to stay below the 2 degrees threshold by widely implementing a handful of affordable policies through 2030—ranging from adopting better efficiency standards for vehicles and eliminating fossil-fuel subsidies to shutting down inefficient coal plants and investing in renewable energy. The IPCC and other experts estimate that implementing these policies would have negligible effects on economic growth.[37] In fact, when the societal benefits of implementing these policies are considered—such as enhanced energy efficiency, lower health costs, and decreased damage from extreme weather events—many experts conclude that these policies are likely to enhance economic growth.[38]

## Cutting black carbon and methane emissions would slow near-term Arctic and global warming

Even if a strong international climate change agreement is created in Paris in 2015, the Paris commitments will not take effect until 2020.[39] However, there are immediate opportunities to slow near-term Arctic and global warming through the Arctic Council that should not be missed. Arctic Council member nations and observer nations—including China, India, Japan, South Korea, Germany, the United Kingdom, and others—produce at least 60 percent of global black carbon emissions and 42 percent of global anthropogenic methane emissions, both of which are powerful drivers of regional and global warming.[40] Because of the short atmospheric lifetime of methane and black carbon, the benefits of reducing these super pollutants will be felt in the near term.

Existing diesel regulations put the United States on track to reduce black carbon emissions 52 percent below 2005 levels by 2030. By taking additional steps now, the United States could cut black carbon emissions at least 78 percent by 2030.[41] For example, the U.S. Department of the Interior Bureau of Ocean Energy Management's rulemaking process provides an opportunity to require oil and gas companies to limit black carbon pollution to protect public health and safeguard the climate.[42] The United States could also provide incentives for new, more-efficient, and less-polluting trucks, off-road construction and agriculture equipment, woodstoves and boilers, agricultural burning, shipping, and oil and gas flaring.[43]

Reducing methane emissions would slow warming globally and would have an outsized payback in the Arctic, which would benefit from two to three times more avoided warming than the global average.[44] Effective and low-cost options also exist to reduce methane emissions from oil and gas systems, agriculture, waste, and wastewater management. These options have been well mapped and analyzed.[45]

As Arctic Council chairman, Secretary Kerry should seek commitments from Arctic Council nations to set national goals or action plans to limit black carbon and methane pollution and actions from observer nations to inventory and reduce their black carbon and methane emissions.

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## Seizing the Arctic Council U.S. chairmanship moment

Secretary Kerry and President Obama have rightly made addressing climate change a core aspect of the U.S. Arctic Council chairmanship agenda, along with strengthening Arctic Ocean stewardship and improving economic and living conditions in the region.[46] The president's recent executive order lays the groundwork for the United States to deliver on these priorities and support more effective implementation of President Obama's National Strategy for the Arctic Region, the U.S. Department of Defense's 2013 Arctic Strategy, the U.S. Navy's Arctic Roadmap for 2014 to 2030, and other presidential directives and agency plans geared to pursue responsible environmental stewardship and strengthen international cooperation in the region.[47]

Yet no amount of improved coordination will remedy the fact that key federal agencies simply do not have the staff or resources to respond to the risks of a melting Arctic and growing commercial activity in the region. A May 2014 Government Accountability Office report found that U.S. agencies with leadership roles in the Arctic Council do not have designated resources for their Arctic Council work.[48] Secretary Kerry took immediate strides to address this critique with his July 2014 appointment of retired Adm. Robert Papp to serve as U.S. special representative for the Arctic—who, along with a team of nine staff, will advance the Arctic Council U.S. chairmanship goals. Nonetheless, more action is needed. Without specified funds for Arctic Council activities, staff within other agencies supporting Arctic Council work—including the U.S. Environmental Protection Agency, the U.S. Global Change Research Program, the U.S. Fish and Wildlife Service, the National Nuclear Security Administration, NOAA, and the U.S. Department of Homeland Security, among others—must compete with other mission priorities when seeking Arctic funding.[49]

The omnibus federal spending bill signed by President Obama in December 2014 for fiscal year 2015 includes a $2 million appropriation to expand staff supporting the Arctic Council's U.S. chairmanship, a request for the U.S. Department of Defense to assess U.S. satellite coverage of the Arctic, and $7.3 million for the Pentagon to develop technology to enhance maritime domain awareness in the region.[50] While this is a step in the right direction, it is not nearly enough to fill the resource gaps that currently limit the nation's ability to manage risks to the United States in the Arctic.

As Adm. Papp testified before the House Committee on Foreign Affairs in December 2014, "There's going to be increased human activity—whether it's maritime or on the shore—and infrastructure and governmental functions have not caught up to where we are right now in terms of humankind starting to come to the area."[51]

## Preparing the fiscal year 2016 budget

With icebreaking ships costing roughly $880 million each, the president, the U.S. Coast Guard, and Congress are not rushing to build new ones.[52] However, considering the potential impacts of a poorly managed oil spill or shipping accident in the region makes the decision to delay a new icebreaking ship purchase seem less prudent.

For example, the 1989 Exxon Valdez oil spill in Alaska's remote Prince William Sound damaged 1,300 miles of shoreline, devastated commercial fisheries and communities that depend on fishing, and decimated wildlife populations, some of which are still struggling to recover.[53] In 1991, Exxon agreed to pay $100 million in restitution for damage to fish, wildlife, and lands—on top of a $900 million civil settlement to compensate Alaskans for spill damages; a $150 million criminal fine, which the courts later forgave in large part; and $2 billion in cleanup costs.[54] Since then, the federal government and the state of Alaska have asked Exxon to pay an additional $92 million to address long-term environmental damage and to clean up remaining oil.[55] Given the stark lack of response capacity and even basic infrastructure along Alaska's Arctic coast, the costs of a similar accident north of the Arctic Circle would likely be exponentially higher.

Congress and the president should make ensuring that the nation has an adequate fleet of icebreaking ships a priority. The United States also needs to be prepared to lead ambitious Arctic Council initiatives to reduce the risks of rapid warming and growing commercial activity in the region. To do so, the president should assess resources needed to upgrade and expand U.S. Arctic readiness, including:[56]

- Black carbon and methane monitoring and mitigation
- Scientific understanding of climate change and marine biodiversity in the region
- Residential and commercial infrastructure
- Search and rescue capabilities
- Satellite monitoring, navigation, and communication systems

The president should use this assessment to inform his fiscal year 2016 budget request to Congress.

## Improving Arctic community resilience

In November 2014, the president's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience recommended that the White House "explore [the] Federal role in addressing climate change-related displacement" of people and their communities.[57] President Obama should act on this advice by working with agencies to identify climate change impacts that are likely to trigger displacement of people and communities, particularly for slow-onset events such as sea-level rise. The president should ask agencies to identify in their adaptation plans how they will help vulnerable communities reduce their climate change risks and, when needed, how they can support local leaders with making smart decisions about whether, how, and where to relocate. In the case of Alaska Native governments and communities, it is crucial that agencies honor the unique government-to-government relationship in this process by properly consulting with the affected Alaska Native governing entities.[58] The president should also request a fiscal year 2016 budget from Congress that includes resources to support coastal communities on the brink of climate change devastation, including smart relocation planning and other protections where moving is not a viable option.

## Strengthening Arctic Ocean stewardship and maritime safety

The expansive and pristine marine ecosystems in the Arctic Ocean are increasingly threatened by climate change and commercial activity in the region. To strengthen Arctic Ocean stewardship, the president and Secretary Kerry should work with key federal agencies to develop world-class standards for preventing oil spills and to identify and protect important marine areas in the Arctic.

At the Arctic Council helm, Secretary Kerry should also aim to reach agreements with other Arctic nations to improve maritime safety and domain awareness, charting, and weather, ocean, and ice forecasting.

As an Arctic nation and with Secretary Kerry's Arctic Council chairmanship around the corner, the United States has a responsibility and opportunity to lead efforts to reduce the risks of Arctic warming and commercial activity that have serious implications for people and the environment in the region and beyond. Without adequate resources to respond to these risks, the United States will be caught flat footed in the Arctic at a high price to the region and to the planet.

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***Correction, January 23, 2015:** This issue brief has been corrected to more accurately characterize the temperature increase in the Arctic compared with the global temperature increase.*

# Endnotes


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