

The New Ice Curtain

Russia's Strategic Reach to the Arctic

A Report of the CSIS Europe Program

AUTHORS

Heather A. Conley
Caroline Rohloff

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Acknowledgments

This research effort was designed to search for new ways to strengthen U.S.-Russian bilateral cooperation in the Arctic during the U.S. chairmanship of the Arctic Council (2015–2017), as well as to explain to U.S. and international audiences why the Russian Arctic is so vital to Russia’s future. The early months of our research were very promising, beginning with a major Arctic conference in Moscow in December 2013 hosted by the Russian International Affairs Council, where senior Russian and U.S. officials gave serious presentations about enhancing Arctic engagement, and afterwards sat together and planned a promising cooperative roadmap.

Events in Ukraine in February 2014 changed the geopolitical landscape. Our research project went from promoting new collaborative thinking to identifying ways to preserve and protect Arctic cooperation as EU and U.S. sanctions were imposed after Russia annexed Crimea in March 2014 and U.S.-Russia military relations suspended by the United States. Although already under way, significant changes to Russia’s Arctic policy occurred in 2014 and continue to this day, which necessitated our research to take yet another turn in order to understand the factors that contributed to the policy change that went from describing Russia’s Arctic as “a territory of dialogue” to “challenges and threats to our national security.” The report’s policy recommendations suggest ways to bring the Arctic back to a region that ensures transparency and begins to rebuild confidence between Arctic and non-Arctic states alike.

Writing such a detailed report is an enormous undertaking and the product of literally hundreds of hours of research and writing. This herculean task would not have been possible without the tireless dedication and stalwart efforts of CSIS research associate Caroline Rohloff. Caroline worked closely with very talented CSIS research interns Anna Olevsky, Tomi Stahlberg, and Katrina Negrouk, as well as former CSIS research associate Terence Toland. It takes a village to produce such an extensive report and gratefully, the CSIS Europe Program has an extremely talented village.

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The authors hope this report illuminates Russian policy toward the Arctic now and into the future.

Executive Summary

What Does the Future Hold for the Russian Arctic?

This research effort was designed to better understand the growing economic, political, and security importance of the Arctic to the Russian Federation and its leadership, as well as to determine what the Russian Arctic would tell us about the future development of Russia itself. The Russian Arctic is a much understudied and underappreciated region that encompasses nearly the entire northern coast of Eurasia and 50 percent of the total Arctic coastline, includes Russia's strategic nuclear fleet, and accounts for about 20 percent of Russia's GDP and 22 percent of its exports.¹ Russia is an Arctic superpower and it perceives its Arctic region, or Far North, as a key development driver of the country in the twenty-first century. Russia's interests in the Arctic have been largely driven by the promise of lucrative hydrocarbon resources beneath the Arctic Ocean, a perception promoted by Russia's state-owned energy giants, as well as by the development of a new Arctic shipping route.²

This report traces the evolution of Russian Arctic policy beginning from the 2007–2008 period to today and offers a detailed examination of critical aspects of Russia's Arctic policies, particularly economic development and security issues, that animate the Kremlin. The report draws conclusions about Russia's policies and actions in the Arctic and makes recommendations to enhance confidence, transparency, and safety in the region.

In an attempt to better understand the Russian Arctic, we examined the region to determine if it could be an example of decentralization and modernization or would it return to its historically rooted Soviet model of centralization with a greater emphasis on military-industrial and energy development. When we began our research in January 2013, there was some hope that the Kremlin would take a modernizing path despite troubling signs that Soviet-style development was an emerging trend. Russia has provided leadership within the Arctic Council, the premier intergovernmental forum for the Arctic, on issues such as search and rescue, oil spill response, and fisheries, while non-Arctic states, such as China and India among others, also intensified their Arctic collaboration.

1. Linda Edison Flake, "Russia's Security Intentions in a Melting Arctic," *Military and Strategic Affairs* 6, no. 1 (March 2014): 105, [http://www.inss.org.il/uploadImages/systemFiles/MASA6-1Eng%20\(4\)_Flake.pdf](http://www.inss.org.il/uploadImages/systemFiles/MASA6-1Eng%20(4)_Flake.pdf).

2. Pavel K. Baev, "Russia's Arctic Aspirations," in *Arctic Security Matters*, ed. Juha Jokela (Paris: EU Institute for Security Studies, June 2015), 51, http://www.iss.europa.eu/uploads/media/Report_24_Arctic_matters.pdf.

The Arctic Council increased its focus on sustainable Arctic economic development under the Canadian chairmanship, a subject area particularly welcomed by Russian officials as global commodity prices were advantageous for greater development.

In December 2013, CSIS partnered with the Russian International Affairs Council (RIAC) to host a high-level conference on the Russian Arctic in Moscow. It was clear that the Russian government had prioritized the Arctic region both for domestic development and as a bilateral foreign policy priority with the United States and other Arctic countries. There was great optimism at the time that U.S.-Russian bilateral cooperation in the Arctic could be strengthened, particularly during the upcoming U.S. chairmanship of the Arctic Council that would begin in April 2015.

Despite initial optimism, less than a year after Vladimir Putin returned to the Kremlin following contested Russian parliamentary elections and the largest domestic demonstrations of his tenure, it was apparent that Russia was returning to its historic Soviet course of state-centric Arctic development, including an over-reliance on natural and mineral resources, as well as military modernization and mobilization of its strategic nuclear deterrent. Reminiscent of the 1930s, this perspective is perhaps best captured in the Soviet concept of a “Red Arctic” with historical inspiration of “storming the distant seas” drawn from the heroic 1934 rescue of the Chelyuskin scientific mission.³ As former Murmansk district governor Dmitri Dmitriyenko noted in 2012, “For Murmansk Oblast [District], the election of Vladimir Putin as President of the Russian Federation is a very important event, which means the continuity of the current course . . . a course of huge breakthrough projects, which gradually will transform the social and economic situation in the region. Probably, Putin is the only of our politicians who knows and understands the Russian Arctic, and who underlines that it is in the Arctic that Russia has its future.”⁴

Russia’s nationalistic rhetoric has become an increasing part of its new Arctic narrative. Russia’s historical Arctic narrative—both one of man conquering the forces of nature and the relentless focus to achieve military and industrial progress—is a source of national pride and identity that is exploited for domestic purposes. In the chilling words of Deputy Prime Minister Dmitry Rogozin, who chairs Russia’s new Arctic Commission and who foreshadowed “serious economic collisions in the twenty-first century” in the Arctic, has stated, “It is our territory, it is our shelf, and we’ll provide its security. And we will make money there. . . . They [the West] will put us on a sanctions list—but tanks do not need visas.”⁵ Other bombastic statements from Minister Rogozin, including his reference to the

3. Pavel K. Baev, “Russian Policy in the Arctic: A Reality Check,” in *The Arctic: A View from Moscow*, ed. Dmitri Trenin and Pavel K. Baev (Washington, DC: Carnegie Endowment for International Peace, 2010), 25, http://carnegieendowment.org/files/arctic_cooperation.pdf.

4. Atle Staalesen, “Governor: Putin is good for the Arctic,” *Barents Observer*, March 6, 2012, <http://barentsobserver.com/en/articles/governor-putin-good-arctic>.

5. Lucy Clarke-Billings, “Russia begins huge surprise air force drill on same day as NATO starts Arctic training,” *Independent*, May 27, 2015, <http://www.independent.co.uk/news/world/russia-begins-huge-surprise-air-force-drill-on-same-day-as-nato-start-arctic-training-10275692.html>.

1867 sale of Alaska by Russia as a “betrayal of Russian power status”⁶ and his recent reference to the Arctic as “Russia’s Mecca”⁷ are a source of concern regarding Russia’s northern intentions. Only one other Arctic nation has deployed similar nationalistic sentiment related to the Arctic. In 2007, Canadian prime minister Stephen Harper stated that Canada had to “use or lose” its Arctic sovereignty.⁸ But as a nuclear power that is rapidly developing its Arctic-based strategic nuclear deterrent, Russia’s official proclamations must be viewed in a more serious light.

Russia has substantially revitalized its military mobilization and modernization programs in the Arctic. While other Arctic nations are also examining ways to strengthen border protection, it is unclear what Russia’s intentions are vis-à-vis its Arctic region. At President Putin’s request in March 2015, the Russian military launched an unannounced exercise that involved more than 45,000 Russian forces, 15 submarines, and 41 warships and practiced full combat readiness in the Arctic.⁹ This exercise was likely in response to Norway’s Joint Viking exercise that involved 5,000 military personnel and was notified to the Russian authorities two years in advance of the exercise.¹⁰ With increased frequency, Russian pilots are turning off their aircraft transponders when flying into Northern Europe’s crowded airspace, forcing at least two civilian airliners to alter their course over the past few months. Over the course of one year, there has been a three-fold increase in air incursions over the Baltic region, the North Sea, and the Atlantic Ocean.¹¹ The Russian government has announced the reopening of 50 previously closed Soviet-era military bases in the Russian Arctic and an increase in Russian military personnel along the Northern Sea Route, but does not provide clarity as to how these enhanced military resources could necessarily be deployed to improve search-and-rescue or oil spill response and prevention capabilities. These recent and intensified efforts appear to be the development of a Russian anti-access presence in the Arctic.

What also makes this military buildup and demonstration of capabilities questionable is that since 2014, Russian economic development in its Arctic region has substantially slowed. Prior to the crisis over Ukraine, significant natural gas finds, such as the Shtokman field, had been postponed. Since March 2014, international energy companies, including ExxonMobil, have departed the Russian Arctic and postponed their development

6. Trude Pettersen, “Controversial politician to head Arctic commission,” *Barents Observer*, February 6, 2015, <http://barentsobserver.com/en/security/2015/02/controversial-politician-head-artic-commission-06-02>.

7. Ishaan Tharoor, “The Arctic is Russia’s Mecca, says top Moscow official,” *Washington Post*, April 20, 2015, <http://www.washingtonpost.com/blogs/worldviews/wp/2015/04/20/the-arctic-is-russias-mecca-says-top-moscow-official/>.

8. Prime Minister of Canada Stephen Harper, “Prime Minister Stephen Harper Announces New Arctic Offshore Patrol Ships,” July 9, 2007, <http://www.pm.gc.ca/eng/news/2007/07/09/prime-minister-stephen-harper-announces-new-arctic-offshore-patrol-ships>.

9. Thomas Grove, “Russia starts nationwide show of force,” Reuters, March 16, 2015, <http://www.reuters.com/article/2015/03/16/us-russia-military-exercises-idUSKBN0MC0JO20150316>.

10. Thomas Nilsen, “Norway launches High North military exercise,” *Barents Observer*, March 9, 2015, <http://barentsobserver.com/en/security/2015/03/norway-launches-high-north-military-exercise-09-03>.

11. Ott Ummelas, “NATO Jets Intercept Russian Fighter Plane over Baltic Sea,” Bloomberg, November 17, 2014, <http://www.bloomberg.com/news/articles/2014-11-17/nato-jets-scrambled-to-intercept-russian-plane-over-baltic-sea>.

activities,¹² and other companies, such as Total, have sought to minimize their existing holdings. As a result of Western-imposed sanctions and a 50 percent plunge in global energy prices, many Russian and foreign energy companies involved in Russian Arctic energy projects are increasingly turning toward Asia, and China in particular, for alternative sources of financing. The slowdown in these energy projects is beginning to impact some of Russia's largest energy companies including Gazprom, which suffered a net profit decline of 32 percent in 2014.¹³

Infrastructure development projects in the Russian Arctic, particularly in support of the Northern Sea Route (NSR), are also experiencing delays. In 2014, Transneft, Russia's state-owned pipeline monopoly, announced that it will likely have to delay the launch of two new oil pipelines in Siberia¹⁴ and the Murmansk Transport Hub project is also experiencing setbacks due to reduced financing.¹⁵ International transits through the Northern Sea Route, while minimal to begin with, have also slowed. In 2013, there were a total of 71 transits through the NSR,¹⁶ but only 53 in 2014.¹⁷ Out of the 71 transits in 2013, 43 were exclusively between Russian ports.¹⁸ It seems questionable that Russia's extensive force mobilization and the development of new security infrastructure in the Russian Arctic should be justified on the basis of domestic economic activity and an anemic level of international transits.

The Kremlin's ambitious plans for the Arctic are understandable as it increasingly relies on Arctic natural and mineral resources for its economy. As the Arctic becomes increasingly ice-free, it is appropriate for Russia to create 10 search-and-rescue centers along its Northern Sea Route. It is also fitting that Russia readjusts its security and border forces to account for increased economic and human activity along the NSR. Finally, it is understandable that Russia reaches out to China as it seeks financial alternatives to Western investment in its Arctic energy production and new Asian markets for its exports.

There are several possible explanations for Russia's increased military presence in the Arctic—beyond what is needed for current economic uses and assertion of sovereignty. It appears that events in the 2012–2013 time frame have solidified Russian military rationale for security and defense developments in the Arctic. The increased commercial and scientific

12. Mikael Holter, "Exxon, Rosneft Scrap Arctic Deals as Russia Sanctions Bite," Bloomberg, December 1, 2014, <http://www.bloomberg.com/news/articles/2014-12-01/exxon-rosneft-scrap-arctic-contracts-as-russia-sanctions-bite>.

13. Vladimir Soldatkin, "Russia's Gazprom Neft says 2014 net profit down 32 percent," Reuters, March 2, 2015, <http://www.reuters.com/article/2015/03/02/us-russia-gazpromneft-results-idUSKBN0LY0UD20150302>.

14. Olesya Astakhova, "Russia's Transneft says sanctions may delay oil pipelines launch," Reuters, September 16, 2014, <http://www.reuters.com/article/2014/09/16/us-russia-transneft-sanctions-idUSKBN0HB1G520140916>.

15. Atle Staalesen, "Murmansk transport hub trouble, again," *Barents Observer*, March 15, 2015, <http://barentsobserver.com/en/business/2015/03/murmansk-transport-hub-trouble-again-11-03>.

16. Trude Pettersen, "Northern Sea Route traffic plummeted," *Barents Observer*, December 16, 2014, <http://barentsobserver.com/en/arctic/2014/12/northern-sea-route-traffic-plummeted-16-12>.

17. Associated Press, "Number of Ships Transiting Arctic Waters Falls in 2014," *New York Times*, January 5, 2015, <http://www.nytimes.com/aponline/2015/01/05/us/ap-us-arctic-shipping.html>.

18. "Northern Sea Route Traffic Mostly One Direction," *Maritime Executive*, November 1, 2014, <http://www.maritime-executive.com/article/Northern-Sea-Route-Traffic-Mostly-One-Direction--2014-11-01>.

presence of China in the Arctic places the Kremlin in the unenviable position of both encouraging greater Chinese investment in the Arctic, while it grows increasingly wary of China's presence. In 2012, the Chinese icebreaker, *Xuelong* (*Snow Dragon*), traversed the Northern Sea Route on its way to China's research station on Svalbard.¹⁹ On the return trip from Norway to Shanghai in September 2012, the *Xuelong* sailed beyond Russia's 200 nautical mile exclusive economic zone (EEZ) into the international waters of the Central Arctic Ocean. The following year, in August 2013, China's Ocean Shipping Group (COSCO) sent the first container ship, the *Yong Sheng*, through the Northern Sea Route in an effort to test the viability of the NSR for container traffic because the route is used primarily for intra-Russian shipping and as a destination route.²⁰ Most recently, in February 2015, Russian minister of defense Sergey Shoigu expressed the Kremlin's concern about the growing presence of non-Arctic states, particularly China, in the Arctic, stating, "Some developed countries that don't have direct access to the Polar Regions obstinately strive for the Arctic, taking certain political and military steps in that direction."²¹

These transits expose several areas of sensitivity for Russia. First, countries that bring their own icebreakers or ice-strengthened vessels to traverse the Northern Sea Route do not require the use of Russian icebreakers and, by going beyond the Russian EEZ, vessels do not pay NSR transit fees. These revenue sources are essential for Russia's ability to maintain its economic model for NSR-specific infrastructure, as well as the operational costs of the Northern Sea Route Administration, which became operational in March 2013. Second, it demonstrates how keen Chinese authorities are to test the potential of the trans-polar transit route through international waters. Finally, China's increased activity along the NSR underscores an area of potential conflict that is little discussed: the legal challenge of sovereignty over the Northern Sea Route. Russia views the NSR as internal waters, and thus subject to transit fees, while the international community regards the NSR as an international passage. Thus far, once a transit permit is granted, commercial and scientific vessels must pay transit fees to the Russian authorities in the guise of icebreaker escorts, piloting services, and other administrative fees.

Another event that prompted a strong Russian military reaction occurred in September 2013, when Russian authorities seized control of the Greenpeace vessel, *Arctic Sunrise*, near the island of Novaya Zemlya after Greenpeace activists scaled the Russian Prirazlomnaya oil rig.²² A total of 30 activists were arrested, charged with acts of piracy, and held for several weeks before the charges were reduced to hooliganism and the activists were released. The previous year, Greenpeace activists scaled the same oil rig and hung a protest banner; however, no one was detained and after about 15 hours, the activists withdrew

19. Atle Staalesen, "Chinese icebreaker through Norwegian waters," *Barents Observer*, August 9, 2012, <http://barentsobserver.com/en/arctic/chinese-icebreaker-through-norwegian-waters-09-08>.

20. Atle Staalesen, "First container ship on Northern Sea Route," *Barents Observer*, August 21, 2013, <http://barentsobserver.com/en/arctic/2013/08/first-container-ship-northern-sea-route-21-08>.

21. Trude Pettersen, "Shoigu: Military presence in the Arctic is a question of national security," *Barents Observer*, February 26, 2015, <http://barentsobserver.com/en/security/2015/02/shoigu-military-presence-arctic-question-national-security-26-02>.

22. John Vidal, "Russian military storm Greenpeace Arctic oil protest ship," *Guardian*, September 19, 2013, <http://www.theguardian.com/environment/2013/sep/19/greenpeace-protesters-arrested-arctic>.

from the platform. But by 2013, Russia delivered a clear message that no one can challenge its ability to develop its Arctic economic resources and if challenged, the “threat” would be dealt with swiftly and severely.

A circumstantial event is the ongoing process of submitting scientific claims by Russia and the other Arctic coastal states to extend its outer continental shelf in the Arctic. Four of the Arctic coastal states (excluding the United States, which has not ratified the Law of the Sea Treaty) will submit or have already submitted data to the Article 76 Commission on the Limits to the Outer Continental Shelf (CLCS). Russia was the first Arctic littoral state to submit data in 2001 to the CLCS, seeking to extend its EEZ to 350 nautical miles, which at the time was the largest claim of any Arctic state.²³ The CLCS invalidated the claim and requested that Russia submit further geological data and research. On August 3, 2015, Russia submitted its revised claim to the CLCS, and, if approved, the claim will expand Russia’s Arctic territory by over 463,000 square miles.²⁴ It is important to note that Russia has followed the United Nations Convention on the Law of the Sea (UNCLOS) process and successfully completed bilateral negotiations with Norway in 2010 to establish their respective maritime borders in the Barents Sea. It is also important to note that the CLCS does not decide or rule in favor of a particular country’s claim; it merely decides whether the claim falls within the legal definition of the Law of the Sea Treaty. Although countries can take their case to the Law of the Sea Tribunal for adjudication, it is for the states to bilaterally negotiate any competing claims. Moreover, the claimant process is very long and drawn out; a ruling by the CLCS can take between 10 and 15 years from the date of submission. Could the Kremlin grow frustrated with this extensive process and assert unilateral claims? Thus far, Moscow has played a responsible role, but increased nationalistic fervor directed toward the Arctic could encourage Russian authorities to be less reasonable in the future.

These events, as well as Russia’s slowing economy and unfolding events in Ukraine have altered Russian Arctic policies and generated a pronounced military response by Russia in the 2014–2015 time frame. After the Russian Federation formally annexed Crimea, causing the West’s relationship with Russia to plunge to depths not seen since the Cold War, the Russian economy experienced stagnation, significant capital outflows, a drop in foreign investment, and a dramatically shifting global energy landscape that culminated in a 50 percent drop in global energy prices²⁵ and an equal drop in the value of the Russian ruble by December 2014.²⁶ Optimism for strengthened cooperation in the Arctic was quickly replaced by sobering realism.

23. Kathryn Isted, “Sovereignty in the Arctic: An Analysis of Territorial Disputes & Environmental Policy Considerations,” *Journal of Transnational Law & Policy* 18, no. 2 (Spring 2009): 358–359, http://archive.law.fsu.edu/journals/transnational/vol18_2/isted.pdf.

24. Associated Press, “Russia Files Revised Claim for Arctic Territory With U.N.,” *Wall Street Journal*, August 4, 2015, <http://www.wsj.com/articles/russia-files-revised-claim-for-arctic-territory-with-u-n-1438719346>.

25. Barani Krishnan, “Oil tumbles after brief rebound; Brent back below \$60,” Reuters, December 18, 2014, <http://www.reuters.com/article/2014/12/18/us-markets-oil-idUSKBN0JW0BC20141218>.

26. Alexander Winning and Vladimir Abramov, “Russian ruble suffers steepest drop in 16 years,” Reuters, December 17, 2014, <http://www.reuters.com/article/2014/12/17/us-russia-rouble-exchange-idUSKBN0JU0KO20141217>.

In September 2014, Russia held the largest post-Soviet military exercise. Held in the Russian Far East, Vostok-2014 involved over 100,000 servicemen and a complex array of thousands of pieces of maritime, air, and land hardware.²⁷ Part of this exercise was conducted on a newly created military base in the New Siberian Islands. Russian forces were also deployed to Chukotka's coastline and Wrangel Island to simulate repelling enemy forces. Some analysts believe that Vostok-2014 was a thinly veiled simulation of a scenario in which Russian forces repel a potential U.S. and coalition invasion; others have suggested that it was an effort to focus on China's growing military strength and presence in Russia's Far East.²⁸ But what analysts do agree upon is that this exercise, which remarkably was preceded by a snap military exercise, focused on command and control, rapid mobilization, combined operations, and, disturbingly, demonstrations of use of both conventional and unconventional arms. With the anticipation that a total of 14 airfields will be operational in the Russian Arctic by the end of 2015 and with a 30 percent increase of Russian Special Forces in the Arctic,²⁹ according to a recent NATO Parliamentary Assembly report, Russia is demonstrating significant military capability and rapid deployment of conventional and non-conventional assets in the Arctic.

Some analysts have suggested that the Arctic could be immune or exempt from rising geopolitical tensions between Russia and the West. Clearly, the region is not entirely immune as U.S. and European sanctions have specifically targeted energy development in the Russian Arctic, as well as Russia's Arctic-based military assets. Yet, because the Arctic is economically vital to Russia, there seems to be an implicit policy impulse from Moscow that attempts to limit potential geopolitical damage to Arctic cooperation. This behavior is most frequently observed at the Arctic Council. In April 2014, Moscow hosted a meeting of the Arctic Council's Task Force for Action on Black Carbon and Methane (TFBCM), yet Canadian officials refused to participate "as a result of Russia's illegal occupation of Ukraine and its continued provocative actions in Crimea and elsewhere."³⁰ U.S. officials also did not attend the task force meeting in Moscow.³¹ In April 2015, Russian foreign minister Sergei Lavrov did not attend the Canadian-hosted Arctic Council Ministerial in Iqaluit (Minister Lavrov has attended every ministerial since 2004) and instead, Moscow sent energy and natural resource minister Sergei Donskoi. The Canadian chair of the Arctic Council, Leona Aglukkaq, made a public reference to Russia's actions in Ukraine during the Iqaluit Ministerial that prompted Russia's ambassador to Canada, Alexander Darchiev, to pen an op-ed affirming that "Russia strongly believes that the Arctic is a

27. Roger McDermott, "Vostok 2014 and Russia's Hypothetical Enemies (Part One)," *Eurasia Daily Monitor* 11, no. 167 (September 23, 2014), http://www.jamestown.org/programs/edm/single/?tx_ttnews%5Btt_news%5D=42859&cHash=bb0e68111832039d5c8997b2355b2942#.VYRA1PIVikq.

28. Ibid.

29. Sohrab Ahmari, "The New Cold War's Arctic Front," *Wall Street Journal*, June 9, 2015, <http://www.wsj.com/articles/the-new-cold-wars-arctic-front-1433872323>.

30. Eilis Quinn, "Canada boycotts Moscow Arctic Council meeting over Ukraine," *Alaska Dispatch News*, April 16, 2014, <http://www.adn.com/article/20140416/canada-boycotts-moscow-arctic-council-meeting-over-ukraine>.

31. "Arctic Council Task Force for Action on Black Carbon and Methane Summary Report," Arctic Council, May 8, 2014, <http://www.arctic-council.org/index.php/en/document-archive/category/563-public-documents>.

territory of dialogue, not a place for name-calling and reckoning political scores.”³² Despite this back-and-forth, Russia recently agreed after initial reluctance, along with the other Arctic coastal states, to place a moratorium on commercial fishing in the Central Arctic Ocean.³³

The duality of Russia’s Arctic policies—belligerence and practical cooperation—remains on full display.

Policy Recommendations

Russia’s Arctic duality makes parsing its domestic rhetoric, economic strategies, and military modernization that are specific to the Arctic from Russia’s broader foreign and security policies no easy feat. Exacerbating this challenge are the United States’ and Russia’s differing policy prioritization of and approaches to the Arctic. For Russia, the Arctic is an important issue of national identity, as well as an enormous economic priority (20 percent of Russia’s GDP is generated in the Arctic) and security necessity where national resources are spent; environmental considerations (although noted in its strategic documents) and indigenous communities are largely an afterthought. For the United States, it is the exact opposite. The United States does not see itself as an Arctic nation and it prioritizes the environment and scientific research first with economic development and security a distant second due to insufficient national resources and political support. The United States is an Arctic science power, spending the bulk of its resources on the further understanding of weather and climate change. U.S. energy development in the Arctic, which was a national priority in the 1970s and 1980s, has diminished as new sources of energy from hydraulic fracturing have reduced U.S. energy dependence. The Obama administration has prioritized the impact of climate change in the Arctic, particularly focusing on the mitigation of short-lived climate forcers and ocean acidification. Like Russia following the collapse of the Soviet Union, the United States greatly diminished its security presence in the Arctic.

The Arctic region is a challenging subject for U.S. policymakers. Despite the fact that Arctic issues are frequently discussed and new strategies have been produced, Washington has largely maintained the same policy posture it has assumed for decades—science and environmental research, international cooperation, and national security—generally through the same institutional mechanisms. However, attempts are being made to develop new mechanisms, such as the creation of a U.S. Special Representative for the Arctic Region and a recent White House Arctic Executive Steering Committee. A more radical restructuring of U.S. policy or an Arctic-specific national budget is not currently being envisioned by policymakers.

32. Alexander Darchiev, “Arctic cooperation must continue,” *Embassy*, June 5, 2015, <http://www.embassynews.ca/opinion/2015/06/03/arctic-co-operation-must-continue/47168>.

33. Andrew E. Kramer, “Russia and U.S. Find Common Cause in Arctic Pact,” *New York Times*, May 19, 2015, http://www.nytimes.com/2015/05/20/world/russia-and-us-find-common-cause-in-arctic-pact.html?_r=2.

Despite these differences, the United States and Russia share two important things in common: the desire for greater international cooperation in the Arctic (particularly within the Arctic Council) and the need to ensure enhanced safety in the Bering Strait (the narrow strait that connects the Pacific Ocean with the Arctic Ocean and is 44 nautical miles wide at its narrowest point). Could the Arctic, rather than becoming yet another policy victim of growing East-West tensions, become a region where trust can be rebuilt? The following section provides some new policy thinking on ways to potentially rebuild regional trust in the Arctic.

AN ORGANIZATION FOR ENHANCED COOPERATION IN THE ARCTIC?

The Arctic Council turns 20 in 2016, offering an important moment for reflection for the next 20 years of Arctic governance amidst greater geopolitical tensions. Over the past five years, several new agreements and entities have been created that are not part of the Arctic Council, including the Arctic Economic Council, the soon-to-be launched Arctic Coast Guard Forum (ACGF), and two legally binding treaties on search and rescue and oil spill response and preparedness.

The Arctic states and observer states are currently focusing on three baskets of issues: environmental protection, science cooperation, and indigenous community well-being; economic issues; and security issues. These three baskets are reminiscent of the structure of the 57-member Organization for Security and Cooperation in Europe (OSCE).

- *Security-Related Issues.* It is ironic that, at U.S. insistence, the Arctic Council was not permitted to discuss military or security matters for fear that this could send mixed and harmful signals of a potential militarization of the Arctic. Nearly 20 years later, the Arctic is beginning to become militarized and there is no forum or place to discuss security-related issues and to promote greater transparency and confidence. The United States, in cooperation with Russia and the other Arctic Council states, will launch a new Arctic Coast Guard Forum in the fall of 2015 in New London, Connecticut. The ACGF will include the coast guards or their equivalents of the eight Arctic Council member states (Canada, Denmark [via Greenland], Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States) and will focus on search-and-rescue capabilities and oil spill response and prevention in the Arctic or, as it has been suggested “to keep people and oil out of the water.” This is an important multi-lateral vehicle to maintain contact with the Russian Federal Security Service (FSB) while bilateral military contacts are currently suspended indefinitely.

Beyond performing a tabletop exercise in 2015 and a live search-and-rescue exercise in 2016, the ACGF should create a U.S.-Russia joint working group to focus on enhancing safety and improving maritime domain awareness in the Bering Strait and Chukchi Sea. The U.S. Coast Guard (USCG) has proposed a vessel traffic management scheme for the U.S. side of the Bering Strait.³⁴ The USCG should engage with

34. Seth Borenstein, “Coast Guard proposes Bering Strait shipping route,” *Alaska Dispatch News*, December 5, 2014, <http://www.adn.com/article/20141205/coast-guard-proposes-bering-strait-shipping-route>.

Russian FSB counterparts to seek coordination of vessel traffic lanes, discuss speed restrictions for vessels, and designate restricted areas. This initiative would be in anticipation of increased liquefied natural gas (LNG) tanker traffic in route to Asia from the Yamal LNG project. U.S. and Russian officials should cooperate to update hydrographic charting in the Bering Strait, share weather forecasting information, and enhance navigational aids. Specific emergency response exercises should be designed for the Bering Straits in the 2015–2016 period.

Most importantly, the eight Arctic Council states should begin to negotiate a non-binding political statement to serve as a “Declaration on Military Conduct in the Arctic” in line with the OSCE’s confidence-building measures. This declaration should outline provisions to include the mandatory notification by every country 21 days in advance of major military exercises (25,000 forces and above) and the requirement that the eight Arctic Council states be invited as observers to these exercises. Each year these eight states will submit an annual military exercise plan and update their respective emergency contact and communication information. Each nation would agree that all aircraft would have operational transponders and would send appropriate electronic signaling when in flight.

- *Economic Issues.* More attention should be given to enhancing sustainable economic development in the Arctic and encouraging business-to-business linkages across the region. The formation of the Arctic Economic Council gives a tremendous boost to enhancing business-to-business ties; however, there should be more focused work on regional and cross-border cooperation. Although recent Russian legislation prevents Russian entities from accepting Western funds unless registered as a foreign agent, opportunities should be identified to strengthen regional economic ties between the states of Alaska and Washington and the Russian Far East.
- *Environment, Science, and Indigenous Cooperation Issues.* The so-called human dimension of Arctic cooperation is the central and founding mission of the Arctic Council. The six working groups of the Arctic Council should continue their important work on such issues as enhancing biodiversity, protecting the Arctic marine environment, assessing climatic impacts, and reducing environmental pollutants. Should the Arctic Council members negotiate a legally binding international science agreement for the Arctic, barriers must be removed from greater scientist-to-scientist engagement and joint U.S.-Russian science missions.

Is a separate organization needed or could the OSCE—of which all eight Arctic Council states are members—form an Arctic consultative group based on OSCE principles? Unfortunately, the OSCE is not a successful organization today, although its principles and approach are as urgently needed in Europe as they are in the Arctic. Would the Kremlin be willing to consider a three-basket cooperative approach to the Arctic?

Without international cooperation in the Arctic, Russia cannot fully realize its economic potential that is so vital to its future development. Without predictability,

transparency, and trust, there will be no international cooperation in the Arctic. This report demonstrates how much Russia has and will continue to invest in the Russian Arctic economically and militarily, yet this investment is at profound risk if instability in the region persists. A new initiative to balance the Arctic's security, economic, environmental, and human dimensions could potentially save Russia's investment and begin to pave a path back to improved East-West relations.

1 | The Evolution of Russian Arctic Policy Since President Putin's Return to the Kremlin

For nearly 20 years, the Arctic has been a region that has enjoyed strong international cooperation. While the Arctic seems geographically far removed from the ongoing conflict in Ukraine and rising tensions between Russia and the West, a distinct geopolitical chill has returned to the Arctic as Europe's security environment has rapidly deteriorated. Seven of the eight member states of the Arctic Council have imposed economic sanctions against Russia¹ and most countries have suspended military-to-military relations. These tensions have impaired decades of confidence-building efforts to normalize cross-border relations with Finland and Norway in the Arctic. Above all, Moscow's actions in Ukraine since February 2014 reflect its willingness to challenge the existing international legal order by military means. Although Moscow has traditionally viewed the Arctic as "a territory of dialogues" and is seen as a cooperative member of the Arctic Council, the Barents Euro-Arctic Council (BEAC), and the United Nations Convention on the Law of the Sea (UNCLOS), the Arctic has now become a more threatening place. In the words of Russian defense minister Sergey Shoigu, "A broad spectrum of potential challenges and threats to our national security is now being formed in the Arctic. Therefore, one of the defense ministry's priorities is to develop military infrastructure in this zone."² This viewpoint was captured in Russia's 2014 military doctrine that asserted, for the first time, that Russian military forces must protect Russian national interests in the Arctic. Russia has revealed its protective stance by substantially increasing defense spending and rapidly modernizing the Russian Navy and the Northern Fleet; reopening previously closed military installations in the Arctic; and reconfiguring its Arctic forces. Why such significant military activity?

What factors have caused this shift in Russia's approach to the Arctic in such a short period of time? According to Russian defense minister Shoigu and other Russian officials, neighboring and non-neighboring countries are attempting to expand their influence in the Arctic region, which presents a paramount threat to Russian security. Other recent

1. Iana Dreyer and Nicu Popescu, "Do sanctions against Russia work?," European Union Institute for Security Studies, December 2014, 1, http://www.iss.europa.eu/uploads/media/Brief_35_Russia_sanctions.pdf.

2. Jeremy Bender, "Russian defense minister explains why the Kremlin is militarizing the Arctic," *Business Insider*, February 26, 2015, <http://www.businessinsider.com/why-the-kremlin-is-militarizing-the-arctic-2015-2>.

economic and security factors appear to have also animated the Kremlin's new Arctic security policy approach.

Economic Impact of Sanctions and Global Energy Prices

Dramatic changes in the global energy market—particularly the U.S. shale revolution, the 50 percent plunge in global energy prices, the change in the global energy mix, and softening global demand—have significant implications for Russia as a future energy provider and the role of the Arctic in Russia's energy future. Russia's most important energy export market, Europe, will decrease its dependency on Russia's gas in the future as Europe seeks to diversify its energy supplies, increase its energy efficiency, turn to renewable energy alternatives, limit oil-gas price indexation, and eventually reduce overall energy demand due to slowing economic growth and demographic decline. China, which has more international energy importation opportunities from the Middle East and Africa and has recoverable gas resources similar to those of the United States, has a strong interest in developing its own shale gas production, which could also reduce global energy demand from Russia. And finally, on the cusp of ending international sanctions against the Iranian regime, an increase in Iranian energy resources on the global market will further reduce Europe's energy dependency on Russia, decrease China's interest in Russian energy, and likely reduce global energy prices for the foreseeable future, exacerbating Russia's budget woes as over 50 percent of the Russian federal budget depends on its oil and gas revenues.³ At the time of this report, the price of oil per barrel has somewhat stabilized to approximately \$60 per barrel and the ruble has also begun to stabilize after losing more than half its value against the dollar at the end of 2014, which sent shock waves throughout Russia's economy.⁴

Drilling under Arctic climatic conditions requires the latest drilling technologies, ice-strengthened drilling platforms, safety and spill response equipment, and long-term financing that Russian firms must acquire from foreign partners. The fourth round of sanctions applied by the United States and the European Union against Russia at the end of July 2014, and will be continued through January 2016, specifically target Russia's Arctic energy sector by banning EU exports of sensitive technologies to Russia in three key areas: deep sea drilling, Arctic exploration, and shale oil extraction.⁵ In response, Russian officials have stated that they will "Russify" drilling services technology. Thus far, Russia has created a state-owned energy services company and has purchased a well-drilling business. In anticipation of the 2015 summer drilling season in the Arctic, the Russian

3. Steven Munson, "Where do the latest U.S. sanctions leave Russian oil?," *Washington Post*, July 30, 2014, <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/07/30/where-do-the-latest-u-s-sanctions-leave-russian-oil/>.

4. "Russian rouble in free-fall despite shock 17% rate rise," BBC News, December 16, 2014, <http://www.bbc.com/news/business-30492518>.

5. Valentina Pop, "Obama, EU leaders agree on Russia sanctions," *EUobserver*, July 29, 2014, <http://euobserver.com/foreign/125136>.

government secured six drilling rigs and seems intent on pursuing Arctic offshore development with its 42 licensed blocks.⁶ In addition, the Russian Ministry of Transport is currently developing legislation that would prohibit Russian companies from exporting Russian Arctic oil and gas using foreign-registered ships.⁷ However, it seems the proposed law could inflict greater damage on Russian stakeholders because most Sovcomflot (Russia's largest shipping company) ships sail under foreign flags and the Russian shipbuilding industry is not prepared to take on the construction of such a large number of ships. Moreover, funding continues to be a significant hurdle as indicated by the government's recent decision to cut the construction of two nuclear icebreakers from the 2015 budget, for which 13.9 billion rubles had been earmarked.⁸

U.S. sanctions against Russia have impacted ExxonMobil's operations in the Kara Sea. Between 2011 and 2013, Exxon signed cooperation agreements with Rosneft for 10 joint ventures, including exploration in the Kara and Black Seas, as well as development in West Siberia of the Bazhenov shale.⁹ Since sanctions were imposed, nine of those ventures have been suspended and ExxonMobil will not be able to play any further role in developing the recently discovered oil field.¹⁰ Ironically, on September 27, 2014, Rosneft confirmed, with great fanfare, that it had made an oil discovery with ExxonMobil at their joint Universitetskaya-1 well in the Kara Sea.¹¹ In June 2015, French energy giant Total withdrew from a joint venture with Russia's Lukoil to develop the Bazhenov shale oil fields in West Siberia,¹² a day after reports were released that Total will return its 25 percent share in the postponed Shtokman gas field project to Gazprom.¹³

As a result of U.S. and EU sanctions against Russia, several Russian and foreign energy companies must now seek alternative sources of financing for development projects in the Arctic. For instance, French energy company Total is seeking non-dollar financing, primarily from China, in order to finance its share of the Yamal LNG plant project.¹⁴ Like Total, the Russian government is seeking financial alternatives and is increasingly looking toward Beijing. In early 2015, a Russian official announced that Russia "is ready to deepen its

6. Andrew E. Kramer, "The 'Russification' of Oil Exploration," *New York Times*, October 29, 2014, http://www.nytimes.com/2014/10/30/business/energy-environment/russia-oil-exploration-sanctions.html?_r=0.

7. Atle Staalesen, "Russian Arctic for Russian ships," *Barents Observer*, June 19, 2015, <http://barentsobserver.com/en/energy/2015/06/russian-arctic-russian-ships-19-06>.

8. Petr Netroba, Yana Milyukova, and Svetlana Bocharova, "Finance Ministry proposes new budget sequestration," RBC, February 19, 2015, <http://top.rbc.ru/economics/19/02/2015/54e4ab6d9a79477dae112a21>.

9. Ed Crooks and Jack Farthy, "Exxon considers its course after sanctions hit Russian ambitions," *Financial Times*, September 30, 2014, <http://www.ft.com/intl/cms/s/0/586ae5c0-487c-11e4-ad19-00144feab7de.html#axzz3Evh8ahDS>.

10. Ibid.

11. Jack Farthy, "Rosneft and ExxonMobil strike oil in Arctic well," *Financial Times*, September 27, 2014, <http://www.ft.com/intl/cms/s/0/d667e26c-457e-11e4-9b71-00144feabdc0.html?siteedition=intl#axzz3Evh8ahDS>.

12. "Lukoil CEO: France's Total Leaving Joint Venture," *Sputnik*, June 25, 2015, <http://sputniknews.com/business/20150625/1023820344.html>.

13. "France's Total to Return 25% Stake in Shtokman Gas Field Project to Gazprom," *Sputnik*, June 24, 2015, <http://sputniknews.com/business/20150624/1023774908.html>.

14. Selina Williams and Daniel Gilbert, "Total Looks to China to Finance Russian Gas Project Amid Sanctions," *Wall Street Journal*, September 22, 2014, <http://www.wsj.com/articles/total-cuts-production-outlook-1411375794>.

Map of Russia's Arctic Coastline



Source: Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Laptev_Sea_map.png.

economic ties with China” and is considering allowing Chinese investors to own more than 50 percent stakes in Russia’s strategic oil and gas fields.¹⁵ However, it does not seem that any new Sino-Russian deals have been signed based on this new Russian opening. In addition to Total, Novatek had to secure a \$2.6 billion loan from Russia’s National Welfare Fund. Rosneft also requested a \$25 billion loan to finance four projects, but was rejected by the Russian Finance Ministry on May 20, 2015, due to a lack of adequate information.¹⁶

Although not a member of the European Union, the Norwegian government has stated it will follow EU sanctions. The sanctions ban the transfer or export of sensitive technologies related to deep sea drilling, Arctic exploration, or shale oil projects. As of August 2014, Statoil’s chief executive Helge Lund maintained that Statoil would continue its joint ventures with Rosneft, although some of the projects may be slowed due to sanctions.¹⁷ Rosneft will soon begin drilling its first oil well in the Norwegian Barents Sea with the help of Statoil.¹⁸

15. Olesya Astakhova, “Russia may accept majority Chinese control of big oil and gas fields,” Reuters, February 27, 2015, <http://www.reuters.com/article/2015/02/27/russia-crisis-energy-china-idUSL5N0W10W420150227>.

16. “Russian Finance Ministry Rebuffs Rosneft Oil Firm’s Request for State Aid,” *Moscow Times*, June 3, 2015, <http://www.themoscowtimes.com/business/article/russian-finance-ministry-rebuffs-rosneft-oil-firms-request-for-state-aid/522992.html>.

17. Kjetil Malkenes Hovland, “Statoil Warns of Delays in Russian Energy Projects,” *Wall Street Journal*, August 25, 2014, <http://www.wsj.com/articles/statoil-warns-of-russian-energy-project-delays-as-sanctions-bite-1408955576>.

18. Richard Milne, “Rosneft to drill in Arctic with Statoil,” *Financial Times*, August 18, 2014, <http://www.ft.com/intl/cms/s/0/18c4dc58-26e1-11e4-8df5-00144feabdc0.html?siteedition=intl#axzz3Akp3FbEP>.

However, in early December 2014, Rosneft terminated a number of contracts with Norwegian oil service companies, including Siem Offshore, Rem Offshore, and Viking Supply, all of which were cooperating with Rosneft on a joint operation in the Kara Sea.¹⁹ In a recent letter to the Russian Mineral Agency, Rosneft has requested the postponement of exploration activities in 12 Arctic licenses due to lack of investment and the pull-out of foreign partners.²⁰ The request includes license areas in the Barents, Pechora, and East Siberian Seas, as well as the Sea of Okhotsk, and would postpone exploration activities for approximately two years. According to Russian news sources, other energy companies, including Gazprom Neft, Surgutneftegaz, Bashneft, and Tatneft, are also considering the necessity of license adjustments.

Although a number of Russian-Norwegian energy contracts have been terminated, the Norwegian Ministry of Foreign Affairs has confirmed that sanctions do not apply to supply ships, thus allowing the Norwegian Shipowners Association's members to continue supply services to the Russian offshore oil industry.²¹ While Russia had been relatively dependent on other Arctic coastal states, particularly Norway, for these technologies, it is now looking to the Asia-Pacific region for both investors and technology providers for its Arctic oil and gas projects. In July 2014, the South Korean company Daewoo announced that it will build nine LNG tankers required to transport the resources from the Yamal gas fields and the Japanese company Mitsui O.S.K. has already agreed to buy and operate three of these tankers.²² Increased participation of China, South Korea, and Japan in Russia's energy sector will not be affected by sanctions.

Although Russia continues to produce and export oil and gas at record levels,²³ analysts are downgrading their forecasts for Russian oil production growth. Morgan Stanley, for instance, had assumed that Russia would be producing an extra 250,000 barrels a day from its shale deposits and currently untapped Arctic fields by 2018, but now argues that these prospects are at risk.²⁴ The Organization of Petroleum Exporting Countries (OPEC) has also announced that it anticipates Russian oil production to fall by 70,000 barrels a day, with oil exports dropping by 60,000 barrels a day.²⁵ Russian energy companies are also feeling the impact of low energy prices and a declining ruble. In March 2015, partly due to a weak ruble, Gazprom Neft announced a net profit decline of 32 percent in 2014 with a sustained

19. Atle Staalesen, "Russia's Rosneft terminates Norwegian contracts," *Barents Observer*, December 2, 2014, <http://barentsobserver.com/en/energy/2014/12/rosneft-terminates-norwegian-contracts-02-12>.

20. Atle Staalesen, "Rosneft puts shelf on hold," *Barents Observer*, February 20, 2015, <http://barentsobserver.com/en/energy/2015/02/rosneft-puts-shelf-hold-20-02>.

21. Atle Staalesen, "Norwegians mull continued supply to Russian offshore drillers," *Barents Observer*, December 8, 2014, <http://barentsobserver.com/en/energy/2014/12/norwegians-mull-continued-supply-russian-offshore-drillers-08-12>.

22. Mia Bennet, "Sanctions on Russia: Helping the Environment?," *Maritime Executive*, July 26, 2014, <http://www.maritime-executive.com/article/Sanctions-on-Russia-Helping-the-Environment-2014-07-26>.

23. Stephen Bierman, Jake Rudnitsky, and Dina Khrennikova, "Russia Oil Output near Record Swells Global Glut before OPEC," Bloomberg, June 2, 2015, <http://www.bloomberg.com/news/articles/2015-06-02/russia-near-record-output-adds-to-global-glut-before-opec-meets>.

24. Guy Chazan, "US sanctions not mere 'trifles' for Russia's oil industry," *Financial Times*, August 10, 2014, <http://www.ft.com/intl/cms/s/0/99ef756c-1d50-11e4-8b03-00144feabdc0.html#axzz3B26lPa68>.

25. Trude Pettersen, "Russian oil production to drop by 70,000 barrels a day in 2015—OPEC," *Barents Observer*, February 11, 2015, <http://barentsobserver.com/en/energy/2015/02/russian-oil-production-drop-70000-barrels-day-2015-opec-11-02>.

loss of more than 52 billion rubles.²⁶ Profit declines significantly impact the tax revenues collected by Russia's Arctic regions. For example, the Nenets Autonomous District's tax revenues decreased by one billion rubles (equal to a 5 percent reduction in total regional revenues) due to a decline in oil production and an increase in operational costs at the Kharyaga field.²⁷ The regionally based Nenets Oil Company suffered a drop in its revenues by more than 60 percent in 2014 as oil production at Kharyaga fell by 5 percent to 1.5 million tons.²⁸ Severe cuts in federal spending are likely to have a significant impact on Russia's Arctic districts, targeting education, public health, and environmental programs.²⁹

In addition to the impact on Russia's energy sector, the ongoing conflict with Ukraine, Western-imposed sanctions, and low oil prices have exasperated a general decline in Russia's overall economic growth that began around the time Vladimir Putin returned to the presidency in 2012. According to Alexei Kudrin, a former Russian finance minister, "Russia is in the midst of a fully-fledged crisis."³⁰ Although the International Monetary Fund (IMF) originally forecasted a higher economic downturn for Russia in 2015, it is still expecting a 3.4 percent contraction in GDP this year, driven by a drop in domestic demand, falling real wages, and weakened investor confidence.³¹ The European Bank for Reconstruction and Development (EBRD) expects Russia's economic contraction to continue into 2016, forecasting an economic downturn of 1.8 percent in 2016.³² In 2014, net capital outflows by Russian companies and banks reached \$151.5 billion, surpassing the previous record of \$133.6 billion from the 2008 global financial crisis.³³ Furthermore, as a result of Russia's slumping economy, Fitch Ratings has downgraded ratings for 30 Russian and Russian-owned financial institutions³⁴ and in January 2015, Standard & Poor's downgraded Russia's sovereign debt to junk status.³⁵ This economic downturn is becoming increasingly evident in Russia's Arctic region, particularly in Murmansk where the total overdue wage debt is 178 million rubles (€3 million) and the average monthly salary in the Murmansk

26. Vladimir Soldatkin, "Russia's Gazprom Neft says 2014 net profit down 32 percent," Reuters, March 2, 2015, <http://www.reuters.com/article/2015/03/02/us-russia-gazpromneft-results-idUSKBN0LY0UD20150302>.

27. Atle Staalesen, "Kharyaga oil cools Nenets economy," *Barents Observer*, June 4, 2015, <http://barentsobserver.com/en/energy/2015/06/kharyaga-oil-cools-nenets-economy-04-06>.

28. Ibid.

29. Pavel K. Baev, "Russia's Arctic Aspirations," in *Arctic Security Matters*, ed. Juha Jokela (Paris: EU Institute for Security Studies, June 2015), 52, http://www.iss.europa.eu/uploads/media/Report_24_Arctic_matters.pdf.

30. Courtney Weaver and Kathrin Hille, "St Petersburg's red carpet fails to hide year of economic bloodshed," *Financial Times*, June 19, 2015, <http://www.ft.com/intl/cms/s/0/eda3f4aa-166d-11e5-b07f-00144feabdc0.html#axzz3dWM4hpa1>.

31. "IMF sees less gloom for Russian economy," *Deutsche Welle*, May 21, 2015, <http://www.dw.de/imf-sees-less-gloom-for-russian-economy/a-18466181>.

32. Paul Hannon, "Russia's Economy to Contract Again in 2016, EBRD Says," *Wall Street Journal*, May 14, 2015, <http://www.wsj.com/articles/russias-economy-to-contract-again-in-2016-ebrd-says-1431594001>.

33. Thomas Grove, "Russia's capital outflows reach record \$151.5 bln in 2014 as sanctions, oil slump hit," Reuters, January 16, 2015, <http://www.reuters.com/article/2015/01/16/russia-capital-outflows-idUSL6N0UV3S320150116>.

34. Ibid.

35. Anna Andrianova and Ksenia Galouchko, "Russia Credit Rating is Cut to Junk by S&P for the First Time in a Decade," Bloomberg, January 26, 2015, <http://www.bloomberg.com/news/articles/2015-01-26/russia-credit-rating-cut-to-junk-by-s-p-for-first-time-in-decade>.

District declined from \$1,263 in 2013 to \$1,117 in 2014, the first time salary levels have declined in the Russian north since the 2008 financial crisis.³⁶

Recentralization of Russian Arctic Policy

The Russian Arctic, similar to other Russian regions, is becoming a more highly centralized policy arena. As the infographic, “The Construction of a New Ice Curtain: Russian Domestic and Arctic Policies from 2004–2014,” at the end of this chapter illustrates, Russia’s Arctic policies have undergone three important policy phases, resulting in the increased centralization of Arctic policies and decision making since Vladimir Putin’s return to the Kremlin in 2012. On February 3, 2015, President Putin signed an order to establish a new governmental commission for the Arctic that will be responsible for national security as well as the social and economic development of Russia’s Arctic region.³⁷ This new Arctic Commission encompasses and coordinates the Arctic work of four Russian ministries including the Ministries of Natural Resources and Environment Energy, Economic Development, and Transport, as well as the National Security Council.³⁸ The Arctic Commission is composed of 60 officials, including representatives from the oil and gas industry and officials from the Ministry of Defense, the Federal Security Service (FSB), the presidential administration, and regional governors. President Putin has noted that a “single point of accountability for the implementation of Arctic policy” was needed to ensure a “flexible, operational structure, which will help to better coordinate the activities of ministries and departments, regions and business.”³⁹

Russian deputy prime minister Dmitry Rogozin, currently sanctioned by the United States and the EU, leads this new Arctic Commission.⁴⁰ Minister Rogozin has made numerous nationalistic statements about the Arctic, stating for instance that the sale of Alaska by Russia in 1867 was a “betrayal of Russian power status” and that Russia has the “right to reclaim our lost colonies.”⁴¹ In a recent visit to a Russian research station near the North Pole, Minister Rogozin proclaimed that the Arctic was “Russia’s Mecca.”⁴² His leadership of Russia’s Arctic Commission is a distinct shift away from a regional development model to a more assertive, nationalistic, and security-centric approach to the Arctic. Minister Rogozin has long-standing ties to Russia’s defense industry; as deputy prime minister he is responsible for implementing government policy related to the development of the defense,

36. Arina Ulyanova, “Salary debts grow in Murmansk,” *Barents Observer*, June 2, 2015, <http://barentsobserver.com/en/business/2015/06/salary-debts-grow-murmansk-02-06>.

37. Trude Pettersen, “Controversial politician to head Arctic commission,” *Barents Observer*, February 6, 2015, <http://barentsobserver.com/en/security/2015/02/controversial-politician-head-artic-commission-06-02>.

38. Atle Staalesen, “Arctic policy up for remake,” *Barents Observer*, March 17, 2015, <http://barentsobserver.com/en/politics/2015/03/arctic-policy-remake-17-03>.

39. Pettersen, “Controversial politician to head Arctic commission.”

40. “Report: Russia Considers Opening Arctic Ministry,” *Moscow Times*, November 20, 2014, <http://www.themoscowtimes.com/news/article/report-russia-considers-opening-arctic-ministry/511563.html>.

41. Pettersen, “Controversial politician to head Arctic commission.”

42. Ishaan Tharoor, “The Arctic is Russia’s Mecca, says top Moscow official,” *Washington Post*, April 20, 2015, <http://www.washingtonpost.com/blogs/worldviews/wp/2015/04/20/the-arctic-is-russias-mecca-says-top-moscow-official/>.

nuclear, space, shipbuilding, and aircraft industries.⁴³ Since January 2012, Minister Rogozin has also been in charge of the government's Military-Industrial Commission, which was previously managed personally by President Putin beginning in 2011.

The creation of the Russian Arctic Commission comes at the expense of the elimination of the Ministry of Regional Development at the end of 2014, which played a key role in developing detailed and ambitious regional, social, and economic development strategies for the Russian Arctic region, as well as for minorities and indigenous peoples. In its important work, *Russian Strategy of the Development of the Arctic Zone and the Provision of National Security until 2020* the Regional Development Ministry's strategy outlined various strategies to modernize Russia's Arctic economy, including the development of state support and the co-financing of projects, use of renewable and alternative energy, modernization of Arctic transport along the Northern Sea Route, and the promotion of science and technology through state and private funding.⁴⁴ In addition to the creation of the Russian Arctic Commission, three new Russian ministries were also established: the Ministry of the Crimea, the Ministry of the North Caucasus, and the Ministry of the Far East.

Why the sudden creation of three new territorial ministries and an Arctic Commission? Clearly, the creation of the Ministry of the Crimea was necessitated by Russia's illegal annexation of Crimea in March 2014. Yet the other ministries were likely created due to a growing need by the Kremlin to develop new institutions and bureaucratic instruments to manage the distribution of state subsidies to these key regions that are essential to Russia's future economic growth and domestic stability. Moreover, these new ministries replace the function of elected regional governors with ministers who are hand selected and nominated by President Putin. Historically, Soviet-style management centralized important industrial sectors and regions considered crucial to the survival of the regime or for the country's sovereignty. Increased control and consolidation by the Kremlin of the Arctic and other key regions is an acknowledgment that difficult economic times lie ahead for the Russian Arctic as the fall of the ruble, the precipitous decline in global energy prices, and the imposition of Western sanctions restrict the ability of the Russian state to maintain public spending levels for pensions, education, infrastructure, and, most importantly, the standard of living of Russia's middle class. It is unclear if these new ministries will implement new policies or will be more efficient and better coordinate existing policies under the supervision of President Putin's inner circle or if it will just add one more bureaucratic layer to an already complex decisionmaking chain of command.

In his annual televised call-in question-and-answer session on April 16, 2015, President Putin was not asked about, nor did he specifically mention, the Arctic. However, in a response to one question, President Putin referenced Emperor Alexander III and remarked that

43. Russian Government, "Structure: Responsibilities," February 6, 2015, <http://government.ru/en/gov/responsibilities/#170>.

44. International Expert Council on Cooperation in the Arctic (IECCA), "The Development Strategy of the Arctic Zone of the Russian Federation," April 14, 2013, <http://www.iecca.ru/en/legislation/strategies/item/99-the-development-strategy-of-the-arctic-zone-of-the-russian-federation>.

“Everyone is afraid of our vastness.”⁴⁵ All Arctic states are, in different ways, intimidated by the “tyranny of distance” in the Arctic, as well as the harsh climatic and operating conditions. As the Russian Federation population declines, particularly in the Far East, the Far North, and in Central Russia, it is Russia that may be increasingly afraid of managing its own vastness and thus has returned to a highly centralized model of control and development.

Changes to Russia’s Security Posture in the Arctic

Since 2007, Russia has steadily expanded its military presence and infrastructure in the Arctic, including President Putin’s order to resume regular air patrols over the Arctic Ocean.⁴⁶ For example, Russian bombers penetrated the North American Aerospace Defense Command (NORAD) 12-mile air defense identification zone around Alaska 18 times throughout the course of 2007.⁴⁷ There has been rapid development and modernization of the Russian Navy, particularly the Northern Fleet, the reopening of military bases in the Russian Arctic, the holding of large and complex military exercises, and the substantial increase of Russia’s military presence in the Arctic through the creation of Arctic brigades and command centers. Russia’s enhanced military activity in the Arctic has largely paralleled its renewed assertiveness in international affairs although it is challenging to discern the purpose of Russia’s enhanced Arctic military presence. Is it designed to demonstrate global power projection capabilities, specific capabilities for the Arctic region, or both? The growing uncertainty about Russia’s Arctic intentions raises questions and concerns among other Arctic states.

In November 2014, President Putin announced the creation of a new strategic command for the Arctic zone to be active starting on December 1.⁴⁸ The Northern Fleet–United Strategic Command (OSK “Sever”) will have the status of a military district and will consist of the Northern Fleet and units from other military branches. The operational control of the command will be directed from the National Defense Control Center in Moscow. Shortly after Russia’s annexation of Crimea, President Putin held a briefing session with permanent members of the Security Council of the Russian Federation (SCRF) and emphasized that, “Next is the further development of the combat personnel of our armed forces, including in the Arctic region.”⁴⁹ He then called on the FSB to make the development of Arctic border infrastructure a strategic priority.⁵⁰ These comments came just a few weeks after

45. President of Russia, “Direct Line with Vladimir Putin,” April 16, 2015, <http://en.kremlin.ru/events/president/news/49261>.

46. Ariel Cohen, “Russia in the Arctic Challenges to U.S. Energy and Geopolitics in the High North,” in *Russia in the Arctic*, ed. Stephen J. Blank (Carlisle, PA: Strategic Studies Institute, 2011), 21, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1073.pdf>.

47. Ibid.

48. Trude Pettersen, “Russian Arctic Command from December 1st,” *Barents Observer*, November 25, 2014, <http://barentsobserver.com/en/security/2014/11/russian-arctic-command-december-1st-25-11>.

49. Thomas Nilsen, “Putin orders Arctic army development,” *Barents Observer*, March 28, 2014, <http://barentsobserver.com/en/security/2014/03/putin-orders-arctic-army-development-28-03>.

50. Thomas Nilsen, “Putin urges FSB to develop Arctic border,” *Barents Observer*, April 7, 2014, <http://barentsobserver.com/en/borders/2014/04/putin-urges-fsb-develop-arctic-border-07-04>.

Vladimir Putin aboard the Battlecruiser *Pyotr Velikiy* in 2005



Source: Kremlin.ru, https://commons.wikimedia.org/wiki/File:Pyotr_Velikiy_battlecruiser_4.jpg.

350 Russian paratroopers were dropped over the far northern New Siberian Islands in one of Russia's largest post-Soviet Arctic airdrop exercises.⁵¹

At the same time, and in spite of Russia's economic decline, the Kremlin announced that national defense spending would continue to rise, with some estimates that Russia could spend \$81 billion, or 4.2 percent of its GDP on defense in 2015.⁵² In August 2014, commander-in-chief of the Russian Air Force, Colonel General Viktor Bondarev, announced that roughly 50 military airfields will be repaired and supplied with modern equipment by 2020.⁵³ In January 2015, Deputy Defense Minister Dmitry Bulgakov announced that Russia will reconstruct 10 military airfields in the Arctic by the end of 2015, providing Russia with 14 operational airfields in its Arctic region.⁵⁴ The first, an abandoned military base in

51. Atle Staalesen, "Arctic here we come!," *Barents Observer*, March 17, 2014, <http://barentsobserver.com/en/security/2014/03/arctic-here-we-come-17-03>.

52. "Russian Defense Budget to Hit Record \$81 Billion in 2015," *Moscow Times*, October 16, 2014, <http://www.themoscowtimes.com/business/article/russian-defense-budget-to-hit-record-81bln-in-2015/509536.html>.

53. "Russia to upgrade 50 military airfields by 2020," ITAR-TASS, August 11, 2014, <http://en.itar-tass.com/russia/744503>.

54. "Russia to Reconstruct 10 Military Airfields in Arctic by Year's End," *Sputnik*, January 13, 2015, <http://sputniknews.com/military/20150113/1016832361.html>.

The K-114 Tula Nuclear Submarine at a Naval Base in the Murmansk Region



Source: Wikimedia Commons. Photo by Mikhail Fomichev, https://upload.wikimedia.org/wikipedia/commons/0/02/RIAN_archive_895550_Drills_for_nuclear_submarine_crews_at_training_center_in_Murmansk_Region.jpg.

Alakurtti, just 50 kilometers from the Finnish border, has been reopened. On January 14, 2015, the first Russian infantry brigade troops arrived at the base and it is expected that upwards of 3,000 soldiers could be stationed at Alakurtti.⁵⁵ In addition to this infantry brigade, the 200th Independent Motorized Infantry Brigade is based in Pechenga on the Kola Peninsula, ten kilometers from the Russian-Norwegian border. According to Colonel General Oleg Salyukov, the brigades will “demonstrate to other Arctic nations Russia’s military presence in the increasingly contested region.”⁵⁶

What differentiates Russia’s military developments and activities in the Arctic from their military activities in the Baltic Sea is the extensive deployment of nuclear assets.⁵⁷ Russia has been testing and modernizing its strategic nuclear capabilities located in the Arctic with three completed Borei-class ballistic submarines, an additional two to be in

55. “Russia moves first troops to Arctic base near Finnish border,” *Alaska Dispatch News*, January 15, 2015, <http://www.adn.com/article/20150115/russia-moves-first-troops-arctic-base-near-finnish-border>.

56. “Russia to Form Arctic Military Command by 2017,” *Moscow Times*, October 1, 2014, <http://www.themoscowtimes.com/business/article/russia-to-form-arctic-military-command-by-2017/508199.html>.

57. Baev, “Russia’s Arctic Aspirations,” 54.

service by the end of 2014 and another three to be completed by 2020.⁵⁸ Prior to Russia's Victory Day and then again in August 2014, Russia simulated massive retaliatory nuclear attacks in the Barents Sea.^{59, 60} At the same time, Russia's nuclear submarine *Vladimir Monmakh* test launched an intercontinental ballistic Bulava missile in the North Sea and was expected to conduct a similar test in November.⁶¹ More recently, the Russian Navy's nuclear units conducted exercises in the international waters beneath the northern ice cap with the goal to train younger crewmen in Arctic warfare.⁶² Finally, and perhaps most troubling, the U.S. State Department released the latest exchange of data under the New START (Strategic Arms Reduction Treaty) agreement with Russia for 2014.⁶³ Compared to October 1, 2013, the number of Russian-deployed nuclear warheads and deployed launchers has increased substantially; the number of deployed intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers rose from 473 in 2013 to 515 in 2015.⁶⁴ The number of deployed nuclear warheads increased from 1,400 in 2013 to 2,472 in 2015. Kristian Åtland, senior research fellow at the Norwegian Defense Research Establishment, argues that if these numbers are correct, then 81.5 percent of Russia's sea-based strategic nuclear weapons are concentrated on the Kola Peninsula.⁶⁵

Before the crisis in Ukraine began in November 2013, Russia had resumed and was heightening its incursions into sovereign airspace and air defense identification zones. On the morning of October 28, 2013, three escort planes and two Russian bombers practiced bombing runs first over the Gulf of Finland, then over Poland, the Baltics, and finally over the southern tip of Öland in Sweden.⁶⁶ In May 2014, Finland was forced to scramble its fighter jets when two Russian-owned planes were suspected of flying over the Gulf of Finland without authorization.⁶⁷ Then, in late August, Russian aircraft entered Finnish

58. "Russia's First Borei Class Submarine 'Almost Combat-Ready,'" *Moscow Times*, April 17, 2014, <http://www.themoscowtimes.com/news/article/russia-s-first-borei-class-submarine-almost-combat-ready/498289.html>.

59. Thomas Nilsen and Trude Pettersen, "Putin plays nuclear war games ahead of Victory Day," *Barents Observer*, May 8, 2014, <http://barentsobserver.com/en/security/2014/05/putin-plays-nuclear-war-games-ahead-victory-day-08-05>.

60. Trude Pettersen, "Northern Fleet drills in the Barents Sea," *Barents Observer*, August 6, 2014, <http://barentsobserver.com/en/security/2014/08/northern-fleet-drills-barents-sea-06-08>.

61. "Russian Nuclear Submarine to Test Launch Bulava ICBM Within Two Days: Source," *Sputnik*, September 9, 2014, <http://sputniknews.com/russia/20140909/192761908.html>.

62. Damien Sharkov, "Russia Sends Nuclear Submarine Troops on Arctic Exercise," *Newsweek*, February 6, 2015, <http://www.newsweek.com/russia-sends-nuclear-submarines-arctic-exercise-304931>.

63. U.S. Department of State, Bureau of Arms Control, Verification and Compliance, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," fact sheet, October 1, 2014, <http://www.state.gov/t/avc/rls/235606.htm>.

64. U.S. Department of State, Bureau of Arms Control, Verification and Compliance, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," fact sheet, July 1, 2015, <http://www.state.gov/documents/organization/240274.pdf>.

65. Ibid.

66. David Cenciotti, "'Russian Bombers Practiced Bomb Runs on Sweden, Baltic States and Poland,' Swedish Armed Forces Say," *Aviationist*, November 13, 2013, <http://theaviationist.com/2013/11/13/russian-bombers-sweden-new-attack/>.

67. Heather Saul, "Finland scrambles jets after two Russian aircrafts 'violate airspace,'" *Independent*, May 22, 2014, <http://www.independent.co.uk/news/world/europe/finland-scrambles-jets-after-two-russian-aircrafts-violate-airspace-9415541.html>.

airspace again without authorization three times in one week.⁶⁸ Finnish defense minister Carl Haglund reported that four to six incidents a year are normal but this increased number of incursions is cause for serious concern. In 2014, Norway intercepted 74 Russian fighter jets along its coast, 27 percent more than in 2013.⁶⁹ The Baltic countries have also reported an unusually high level of Russian military provocations in 2014, with NATO fighters forced to scramble 68 times along Lithuania's border and Latvia registered 150 "close encounters," where Russian aircraft were observed for risky behavior.⁷⁰ On September 17, 2014, two U.S. fighter jets were scrambled to intercept six Russian planes that had neared U.S. airspace off the Alaskan border. On the next day, Canada also scrambled jets to intercept two Russian Bear long-range bombers in the Beaufort Sea that were within 40 nautical miles of the Canadian coastline.⁷¹ In October 2014, a Russian Su-27 fighter jet was photographed flying only a few meters away from a Swedish surveillance aircraft.⁷² According to Anders Grenstad, deputy director of operations in the Swedish Armed Forces, there should normally be a distance of between 50 and 150 meters between aircraft. In a speech to parliament, Swedish minister of foreign affairs Carl Bildt said that "the threshold for Russia's use of military force in its neighborhood has clearly been lowered."⁷³ Finally, in early 2015, two Tupolev Tu-95 long-range Russian bombers entered NATO-surveyed airspace close to Iceland, the first time Russia has flown so close to Iceland since 2006.⁷⁴ Particularly for Russia's neighbors in the Nordic-Baltic region, these blatant violations of airspace are quickly becoming the norm as Russia tests the limits of resistance in the region.

Since March 2014, Russia has been conducting military exercises in Northwest Russia, near the borders of Finland and Norway. Russian air defense units in Murmansk and Arkhangelsk Districts have practiced intercepting fictitious enemy aircraft that violate the Russian border. Several of these air defense exercises have involved long-range S-300 surface-to-air missile systems.⁷⁵ In March 2015, more than 40 Russian fighter jet crews conducted week-long military exercises over the Barents Sea, including the simulation of destroying enemy missiles and aircraft.⁷⁶

68. Associated Press, "Finland suspects Russian airspace violation," August 28, 2014, <http://www.bigstory.ap.org/article/finland-suspects-russian-airspace-violation>.

69. David Barno and Nora Bensahel, "The Anti-Access Challenge You're Not Thinking About," *War on the Rocks*, May 5, 2015, <http://warontherocks.com/2015/05/the-anti-access-challenge-youre-not-thinking-about/?singlepage=1>.

70. Richard Milne, Sam Jones, and Kathrin Hille, "Russian air incursions rattle Baltic states," *Financial Times*, September 24, 2014, <http://www.ft.com/intl/cms/s/0/9d016276-43c3-11e4-baa7-00144feabdc0.html#axzz3dFGMS87d>.

71. Reuters and Associated Press, "F-22 fighters intercept Russian military planes 55 miles off Alaska," *Fox News*, September 20, 2014, <http://www.foxnews.com/us/2014/09/20/f-22-fighters-intercept-russian-military-planes-55-miles-off-alaska/>.

72. "Russian fighter jet 10 m from Swedish plane," Radio Sweden, October 3, 2014, <http://sverigesradio.se/sida/artikel.aspx?programid=2054&artikel=5982035>.

73. Atle Staalesen, "Flexing muscles for Nordic neighbors," *Barents Observer*, March 20, 2014, <http://barentsobserver.com/en/security/2014/03/flexing-muscles-nordic-neighbors-20-03>.

74. Zoë Robert, "Two Russian Bombers Fly Close to Iceland," *Iceland Review Online*, February 19, 2015, <http://icelandreview.com/news/2015/02/19/two-russian-bombers-fly-close-iceland>.

75. Staalesen, "Flexing muscles for Nordic neighbors."

76. "Over 40 Russian Fighter Jet Crews Hold Airstrike Drills in Barents Sea," *Sputnik*, March 6, 2015, <http://sputniknews.com/russia/20150306/1019136349.html>.

“Everyone Is Afraid of Our Vastness” (President Putin statement)

Two overarching events occurred in the 2013–2014 time frame that impacted Russian Arctic security policies and its current form of development: Russia’s slowing economy and unfolding events in Ukraine. Several weeks after former Ukrainian president Viktor Yanukovych fled Kyiv, the Russian Federation formally annexed Crimea. This violation of international norms caused the West’s relationship with Russia to plunge to depths not seen since the Cold War and has been further exacerbated by ongoing Russian military aggression in eastern Ukraine. Concurrently, the Russian economy was experiencing stagnation, significant capital outflows, a drop in foreign investment, and a dramatically shifting global energy landscape, which culminated in a 50 percent drop in global energy prices and an equal drop in the value of the Russian ruble by December 2014. Optimism was quickly replaced by sobering realism. There was a dramatic uptick in unannounced military exercises by Russian military forces at the same time that NATO countries were also exercising in the Nordic-Baltic region and the Arctic. Sanctions and counter-sanctions were quickly imposed and have been maintained.

Some analysts have suggested that the Arctic could be immune or exempt from these rising geopolitical tensions. Clearly, the region is not entirely immune as U.S. and European sanctions have specifically targeted energy development in the Russian Arctic, key Russian officials that lead its Arctic policy such as Deputy Prime Minister Dmitry Rogozin, and Russian efforts to gain long-term international financing. Yet, because the Arctic is so economically vital to Russia, there seems to be an implicit policy impulse from Moscow that attempts to limit potential geopolitical damage to Arctic cooperation despite its military activism in the region. This behavior is most frequently observed at the Arctic Council. In April 2014, Moscow hosted a meeting of the Arctic Council Task Force for Action on Black Carbon and Methane (TFBCM), yet Canadian officials refused to participate “as a result of Russia’s illegal occupation of Ukraine and its continued provocative actions in Crimea and elsewhere.”⁷⁷ U.S. officials also did not attend the task force meeting in Moscow.⁷⁸ In April 2015, Russian foreign minister Sergei Lavrov did not attend the Canadian-hosted Arctic Council Ministerial in Iqaluit (Minister Lavrov has attended every ministerial since 2004) and instead, Moscow sent Russian natural resource and environment minister Sergei Donskoi. The Canadian chair of the Arctic Council, Leona Aglukkaq, made a public reference to Russia’s actions in Ukraine during the Iqaluit Ministerial that prompted Russia’s ambassador to Canada, Alexander Darchiev, to pen an op-ed affirming that “Russia strongly believes that the Arctic is a territory of dialogue, not a place for name-calling and

77. Eilís Quinn, “Canada boycotts Moscow Arctic Council meeting over Ukraine,” *Alaska Dispatch News*, April 16, 2014, <http://www.adn.com/article/20140416/canada-boycotts-moscow-arctic-council-meeting-over-ukraine>.

78. “Arctic Council Task Force for Action on Black Carbon and Methane Summary Report,” Arctic Council, May 8, 2014, <http://www.arctic-council.org/index.php/en/document-archive/category/563-public-documents>.

reckoning political scores.”⁷⁹ Despite this back-and-forth, Russia recently agreed after initial reluctance, along with the other Arctic coastal states, to place a moratorium on commercial fishing in the Central Arctic Ocean.⁸⁰ The duality of Russia’s Arctic policies—belligerence and practical cooperation—remains on full display.

The Kremlin’s ambitious plans for the Arctic are understandable as it increasingly relies on Arctic natural and mineral resources as well as developing a new international shipping route for its economy. As the Arctic becomes increasingly ice-free, it is justifiable for Russia to create 10 search-and-rescue centers along its Northern Sea Route. It is also appropriate that Russia readjusts its security and border forces to account for increased economic and human activity along the Northern Sea Route. It is also understandable that Russia reaches out to China as it seeks financial alternatives to Western investment in its Arctic energy production and new Asian markets for its exports in light of current Western sanctions. Finally, Russia’s Arctic historical narrative—both one of man conquering the forces of nature and the ability to achieve industrial progress—is a source of national pride and identity that is deployed for domestic purposes.

Yet, it is not appropriate that President Putin launched an unannounced military exercise in March 2015 that involved more than 45,000 Russian forces, 15 submarines, and 41 warships and practiced full combat readiness in the Arctic.⁸¹ It is not understandable that Russian fighter pilots turn off aircraft transponders when flying into Northern Europe’s crowded airspace, forcing at least two civilian airliners to alter their course over the past few months. Over the course of twelve months, there has been a three-fold increase in air incursions over the Baltic region, the North Sea, and the Atlantic Ocean.⁸² It is not understandable how the reopening of 50 previously closed Soviet-era military bases in the Russian Arctic and the increase in Russian military personnel are in proportion to the diminishing use of the Northern Sea Route or how these military resources could necessarily be deployed to enhance search-and-rescue or oil spill response and prevention capabilities. These recent and intensified efforts appear to be the development of a Russian anti-access presence in the Arctic.

There are several possible explanations for Russia’s increased military presence in the Arctic and it appears that events in the 2012–2013 time frame have solidified Russian military rationale for security and defense developments in the Arctic. First, the increased commercial and scientific presence of China in the Arctic places the Kremlin in the unenviable position of both encouraging greater Chinese investment in the Arctic, while it grows increasingly wary of China’s presence. In February 2015, Russian minister of defense

79. Alexander Darchiev, “Arctic cooperation must continue,” *Embassy*, June 3, 2015, <http://www.embassynews.ca/opinion/2015/06/03/arctic-co-operation-must-continue/47168>.

80. Andrew E. Kramer, “Russia and U.S. Find Common Cause in Arctic Pact,” *New York Times*, May 19, 2015, http://www.nytimes.com/2015/05/20/world/russia-and-us-find-common-cause-in-arctic-pact.html?_r=2.

81. Thomas Grove, “Russia starts nationwide show of force,” *Reuters*, March 16, 2015, <http://www.reuters.com/article/2015/03/16/us-russia-military-exercises-idUSKBN0MC0JO20150316>.

82. Ott Ummelas, “NATO Jets Intercept Russian Fighter Plane over Baltic Sea,” *Bloomberg*, November 17, 2014, <http://www.bloomberg.com/news/articles/2014-11-17/nato-jets-scrambled-to-intercept-russian-plane-over-baltic-sea>.

Russian Army Guards Engineer Brigade Conducts Military Exercises



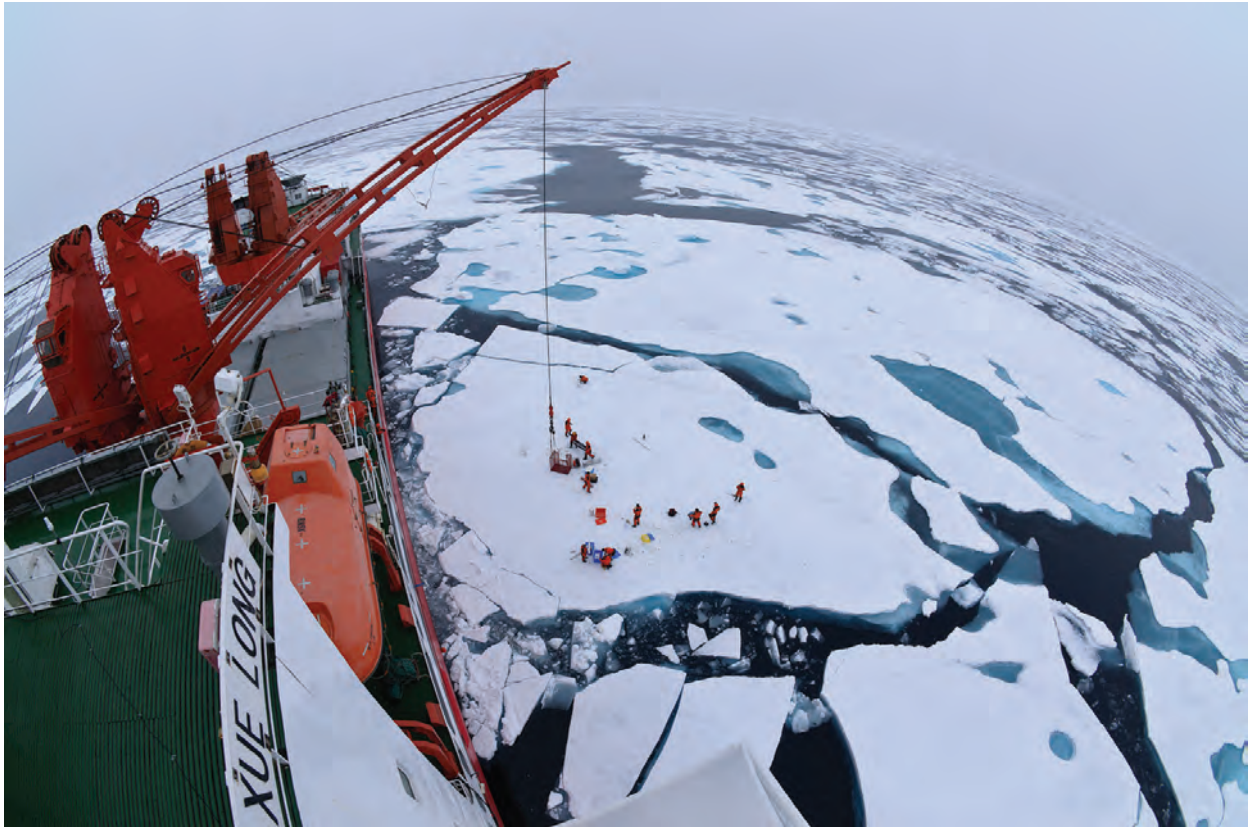
Source: Wikimedia Commons. Photo by Grigory Sysoev, https://upload.wikimedia.org/wikipedia/commons/4/47/RIAN_archive_842942_Military_exercises_of_Guards_Engineer_Brigade_and_Engineer_Camouflage_Regiment_of_Russian_army.jpg.

Sergey Shoigu expressed the Kremlin's concern about the growing presence of non-Arctic states, particularly China, in the Arctic, stating, "Some developed countries that don't have direct access to the Polar Regions obstinately strive for the Arctic, taking certain political and military steps in that direction."⁸³ In 2012, the Chinese icebreaker, *Xuelong* (*Snow Dragon*), traversed the Northern Sea Route on its way to China's research station on Svalbard.⁸⁴ On the return trip from Norway to Shanghai in September 2012, the *Xuelong* sailed beyond Russia's 200 nautical mile exclusive economic zone (EEZ) into the international waters of the Central Arctic Ocean. The following year in August 2013, China's Ocean Shipping Group (COSCO) sent the first container ship, the *Yong Sheng*, through the Northern Sea Route in an effort to test the viability of the NSR for container traffic because the route

83. Trude Pettersen, "Shoigu: Military presence in the Arctic is a question of national security," *Barents Observer*, February 26, 2015, <http://barentsobserver.com/en/security/2015/02/shoigu-military-presence-arctic-question-national-security-26-02>.

84. Atle Staalesen, "Chinese icebreaker through Norwegian waters," *Barents Observer*, August 9, 2012, <http://barentsobserver.com/en/arctic/chinese-icebreaker-through-norwegian-waters-09-08>.

China's *Xue Long* Icebreaker and a Drift Ice Camp in the Arctic Ocean



Source: Wikimedia Commons. Photo by Timo Palo, https://commons.wikimedia.org/wiki/File:Teadlased_j%C3%A4%C3%A4l.jpg.

is used primarily for intra-Russian shipping and as a destination route.⁸⁵ These transits expose several areas of sensitivity for Russia. First, countries that bring their own icebreakers or ice-strengthened vessels do not require the use of Russian icebreakers to traverse the Northern Sea Route and, by going beyond the Russian EEZ, vessels do not pay NSR transit fees. These revenue sources are essential for Russia's ability to maintain its economic model for the NSR infrastructure, as well as the operational costs of the Northern Sea Route Administration, which became operational in March 2013. Second, it demonstrates how keen Chinese authorities are to test the potential of the trans-polar transit route through international waters. Finally, China's increased activity along the Northern Sea Route underscores an area of potential conflict that is little discussed: the legal challenge of sovereignty over the Northern Sea Route. Russia views the NSR as internal waters, and thus subject to transit fees, while the international community regards the NSR as an international passage. Thus far, once a transit permit is granted, commercial and scientific vessels have paid transit fees to the Russian authorities in the guise of icebreaker escorts, piloting services, and other administrative fees.

85. Atle Staalesen, "First container ship on Northern Sea Route," *Barents Observer*, August 21, 2013, <http://barentsobserver.com/en/arctic/2013/08/first-container-ship-northern-sea-route-21-08>.

Another event that prompted a strong Russian military reaction occurred in September 2013, when Russian authorities seized control of the Greenpeace vessel, *Arctic Sunrise*, near the island of Novaya Zemlya after activists scaled the Russian Prirazlomnaya oil rig.⁸⁶ A total of 30 activists were arrested, charged with acts of piracy, and held for several weeks before the charges were reduced to hooliganism and the activists were released. The previous year, Greenpeace activists scaled the same oil rig and hung a protest banner; however, no one was detained and after about 15 hours, the activists withdrew from the platform. But by 2013, Russia delivered a clear message that no one can challenge its ability to develop its Arctic economic resources and if challenged, the “threat” would be dealt with swiftly and severely.

A circumstantial event is the ongoing process of submitting scientific claims by Russia and the other Arctic coastal states to extend its outer continental shelf in the Arctic. Four of the Arctic coastal states (excluding the United States, which has not ratified the Law of the Sea Treaty) will submit or have already submitted data to the Article 76 Commission on the Limits to the Outer Continental Shelf (CLCS). Russia was the first Arctic littoral state to submit data in 2001 to the CLCS, seeking to extend its EEZ to 350 nautical miles, which at the time was the largest claim of any Arctic state.⁸⁷ The CLCS invalidated the claim and requested that Russia submit further geological data and research. On August 3, 2015, Russia submitted its revised claim to the CLCS, and, if approved, the claim will expand Russia’s Arctic territory by over 463,000 square miles.⁸⁸ It is important to note that Russia has followed the UNCLOS process and successfully completed bilateral negotiations with Norway in 2010 to establish their respective maritime borders in the Barents Sea. It is also important to note that the CLCS does not decide or rule in favor of a particular country’s claim; it merely decides whether the claim falls within the legal definition of the Law of the Sea Treaty. Although countries can take their case to the Law of the Sea Tribunal for adjudication, it is for the states to negotiate any competing claims. Moreover, the claimant process is very long and drawn out; a ruling by the CLCS can take between 10 and 15 years from the date of submission. Could the Kremlin grow frustrated with a long, drawn out process? Possibly. In the chilling words of Russian deputy prime minister Dmitry Rogozin, who has foreshadowed “serious economic collisions in the twenty-first century” due to competing claims in the Arctic, “It is our territory, it is our shelf, and we’ll provide its security. And we will make money there. . . . They [the West] will put us on a sanctions list—but tanks do not need visas.”⁸⁹

86. John Vidal, “Russian military storm Greenpeace Arctic oil protest ship,” *Guardian*, September 19, 2013, <http://www.theguardian.com/environment/2013/sep/19/greenpeace-protesters-arrested-arctic>.

87. Kathryn Isted, “Sovereignty in the Arctic: An Analysis of Territorial Disputes & Environmental Policy Considerations,” *Journal of Transnational Law & Policy* 18, no. 2 (Spring 2009): 358–359, http://archive.law.fsu.edu/journals/transnational/vol18_2/isted.pdf.

88. Associated Press, “Russia Files Revised Claim for Arctic Territory With U.N.,” *Wall Street Journal*, August 4, 2015, <http://www.wsj.com/articles/russia-files-revised-claim-for-arctic-territory-with-u-n-1438719346>.

89. Lucy Clarke-Billings, “Russia begins huge surprise air force drill on same day as NATO starts Arctic training,” *Independent*, May 27, 2015, <http://www.independent.co.uk/news/world/russia-begins-huge-surprise-air-force-drill-on-same-day-as-nato-start-arctic-training-10275692.html>.

These events—along with Russia’s military activities in Ukraine—have generated an unprecedented military response in the Arctic by Russia in the 2014–2015 time frame. In September 2014, Russia held the largest military exercise in its history. Held in the Russian Far East, Vostok-2014 involved over 100,000 servicemen and a complex array of thousands of pieces of maritime, air, and land hardware.⁹⁰ Part of this exercise was conducted on a newly created military base on the New Siberian Islands. Russian forces were also deployed to Chukotka’s coastline and the Wrangel Island to simulate repelling enemy forces. Some analysts believe that Vostok-2014 was a thinly veiled simulation of a scenario in which Russian forces repel a potential U.S. and coalition invasion; others have suggested that it was an effort to focus on China’s growing military strength and presence in Russia’s Far East.⁹¹ But what analysts do agree upon is that this exercise, which remarkably was preceded by a snap military exercise, focused on command and control, rapid mobilization, combined operations and, disturbingly, demonstrations of use of both conventional and unconventional arms. With the anticipation that a total of 14 airfields will be operational in the Russian Arctic by the end of 2015 and with a 30 percent increase of Russian Special Forces in the Arctic,⁹² according to a recent NATO Parliamentary Assembly report, Russia is demonstrating significant military capability and rapid deployment of conventional and non-conventional assets in the Arctic.

What also makes this military buildup and demonstration of capabilities highly questionable is that over the past year, Russian Arctic economic development in the Russian Arctic has substantially slowed. Prior to the crisis over Ukraine, significant natural gas finds, such as the Shtokman field, had been postponed. Since March 2014, international energy companies, including ExxonMobil, have departed the Russian Arctic and postponed their development activities,⁹³ and other companies, such as Total, have sought to minimize their existing holdings. Transits through the Northern Sea Route, while minimal to begin with, have also slowed. In 2013, there were a total of 71 transits through the NSR,⁹⁴ but only 53 in 2014.⁹⁵ This low level of economic activity is hardly sufficient to justify such extensive force mobilization and the development of new security infrastructure in the Russian Arctic. Russia’s military buildup and demonstrations of capability are obviously not just about economics or safety but indicate a potentially dangerous attempt to return to Cold War parity in the Arctic.

90. Roger McDermott, “Vostok 2014 and Russia’s Hypothetical Enemies (Part One),” *Eurasia Daily Monitor* 11, no. 167 (September 23, 2014), http://www.jamestown.org/programs/edm/single/?tx_ttnews%5Btt_news%5D=42859&cHash=bb0e68111832039d5c8997b2355b2942#.VYRA1PlVikq.

91. *Ibid.*

92. Sohrab Ahmari, “The New Cold War’s Arctic Front,” *Wall Street Journal*, June 9, 2015, <http://www.wsj.com/articles/the-new-cold-wars-arctic-front-1433872323>.

93. Mikael Holter, “Exxon, Rosneft Scrap Arctic Deals as Russia Sanctions Bite,” *Bloomberg*, December 1, 2014, <http://www.bloomberg.com/news/articles/2014-12-01/exxon-rosneft-scrap-arctic-contracts-as-russia-sanctions-bite>.

94. Trude Pettersen, “Northern Sea Route traffic plummeted,” *Barents Observer*, December 16, 2014, <http://barentsobserver.com/en/arctic/2014/12/northern-sea-route-traffic-plummeted-16-12>.

95. Associated Press, “Number of Ships Transiting Arctic Waters Falls in 2014,” *New York Times*, January 5, 2015, <http://www.nytimes.com/aponline/2015/01/05/us/ap-us-arctic-shipping.html>.

The Construction of a New Ice Curtain: Russian Domestic and Arctic Policies from 2004–2014

PHASE 1

2004–2009

Russia's position on the Arctic was still in a formative stage. In 2001, the Kremlin approved the draft of the document, *Foundations of the State Policy of the Russian Federation*, which began to formulate Russia's national interests in the Arctic. During President Putin's second term as Russian president, the color revolutions in the post-Soviet space challenged Moscow's regional policy vision and required a more coherent ideological position. In 2008, President Medvedev approved the *Foundations of the State Policy of the Russian Federation in the Arctic up to and Beyond 2020*, which developed a more coherent and comprehensive Russian Arctic policy. The Kremlin's Arctic policy was two-pronged: "international cooperation on the one hand, and the sustained build-up of military capabilities on the other."

RUSSIA'S DOMESTIC & FOREIGN POLICIES

2003/
2004

Color revolutions in the post-Soviet space.

2005

RUSSIAN PROTESTS

Massive demonstrations in protest of a new Russian law abolishing many social benefits.

2007

MUNICH SECURITY CONFERENCE

President Putin declared "Russia should play an increasingly active role in world affairs" and accused the United States of disregarding international law.

ESTONIAN BRONZE NIGHT INCIDENT

After relocating a WWII monument honoring Soviet soldiers in Estonia, clashes erupted between ethnic Russians and Estonians. Russia launched a massive cyberattack against Estonia in response.

2008

GEORGIAN-RUSSIAN CONFLICT

Moscow violates Georgia's territorial integrity and recognizes Abkhazia and South Ossetia as independent states.

2009

U.S.-RUSSIA POLICY

The United States announces it wants to 'reset' relations with Russia and work on re-negotiating a follow-up to the Strategic Arms Reduction Treaty.

RUSSIA'S ARCTIC POLICIES

RENEWED MILITARY FOCUS ON THE ARCTIC

Regular missile tests and strategic submarine patrols are resumed between 2004–2006.

ARKTIKA EXPEDITION

Russian expedition led by Artur Chilingarov, descended to the seabed at the North Pole and planted a Russian flag.

RUSSIAN GOVERNMENT ADOPTS ARCTIC STRATEGY

The Fundamentals of State Policy of the Russian Federation in the Arctic in the Period up to 2020 and Beyond outlines Russia's national interests in the Arctic, including preserving its role as a "leading Arctic power."

EXPANSION OF RUSSIA'S ARCTIC POLICIES

The Strategy for National Security of the Russian Federation until 2020 links the development of the Arctic to Russian national security. *The Russian Energy Strategy up to 2030* underlines the importance of the Arctic in relation to natural resource development.

(Continued)

PHASE 2

2011–2013

President Putin's announced return to the Kremlin in September 2011 sparked the largest public protests of his political career. The Kremlin imposed increasing controls over nongovernmental organizations (NGOs) through a law to prevent Russian organizations from receiving Western financial assistance and initiated a search for external and internal enemies aided by foreign agents. Moscow develops more detailed Arctic policies; centralizes administrative mechanisms (through the 2012 Federal Law on the Arctic Zone); and enhances its security posture in the Arctic. Moscow continues its dual Arctic policy: increased cooperation between Russia and other Arctic states on creating international search and rescue and oil spill response agreements, while at the same time tightening control over domestic activists and civil society.

RUSSIA'S DOMESTIC & FOREIGN POLICIES

2011 RUSSIAN PROTESTS

Thousands of Russian citizens protested the December legislative elections and Mr. Putin's bid to return to the presidency. Protests continued throughout 2012 and 2013.

Officials portrayed the demonstrators as revolutionaries dedicated to a violent overthrow instigated by the United States.

2012 RUSSIAN NGO LAW

In July, the Duma passed legislation requiring non-profit organizations and non-governmental organizations that receive foreign funding to register as foreign agents with Russia's Ministry of Justice.

The Duma approved a bill to expand Russia's definition of treason to include financial or consultative assistance to a foreign state or international organization.

In September, Moscow ordered USAID to cease operations on accusations of meddling in Russia's internal affairs, and eliminating roughly \$50 million in project funding.

2013 THE EUROMAIDAN PROTESTS BEGIN

Due to pressure from Russia, the Ukrainian government halts preparations to sign an Association Agreement with the EU. Thousands protest in Ukraine and call for the resignation of President Victor Yanukovich.

RUSSIA'S ARCTIC POLICIES

ENHANCING MILITARY CAPABILITIES

Russian military official announced the creation of the first Arctic brigade by 2015 and deployment of Mig-31s to Novaya Zemlya to establish a missile defense system and secure Russian military interests in the Arctic.

The Russian Navy resumed naval patrols of the Northern Sea Route.

CLOSURE OF RAIPON

After operating in Russia for 22 years, the Russian Ministry of Justice informed RAIPON (Russian Association of Indigenous Peoples of the North) that the organization had to temporarily close due to alleged irregularities in its organizational statutes.

GREENPEACE PROTEST

Russian Special Forces seized control of Greenpeace's Arctic Sunrise, accusing the activists of committing piracy and threatening the Prirazlomnaya oil platform.

(Continued)

PHASE 3

2014 – PRESENT

By 2014, there was only one narrative: Russia is encircled by foreign enemies and has been humiliated by the West requiring a strong leader to defend Russia's interests (e.g., "There is no Russia today if there is no Putin"). As the Russian economy stalled, the Kremlin tightened its control over all media outlets and continued its crackdown of Russian opposition leaders and civil society. Russia formally annexed Crimea in March 2014 and sent military forces and equipment across the Ukrainian border to support pro-Russian separatists in the Donbas region. Increased and unannounced military exercises occur in the Arctic and Russian nationalistic voices state that the Russian Arctic "... is our territory, it is our shelf...They [the West] will put us on a sanctions list—but tanks do not need visas" and "the Arctic is a Russian Mecca."

RUSSIA'S DOMESTIC & FOREIGN POLICIES

2014

ANNEXATION OF CRIMEA

March 17, President Putin recognized Crimea as part of the Russian Federation; on March 18 he addressed the Federal Assembly stating that "Crimea has always been an inseparable part of Russia."

VALDAI DISCUSSION CLUB THEME "NEW RULES OR NO RULES?"

President Putin identified the "further escalation of ethnic, religious, or social conflicts" as a potential threat to the international system.

RUSSIAN MILITARY DOCTRINE

In Russia's updated military doctrine, Moscow authorizes the utilization of military force to protect Russian national interests in the Arctic.

2015

MINSK II AGREEMENT SIGNED

After the collapse of the first Minsk Agreement and ongoing fighting in eastern Ukraine, Russia, Ukraine, Germany, and France reached a new ceasefire agreement on February 12.

RUSSIA'S ARCTIC POLICIES

ENHANCED MILITARY ACTIVITIES

Russia announces it will reopen and modernize 50 military airfields in the Arctic by 2020.

In September, Russia staged the Vostok-2014 exercise, involving 100,000 servicemen and over 6,000 pieces of military hardware.

In November, President Putin announced the creation of the Northern Fleet-United Strategic Command for the Arctic.

ARCTIC COMMISSION ESTABLISHED

President Putin created a governmental commission for the Arctic responsible for social and economic development, and national security chaired by Dmitry Rogozin.

SNAP ARCTIC EXERCISES

Within three months, Russia conducted two large-scale, unannounced military exercises in the Arctic in response to NATO activities in the region. The first exercise called the Northern Fleet to full combat readiness and involved nearly 45,000 troops, 41 ships, 15 submarines, and 110 aircraft, and the second snap exercise involved 12,000 troops and 250 aircraft.

REVISED MARITIME DOCTRINE AND SUBMISSION OF NEW ARCTIC CLAIM

Russia issued a revised Maritime Doctrine, stating the Northern Fleet's presence in the Arctic should be strengthened to defend Russia's economic interests. On August 3, Russia submitted its claim to the UN Continental Shelf Commission to extend its Arctic territory by 1.2 million square kilometers.

2 | Russia's Energy and Economic Future Points Northward

Russia's Global Energy Strategy and Its Economic and Geopolitical Limits

Russia is a global energy power because the country holds the world's largest natural gas reserves, second largest coal reserves, and ninth largest crude oil reserves.¹ Russia was the third largest producer of liquid fuels in 2014,² and sales of oil and natural gas products accounted for 68 percent of Russia's total export revenues in 2013, amounting to over \$350 billion in revenue.³ East Siberia and sub-Arctic Sakhalin are crucial to continued production expansion efforts and these fields have already become the center of Russia's production growth.

Accounting for two-thirds of Russia's total energy production, West Siberia remains the leading Russian oil-producing region, although its three main fields—Yamburg, Urengoy, and Medvezh've—have experienced output decline in recent years,⁴ culminating in the Russian Ministry of Energy's prediction of a decline in gas output of 13 percent over the next 20 years from the West Siberian Nadym-Pur-Taz fields, which have been in operation since the 1970s.⁵ ⁶ As these fields are estimated to be about 60 percent depleted,⁷ combined with the lack of introducing new technologies such as hydrologic fracturing to extract additional resources as well as recent Western economic sanctions, it is likely that Russia will abandon its once rich Siberian fields to pursue more technologically challeng-

1. U.S. Energy Information Administration (EIA), "Russia: International energy data and analysis," updated July 28, 2015, <http://www.eia.gov/beta/international/analysis.cfm?iso=RUS>.

2. EIA, "International Energy Statistics: Total Petroleum and Other Liquids Production 2014," http://www.eia.gov/beta/international/rankings/#?product=53-1&iso=RUS&pid=53&aid=1&tl_id=1-A&tl_type=a&cy=2014.

3. EIA, "Today in Energy: Oil and natural gas sales accounted for 68% of Russia's total export revenues in 2013," July 23, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=17231>.

4. EIA, "International: Total Petroleum and Other Liquids Production—2014: Russia," March 12, 2014, 2, <http://www.eia.gov/countries/analysisbriefs/Russia/russia.pdf>.

5. Organization for Economic Cooperation and Development (OECD), *OECD Economic Surveys: Russian Federation 2002* (Paris: OECD, February 2002), 133, http://www.oecd-ilibrary.org/economics/oecd-economic-surveys-russian-federation-2002_eco_surveys-rus-2002-en.

6. Ministry of Energy of the Russian Federation, "Energy Strategy of Russia: For the Period up to 2030," 2010, 146, [http://www.energystrategy.ru/projects/docs/ES-2030_\(Eng\).pdf](http://www.energystrategy.ru/projects/docs/ES-2030_(Eng).pdf).

7. Tatiana Mitrova, *The Geopolitics of Russian Natural Gas* (Houston, TX: James A Baker III Institute for Public Policy and Belfer Center for Science and International Affairs, February 2014), 24, http://bakerinstitute.org/media/files/research_document/cdfea656/CES-pub-GeoGasRussiax-022114.pdf.

Map of Russia's Energy Developments in the Arctic

Oil and natural gas production in Russia (2013)



Source: U.S. Energy Information Administration, Eastern Bloc Research, 2014, <http://www.eia.gov/todayinenergy/detail.cfm?id=18051>.

ing and capital-intensive Arctic onshore and offshore hydrocarbon interests discovered during the Soviet era.

The Russian Arctic is an enormous source of energy resources and revenue for Russia, with the Arctic accounting for two-thirds of Russian oil and gas.⁸ According to Dr. Valeriy Kryukov, from the Russian Academy of Sciences, “The Arctic’s economic development (which is impossible without investment activity and various investment and social projects) is the most important component of social and economic development of Russia as a whole.”⁹ Russia’s Ministry of Natural Resources estimates that Russia’s underwater Arctic region could contain as much as 586 billion barrels of oil reserves. Proven oil deposits in the Barents, Pechora, Kara, East Siberian, Chukchi, and Laptev Seas are estimated at 3 billion barrels while potential reserves could total 67.7 billion barrels of oil.¹⁰ In the same

8. Dag Harald Claes and Arild Moe, “Arctic Petroleum Resources in a Regional and Global Perspective,” in *Geopolitics and Security in the Arctic*, ed. Rolf Tamnes and Kristine Offerdal (New York: Routledge, 2014), 105.

9. Valeriy A. Kryukov, “Patterns of Investment in the Russian Onshore Arctic: Area of Stable Growth?,” in *The Arctic in World Affairs: A North Pacific Dialogue on the Future of International Cooperation*, ed. Oran R. Young, Jong Deog Kim, and Yoon Hyung Kim (Seoul: Korea Maritime Institute, 2014), 41, <http://www.kmi.re.kr/kmi/kr/download/2014NPAC.pdf>.

10. Ariel Cohen, “Russia in the Arctic: Challenges to U.S. Energy and Geopolitics in the High North,” in *Russia in the Arctic*, ed. Steven J. Blank (Carlisle: Strategic Studies Institute, 2012), 4, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1073.pdf>.

region, proven gas reserves could reach 7.7 trillion cubic meters (tcm) and unexplored gas reserves are estimated at 88.3 tcm.¹¹ Russia's Energy Strategy forecasts an output as high as 900 billion cubic meters (bcm) by 2030 for its Arctic resources. This goal was increased to one trillion cubic meters in 2010, constituting almost a doubling of production rates in 2010, and including investments of more than \$400 billion.¹²

There are two Russian Arctic regions that are particularly influential for the Russian oil and gas industry: Yamal-Nenets and the Timan-Pechora/Barents Sea regions. The Yamal Peninsula is the key Arctic region where Gazprom directs its development efforts. It is already Russia's largest gas-producing region, supplying over 85 percent of Russian natural gas and accounting for roughly 20 percent of the global natural gas supply.¹³ Located in the Yamal-Nenets region, the Zapolyarnoe field—with an expected 130 bcm per year once in full capacity—is the most recent field to be in operation in the sub-Arctic region.¹⁴ The Yamal Peninsula also contains the Bovanenkovo gas field, a vast tract containing about 4.9 tcm of natural gas in which Gazprom began production in 2013, and which could account for as much as 200 bcm of gas production per year by 2020, and 360 bcm per year by 2030.¹⁵ The Yamal LNG megaproject—the largest in Russia's history—will cost hundreds of billions of dollars, require 50,000 workers, and could take up to 50 years to fully develop.¹⁶ The Port of Sabetta is currently under construction and is expected to become one of the biggest ports in the Russian Arctic, capable of handling more than 30 million tons of goods per year.¹⁷ There are plans to build more than 12,000 kilometers of new pipelines and 27 compressor stations, as well as the Yamal-Europe gas pipeline, with a capacity of 33 bcm, extending more than 4,000 kilometers to Germany.¹⁸ If Arctic shipping along the Northern Sea Route (NSR) develops, delivering LNG by tankers through the NSR and Bering Strait to Asian markets could ease pressure on Russia's aging overland pipeline system and mitigate the risks of building new pipelines on increasingly unstable thawing permafrost.¹⁹ Russia's focus will also shift to adjacent offshore reserves once the onshore fields have peaked, possibly around 2030.

Exploring and producing Arctic energy is an expensive and long-term endeavor due to short drilling seasons, remoteness, climatic conditions, and production and transportation costs. The International Energy Agency (IEA) calculates, for instance, that the cost of

11. Ibid.

12. "Russia to Invest over \$400bln in Gas Sector by 2030," *Sputnik International*, October 11, 2010, <http://en.rian.ru/business/20101011/160915781.html>.

13. "Russian Arctic resources," Voice of Russia, August 28, 2012, http://voiceofrussia.com/2012_08_28/Russian-Arctic-resources/.

14. Gazprom, "Zapolyarnoye Becomes Most Productive Field in Russia—130 Billion Cubic Meters per Year," January 15, 2013, <http://www.gazprom.com/press/news/2013/january/article154079/>.

15. "Gazprom Launches Bovanenkovo Gas Field, Russia," *LNG World News*, October 25, 2012, <http://www.lngworldnews.com/gazprom-launches-bovanenkovo-gas-field-russia/>.

16. Indra Overland, "Russia's Arctic Energy Policy," *International Journal* 65, no. 4 (December 2010): 873, <http://ijx.sagepub.com/content/65/4.toc>.

17. Trude Pettersen, "Construction of Sabetta port to start this summer," *Barents Observer*, April 17, 2013, <http://barentsobserver.com/en/energy/2013/04/construction-sabetta-port-start-summer-17-04>.

18. Global Intelligence Report, "The Yamal-Europe Natural Gas Pipeline," OilPrice, February 14, 2011, <http://oilprice.com/Energy/Natural-Gas/The-Yamal-Europe-Natural-Gas-Pipeline.html>.

19. Overland, "Russia's Arctic Energy Policy," 873–876.

exploiting Arctic resources is between \$40 and \$100 per barrel, whereas for Middle Eastern reserves it is between \$10 and \$40.²⁰ The combination of 50 percent lower energy prices and the imposition of U.S. and European sanctions against long-term Russian Arctic energy development²¹ make Russia's 2030 Arctic energy production estimates seem overly optimistic, if not impossible. For example, in April 2015, OAO Novatek—the largest shareholder in the Yamal LNG plant project and one of the energy companies targeted by U.S. energy sanctions—announced its plans to accelerate the sale of roughly 9 percent of Novatek's 60 percent stake in the Yamal LNG project.²² Unsurprisingly, IEA's *World Energy Outlook 2014* estimates that Russia's development of offshore Arctic resources will play a limited role in Russia's future energy production until the early 2030s, reaching approximately 250,000 barrels per day by 2040.²³

Due to the highly uncertain energy future of the Russian Arctic, former senior Russian officials have begun a public rationale for what is, in effect, a current slowdown in Russian Arctic energy development. Former prime minister and foreign minister Yevgeny Primakov has stated, "Despite the importance of the region to Russia, why should we not take a pause in development of Arctic oil and gas fields?"²⁴

It is not just Russia's Arctic energy future that is in doubt, but the country's energy future as well. Prior to the decline in global energy prices, the Russian government document, "General Outline of the Development of the Oil Sector of the Russian Federation until 2020," concluded as early as 2010 that the Russian oil sector was at a critical stage. From now until 2030, Russian forecasts estimate an increase in oil production of only 40 million tons as the "brownfield" renaissance of the Siberian fields is considered over and the resource base for further "greenfield" development is in "critical condition."²⁵ The IEA predicts a decrease of 40 million tons²⁶ and "new projects [may] only [be] able to offset declining output from aging fields and not result in significant output growth."²⁷ Without urgent structural reforms to its energy sector and tax regime, Russia's oil output will fall far short of what would be needed to meet growth targets—nearly 30 percent by 2020, and over 60 percent by 2030.

20. International Energy Agency (IEA), *World Energy Outlook 2008* (Paris: IEA, 2008), 219, <http://www.worldenergyoutlook.org/media/weowebiste/2008-1994/WEO2008.pdf>.

21. U.S. Department of Treasury, "Announcement of Expanded Treasury Sanctions within the Russian Financial Services, Energy and Defense or Related Materiel Sectors," September 12, 2014, <http://www.treasury.gov/press-center/press-releases/Pages/jl2629.aspx>.

22. Dina Khrennikova, "Novatek Aims to Reduce Stake in Arctic LNG Project by Mid-Year," Bloomberg, April 13, 2015, <http://www.bloomberg.com/news/articles/2015-04-13/novatek-aims-to-reduce-stake-in-arctic-lng-project-by-mid-year>.

23. IEA, *World Energy Outlook 2014* (Paris: IEA, 2014), 123.

24. Trude Pettersen, "Ex-minister suggests pause in Russian Arctic oil," *Barents Observer*, January 14, 2015, <http://barentsobserver.com/en/energy/2015/01/ex-minister-suggests-pause-russian-arctic-oil-14-01>.

25. Proekt "General'naia skhema razvitiia neftianoi otrasli Rossiiskoi Federatsii na period de 2020 g" [General outline of the development of the oil sector of the Russian Federation until 2020], website of the Prime Minister, October 28, 2010, http://uploadrb.ru/upload/archive/dop_upload/file_2010-10-29_10.16.38_genshema.doc.

26. Adnan Vatansever, "Russia's Energy Strategy Abroad" (lecture, Institute for European, Russian, and Eurasian Studies, George Washington University, Washington, DC, March 24, 2011).

27. EIA, "International: Total Petroleum and Other Liquids Production—2014: Russia," 3.

Although there is general agreement on Russia's oil sector outlook, forecasts for Russia's gas future are more nuanced due to the global energy implications of the U.S. shale gas revolution. While Russia holds the world's largest natural gas reserves (1,567 trillion cubic feet [tcf] or 44 trillion cubic meters [tcm] according to British Petroleum),²⁸ in 2012 and 2013 Russia was eclipsed by the United States as the world's largest natural gas producer due to the hydro-fracturing of its indigenous shale gas formations.²⁹ While some estimate that Russia may hold some of the world's largest unconventional gas resources, including coal-bed methane (CBM) and shale gas, it currently does not possess the technology or infrastructure to exploit its shale gas resources. As a result, most experts and representatives from the Russian state-owned company Gazprom and the Russian Ministry of Energy agree that shale gas production is not economically feasible in Russia at the moment, partly due to the lack of technology and infrastructure but also because Russia has considerable reserves of natural gas that it can currently exploit.³⁰ Currently, Russia's main gas exports are of piped, natural gas, whereas the global energy market is increasingly looking toward other unconventional types of gas (such as liquefied natural gas [LNG]).

The U.S. shale gas revolution and the imposition of Western sanctions against Russia have drastically affected Russian Arctic energy production and its subsequent geopolitics.³¹ Two examples of the impact of shifting global energy patterns on the Russian Arctic and its energy development are the Shtokman field and the Yamal LNG project. The Shtokman field in the Barents Sea contains more than twice as much natural gas as Canada's total known conventional gas reserves,³² has confirmed natural gas reserves of 3.9 tcm and 53 million tons of condensate, and was intended to play a major role in North Atlantic energy supplies with enough gas reserves to satisfy the entire gas consumption of the EU for seven years.³³ However, development of the Shtokman field, which was supposed to have commenced in 2013, has been postponed indefinitely as North American markets no longer use gas due to U.S. conventions, the boom in exporting LNG from the Middle East and North Africa to Europe, and the considerable cost of extracting the gas.

With the Shtokman field postponed for "future generations,"³⁴ the Yamal LNG project, also known as the Yamal megaproject and the largest in Russia's history, has become the

28. BP, *BP Statistical Review of World Energy June 2010* (London: BP, 2010), 20, http://russland.ahk.de/fileadmin/ahk_russland/Dokumente/Veranstaltungen/2011/Vorstellung_BP-Energiejahresbericht/Statistical_review_of_world_energy_full_report_2011.pdf. The figures vary depending on the source; those of the International Energy Agency are not the same as BP's.

29. Suzanne Goldenberg, "US surpasses Russia as world's top oil and natural gas producer," *Guardian*, October 4, 2013, <http://www.theguardian.com/business/2013/oct/04/us-oil-natural-gas-production-russia-saudi-arabia>.

30. Mitrova, *The Geopolitics of Russian Natural Gas*, 21–22.

31. Paul Stevens, *The 'Shale Gas Revolution': Hype and Reality* (London: Chatham House, September 2010), http://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/r_0910stevens.pdf.

32. Overland, "Russia's Arctic Energy Policy," 874.

33. Marta Carlsson and Niklas Granholm, *Russia and the Arctic: Analysis and Discussion of Russian Strategies* (Stockholm: FOI, Swedish Defense Research Institute, March 2013), 21, http://www.foi.se/ReportFiles/foir_3596.pdf.

34. "Gazprom Still Undecided on Shtokman Arctic Field," *Sputnik News*, June 18, 2013, <http://sputniknews.com/business/20130618/181733704.html>.

focus of Russia's energy ambitions. Alexey Miller, chairman of the Gazprom Management Committee recently announced, "Yamal is the future of the Russian gas industry,"³⁵ and the government has allocated \$2.5 billion to support the Yamal project.³⁶ The Yamal LNG project and the development of the Arctic Port of Sabetta are now a new priority for the Russian government as LNG will be shipped from Yamal to Asian markets.

The Shtokman experience demonstrates that Arctic energy resources are highly susceptible to global energy dynamics and cost effectiveness. The long development time horizons for the Arctic, which can extend from 20 to 40 years and are limited by very short drilling seasons, are not as nimble to "turn-on or turn-off" production as unconventional energy sources. Although initially downplaying the global impact of the U.S. unconventional energy revolution, since 2012 the Russian government has acknowledged the shift in the global energy landscape with Russian president Vladimir Putin urging Gazprom to revise its export policy, as the "shale revolution" and the development of liquefied natural gas has the potential to seriously erode the country's export revenues.³⁷ Moscow has also encouraged the development of its domestic shale oil and gas production, although this requires Western technology and infrastructure development. Not only have the Russian authorities been slow to invest in new technologies to revitalize their Siberian fields, there has also been a significant lack of Russian investment to upgrade aging pipeline and port infrastructure, which is increasingly experiencing considerable structural damage from thawing permafrost. There are around 35,000 oil and gas pipeline accidents annually in West Siberia and the Russian government spends up to 55 billion rubles each year repairing infrastructure and pipeline damage and deformation from permafrost thaw.³⁸ It is estimated that the cost of modernizing the entire Soviet-era energy infrastructure would be approximately \$900 billion over the next 25 years simply to maintain current oil and gas production levels.³⁹ Moreover, Russia assumes that its oil and dry natural gas will continue to be in high demand in the decades to come to sustain the industry, yet this is very much in doubt due to geopolitical and geo-economic factors. Because the United States is an energy exporter rather than importer, European economic and energy demand remains anemic in the years ahead, and other energy exports such as Saudi Arabia compete with Russia to supply energy to Asia, the only immediate prospect for guaranteed energy demand growth will require Russia to reorient overnight its entire energy transportation network from Europe toward Asia.

35. Gazprom, "Alexey Miller: Yamal is the future of the Russian gas industry," December 22, 2014, <http://www.gazprom.com/press/news/2014/december/article211406/>.

36. Alexander Winning, "UPDATE 2-Russia ramps up aid for strategic banks, firms as crisis deepens," Reuters, December 31, 2014, <http://www.reuters.com/article/2014/12/31/russia-crisis-gazprom-bk-capital-idUSL6N0UF0HW20141231>.

37. Reuters, "Russia Increasingly Worried about US 'Shale Revolution,'" *Russia Today*, October 24, 2012, <http://www.rt.com/business/russia-shale-gas-usa-110/>.

38. O. A. Anisimov, ed., *Assessment Report: The Main Natural and Socio-economic Consequences of Climate Change in Permafrost Areas: A Forecast Based upon a Synthesis of Observations and Modelling* (Moscow: Greenpeace, 2010), 14, <http://www.greenpeace.org/russia/Global/russia/report/2010/4/copy-of-7.pdf>.

39. N. J. Watson, "The Money Gap," *Petroleum Economist*, January 1, 2006, www.petroileum-economist.com/Article/2733074/The-money-gap.html.

A FEW GOVERNMENT PLAYERS

Oil and gas industries are Russia's most centralized economic sector with a number of federal ministries involved in the regulation and management of the energy sector. The Ministry of Natural Resources and the Environment is responsible for issuing field licenses, monitoring compliance with license agreements, and is responsible for levying fines for violations of environmental regulations.⁴⁰ The Ministry of Finance is the authority responsible for tax policies in the energy sector; the Ministry of Economic Development is in charge of regulating tariffs and energy sector reforms; and the Ministry of Energy oversees general energy policies.

These numerous ministries mostly play a managing and implementing role. Strategic decisions are decided at a much higher level, namely by the presidential administration and President Putin's inner circle of confidants and advisers. Immediately following his election as president in 2000, President Putin centralized the Kremlin's control over Gazprom by replacing former prime minister Viktor Chernomyrdin with Dmitry Medvedev—who, at the time, had been Putin's legal adviser in St. Petersburg—as chairman of the board, as well as announcing Alexey Miller as Gazprom's new CEO.⁴¹ By 2008, 11 of the 18 board members were individuals who began their career with President Putin when he was deputy mayor of St. Petersburg or in the Federal Security Service (FSB), the successor entity of the KGB. The late former prime minister Boris Nemtsov and former deputy energy minister Vladimir Milov—both of whom served in the Ministry of Energy—commented at the time, “This is not the typical way in which global energy companies are run. Usually, leading positions are occupied by professionals with years of experience in top management in energy corporations.”⁴² As the Kremlin enhanced its control over Gazprom and allegations of corrupt practices and ties with organized crime began to circulate, the Organization for Economic Cooperation and Development (OECD) noted that Gazprom and its board members were using intermediary and subsidiary companies like Eural Trans Gaz to “extract value from the company.”⁴³

Since 2004, Igor Sechin has served as chairman of the board of directors of Rosneft and additionally, has served as president of Rosneft since 2013. However, Sechin's ties with President Putin extend back to 1994 when they both worked in the St. Petersburg mayor's office. The two continued to foster close ties when Sechin served as deputy prime minister until May 2012, during which time Sechin oversaw the development and implementation of government policy for industry (with the exception of the defense industry complex) and energy, as well as for the use of natural resources and environmental protection policy. Sechin also led the governmental commission on the fuel and energy complex, the mineral resource base, and increasing the energy efficiency of the economy.

40. EIA, “Russia: International energy data and analysis.”

41. Karen Dawisha, *Putin's Kleptocracy: Who Owns Russia?* (New York: Simon & Schuster, 2014), 281.

42. *Ibid.*, 282.

43. *Ibid.*, 284.

Gazprom CEO Alexey Miller with President Putin



Source: Kremlin.ru, https://commons.wikimedia.org/wiki/File:Vladimir_Putin_in_Germany_25-27_September_2001-26.jpg.

In June 2014, Artur Chilingarov was elected to Rosneft's board of directors after having served as special representative to the president on international cooperation in the Arctic and Antarctic for a decade.⁴⁴ Chilingarov, one of Russia's most famous polar researchers, is well known for planting the Russian flag on the sea bottom at the North Pole during a 2007 expedition. A strong proponent of Russia's territorial claims in the Arctic, Chilingarov has stated, "The Arctic is Russian. We must prove the North Pole is an extension of the Russian coastal shelf."⁴⁵

ROLE OF STATE-OWNED AND PRIVATE COMPANIES

Today, most of Russia's oil and gas production is dominated by domestic, state-controlled firms, including Gazprom and Rosneft. While there are privately held companies such as Novatek, Russia's largest private gas producer, and Lukoil, as well as trading intermediaries such as Gunvor Group, these companies are heavily influenced by the Kremlin's political and economic prerogatives.⁴⁶ Members of Putin's inner circle, such as Gennady N. Timchenko, co-founder of Gunvor Group and who is currently under investigation for money-laundering and is under Western sanctions, own considerable shares in Novatek, for example.⁴⁷ In the late 1990s, the Russian oil industry was initially privatized; however, the oil and gas sectors reverted to state control over the past few years,⁴⁸ particularly following the 2003 arrest of Mikhail Khodorkovsky for fraud and tax evasion and the 2006 bankruptcy and break-up of Yukos, which was purchased by Rosneft.⁴⁹ At the time of Khodorkovsky's arrest and Yukos's downfall, Gunvor Group's share of the Russian oil trade rose sharply from less than 10 percent to close to 30 percent and revenues spiked from \$5 billion in 2004 to \$43 billion in 2007, a feat "they could not have done without very powerful political connections."⁵⁰ In February 2004, Gunvor shipped 16 times as much crude from Russian ports as it did two years earlier, and by 2008, Gunvor had become the world's fourth largest independent oil trader.⁵¹

Since 2008, exclusive rights to new Russian offshore licenses can be given only to companies with a state majority holding and a minimum of five years' experience working on Russia's continental shelf.⁵² Interestingly, only two companies met the criteria: Gazprom and Rosneft. The "State Program for the Development of the Continental Shelf in the Period

44. Trude Pettersen, "Arctic experts enters Rosneft board," *Barents Observer*, June 16, 2014, <http://barentsobserver.com/en/energy/2014/06/arctic-expert-enters-rosneft-board-16-06>.

45. Paul Reynolds, "Russia ahead in Arctic 'gold rush,'" BBC News, August 1, 2007, http://news.bbc.co.uk/2/hi/in_depth/6925853.stm.

46. Catherine Belton and Neil Buckley, "On the offensive: How Gunvor rose to the top of Russian oil trading," *Financial Times*, May 14, 2008, <http://www.ft.com/intl/cms/s/0/c3c5c012-21e9-11dd-a50a-000077b07658.html#axzz3bomg335V>.

47. Mitrova, *The Geopolitics of Russian Natural Gas*, 47.

48. EIA, "Russia: International energy data and analysis."

49. Lucian Kim and Bradley Cook, "Yukos Creditors Told Russian Oil Company Is Doomed (Update 1)," Bloomberg, July 25, 2006, <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a.CwLx2HL1ps&refer=europa>.

50. Belton and Buckley, "On the offensive."

51. Andrew Higgins, Guy Chazan, and Alan Cullison, "Secretive Associate of Putin Emerges as Czar of Russian Oil Trading," *Wall Street Journal*, June 11, 2008, <http://www.wsj.com/articles/SB121314210826662571>.

52. Claes and Moe, "Arctic Petroleum Resources in a Regional and Global Perspective," 111.

up to 2030,” adopted in 2012, confirmed that the exploitation of the Russian Arctic continental shelf is reserved for state companies, namely Rosneft and Gazprom, which are allowed to bid for 80 percent of the development rights. Several debates over the wisdom of according priority to state-run corporations have divided political elites. The former minister of natural resources, Yuri Trutnev, acknowledged on several occasions that the preference given to national oil companies over international or national private companies has not born any fruit, but on the contrary has impeded the development of the Arctic shelf.⁵³ However, the Kremlin may finally be rethinking its Arctic offshore licensing approach and allow private companies to bid competitively, causing Rosneft CEO Sechin to publicly denounce any efforts to liberalize private company access to future Russian Arctic shelf licenses, suggesting that this would harm Rosneft stakeholders and existing Arctic oil projects.⁵⁴

Despite the strong bias in favor of state-owned companies, Russian private firms have sought to establish themselves in the Russian Arctic. In 2012, Lukoil, for instance, announced it was ready to invest \$2.7 billion in geological exploration on the continental shelf, especially in remote areas such as the Laptev, East Siberian, and Chukchi Seas.⁵⁵ Gazprom, as the sole Russian state-owned company responsible for the Yamal megaproject, is increasingly cooperating with Novatek, with Novatek holding as much as 60 percent of the company JSC Yamal LNG and responsible for constructing the Yamal LNG plant at Sabetta.⁵⁶ In June 2013, Novatek signed a deal to supply 3 million tons of LNG per year to China from the Yamal LNG project, which was later formalized through the \$400 billion gas deal signed between Russia and China in May 2014.⁵⁷

Due to the high costs, long-term financing needs, and offshore technological requirements of Arctic development, Russia’s oil and gas companies increasingly turned to international investors and foreign companies—even prior to the imposition of Western sanctions—through joint ventures to share the financial, labor, and technological burdens of developing Arctic resources. However, all of these agreements stipulate that the international partners will receive a third of the joint venture and, in return for access to the oilfields, the international companies will finance the project and help explore and develop joint technologies.⁵⁸ For example, before the project was postponed, in 2007 and 2008, Gazprom signed agreements with Norway’s state-owned oil company Statoil and France’s Total to explore in the Shtokman field. The contracts included technology transfers in areas where

53. Kirill Melnikov and Alexander Gudkov, “Pravitel’s tvo priotkroet shel’f” [Government slightly opens the shelf], *Kommersant*, March 1, 2012, <http://www.kommersant.ru/doc/1883820>.

54. “Giving Access to Russian Arctic Shelf May Hurt Rosneft Oil Projects—CEO,” *Sputnik International*, June 20, 2015, <http://sputniknews.com/business/20150620/1023642083.html>.

55. “LUKOIL ready to invest 2.7 billion dollars in Arctic shelf exploration,” ITAR-TASS, October 26, 2012, <http://tass.ru/en/archive/684312>.

56. “Total: Yamal LNG project progressing in satisfactory manner,” *Barentsnova*, October 31, 2014, <http://barentsnova.com/business-overview/our-stories/1991-total-yamal-lng-project-progressing-in-satisfactory-manner/>.

57. Jacob Koch-Weser and Craig Murray, “The China-Russia Gas Deal: Background and Implications for the Broader Relationship,” U.S.-China Economic and Security Review Commission, June 9, 2014, 16, http://origin.www.uscc.gov/sites/default/files/Research/China%20Russia%20gas%20deal_Staffbackgrounder.pdf.

58. Carlsson and Granholm, *Russia and the Arctic*, 20.

Gazprom had clear shortcomings, including drilling platforms and production plants for liquefied natural gas. In May 2012, prior to Western sanctions, Rosneft signed an agreement with Norway's Statoil and the Italian energy firm ENI to jointly develop offshore reserves in the Perseevsky block in the Russian sector of the Barents Seas, as well as three license areas in the Sea of Okhotsk in Russia's Far East.⁵⁹ In March 2015, Statoil announced it would continue with its plans to drill four wells with Rosneft, after "seeking all required approvals from relevant authorities to ensure that we remain in compliance with all sanctions."⁶⁰ In April, Statoil executive vice president Tim Dodson announced that the company had been authorized to move ahead with the "technical aspects of the offshore joint venture in the Sea of Ohkotsk" and would move forward with existing contracts "as long as we [Statoil] comply with the sanctions that are in place."⁶¹ Rosneft also signed an agreement with ExxonMobil to explore oil reserves in the Kara Sea. However, due to Western-imposed sanctions, ExxonMobil has had to withdraw its participation and Rosneft announced that drilling would cease in 2015 but will hopefully resume next year.⁶² While production sharing agreements (PSAs) between the Russian Federation and investors (including foreign investors) are still technically legal and available, they are no longer endorsed by the government and therefore no new PSAs have been signed since 2000.⁶³

Although the Kara Sea is anticipated to be a major focus of Russia's Arctic energy development with estimated oil reserves of 36 billion barrels, the departure of ExxonMobil from the Kara Sea project due to U.S. sanctions against Russia, as well as the need for expensive and technologically advanced ice-strengthened platforms and ice floe management technology will force Russian companies to attempt to either acquire these assets, possibly do without them, or make use of current equipment to exploit these resources, which may increase accidents and environmental incidents. Financially, Russian firms seek alternatives to Western-backed financing, particular from Chinese sources, or to sell their assets. For example, OAO Novatek, the largest shareholder of the Yamal LNG project, formed a partnership with the French energy company Total and the Chinese National Petroleum Corporation (CNPC) to construct a \$20 billion Yamal LNG plant on the central Arctic coast of Russia.⁶⁴ The Yamal LNG plant is estimated to have an annual production capacity of 16.5 million tons and could be operational by 2017 with a cost of \$30 to \$40 billion.⁶⁵ Total and the CNPC are expected to cover 80 percent of the project development and each controls 20 percent of the joint venture.

59. Guy Chazan, "Rosneft agrees Arctic deal with Statoil," *Financial Times*, May 6, 2012, <http://www.ft.com/intl/cms/s/0/c31af7c6-976b-11e1-83f3-00144feabdc0.html#axzz3eSKZsQqz>.

60. Bloomberg, "Norway's Statoil plans four oil wells in Russia amid sanctions," *Energy Voice*, March 18, 2015, <https://www.energyvoice.com/oilandgas/76038/norways-statoil-plans-four-oil-wells-in-russia-amid-sanctions/>.

61. "Norway's Statoil, Russia's Rosneft to Start Oil Drilling in Okhotsk Sea," *Sputnik International*, May 21, 2015, <http://sputniknews.com/business/20150421/1021188001.html>.

62. Reuters, "Rosneft Can't Drill in Arctic Without Sanction-Hit ExxonMobil, Sources Say," *Moscow Times*, January 30, 2015, <http://www.themoscowtimes.com/article.php?id=515157>.

63. Mitrova, *The Geopolitics of Russian Natural Gas*, 32.

64. Andrew E. Kramer, "Polar Thaw Opens Shortcut for Russian Natural Gas," *New York Times*, July 24, 2013, <http://www.nytimes.com/2013/07/25/business/energy-environment/polar-thaw-opens-shortcut-for-russian-natural-gas.html?pagewanted=all&r=0>.

65. Atle Staalesen, "Sechin eyes LNG plant in Yamal," *Barents Observer*, February 11, 2014, <http://barentsobserver.com/en/energy/2014/02/sechin-eyes-lng-plant-yamal-11-02>.

Prirazlomnaya Oil Rig in the Pechora Sea



Source: Wikimedia Commons, https://commons.wikimedia.org/wiki/File:МЛСП_Приразломная_зимой.jpg.

In April 2014, Russia's Gazprom began exporting oil from the Prirazlomnaya offshore platform in the Pechora Sea, Russia's first offshore oil-producing field of its kind in the Arctic. President Vladimir Putin proclaimed, "This is, in fact, the beginning of our country's enormous work on oil production in the Arctic. The entire project will exert a most encouraging influence on Russia's presence on the energy markets and will stimulate the Russian economy in general and its energy sector in particular."⁶⁶ First discovered in 1989, recoverable oil reserves from the Prirazlomnoye deposit are estimated at 71.96 million tons and more than 300,000 tons of oil were expected to be shipped in 2014, with the goal of achieving full output of 5 million tons per year by 2020.⁶⁷ On January 15, 2015, Gazprom Neft, the oil arm of Gazprom, announced that the Prirazlomnoye oil field had reached its 2014 production goal of 300,000 tons of oil. There is also discussion that an additional four Prirazlomnoye wells will be drilled in 2015.⁶⁸

66. Ari Phillips, "In Russia, World's First Ice-Resistant Oil Platform Starts Production," *Climate Progress*, April 21, 2014, <http://thinkprogress.org/climate/2014/04/21/3429130/russia-arctic-offshore-oil-platform/>.

67. "First tanker with Arctic crude oil leaves Prirazlomnaya platform," Voice of Russia, April 19, 2014, http://voiceofrussia.com/news/2014_04_19/First-tanker-with-Arctic-crude-oil-leaves-Prirazlomnaya-platform-9211/.

68. Atle Staalesen, "300 thousand tons from Prirazlomnoye," *Barents Observer*, January 15, 2015, <http://barentsobserver.com/en/energy/2015/01/300-thousand-tons-prirazlomnoye-15-01>.

Russia has also recently begun transporting the first oil from the Novoportovskoye oil field in the Gulf of Ob. In August 2014, the oil product tankers SCF *Yenisei* and SCF *Pechora*, operated by OAO Sovcomflot, Russia's largest shipping company, began loading oil from the field and will utilize the Northern Sea Route to deliver the oil. According to Evgeniy Ambrosov, first deputy general director of OAO Sovcomflot, "The start of oil exports from the Novoportovskoye oilfield, using Sovcomflot's ships, forms part of the company's strategy to steadily increase the provision of transportation and logistics services supporting the largest oil deposits located in the far north of Russia. SCF Group also continues to develop the use of high-latitude Arctic routes from the Atlantic to the Pacific Oceans."⁶⁹

ROLE OF CIVIL SOCIETY AND PUBLIC OPINION

Over the past 10 years, Moscow has advanced ambitious Arctic development strategies and the region has witnessed a modest increase in economic activity, yet Russian public opinion is not very well informed about current Arctic developments, with the exception of the population living in the concerned regions. For the approximate 1.9 million Russian and indigenous peoples living in the Arctic,⁷⁰ new economic involvement of Russian firms, public or private, with or without a partnership with foreign investors, is welcome as it brings job opportunities and new investments to the region. For instance, Gazprom's philanthropic programs—building sports and health centers in Nadym and Novy Urengoy, an indoor ice arena in the Pangody settlement, and other facilities—are well publicized by both the firms and the local authorities, and well received by a population used to this type of state-encouraged corporate giving.

Increased governmental attention and focus on the Arctic has also raised concerns among environmental organizations, civil society, and indigenous groups that seek to protect the fragile and rapidly changing Arctic environment. Gazprom's project in the Yamal Peninsula, for example, has raised tensions with the Nenets—around 13,000 people—who use the land for reindeer pasture. The Nenets are very concerned about the destruction of the tundra and their inability to preserve their traditional knowledge and cultural heritage due to increased construction of energy infrastructure projects that separates their traditional herding patterns and transforms the tundra. Gazprom argues that it has made numerous "good neighborhood" gestures, including paying salaries to the Nenets tribesmen for herding, reimbursing Nenets women for looking after their families, and boarding their children for summer camps.⁷¹

In July 2012, the Russian Duma passed legislation requiring non-profit organizations and nongovernmental organizations (NGOs) that receive foreign donations or serve as the instrument of a foreign power to register as foreign agents with the Russian Ministry of

69. "Tankers SCF Yenisei and SVF Pechora begin shipping first oil from Novoportovskoye," *Port News*, August 23, 2014, <http://en.portnews.ru/news/185824/>.

70. Hugo Ahlenius, "Population distribution in the circumpolar Arctic, by country (including indigenous population)," UNEP/GRID-Arendal, 2008, http://www.grida.no/graphicslib/detail/population-distribution-in-the-circumpolar-arctic-by-country-including-indigenous-population_1282.

71. Anna Nemtsova, "Fight between Gazprom and Russia's herding nomads," *Telegraph*, July 4, 2011, <http://www.telegraph.co.uk/sponsored/rbth/society/8615405/Gazprom-and-reindeer-herding-nomads.html>.

Justice. In November of the same year, the Russian Ministry of Justice informed RAIPON (Russian Association of Indigenous Peoples of the North) that the organization had to close due to alleged irregularities in its organizational statutes.⁷² After successfully operating in Russia for 22 years, many observers viewed RAIPON's suspension as a way for the Kremlin to eliminate one of the last barriers preventing energy companies from extracting the Arctic's vast resources. In March 2013, after being closed for six months, RAIPON was permitted to reopen.

Russian environmental groups are doing their best to raise public awareness about current issues related to oil and gas exploitation. A 2012 report conducted by the World Wildlife Fund (WWF)–Russia, the International Institute for Sustainable Development (IISD), and the Global Subsidies Initiative (GSI) identified three critical gaps to ensure safe development in Russia's Arctic region: governance gap; knowledge and science gap; and a gap in the technical capability for oil spill response.⁷³ The report also concluded that due to these gaps, Russian tax relief schemes incentivize oil and gas companies to pursue projects with extremely high environmental risks offshore, as well as in new areas beyond the polar circle, instead of building up “smart” investments in energy efficiency and oil recovery.⁷⁴

International environmental activist groups have gone to more extreme measures to prevent energy development in the Russia Arctic. In September 2013, Greenpeace sent its ship *Arctic Sunrise* to protest at Gazprom's Prirazlomnaya oil rig in the Pechora Sea. Russia deemed the protest to be an act of piracy when the activists attempted to board the oil rig. Russian Special Forces seized control of the ship and detained the activists for three months, eventually reducing the charges from piracy to hooliganism. In August 2014, *Arctic Sunrise* was finally allowed to depart Murmansk and return to Amsterdam. However, the impact of environmental groups remains limited: they do not get the support of either national or regional authorities, and public opinion strongly supports the state's position and its actions against the *Arctic Sunrise*.⁷⁵

Building the Russian Arctic on Thawing Ground

One of the most significant obstacles to economic development in the Arctic in general has been the absence of infrastructure, although there is more maritime infrastructure in the European and Russian Arctic than the North American Arctic. Arctic infrastructure investment in Russia has increased significantly under President Putin's leadership. According to

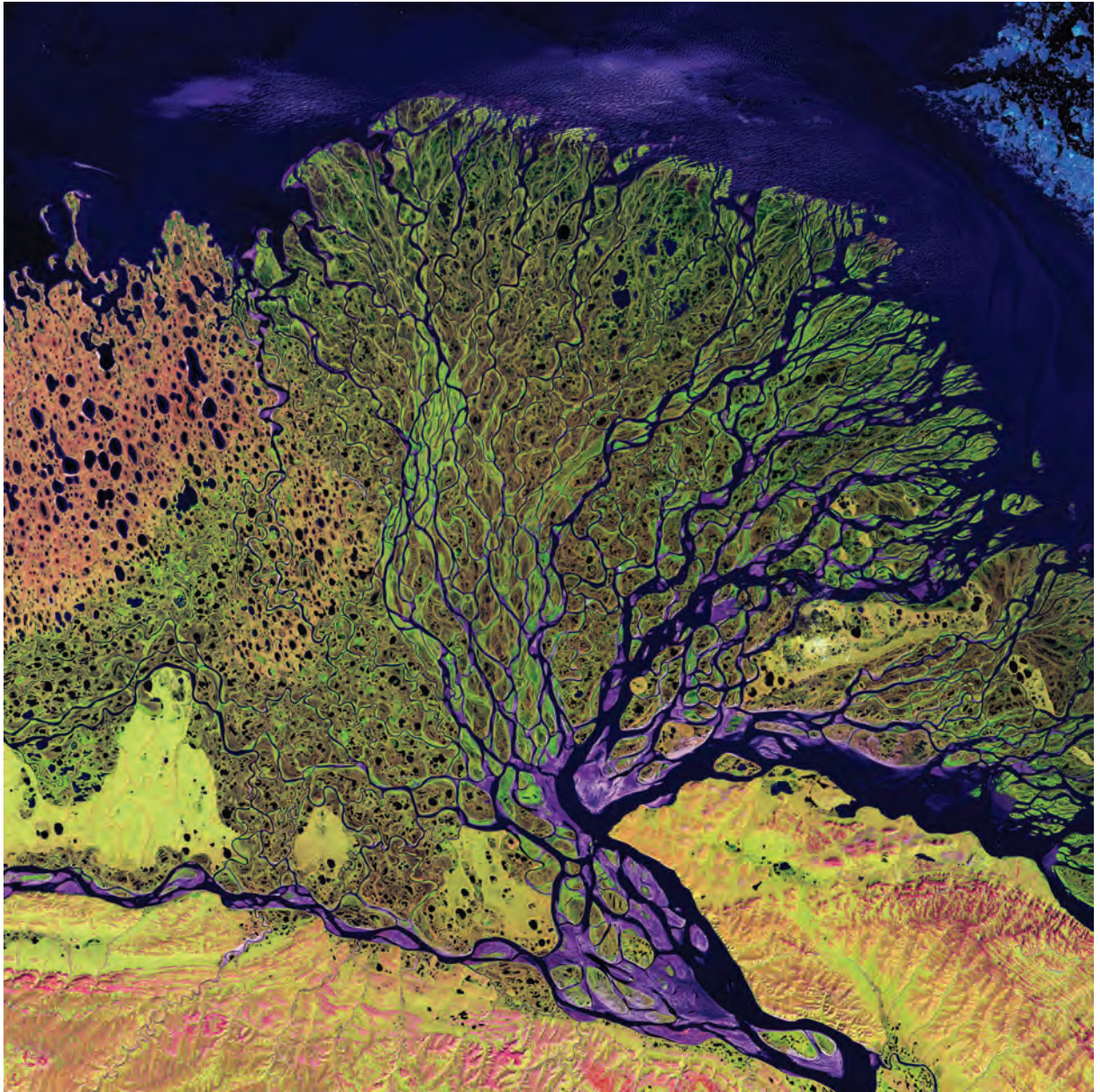
72. “Russian indigenous peoples’ organization ordered to close,” *Survival*, November 22, 2013, <http://www.survivalinternational.org/news/8845>.

73. Ivetta Gerasimchuk, *Fossil Fuels—At What Cost? Government support for upstream oil and gas activities in Russia* (Moscow: WWF-Russia, February 2012), 3, http://www.iisd.org/gsi/sites/default/files/ffs_awc_russia_eng.pdf.

74. *Ibid.*

75. Russian Public Opinion Research Center, “Arrest of Greenpeace Activists in Arctic,” September 3, 2013, <http://wciom.com/index.php?id=61&uid=867>.

Lena River Delta



Source: NASA, https://commons.wikimedia.org/wiki/File:Lena_River_Delta_-_Landsat_2000.jpg.

the OECD, total inland transport infrastructure investment rose from €3.1 billion in 1995 to €18.5 billion in 2011, with railway investment increasing from €1.1 billion to €9.8 billion, maritime port investment rising from €146 million to €326 million, and airport investment increasing from €262 million to €434 million.⁷⁶ While these figures apply to Russia as a whole, they indicate the trend of increased investment and the federal government's focus on developing and improving all aspects of Russian infrastructure.

76. OECD, "Transport Infrastructure Investment and Maintenance Spending," February 12, 2014, http://stats.oecd.org/Index.aspx?DataSetCode=ITF_INV-MTN_DATA.

Russia's main Arctic rivers—Ob, Yenisei, and Lena—comprise Russia's Arctic watershed and are a vital component of transportation in Russia's northernmost regions. The construction of highways and railroads in these areas is impeded by the harsh climate, rough terrain, and vast distances between cities. As a result, these rivers provide a critical source of transportation stretching from the Ural Mountains to the west, and from Kazakhstan and Mongolia in the south. Russia's 2008 report, *Transport Strategy of the Russian Federation up to 2030*, identifies "strengthening the Northern Sea Route and the river network that links the route to the interior" as key objectives for Russia's Arctic region.⁷⁷ Regional ports, including Novy Port on the Ob River and Tiksi at the mouth of the Lena River, as well as mining towns along the Yenisei such as Dikson, Dudinka, and Igarka, provide access to the NSR and promote coastal shipping.⁷⁸ For instance, in 2009, Norilsk Nickel's privately owned fleet of icebreaking cargo ships accounted for roughly one million tons of shipping from Dudinka to the Kola Peninsula.⁷⁹ In addition to accessing the NSR, Russia's main Arctic rivers are also an important source of energy and natural resources. The Ob and Yenisei both provide hydroelectric power to oil and coal development in the region and the Lena provides access to gold and diamond mines.⁸⁰ However, due to severe climatic conditions and the high cost of maintenance, ports and other facilities along these rivers have deteriorated or have been abandoned since the end of the Cold War. As Arctic sea ice levels along the NSR and Russia's Arctic coast continue to decrease, particularly during the summer months, these rivers will become a greater connecting link between portions of Russia's mainland and Arctic shipping routes and resources. Significant investments, however, will be required to make the use of these rivers economically viable.

For Russia's Arctic regions, the development of the Northern Sea Route as well as the regional port, riverine, and search-and-rescue infrastructure are considered the most vital components.⁸¹ Russia's Arctic strategy for 2020 identifies the development of infrastructure and an integrated transport system in the Arctic as one of the primary goals. The strategy also guarantees state support for the expansion and improvement of infrastructure for transport, industry and energy, as well as scientific research and technological innovation. The 2008 *Transport Strategy of the Russian Federation up to 2030* emphasizes the need to develop the NSR into an international transport route with a system for monitoring shipping (an automated identification system [AIS]) and a communications system to facilitate search-and-rescue operations along the NSR.⁸² In 2011, the Russian government announced that approximately \$700 million would be spent over the following three years to achieve this goal. In addition, in 2009, the Russian government allocated approximately €20.6 million to construct 10 search-and-rescue centers from Murmansk to Provideniya.⁸³

77. Caitlyn Antrim, "The Next Geographical Pivot: The Russian Arctic in the Twenty-first Century," *Naval War College Review* 63, no. 3 (Summer 2010): 31, <https://www.usnwc.edu/getattachment/f8217b41-afd2-4649-8378-7b6c8a7e61d2/The-Next-Geographical-Pivot--The-Russian-Arctic-in>.

78. Ibid., 22.

79. Ibid.

80. Ibid., 23.

81. Carlsson and Granholm, *Russia and the Arctic*, 22.

82. Ibid.

83. Andrey Vokuev, "Russia opens first Arctic search and rescue center," *Barents Observer*, August 27, 2013, <http://barentsobserver.com/en/arctic/2013/08/russia-opens-first-arctic-search-and-rescue-center-27-08>.

GOVERNMENT PLAYERS

Energy-related infrastructure is under the purview of the Russian Ministry of Energy. Transit infrastructure falls under the umbrella of the Russian Ministry of Transport, which covers railways, roads and highways, as well as air and river transportation. Railways constitute the core of the ministry (which previously had a separate Ministry of Railroads), followed by air transport, while roads have traditionally been the neglected sector of Russian transportation. In 2013, Russia's Ministry of Transport developed rules of navigation in the water area of the Northern Sea Route, including regulations for ice-breaker assistance, ice pilotage of ships, radio communications, and requirements for safety of navigation and protection of the marine environment against ship pollution.⁸⁴ The transportation sector is considered by Moscow to be nationally strategic and is often supervised in close cooperation with the Ministry of Defense and the defense industry. For example, the transport minister from 2004 to 2012 was Igor Levitin, a military officer by training and profession.

Due to the increased number of shipping vessels along the Northern Sea Route, the Kremlin established the Northern Sea Route Administration (NSRA) in March 2013. Led by Aleksander Olshevskiy, the NSRA is responsible for the organization of procedures for shipping along the route, including reviewing permit applications and issuing licenses, and the introduction of safety and environmental measures, such as the installation of navigation equipment. In addition, the NSRA will harmonize search-and-rescue and environmental cleanup operations in the case of accidents.⁸⁵ In August 2013, there was some controversy when the NSRA refused to issue a transit permit to *Arctic Sunrise*, the Greenpeace icebreaker.⁸⁶ Greenpeace claimed that the regulations were being manipulated to prevent the organization's protests against Russian energy exploration in the Arctic.

Additional investments in infrastructure projects in the Russian Arctic will be largely dependent on the level of vessel traffic along the Northern Sea Route. In 2013, 71 large ships were able to navigate the NSR, a 54 percent increase compared to 2012. However, in 2014, only 53 vessels transited the route.⁸⁷ In order to ensure funding for additional infrastructure investments along the Northern Sea Route, the Russian Ministry of Transport is currently developing legislation that would prohibit Russian companies from exporting Russian oil and gas from the Arctic using foreign-registered ships.⁸⁸

84. Ministry of Transport of Russia, "Rules of Navigation on the Water Area of the Northern Sea Route," January 17, 2013, http://www.arctic-liaison.com/docs/nsr/legislation/20130425185806en-Rules_unof.pdf.

85. Atle Staalesen, "Opening the Northern Sea Route administration," *Barents Observer*, March 21, 2013, <http://barentsobserver.com/en/arctic/2013/03/opening-northern-sea-route-administration-21-03>.

86. John Helmer, "Russia Intensifies Control Over Northern Sea Route Shipping, But Suez May Still Win," *Business Insider*, September 5, 2013, <http://www.businessinsider.com/russia-intensifies-control-over-shipping-route-2013-9>.

87. Trude Pettersen, "Northern Sea Route traffic plummeted," *Barents Observer*, December 16, 2014, <http://barentsobserver.com/en/arctic/2014/12/northern-sea-route-traffic-plummeted-16-12>.

88. Atle Staalesen, "Russian Arctic for Russian ships," *Barents Observer*, June 19, 2015, <http://barentsobserver.com/en/energy/2015/06/russian-arctic-russian-ships-19-06>.

REGIONAL PLAYERS

There are currently 85 regions—or federal subjects (including the Republic of Crimea and Sevastopol)—in the Russian Federation that seek subsidies and funding from Moscow to improve local infrastructure. Some of the most successful Arctic regions to receive state funds are Murmansk, Arkhangelsk, and Yakutia-Sakha. These three regions vie against one another to receive state investment in port infrastructure, new oil and gas terminals, and participation in the Belkomur railway project. When constructed, the 1,155 kilometer Belkomur railway will link the mining and industrial areas in the South Urals to the port of Arkhangelsk, as well as Murmansk.⁸⁹ Infrastructure competition is particularly intense between the Murmansk and Arkhangelsk regions. Murmansk claims it has the most developed infrastructure to receive large oil tankers and has access to open seas; Arkhangelsk argues, on the other hand, that it can easily organize trans-shipment from ships to railways.⁹⁰ The Yakutia-Sakha region, not to be left behind, seeks to revive its main port, Tiksi, on the Arctic coast to the south of the Lena River delta (which has fallen into partial disrepair), and Zelenyi Mys, which is located on the Kolyma River (and is practically shut down).

Originally started in 2008 when Prime Minister Vladimir Putin signed a decree, the Murmansk Transport Hub project aims to combine various modes of transportation to make Murmansk one of Russia's most strategic locations. Currently, Murmansk is the only port in European Russia with open access to major oceanic routes, including the NSR, making it the northern gateway of Russia. Its commercial seaport is the second largest port in Northwest Russia in terms of cargo turnover after St. Petersburg. It is also the only port in Northwest Russia that can serve ships with a carrying capacity of up to 80,000 tons (Panamax-type vessels). The transport project will include reconstruction of a coal terminal, construction of a new coal terminal, a container terminal, and a railway line along the western shore of the Kola Bay.⁹¹ The Transport Hub is expected to be financed with €1.6 billion from the federal budget, while Russian Railways has agreed to invest €1 billion on new branch railways in the harbor area.⁹² According to the 2009 *Arctic Marine Shipping Assessment*, more than €4.4 billion have been invested since 2004 in improving Murmansk's deep-water port facilities with the goal of increasing the port's annual capacities to 28.5 million tons by 2010 and 52 million tons by 2020.⁹³

However, developments of the Transport Hub have recently stalled due to changes in federal funding. In April 2014, the Russian government announced that it intended to move

89. Thomas Nilsen, "Sign Belkomur railway agreement," *Barents Observer*, February 27, 2013, <http://barentsobserver.com/en/business/2013/02/sign-belkomur-railway-agreement-27-02>.

90. "Arkhangelskie vlasit zaiavliait, chto konkurentsii s Murmanske v proekte 'Belkomur' net" [Arkhangelsk authorities claim that there is no competition in the Murmansk project 'Belkomur'], *Belkomur*, January 27, 2013, http://www.belkomur.com/news/index.php?ELEMENT_ID=2661&PHPSESSID=aeec81f87d6fc92228178dfc23ada44d.

91. "Pre-investment stage for Murmansk transport hub," *Barentsnova*, October 3, 2011, <http://barentsnova.com/business-overview/our-stories/631-pre-investment-stage-for-murmansk-transport-hub/page,90/>.

92. Atle Staalesen, "Murmansk Transport Hub back on agenda," *Barents Observer*, February 15, 2013, <http://barentsobserver.com/en/business/2013/02/murmansk-transport-hub-back-agenda-15-02>.

93. B. Ellis and B. Lawson, eds., *Arctic Marine Shipping Assessment 2009 Report* (Tromsø, Norway: Arctic Council, April 2009), 179, http://www.arctic.noaa.gov/detect/documents/AMSA_2009_Report_2nd_print.pdf.

Murmansk Harbor



Source: Wikimedia Commons. Photo by Martin Lie, <https://commons.wikimedia.org/wiki/File:MurmanskHarbour.jpg>.

31.5 million rubles of state funding for the Murmansk Transport Hub project to other infrastructure projects in the newly annexed Crimea.⁹⁴ The reduction in funding came after assurances from President Putin that major state investments in Crimea would not affect projects in Russia's other regions. Previously, the project had been stalled when Gazprom indefinitely postponed the development of the Shtokman project, which was supposed to pipe gas through Murmansk and the Kola Peninsula to the Baltic Sea. However, in late 2013, Rosneft announced it would claim a 75 percent stake in the Murmansk Transport Hub and take over development of the project.⁹⁵

In 2014, state investment in the Murmansk District was the fifth largest in Russia.⁹⁶ In the same year, Russia concluded state contracts worth €550.3 million for development of the Murmansk Transport Hub. Throughout Russia, roughly 44 percent of infrastructure

94. Atle Staalesen, "Murmansk fights Moscow over Transport Hub," *Barents Observer*, April 24, 2014, <http://barentsobserver.com/en/business/2014/04/murmansk-fights-moscow-over-transport-hub-24-04>.

95. Atle Staalesen, "Sechin ready to invest in Murmansk," *Barents Observer*, December 12, 2013, <http://barentsobserver.com/en/energy/2013/12/sechin-ready-invest-murmansk-12-12>.

96. Trude Pettersen, "State investments in Murmansk Oblast on top 5 list," *Barents Observer*, January 16, 2015, <http://barentsobserver.com/en/business/2015/01/state-investments-murmansk-oblast-top-5-list-16-01>.

projects are at least partially funded by private investors or public-private partnerships.⁹⁷ For instance, private Finnish investors have provided the majority of investment for a transport corridor, including a new 426 kilometer highway, between the Republic of Karelia and Finland. The purpose of this transport corridor is to “boost the investment attractiveness of the adjacent territories and significantly improve the transport connection between Europe and Central Russia.”⁹⁸ However, the economic slowdown prior to 2014, the decrease in energy prices in 2014, and the need to largely subsidize the costs of annexing Crimea have also decreased the availability of funds for Arctic regions, with many infrastructure projects substantially delayed or cancelled.

ROLE OF STATE-OWNED AND PRIVATE COMPANIES

As in other sectors of the Russian economy, there are no significant differences between state-owned and private infrastructure companies. Many Russian private companies in the energy transit and the infrastructure development sectors are owned by oligarchs who have very close ties to the Kremlin.

The most well-known actor in the Russian transportation sector is Vladimir Yakunin, the head of Russian Railways (RZhD), who controls a large part of the oil export industry and is currently under U.S. sanctions as of March 2014 (but not EU sanctions).⁹⁹ Often dubbed the “Chekist Orthodox” in the Russian media because of prior KGB service and his pronounced Orthodox orientation, Yakunin is very close to Putin. The two men met in 1991 at the International Center of Business Cooperation, a company under the supervision of the FSB. Based in St. Petersburg, it is responsible for attracting foreign investment. Yakunin began a new career in transportation in 2000, when he obtained the post of deputy minister of transport, then became head of the Russian Railways in 2003. His appointment raised a storm of protest among senior officers of the company who accused him of having little knowledge about the institution, but his links to the secret services allowed him to remain in this crucial position.

Transneft, the state-owned pipeline monopoly, has jurisdiction over Russia’s pipeline oil exports and is responsible for transporting approximately 90 percent of the oil extracted in Russia.¹⁰⁰ As a result of Western-imposed sanctions, Transneft announced in September 2014 that the company will likely have to delay the launch of two new oil pipelines in Siberia—the Zapolyarye-Purpe and Kuyumba-Taishet pipelines—by two to three

97. Ernst & Young Global Limited, “The Road to 2030: A Survey of Infrastructure Development in Russia,” 2014, 8, [http://www.ey.com/Publication/vwLUAssets/EY-russia-infrastructure-survey-2014-eng/\\$FILE/EY-russia-infrastructure-survey-2014-eng.pdf](http://www.ey.com/Publication/vwLUAssets/EY-russia-infrastructure-survey-2014-eng/$FILE/EY-russia-infrastructure-survey-2014-eng.pdf).

98. Atle Staalesen, “Karelia strikes €4.6 billion East-West infrastructure deal,” *Barents Observer*, June 20, 2013, <http://barentsobserver.com/en/business/2013/06/karelia-strikes-eu46-billion-east-west-infrastructure-deal-20-06>.

99. Matthew Dalton, Laurence Norman, and Naftali Bendavid, “EU Slaps Sanctions on 12 More Russian Officials,” *Wall Street Journal*, March 21, 2014, <http://www.wsj.com/articles/SB10001424052702303802104579452874204999760>.

100. Elena Popina, “Transneft Advances as Investors Ignore Analysts’ Calls,” *Bloomberg*, March 5, 2015, <http://www.bloomberg.com/news/articles/2015-03-05/transneft-advances-as-investors-ignore-analysts-calls>.

years.¹⁰¹ Before the implementation of Western sanctions, construction of both pipelines was to be completed by 2016. In March 2010, Transneft began construction of the 488 kilometer Zapolyarye-Purpe pipeline, located in the Yamalo-Nenets region in East Siberia, that is intended to link the oil fields in the Yamal-Nenets region to the East Siberia–Pacific Ocean (ESPO) pipeline, as well as the main pipeline grid and Russia’s oil refineries before being exported to the Asia-Pacific region.¹⁰² When completed, the \$3.83 billion pipeline project will be able to transport 45 million tons of crude a year, nearly 9 percent of Russia’s world leading output.¹⁰³ In December 2013, Transneft began construction of the 700 kilometer Kuyumba-Taishet pipeline, located in the Krasnoyarsk Territory in East Siberia. The \$3.6 billion pipeline will transport 15 million tons of oil per year from Russia’s northern oil fields—notably the Kuyumba and Yurubcheno-Tokhoma fields—to China.¹⁰⁴

ENERGY INFRASTRUCTURE

As energy demand in China and India grows, the decline of the European market will be offset. Increasingly, Russia will turn toward Asia as the 2014 Sino-Russian energy partnership suggests. But this geo-economic change will come at a high price, as Russia’s energy infrastructure is currently oriented toward Europe, and the reorientation toward Asia entails massive investments and thus rising costs. New production from the Yamal Peninsula is therefore crucial to satisfy both domestic requirements and export consumers in coming years, yet there have been numerous delays in energy infrastructure investments.

The main challenge for the Yamal megaproject is the total absence of infrastructure on the peninsula, but the deposits may be linked to the nearby Nadym-Pur-Taz network. In 2013, French company Technip and the Japanese JGC won the tender to lead the construction of the Yamal LNG plant. Novatek and Gazprom have agreed to jointly conduct all project preparations, including construction plans and field development programs. The plant, which will have a capacity of 16.5 million tons, will be built based on the resources of the South Tambey gas condensate project, a field which yields about 1.25 trillion cubic meters of natural gas.¹⁰⁵ Construction of the Yamal-Europe pipeline began in 1994 and the first strand of the pipeline has been operational since 1999. Over 2,000 kilometers long, the Yamal-Europe pipeline is the primary gas route from the Urengoy gas field in the Yamalo-Nenets region to Russia’s east European clients, with a capacity of 32.9 billion cubic meters. In April 2013, President Putin promoted the return to the Yamal-Europe 2 project, a second

101. Olesya Astakhova, “Russia’s Transneft says sanctions may delay oil pipelines launch,” Reuters, September 16, 2014, <http://www.reuters.com/article/2014/09/16/us-russia-transneft-sanctions-idUSKBN0HB1G520140916>.

102. Stephen Bierman, “Transneft Begins Building Arctic Pipeline to Open Oil Province,” Bloomberg, March 19, 2012, <http://www.bloomberg.com/news/articles/2012-03-19/transneft-begins-building-arctic-pipeline-to-open-oil-province>.

103. Ibid.

104. Anatoly Medetsky, “Construction of New Pipeline from North Siberia to China Kicks Off,” *Moscow Times*, December 18, 2013, <http://www.themoscowtimes.com/business/article/construction-of-new-pipeline-from-north-siberia-to-china-kicks-off/491796.html>.

105. Atle Staalesen, “French, Japanese technology for Yamal LNG,” *Barents Observer*, April 3, 2013, <http://barentsobserver.com/en/energy/2013/04/french-japanese-technology-yamal-lng-03-04>.

Map of Russian Pipelines to Europe



Source: Wikimedia Commons. Image by Samuel Bailey, https://commons.wikimedia.org/wiki/File:Major_russian_gas_pipelines_to_europe.png.

leg of the Yamal-Europe pipeline that was originally proposed in 2005. The project is expected to cost \$5 billion and could be completed by 2019 with a capacity of 15 billion cubic meters.¹⁰⁶

106. "Russia revives \$5bn Yamal-Europe pipeline project," RT, April 4, 2013, <http://rt.com/business/gazprom-yamal-europe-project-5bn-328/>.

Running through the Baltic Sea, the first branch of the 1,224 kilometer Nord Stream pipeline was opened in November 2011, with an initial capacity of 27 billion cubic meters. After its first year of operation, the capacity doubled; however, the cost of the project rose to \$7.4 billion.¹⁰⁷ The Yuzhno-Russkoye oil and gas field will be the key resource base for the Nord Stream, but the pipeline will also export gas from the Yamal Peninsula, Ob and Taz Bays, and Shtokman field. Linking Russia to Europe, the Nord Stream pipeline bypasses Ukraine and other traditional transit countries with the aim of avoiding gas disruptions, as happened in 2006 and 2009, thus improving Europe's energy security. In June 2015, Gazprom officials met with representatives from Austrian energy company OMV to sign an agreement to begin considering the construction of two additional lines of Nord Stream, which are expected to be in service by 2019.¹⁰⁸

The exploitation of new fields necessitates huge investments in modern oil and gas terminals. The main Arctic terminals—Arkhangelsk, Kolguev, Mokhnatkina Pakhta, Murmansk, Ob Bay, Varandey, and Vitino—have undergone expansions and witnessed an increase of oil shipments from approximately 4 million tons of crude in 2002 to 10 million tons in 2008. In 2007, Lukoil, a private Russian oil company, began installation of a fixed offshore ice-resistant off-loading terminal (FOIROT) on the bottom of the Barents Sea. FOIROT is connected to the Varandey oil terminal with a capacity of 325,000 cubic meters via two subsurface oil pipelines. FOIROT began operating in 2008 with a capacity of 12 million tons of oil per year, and by 2013, 26.4 million tons of oil had been shipped by 381 ice-class tankers through the terminal.¹⁰⁹

In order to participate in the growing LNG market, Russia will have to invest massively in LNG tankers. In 2011, Vyacheslav Popov, leader of the Commission on National Maritime Policy in the Russian Federation Council, stated that by 2020 Russia will need a total of 30 LNG tankers capable of transporting up to 25 million tons of LNG per year.¹¹⁰ At the time, Popov estimated that the Shtokman and Yamal LNG projects would each require 12 tankers, and the remaining 6 will be used for the Kumzhinskoye and Korovinskoye fields. In 2011, Popov also reported that Russian companies have a total of 150 vessels of various kinds that are suited for Arctic operations.¹¹¹ In the same year, Sovcomflot signed an agreement with Gazprom stipulating the lease of two Atlanticmax-type vessels, each with a capacity of 170,000 cubic meters, over a 15 year period.¹¹² The tankers will serve the sub-Arctic Sakhalin-II project, which will include the development of the Piltun-Astokhskoye

107. Ibid.

108. Daniel J. Graeber, "Gazprom: New lines for Nord Stream by 2019," UPI, June 26, 2015, http://www.upi.com/Business_News/Energy-Resources/2015/06/26/Gazprom-New-lines-for-Nord-Stream-by-2019/7911435322452/.

109. "Lukoil Celebrates 5 Years Since 1st Oil Shipment from FOIROT Offshore Terminal," *Offshore Energy Today*, June 20, 2013, <http://www.offshoreenergytoday.com/lukoil-celebrates-5-years-since-1st-oil-shipment-from-foirot-offshore-terminal/>.

110. Atle Staalesen, "30 Arctic LNG tankers by year 2020," *Barents Observer*, June 28, 2011, <http://barentsobserver.com/en/energy/30-arctic-lng-tankers-year-2020>.

111. Ibid.

112. "Gazprom Global LNG and 'Covkomflot' signed an agreement on long-term lease of two gas tankers," Gazprom, June 17, 2011, <http://www.gazprom.ru/press/news/2011/june/article113879/>.

Tanker Arriving at the Prirazlomnaya Oil Rig



Source: Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Prirazlomnoye_tanker.jpg.

oil field and the Lunskeye natural gas field in the Okhotsk Sea, and will later serve the Shtokman project.

More recently in 2014, Total is managing a project to construct 15 icebreaking LNG vessels, each with a 170,000 cubic meter capacity, for the Yamal LNG megaproject. Non-Russian shipping companies are expected to take part in the project, including Japanese operator Mitsui OSK Lines and China's first LNG tanker operator, China LNG Shipping Holdings.¹¹³ The ships will be the first ice-class LNG carriers with the ability to break 1.6 meters of ice at 5 knots, thus enabling the fleet to operate on the Northern Sea Route without full-time icebreaker assistance. In February 2014, Jacques Besse, head of LNG shipping for Total Gas and Power, reported that the first ship will be developed in February 2016 and will conduct ice trials before becoming fully operational. Following seasonal ice patterns, the icebreaker tanker fleet is expected to supply gas to Asian markets in the summer and to European terminals the rest of the year.

113. "Yamal LNG tenders icebreaking tanker fleet," *LNG Shipping News*, February 20, 2014, <http://www.lngjournal.com/lng/lngunlimited/2012/ls2014february20/files/html5/index.html>.

SHIPPING INFRASTRUCTURE

The Northern Sea Route continues to be the focus of Russia's Arctic transportation development efforts. According to a July 2012 law passed by the State Duma on the regulation of commercial navigation in the NSR, the new Northern Sea Route Administration will have an annual budget of about \$1.1 million and will set forth tariffs and regulations regarding "navigation safety and prevention, reduction, and control of pollution in the marine environment."¹¹⁴ The new headquarters of the NSRA opened in Moscow on January 28, 2013.

There is a growing sense that optimism regarding the NSR as a transit route has been overstated. In 2013, 71 large ships were able to navigate the NSR and Russia expects a 30-fold increase in shipping by 2020.¹¹⁵ However, in 2014 the number of vessels transiting the NSR plummeted to roughly 53¹¹⁶ and the amount of cargo shipped along the NSR also dropped significantly from over 1.3 million tons in 2013 to just 274,000 in 2014.¹¹⁷ According to Aleksander Olshevskiy, the head of the Northern Sea Route Administration, the drop in NSR transits is not a result of the current geopolitical climate, but instead the drop in cargo transport is primarily due to a disagreement in prices between customers and freighters.

Sovcomflot (SCF) is Russia's largest shipping company, as well as a global leader in the maritime transportation of hydrocarbons. The company is also the world's largest operator of ice-class LNG tankers, with a fleet of 153 vessels, one-third of which are classified as "high ice class."¹¹⁸ In addition to transporting hydrocarbons, Sovcomflot also services and supports offshore oil and gas production, including the Sakhalin, Varandey, and Prirazlomnoye fields.

In 2014, Rosneft received approval to begin construction of two shipbuilding facilities, one at Roslyakovo and the other at Zvezda, to produce seagoing vessels and platforms for offshore development. The shipyard complex in Roslyakovo will consist of both military and civilian shipbuilding facilities and production at the Zvezda shipyard is expected to begin in 2015.¹¹⁹ Rosneft's ship construction is part of Russia's larger strategy to develop the Arctic, particularly its infrastructure along the Northern Sea Route. In October 2013, Igor Slyuniaev, the regional development minister, stated that the federal government

114. Mia Bennet, "Russia roars ahead in race to develop Arctic shipping route," *Alaska Dispatch News*, January 15, 2013, <http://www.alaskadispatch.com/article/russia-roars-ahead-race-develop-arctic-shipping-route>.

115. John Vidal, "Russian Arctic city hopes to cash in as melting ice opens new sea route to China," *Guardian*, February 1, 2014, <http://www.theguardian.com/world/2014/feb/01/arctic-city-new-route-china>.

116. Associated Press, "Number of Ships Transiting Arctic Waters Falls in 2014," *New York Times*, January 5, 2015, <http://www.nytimes.com/aponline/2015/01/05/us/ap-us-arctic-shipping.html>.

117. Pettersen, "Northern Sea Route traffic plummeted."

118. "Tankers SCF Yenisei and SVF Pechora begin shipping first oil from Novoportovskoye," *Bunker Ports News Worldwide*, August 23, 2014, <http://www.bunkerportsnews.com/News.aspx?ElementId=e037d151-35cd-4c5e-b475-2e6eef3e2927>.

119. "Russian Gov't Approves 2 Arctic Shipyards by Rosneft," *Sputnik International*, February 8, 2014, <http://sputniknews.com/business/20140208/187329007.html>.

50 Years of Victory, the World's Largest Nuclear-Powered Icebreaker



Source: Photo by Christopher Michel, <https://www.flickr.com/photos/cmichel67/18955570954>.

intends to spend approximately \$63 billion by 2020 to develop Russia's Arctic region.¹²⁰ In August 2015, Maxim Kochetkov, director of the department for shipbuilding and maritime technologies with the Ministry of Industry and Trade, announced that Russia would invest nearly \$91 billion to construct more than 1,200 ships, vessels, and maritime units by 2030.¹²¹ Kochetkov estimates that over 90 percent of the fleets servicing Russia's inland waterways were built over 20 years ago.

One of the first priorities in the development of the NSR, as well as Russia's Arctic region as a whole, has been to revive its icebreaker fleet. In 2011, Russia had six nuclear-powered icebreakers, four heavy icebreakers of the Arktika class, and two smaller ones of the Taimyr class.¹²² Currently, Russia has 40 governmental and privately owned conventional and nuclear icebreakers with 11 additional icebreakers in development or planning

120. John Daly, "Russia's Rosneft to Build Arctic Seagoing Vessels," OilPrice, February 10, 2014, <http://oilprice.com/Energy/Energy-General/Russias-Rosneft-to-Build-Arctic-Seagoing-Vessels.html>.

121. "Russia to build more than 1,200 seacraft until 2030," ITAR-TASS, August 6, 2015, <http://tass.ru/en/economy/813008>.

122. Carlsson and Granholm, *Russia and the Arctic*, 23.

stages, including 3 new nuclear-powered icebreakers to be completed by 2020.¹²³ However, significant upgrades will be required because the greater part of Russia's icebreaker fleet was built in the 1970s and 1980s and nearly all of them will be decommissioned by 2020.¹²⁴ In order to maintain its fleet, in 2012 the Russian Ministry of Transport ordered three nuclear-powered and three diesel-electric icebreakers, the first of which should be in service by 2016 or 2017.¹²⁵

By 2012, Russia aimed to have eight floating nuclear power stations, which could be positioned along Russia's north coast and provide the power supply for Russia's planned push to the North Pole.¹²⁶ Each power station is expected to cost \$400 million and will be able to supply electricity and heating for communities of up to 45,000 people and can stay on location for 12 years before requiring servicing. The first floating nuclear power plant (NPP), Akademik Lomonosov, was launched in 2010 by Rosatom, Russia's nuclear engineering group. Rosatom anticipated that within two years the Akademik Lomonosov, a 21,500-ton barge equipped with twin 35-megawatt light-water reactors, would be operating at an Arctic oil and gas operation in the Kamchatka region of Russia's Far East.¹²⁷ However, due to financial problems, the shipyard was unable to complete the NPP on time and it is now expected to be completed for delivery by 2018.

Rosatom currently has six Russian NPPs under construction, including Akademik Lomonosov, and an additional six under construction in foreign countries, including Belarus, Turkey, and China. Particularly in light of current geopolitical tensions with the West, Russia is increasingly turning toward Asia for investment and collaboration on energy projects. Since the \$400 billion gas deal was signed in May 2014, Russia and China have been discussing jointly developing six floating nuclear power plants. Rosatom's export branch, Rusatom Overseas, announced in July 2014 that it had signed a memorandum of understanding with China on the development of the floating NPPs starting in 2019.¹²⁸

With the increased development of NPPs and nuclear vessels, the federal government gave Atomflot the task of creating a unified center for reloading and servicing all of Russia's nuclear-powered vessels including icebreakers, naval vessels, submarines, and the floating nuclear power plants. Andrey Zolotkov, leader of Bellona Murmansk, believes that such a center could lead to a standardization of processes related to the repair and service

123. Milosz Reterski, "Breaking the Ice: Why the United States Needs Nuclear-Powered Icebreakers," *Foreign Affairs*, December 11, 2014, <http://www.foreignaffairs.com/articles/142516/milosz-reterski/breaking-the-ice>.

124. Carlsson and Granholm, *Russia and the Arctic*, 23.

125. Ibid.

126. Richard Galpin, "Nuclear power at heart of Russia's Arctic ambition," BBC News, September 22, 2010, <http://www.bbc.co.uk/news/world-11381773>.

127. Peter Fairley, "Russia Launches Floating Nuclear Power Plant," *IEEE Spectrum*, July 2, 2010, <http://spectrum.ieee.org/energywise/energy/nuclear/russia-launches-floating-nuclear-power-plant>.

128. Svetlana Burmistrova, "Russia's Rosatom, China may develop floating nuclear power plants," Reuters, July 29, 2014, <http://www.reuters.com/article/2014/07/29/us-russia-rosatom-idUSKBN0FY1IB20140729>.

of nuclear installations, as well as the reloading of reactors.¹²⁹ In spite of the government's push for the creation of such a center, Atomflot has not finalized any decision.

PORTS

Ports have been among the biggest losers of the 1990s economic collapse and their infrastructure has been deteriorating since, especially along the NSR. There are at least 18 ports serving as export outlets for Russian oil to various global markets, and seven principal Arctic seaports along the Northern Sea Route from the Kara and Yugoskiy Shar straits to the Bering Sea.¹³⁰ The principal NSR ports include Amderma, Dikson, Dudinka, Khatanga, Tiksi, Pevek, and Mys Shmidta.

Today the shipping traffic is almost exclusively limited to the western section of the Russian Arctic coast, between Murmansk and Dudinka. With the increase in gas production and cooperation between Norway and Russia, the Barents Sea (not legally part of the NSR) is bound to become the most dynamic part of the Russian Arctic and the most congested with ships and vessels. The West Kara Sea is also experiencing an increase in oil traffic from the West Siberian fields bound for northern Europe, and the exploitation of the South Kara Sea deposits by Rosneft will likely accelerate this trend. Since 2000, small tankers have transported gradually increasing volumes of oil from the new Varandey terminal on the Pechora coast. Timber exports, ores, and processed metals are also shipped from the Yenisei River port of Igarka via the Kara Sea.¹³¹ Once the deposits of the South Kara Sea are under exploitation, and the Yamal Peninsula starts production of LNG, domestic freight could grow up to 50 million tons by 2020.¹³²

The eastern part of the Russian Arctic sees much less traffic, albeit with some notable one-time exceptions: in 2004, several tens of thousands of tons of pipes destined for a Gazprom gas pipeline were transported by sea to Chukotka.¹³³ Around 60 percent of the incoming freight passing through the port of Igarka and ports on the Kolyma River comes directly by sea, while the rest moves at least in part along the Lena River.¹³⁴ The potential exploitation of new mineral deposits in East Siberia could revive some of the traffic, as the sites will require heavy construction materials that are easier to transport by sea.

129. "Atomflot can become base for all Russian nuclear vessels," *Barents Observer*, February 13, 2014, <http://barentsobserver.com/en/energy/2014/02/atomflot-can-become-base-all-russian-nuclear-vessels-13-02>.

130. American Bureau of Shipping, *Navigating the Northern Sea Route: Status and Guidance* (Houston, TX: American Bureau of Shipping, 2013), 22, http://www.eagle.org/eagleExternalPortalWEB/ShowProperty/BEA%20Repository/References/Capability%20Brochures/NSR_Advisory.

131. Atle Staalesen, "Varandey terminal boosted profits," *Barents Observer*, June 3, 2010, <http://barentsobserver.com/en/sections/energy/varandey-terminal-boosted-profits>.

132. Ibid.

133. Iceland Ministry for Foreign Affairs Working Group, *North Meets North: Navigation and the Future of the Arctic* (Reykjavik: Ministry for Foreign Affairs, February 2005), 14, http://www.mfa.is/media/Utgafa/North_Meets_North_netutg.pdf.

134. Pierre Thorez, "La Route maritime du Nord: Les promesses d'une seconde vie" [The Northern Sea Route: Promise of a second life], *Le Courrier des Pays de l'Est*, no. 2 (2008): 58, <http://www.cairn.info/revue-le-courrier-des-pays-de-l-est-2008-2-page-48.htm>.

In 2013, construction began on the Port of Sabetta on the Yamal Peninsula, which is expected to become one of the biggest ports in the Russian Arctic. Construction of the port will be a joint initiative between Novatek and the federal government and total investments amount to €1.82 billion.¹³⁵ Located on the gas-rich Yamal Peninsula and within easy access to the Northern Sea Route, the port is expected to become one of Russia's most important freight and transportation hubs in the Arctic. The port will be linked with the South Tambey field and a major projected LNG plant, and will be constructed to handle more than 30 million tons of goods per year.¹³⁶ According to Andrei Smirnov, Atomflot's deputy general director for fleet operations, volumes of transported LNG could increase up to 50 million tons; by 2019, the Port of Sabetta could enable more than 16 million tons of LNG to be transported along the NSR.¹³⁷

According to Sergei Antonov, RosMorPort's deputy director, the volume of shipments via Russia's Arctic ports is expected to increase from 72 million tons to 115 million tons over the next 15 years due to modernization of existing port facilities and the construction of new terminals.¹³⁸ Yet in spite of Russia's push to develop its Arctic region, the turnover of Russian Arctic sea ports is currently on the decline. From January to March 2014, Arctic basin reports handled 8.7 million tons of cargo, 18.2 percent less than in the same period in 2013.¹³⁹ During this time period, turnover decreased by 14.8 percent at the Port of Murmansk, 7.4 percent at the Port of Arkhangelsk, while Arctic turnover rose by 16.6 percent at the Port of Varandey. Moreover, the structure of cargo passing through Russia's Arctic ports is also changing; the volume of dry cargo increased by 11.6 percent to 6.2 million tons, while liquid cargo decreased by half to 2.5 million tons. There are several reasons for the comparatively weak development of Russian ports and the current decline in turnover. First, the issue is part of a larger development problem concerning Russia's transport infrastructure, which includes obsolescent existing infrastructure, as well as slow modernization and construction of new infrastructure. Second, the absence of definite governmental programs with specific plans and objectives has also slowed development. Finally, the issue of declining turnover is due partly to the inability of the majority of Russian ports to meet modern quality conditions and thus the volumes of freight traffic cannot be increased.¹⁴⁰

RAILWAYS AND AIRPORTS

The Russian State Railway Company (RZhD) is the largest company by sales volume in Russia after Gazprom and the two leading oil companies, Rosneft and Lukoil. Included in

135. Pettersen, "Construction of Sabetta port to start this summer."

136. Ibid.

137. "Ships loaded with cargo for the construction of port Sabetta escorted by icebreakers," Arctic Info, March 20, 2013, <http://www.arctic-info.com/News/Page/ships-loaded-with-cargo-for-the-construction-of-port-sabetta-escorted-by-icebreakers->.

138. "Capacity of Russian Arctic Ports to Grow by 60% Over Next 15 Years," *Sputnik International*, February 18, 2015, <http://sputniknews.com/business/20150218/1018429876.html>.

139. "Arctic ports became less busy," *Barentsnova*, April 14, 2014, <http://barentsnova.com/business-overview/our-stories/1017-arctic-ports-became-less-busy/>.

140. Ibid.

its development plans for the period up to 2030, Russian Railways intends to build two railway lines, one from Sosnogorsk in the Komi Republic to Indiga, and the other from Vorkuta in Nenets Autonomous District to Amderma.¹⁴¹ There was also some discussion in 2010 of building a deep-water harbor in Indiga for trans-shipment of cargo to and from Siberia. As Russia continues to develop its infrastructure along the NSR, it is believed that Amderma, with its airport and future railroad, could play a significant role as a check point for traffic on the NSR.

In early 2013, Arkhangelsk announced its plans to build a deep-water port that would also connect into the planned Belkomur railway, which is expected to run from Arkhangelsk, on the White Sea, to Perm, near the Ural Mountains. The railway, which falls under the Russian Federation's railway plan through 2030, would be part of the Northern Transport Corridor ultimately connecting Finland, the Urals, Central Asia, and the Far East.¹⁴²

In March 2014, Russian companies Stroygazkonsulting and Story-Trest were approved to take part in a tender on the construction of a 28 kilometer railway line along the western shore of Kola Bay, a central component of the long-discussed Murmansk Transport Hub project. The companies have offered to construct the railway for between €800 to €880 million, which will also include the construction of a bridge across the Tuloma River.¹⁴³ In addition to the railway, there are plans to build a 20 million ton capacity coal terminal and a 35 million ton capacity oil terminal. However, due to a decline in Russia's energy developments, Stroygazkonsulting is falling into financial crisis

In 2012, Russia was investing as much as \$800 million to upgrade airport facilities at Krasnoyarsk, to serve as Russia's air gateway to the Arctic Bridge, a seasonal route linking Russia to Canada.¹⁴⁴ The Arctic Bridge, which links Churchill, Manitoba, to the port of Murmansk, and may now link Winnipeg to Krasnoyarsk, could serve as a major trade route between Europe and Asia. On April 2, 2013, Prime Minister Dmitry Medvedev ordered the reopening of a remote airport in Tiksi, which serves as the town's only winter transport link. Reconstruction of the airport is part of the federal government's program to revive local aviation services, most of which collapsed in the post-Soviet era and left hundreds of communities isolated. The program includes subsidies for local flight operators, rebuilding the airfields, and development of regional aircraft.¹⁴⁵ If carried out, the program would increase economic opportunities in remote communities, particularly those in Russia's Arctic region.

141. Trude Pettersen, "Future bases for the Northern Sea Route pointed out," *Barents Observer*, December 17, 2010, <http://barentsobserver.com/en/sections/articles/future-bases-northern-sea-route-pointed-out>.

142. Bennet, "Russia roars ahead in race to develop Arctic shipping route."

143. Atle Staalesen, "€880 million for new Murmansk Railway," *Barents Observer*, March 6, 2014, <http://barentsobserver.com/en/business/2014/03/eu880-million-new-murmansk-railway-06-03>.

144. Scott Stephenson, "Collaborative Infrastructures: A Roadmap for International Cooperation in the Arctic," in *Arctic Yearbook 2012*, ed. Lassi Heininen (Akureyri, Iceland: Northern Research Forum, 2012), 311–333, <http://www.arcticyearbook.com/ay2012/#/1/>.

145. "Medvedev Orders Reopening of Arctic Lifeline Airport," *Sputnik International*, April 2, 2013, <http://sputniknews.com/russia/20130402/180396021.html>.

Besides developing Arctic airport facilities for economic purposes, Russia has also been repairing airports due to damage from permafrost thaw, as well as to enhance its scientific and research efforts in the Arctic. In 2011, the federal government announced its plans to refurbish the airport facility on Kotelny Island in the Laptev Sea in preparation for a 2012 major interdisciplinary polar scientific expedition.¹⁴⁶

Russia's Arctic Mineral Resources

The subsoil and continental shelf of Russia's Arctic regions are rich in nonferrous and precious minerals, including zinc, copper, tin, nickel, diamonds, gold, and silver, among others. As with hydrocarbons, estimates are difficult to extrapolate into confirmed figures, but some contend that as much as 90 percent of the world's reserves of nickel and cobalt, 60 percent of copper, and 96 percent of platinum, are located in the circumpolar Arctic—mainly in Russia and northern Canada, but also partly in Alaska.¹⁴⁷

In addition to abundant oil and gas reserves, Russia holds considerable deposits of raw minerals, including one-third of the world's iron, iron ore, and carbon reserves, as well as one-third of the world's gold, nickel, and chromium deposits.¹⁴⁸ As of 2010, approximately 20,000 Russian mineral deposits had been identified and more than 30 percent have been or are currently being mined.¹⁴⁹ In 2005, the export of metals, precious stones, and related products was worth roughly \$37 billion and accounted for 17.7 percent of Russia's total exports.¹⁵⁰ Today, more than 25 centers of mining activities operate in the Russian Arctic.¹⁵¹

This subsoil wealth has tremendous potential value, but figures are difficult to calculate as profitability depends on global commodity prices and the cost of extraction in severe climatic conditions varies depending upon location. In spite of Russia's vast mineral resources, the mining industry is suffering from stagnation, which is translating into declining industrial production and reductions in workforce. In 2013, five of Russia's leading mining and metallurgy companies dismissed close to 35,000 employees in an effort to optimize production and save costs.¹⁵² In addition to falling demands and raw material prices, many of Russia's industrial companies are struggling with large debt and current

146. Trude Pettersen, "Russia to restore abandoned Arctic airport," *Barents Observer*, October 27, 2011, <http://barentsobserver.com/en/topics/russia-restore-abandoned-arctic-airport>.

147. M. Shestopalov, "Vektor ustremleniy—Arktika" [A vector of aspiration—the Arctic], *Vozdushno-kosmicheskaya oborona*, no. 6 (2008): 18, <http://www.vko.ru/geopolitika/vektor-ustremleniy-arktika-1>.

148. Adrian Botezatu and Florin Pintescu, "Russia at the Beginning of the 3rd Millennium: Geopolitical resources and option," *Codrul Cosminului* 18, no. 1 (2012), 114, http://atlas.usv.ro/www/codru_net/CC18/1/russia.pdf.

149. Arnfinn Jorgensen-Dahl, "Arctic Mineral Resources," Centre for High North Logistics, 2010, <http://www.arctis-search.com/Arctic+Mineral+Resources>.

150. Ibid.

151. Morten C. Smelror, "Mining in the Arctic" (presentation given at the annual Arctic Frontiers conference, Tromsø, Norway, January 25, 2011).

152. Atle Staalesen, "Deep fall for Russian miners as trouble for industry mount," *Barents Observer*, June 4, 2014, <http://barentsobserver.com/en/business/2014/06/deep-fall-russian-miners-trouble-industry-mount-04-06>.

Western sanctions make long-term financing more challenging.¹⁵³ Rusal, the world's largest aluminum company, owed creditors more than \$10 billion by late 2013; after the 2008 financial crisis the federal government considerably reduced its economic support to struggling companies.¹⁵⁴ The implementation of Western sanctions against Russia are also beginning to impact Russia's mining billionaires and companies. In 2014, the net worth of Russia's seven richest mining tycoons dropped from \$94.2 billion to \$80.8 billion, and many are trying to sell some assets in order to cut company, and even personal, debt.¹⁵⁵

GOVERNMENT ACTORS

As in the case of the oil and gas industry, the mining sector is closely supervised by President Putin's inner circle, although the mining industry has not been centralized to the same extent. Prior to becoming CEO of Rosneft, former deputy prime minister Igor Sechin oversaw the government policy for industry and natural resources until 2012, which includes raw material; he also led the governmental commission for the development of the metallurgical industry, and supervised Viktor Khristenko, the industry and trade minister. Since 2012, Dmitri Rogozin, deputy prime minister in charge of the defense industry and head of Russia's new Arctic Commission, also oversees the newly formed Ministry of Trade and Industry. Prior to his 2011 resignation as deputy prime minister and finance minister, Aleksei Kudrin was the chair of the supervisory board of the state-owned diamond miner Alrosa.

REGIONAL PLAYERS

Given the opacity of Russian economic statistics, it is difficult to determine the extent of mineral production in Russia's Arctic region. Three regions, however, are particularly rich in mineral resources: Kola Peninsula, Yakutia-Sakha, and Taimyr Peninsula. The most abundant mineral resources and easiest to extract are located in the Kola Peninsula, where more than 700 different minerals—ranging from apatites (used as a source of phosphorus in fertilizer production) to aluminum, as well as titanium, rare metals, ceramic raw materials, mica, and precious stones—have been identified due to geological particularities dating from the Second Ice Age. The northern part of the Kola Peninsula has significant deposits of nickel and also contains large reserves of precious stones such as amazonite and amethyst.¹⁵⁶

153. Leonid Bershidsky, "Russia sanctions will hurt innocent companies," *Japan Times*, August 4, 2014, <http://www.japantimes.co.jp/opinion/2014/08/04/commentary/japan-commentary/russia-sanctions-will-hurt-innocent-companies/#.VZw2kvlViko>.

154. Atle Staalesen, "Deep fall for Russian miners as trouble for industry mount," *Barents Observer*, June 4, 2014, <http://barentsobserver.com/en/business/2014/06/deep-fall-russian-miners-trouble-industry-mount-04-06>.

155. Yuliya Fedorinova and Alexander Sazonov, "Russian Mining Tycoons Seek to Trim Debt After Sanctions," *Bloomberg*, October 27, 2014, <http://www.bloomberg.com/news/articles/2014-10-27/russian-mining-tycoons-look-for-funds-to-cut-debt-as-sanctions-sting>.

156. G. P. Glasby and Yu. L. Voytekhovskiy, "Arctic Russia: Minerals and Mineral Resources," *Geoscientist* 20, no. 8 (August 2010): 16–21, https://www.geolsoc.org.uk/~//media/shared/documents/Geoscientist/Download%20PDF%20copy%20of%20Geoscientist%2020_08%20August%202010.pdf.

Udachnaya Diamond Mine in the Sakha Republic



Source: Wikimedia Commons. Photo by Stapanov Alexander, https://commons.wikimedia.org/wiki/File:Udachnaya_pipe.JPG.

The second region, Sakha-Yakutia, is well known for its diamond mines: 90 percent of all Russian diamonds and 25 percent of the world's rough diamond supply, as well as 24 percent of Russia's gold, is mined in Sakha.^{157, 158} A new deposit was discovered in 2012, with estimated reserves of \$3.5 billion. The state-owned company Alrosa is the largest diamond producer in the world, and Russia ranks second in global diamond sales after South Africa. Alrosa accounts for 97 percent of diamond mining in Russia and 24 percent of global production.¹⁵⁹ With new projects under way, including the recent launching of a second processing plant in the Arkhangelsk region, Alrosa aims to increase production to 40 million carats by 2020.

Finally, the Taimyr Peninsula is rich in copper and zinc. Norilsk Nickel, the world's largest producer of refined nickel and Russia's largest private mining company, accounts

157. Vladislav Vorotnikov, "Diamond Mining in Russia," *Engineering and Mining Journal*, September 11, 2013, http://www.e-mj.com/features/3237-diamond-mining-in-russia.html#.U_S7gfldV8E.

158. The Arctic, "Natural Resources," <http://arctic.ru/resources/>.

159. Vorotnikov, "Diamond Mining in Russia."

for 1.9 percent of Russia's GDP, 4.3 percent of all Russian exports, and 2.8 percent of total industrial output.¹⁶⁰ Norilsk Nickel's primary Russian production units include the Polar Division, located above the Polar Circle on the Taimyr Peninsula, and the Kola Mining and Metallurgical Company (MMC) on the Kola Peninsula. The Polar Division consists of seven mines and three production plants, and mines approximately 16.5 million metric tons per year (mt/y) of ore and produces 124,000 mt/y of nickel.¹⁶¹ Kola MMC is the largest industrial producer in the Murmansk region with three mines and one production plant, mining 8.1 million metric tons of ore and producing 113,000 mt/y of nickel.¹⁶² In addition to its significant contribution to the Russian economy, Norilsk Nickel also provides the greatest number of jobs in Norilsk.¹⁶³

Although Russia has sizeable coal reserves, its production remains relatively modest, making Russia the world's sixth largest coal producer. In 2012, Russia produced about 389 million short tons of coal, 80 percent of which was steam coal and 20 percent was coking coal.¹⁶⁴ The Komi Republic is the coal mining center of the Barents region and contains two subdivisions, Vorkutaugol and Intaugol. For roughly the past two decades, the annual coal output at Vorkutaugol and Intaugol has fallen 46.6 percent, with production decreasing to 12.9 million tons between 1990 and 2002.¹⁶⁵ The decline in Russia's coal production was primarily due to a collapse in domestic coal markets in 2002, which led to a restructuring of the industry and the closure of several mines. However, since the collapse in 2002, production in the Komi Republic has stabilized and even rose to 14.9 million tons in 2013, the highest production rate since 2002.¹⁶⁶ However, this success may be short lived because coal production in the Komi Republic is again decreasing. Both Vorkutaugol and Intaugol reported a decline in 2014 production rates of roughly 12 percent, and Intaugol was taken over by the Komi regional government when it came to the brink of bankruptcy.¹⁶⁷ Russia's energy strategy for the period up to 2030 aims to increase total Russian coal production to 425–470 million tons by the completion of phase three in 2030.¹⁶⁸

ROLE OF STATE-OWNED AND PRIVATE COMPANIES

Russia's mining and metals sector is entirely in private hands, and the owners of those industries are the richest in Russia. CEO of Norilsk Nickel, Vladimir Potanin's wealth increased \$2.8 billion in the past year; in 2015, he became Russia's wealthiest businessman,

160. Vladislav Vorotnikov, "Norilsk Nickel Turns its Attention to the Environment and Tier 1 Assets," *Engineering and Mining Journal*, February 21, 2014, http://www.e-mj.com/features/3736-norilsk-nickel-turns-its-attention-to-the-environment-and-tier-1-assets.html#U_OIEfldV8F.

161. Norilsk Nickel, "Polar Division," 2008–2013, <http://www.nornik.ru/en/about-norilsk-nickel/operations/polar-division>.

162. Norilsk Nickel, "Kola MMC," 2008–2013, <http://www.nornik.ru/en/about-norilsk-nickel/operations/kola-mmc>.

163. Kryukov, "Patterns of Investment in the Russian Onshore Arctic," 16.

164. EIA, "Russia: International energy data and analysis."

165. Elizaveta Vassilieva, "Declining expectations from Komi coal," *Barents Observer*, May 28, 2014, <http://barentsobserver.com/en/business/2014/05/declining-expectations-komi-coal-28-05>.

166. Ibid.

167. Atle Staalesen, "Black year for Komi coal," *Barents Observer*, March 5, 2015, <http://barentsobserver.com/en/business/2015/03/black-year-komi-coal-05-03>.

168. Ministry of Energy of the Russian Federation, "Energy Strategy of Russia: For the Period up to 2030," 147.

Norilsk Nickel Plant, Located in Murmansk



Source: Wikimedia Commons. Photo by Hans Olav Lien, https://commons.wikimedia.org/wiki/File:Norilsk_Nickel_in_Nikel.jpg.

worth an estimated \$15.4 billion.¹⁶⁹ Norilsk Nickel exemplifies the status of mining firms in the Russian Arctic: privatized but intimately linked to the regime. Privatized at the beginning of the 1990s, Norilsk Nickel later merged with Severonickel and Pechenganickel on the Kola Peninsula to create one of the world's largest mining consortiums. It is now the world's largest producer of nickel and palladium, and a leading producer of platinum and copper. It also produces various valuable byproducts, such as cobalt, chromium, rhodium, silver, and gold, among others.¹⁷⁰ Domestically, the company accounts for all the platinum production, most of the nickel (96 percent) and cobalt (95 percent), and a majority of the copper (55 percent). In 2008, the global company was valued at \$53 billion, mostly due to rising nickel prices linked to high demand by steel manufacturers as well as investment funds.¹⁷¹

169. Trude Pettersen, "Norilsk Nickel CEO Potanin richest in Russia," *Barents Observer*, March 3, 2015, <http://barentsobserver.com/en/business/2015/03/norilsk-nickel-ceo-potanin-richest-russia-03-03>.

170. Norilsk Nickel, "General Information," 2008–2013, <http://www.nornik.ru/en/about-norilsk-nickel/about-norilsk-nickel1/general-information>; and Norilsk Nickel, "History," 2008–2013, <http://www.nornik.ru/en/about-norilsk-nickel/about-norilsk-nickel1/history>.

171. Anton Foek, "Norilsk Nickel: A Tale of Unbridled Capitalism, Russian Style," *CorpWatch*, October 9, 2008, <http://www.corpwatch.org/article.php?id=15215>.

Over the past few years, Norilsk Nickel has become one of the most important private actors of the Russian Arctic, and one of the most dynamic in terms of Russian exports. In 2010, it shipped 10,000 metric tons of metal and coal to Asia and plans to double its shipments by 2016.¹⁷² Currently, Norilsk Nickel is both the main supplier and customer utilizing the Northern Sea Route to ship and receive cargo for destination shipments. The company also has its own Arctic shipping fleet comprised of five reinforced ice-class vessels and one ice-class tanker, all of which are able to operate in Arctic ice up to 1.5 meters thick without icebreaker support.¹⁷³ In 2011, the company's fleet made 54 voyages carrying 1.1 million tons of cargo and in the same year, Norilsk Nickel's Arctic-class container ship became the company's second vessel to make a direct voyage from Murmansk to Shanghai using the eastern part of the NSR without icebreaker support.¹⁷⁴

ROLE OF CIVIL SOCIETY AND PUBLIC OPINION

Environmental and civil society groups face enormous challenges when they attempt to raise concerns about how these large mining firms operate in Russia's Arctic regions, and usually do not get support from the local authorities. However, increasingly dire environmental conditions have forced federal and regional authorities to begin to take some tentative steps to mitigate environmental degradation. In 2013, Green Cross Switzerland, in collaboration with Blacksmith Institute, released a report of the world's 10 most polluted places. According to the report, nearly 500 tons each of copper and nickel oxides and two million tons of sulfur dioxide were released annually into the air in Norilsk.¹⁷⁵ Due to such high emission levels, life expectancy for factory workers in Norilsk is 10 years below the Russian average and it is estimated that over 130,000 local residents are being exposed daily to particulates, sulfur dioxide, heavy metals, and phenols.¹⁷⁶ Russian Federal Statistics Services report Norilsk is the most polluted city in Russia, with little improvement of the environmental situation for several decades.

As a result of increased criticism, in 2013, Norilsk Nickel approved a new development strategy in which the company claims it will invest \$1.4 billion for environmental measures.¹⁷⁷ The Polar Division of Norilsk Nickel has already initiated the implementation of a \$2 billion modernization program to create a more environmentally friendly and efficient company. The modernization program calls for equipment investments and upgrades at the Taimyrsky mine, as well as improvements to the Talnakhskaya, Medni, and Nadezhda processing plants. In the Murmansk region, Norilsk Nickel is working at improving the

172. Ilya Khrennikov, "Norilsk to Invest \$370 Million to Double Shipments Across Arctic," Bloomberg, June 28, 2011, <http://www.bloomberg.com/news/articles/2011-06-28/russia-s-norilsk-plans-to-invest-370-million-to-double-arctic-shipments>.

173. Norilsk Nickel, "Transport Independence," 2008–2013, <http://www.nornik.ru/en/about-norilsk-nickel/sustainable-development/economic-performance/transport-independence>.

174. Ibid.

175. Blacksmith Institute and Green Cross Switzerland, *The World's Worst 2013: The Top Ten Toxic Threats* (New York: Blacksmith Institute and Green Cross Switzerland, 2013), 19, http://www.greencross.ch/uploads/media/pollution_report_2013_top_ten_wwpp.pdf.

176. Ibid.

177. Vorotnikov, "Norilsk Nickel Turns its Attention to the Environment and Tier 1 Assets."

disposal of acidic effluents and neutralizing the negative effect of nickel production on the ecosystem adjacent to the industrial area of Kola in Monchegorsk.¹⁷⁸ Norilsk Nickel CEO Vladimir Potanin stated, “By the end of this decade, we hope that the environment problems [in Norilsk] will be almost completely resolved,” which seems extremely optimistic, but at least indicates the company’s recognition that the environmental status quo is unacceptable and unsustainable.

Russia’s Fisheries: Economically Viable or a Depleted Resource?

Among the world’s major traded resources, fishing stocks are an often forgotten figure in trade statistics, despite its growing role in commerce. Between 1976 and 2006, the global trade volume of fish quadrupled, from 7.9 to 31 million tons.¹⁷⁹ But this success is not without its risks: 75 percent of straddling and high seas fish stocks are overexploited, or even depleted.¹⁸⁰ Some common species such as tuna and cod have now become endangered in many of their habitats.

The Arctic Ocean has a vast marine fauna and Russia is again striving to become a major fishing power after the collapse of the Soviet Union. Today, Russia ranks sixth in the world but it was only in 2010 that Russia resumed catches that matched 1991 levels of 4.1 million tons.¹⁸¹ For Russia, the geographical distribution of catches breaks down to about 40 percent in the northeast Atlantic Ocean, mainly in the Barents Sea, and 56 percent in the northwest Pacific Ocean, mostly in the Bering and Okhotsk Seas. The primary fish stocks of Russia’s northern region include herring, redfish, salmon, cod, haddock, blue whiting, arctic cod, flatfish, and mackerel.

While some of the most significant Arctic fish stocks can be found in the Barents and Bering Seas, Russia’s other Arctic seas have been experiencing a steady decline in catches. In the Kara Sea, for example, the total catch of whitefish in Ob Bay reached a record level of over 80,000 tons in the mid-1940s, but by the 1990s, total catches in Ob Bay had dropped to less than 400 tons.¹⁸² According to a 1998 report from the Russian Ministry of Natural Resources, “Commercial fishing in the Kara and eastern Arctic seas is not viable . . . and fishing is only for the subsistence needs of the local population.”¹⁸³ In contrast, the United

178. Ibid.

179. Frank Asche and Martin D. Smith, *Trade and Fisheries: Key Issues for the World Trade* (Geneva: World Trade Organization, January 2010), 7, https://www.wto.org/english/res_e/reser_e/ersd201003_e.pdf.

180. OECD, *Strengthening Regional Fisheries Management Organizations* (Paris: OECD, 2009), 17, http://www.keepeek.com/Digital-Asset-Management/oecd/agriculture-and-food/strengthening-regional-fisheries-management-organisations_9789264073326-en#page3.

181. Atle Staalesen, “Russian Fisheries back on Old Heights,” *Barents Observer*, March 9, 2011, <http://barentsobserver.com/en/sections/business/russian-fisheries-back-old-heights>.

182. Daniel Pauly and Wilf Swartz, “Marine Fish Catches in North Siberia (Russia, FAO Area 18),” in *Reconstruction of Marine Fisheries Catches for Key Countries and Regions (1950–2005)*, ed. Dirk Zeller and Daniel Pauly (Vancouver: University of British Columbia Fisheries Centre, 2007), 19, http://www.fisheries.ubc.ca/webfm_send/130.

183. Ibid., 31–32.

States has placed a moratorium on expanded commercial fishing in its portion of the Bering Sea.¹⁸⁴ At present, the Arctic's share in global fisheries has been stable at 4 percent between 1975 and 2006, equaling 3.5 million tons per year, but these figures may increase.

THE IMPACT OF CLIMATE CHANGE

Climate change in the Arctic poses significant challenges to many Arctic marine and mammal species, particularly due to increasing ocean acidification as Arctic waters absorb higher levels of carbon dioxide. Although fish stocks can a priori adapt to climate change as well as to some degree of pollution, the transformation of marine ecosystems as waters warm leads scientists to conclude that fish stocks will move farther north and into new areas where governmental regulations do not apply. In addition, the melting ice cap will open up new areas to unregulated fishing.

The Barents Sea, in particular, is among the world's richest fishing grounds and is already witnessing the effects of a warming Arctic on its fish population. It is home to the world's largest stock of cod, with a sustainable catch of about 1 million tons (valued at about \$2 billion) for both 2013 and 2014.¹⁸⁵ Recent annual surveys conducted jointly by Norway and Russia have shown that cod are moving farther north and east than previously recorded due to an increase in sea temperatures and a decrease in the amount of sea ice.¹⁸⁶

Climate change in the Arctic and changing migratory patterns of fish stocks could increase illegal, unreported, and unregulated (IUU) fishing, which can cost nations upwards of \$15.5 billion annually.¹⁸⁷ IUU fishing is of particular concern in the Barents and Bering Seas, which provide 20 to 25 percent of the world's whitefish catch. Moreover, IUU fishing is often compounded by territorial disputes between Arctic states. For instance, in 2010, the Norwegian Coast Guard apprehended the Russian fishing vessel *Izumrud* for illegally fishing in the Svalbard archipelago region, where fishing rights in the region remain in dispute between the two countries.¹⁸⁸

184. Hal Bernton, "Global warming spurs commercial fishing moratorium in U.S. Arctic," *Seattle Times*, February 5, 2009, <http://www.seattletimes.com/nation-world/global-warming-spurs-commercial-fishing-moratorium-in-us-arctic/>.

185. Bjarte Bogstad, "In the Arctic, Rich Fish Stocks Meet Energy Exploration," *National Geographic*, November 29, 2013, <http://energyblog.nationalgeographic.com/2013/11/29/in-the-arctic-rich-fish-stocks-meet-energy-exploration/>.

186. In 2012, cod was found as far north as 82° 30' N 56° E (north of Franz Josef Land) and in 2013, as far east as 78° 30' N 79° 30' E (in the northern Kara Sea—and at the same longitude as India). Bogstad, "In the Arctic, Rich Fish Stocks Meet Energy Exploration."

187. Mark Burnett et al., *Illegal Fishing in Arctic Waters: Catch of Today—Gone Tomorrow?* (Oslo: World Wildlife Foundation International Arctic Programme, April 2008), http://d2ouvy59p0dg6k.cloudfront.net/downloads/iuu_report_version_1_3_30apr08.pdf.

188. "Russian Trawler Detained for Illegal Fishing in Disputed Arctic Area," *Sputnik International*, April 31, 2010, <http://sputniknews.com/world/20100531/159228761.html>.

REGIONAL PLAYERS

Murmansk positions itself as Russia's first fishing port, taking advantage of being Russia's main yearly ice-free port with access to the Atlantic Ocean. In Soviet times, fishing fleets and related industries employed half the city's population. Today, Murmansk supplies 16 percent of Russia's fish production and the district controls a 41 percent share of the total Russian marine transport market. Murmansk is also a key base for three fishing fleets, including Russia's largest, the Murmansk Trawl Fleet. The fishing industry is among the most profitable in the region, supplying 16 percent of Russia's total fish production.

In contrast, Russia's fish processing industry is on the verge of economic failure, mostly due to the 2013 federal law on fisheries that allows coastal fishing vessels to freeze their catch on board and engage in ship-to-ship deliveries of products. Since then, the volumes landed in Murmansk District have dropped by almost 50 percent and the 12 processing companies in the region are all near collapse. The fish caught off the coast of the Kola Peninsula is now exported and processed by foreign companies or by Russian fishing vessels that no longer utilize land-based reception and reprocessing plants. Murmansk regional authorities hope to get the law amended to force the coastal fishing vessels to return the catch to Murmansk, either by disallowing the vessels to deliver catch to bigger vessels or by exempting cod and haddock from the new law.¹⁸⁹

Murmansk is also home to the Union of Northern Fish Processors (SRPS), a powerful industrial group of over 50 trawler companies working in Murmansk, Arkhangelsk, Karelia, and Kaliningrad.¹⁹⁰ The SRPS reportedly controls 100 percent of the Russian crab quotas and as much as 40 percent of halibut quotas. Another group, the Fishing Union, unites mostly agribusiness firms processing fishes and aquaculture enterprises.¹⁹¹ Both are well connected to their foreign counterparts in Norway and Canada, and seem able to develop joint strategies to improve the market conditions and negotiate with agencies in charge of veterinary and sanitary services.¹⁹²

INTERACTIONS WITH FOREIGN ACTORS

Due to the rich fishing grounds of the Barents and Bering Seas, as well as their other natural resources, maritime boundary lines have been hotly contested in these seas. For instance, a 40 year dispute between Russia and Norway in the Barents Sea originally began due to a debate over fishing rights in the region. Prior to the delimitation treaty, Norway and Russia established the Joint Norwegian-Russian Fisheries Commission in 1974 to create a joint fisheries management system, which has adequately managed and harvested major

189. Atle Staalesen, "Murmansk fish industry on verge of collapse," *Barents Observer*, October 31, 2013, <http://barentsobserver.com/en/business/2013/10/murmansk-fish-industry-verge-collapse-31-10>.

190. Murmansk Regional Government Official Site, "Fish Industry," 2013–2015, http://eng.gov-murman.ru/about_region/fish_industry/.

191. Fishing Union, "About us," http://xn--90amfpgik0fc7a.xn--p1ai/?page_id=31.

192. "‘Ribniy Sayuz’ obsudyl s Rosselkhoznadzorom voprosi rashireniya sotrudnichestva s kanadskoi ribnoi promishlennostyu" [The "Fishing Union" Discussed with the Department of Veterinary and Manufacturing Oversight Questions Regarding Expansion and Cooperation with the Canadian Fishing Industry], НИА, May 31, 2014, <http://51rus.org/news/economy/6248>.

fish stocks in the Barents Sea in a sustainable manner.¹⁹³ The Joint Norwegian-Russian Fisheries Commission has also helped to reduce IUU fishing in the Barents Sea. According to the Norwegian Ministry of Trade, Industry and Fisheries, joint efforts from Norway and Russia have helped to reduce IUU fishing of cod in the Barents Sea by 84 percent from 2005 to 2008.¹⁹⁴ Quotas are evenly split between the two countries and both exchange extensive scientific information, make their stocks public, and even grant access to Barents Sea fisheries to some non-coastal states. Moscow and Oslo also adhere to annual quotas as recommended by the International Council for the Exploration of the Sea.¹⁹⁵

In the Bering Sea, the tensions are more numerous and could escalate more rapidly, as there are fewer mechanisms for peaceful resolution. Over half of the seafood consumed in the United States comes from the Bering Sea, and American fishermen are sometimes tempted to leave U.S. waters to monitor the crab stocks in Russian waters.¹⁹⁶ However, an agreement signed in 1992 concerning the regulation of fisheries in high seas beyond their respective EEZs enables both countries to take advantage of the sea's fish stocks. In 1988, the United States and the former Soviet Union signed an agreement on mutual fisheries relations. The agreement formed the basis for the U.S.-Russia Intergovernmental Consultative Committee (ICC), which is responsible for furthering the objectives of the 1988 fisheries agreement. In addition, the primary objectives of the ICC include maintaining a mutually beneficial and equitable fisheries relationship through cooperative scientific research and exchanges; reciprocal allocation of surplus fish resources in the respective national 200-mile zones; cooperation in the establishment of joint fishery ventures; general consultations on fisheries matters of mutual concern; and, cooperation to address illegal or unregulated fishing activities on the high seas of the North Pacific Ocean and Bering Sea.¹⁹⁷

FISHING FLEET

The Russian fishing fleet is in urgent need of an overhaul. In the 1990s, state investment in the fisheries collapsed, exacting a heavy toll. The size of the of the Russian fleet plummeted by half; by 2006 it included roughly 2,500 fishing vessels, 30 floating processing plants, and 323 transport ships.¹⁹⁸ Two-thirds of fishing vessels still in operation no longer conform to safety standards and have exceeded their legal life span. They lack the capacity to

193. Norwegian Ministry of Trade, Industry and Fisheries, "Fisheries collaboration with Russia," October 18, 2011, http://www.fisheries.no/resource_management/International_cooperation/Fisheries_collaboration_with_Russia/#.U_dmv_ldV8E.

194. Ibid.

195. "Barents region set the bar for success in fishing," *Barents Observer*, May 19, 2010, <http://barentsobserver.com/en/sections/nature/barents-region-sets-bar-success-fishing>.

196. Roger Howard, *The Arctic Gold Rush: The New Race for Tomorrow's Natural Resources* (New York: Continuum, 2009), 97.

197. National Marine Fisheries Service, "Agreement Between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on Mutual Fisheries Relations," http://www.nmfs.noaa.gov/ia/bilateral/docs/US-Russia_ICC_IA_Book.pdf.

198. Food and Agriculture Organization of the United Nations (FAO), "Russian Federation: Review of the Fishery Sector," FAO Investment Centre Report Series, no. 12 (September 2008): 29, <http://www.fao.org/3/a-aj279e.pdf>.

Sergey Makarevich Trawler in the North Atlantic



Source: Wikimedia Commons. Photo by Heb, https://commons.wikimedia.org/wiki/File:M-0024_S._Makarevich.jpg.

fish off the coast in high seas and do not possess modern catching and freezing equipment.¹⁹⁹ The privatized fishing companies, which buy their vessels abroad, do not have the finances to renew their trawler fleets, whereas the state-run fleets are used to having their needs met through state subsidies. According to the director of the Russian Federal Fisheries Agency, 62 Norwegian vessels are able to take as many fish as 400 Russian ones.²⁰⁰

For Moscow, the modernization of an aging fishing fleet is no longer on the agenda; the goal is a completely new fleet. But here again, the necessary investments have been slow to arrive. The first steps were taken in 2010, when shipyards were officially ordered to build fishing vessels equipped with modern technology, but thus far only a few units have been commissioned.²⁰¹ Beginning in 2011, there has been open discussion about creating a state fishing corporation tasked with centrally managing the overhaul of the fleet and fish

199. Ekaterina Tribiloustova, *Fishery Industry Profile: Russia* (Rome: UN Food and Agriculture Organization, June 2005), 9, [http://www.globefish.org/upl/Publications/GRP%20Russia%20\(mailing\).pdf](http://www.globefish.org/upl/Publications/GRP%20Russia%20(mailing).pdf).

200. Trude Pettersen, "Putin set on reviving domestic fisheries," *Barents Observer*, April 19, 2010, <http://barentsobserver.com/en/sections/topics/putin-set-reviving-domestic-fisheries>.

201. "Rossiia v etom godu nachnet obnovliat' rybolovnyi flot" [Russia this year will begin to renovate its fishing fleet], *Rosbalt*, September 1, 2010, <http://www.rosbalt.ru/business/2010/09/01/767677.html>.

processing plants.²⁰² Therefore, there is much room for improvement in the domestic fishing industry, but this demands clear political and financial choices by the central government.

Demographic Challenges of a Changing Society

The collapse of the Soviet system had a massive impact on the economic development of the Arctic and Siberian regions. Between 1987 and 2000, economic output fell by four-fifths in Yakutia-Sakha and Chukotka and subsidies to individuals who lived in these regions ended, which accelerated the exodus of a significant portion of the population from the region. The absence of work prospects, a future for their children, the exorbitant prices of basic goods, chronic shortage of heating, gas, and electricity, and the declining transportation linkages with the rest of the country are contributing factors that compelled millions of Russians to migrate to the European regions of the country.²⁰³

As noted by demographer Timothy Heleniak, between 1993 and 2009 the Arctic “had a population decline of 15.3 percent, consisting of 17.1 percent decline from net out-migration, compensated for by a 1.8 percent increase from the region having more births than deaths as a result of having a younger age structure than the country.”²⁰⁴ Between 1989 and 2006, one out of six emigrated from the Russian Arctic.²⁰⁵ So-called ghost towns have grown in number, creating poverty gaps in which the remaining populations do not have enough money to migrate. The Russian Far East as a whole lost 17 percent of its population in the space of two decades, declining from 8 million inhabitants in 1990 to 6.4 million in 2010.²⁰⁶ The case is similar for the Siberian Federal District, although the decline is less steep.

Internal migrations between Arctic regions have also been considerable.²⁰⁷ Small towns and rural settlements have been abandoned as their inhabitants moved to larger towns that are able to provide a wider range of services. But one also notes north-south and south-north movements, as the large cities of the Siberian south, such as Krasnoyarsk, attract youths born in the north, who come mainly for their studies before “returning” to their regions of origin. In the first half of the 2000s, the Russian government launched the

202. “Rosrybolovstvo izuchaet vozmozhnost’ sozdaniia infrastrukturoi rybolovnoi korporatsii” [The Russian Federal Fisheries Agency studies the possibility of creating a fisheries infrastructure corporation], Fishnet, March 17, 2011, http://www.fishnet.ru/news/novosti_otrasli/21485.html.

203. T. Wites, “Depopulation of the Russian Far East. Magadan Oblast, a Case Study,” *Miscellanea Geographica* 12 (2006): 185–196, <https://www.infona.pl/resource/bwmeta1.element.c80cb58a-d363-34d8-8538-9c25840c1b66>.

204. Timothy S. Heleniak, “Population Change in the Periphery: Changing Migration Patterns in the Russian North,” *Sibirica: Interdisciplinary Journal of Siberian Studies* 9, no. 3 (2010): 17–18.

205. Timothy S. Heleniak, “Growth Poles and Ghost Towns in the Russian Far North,” in *Russia and the North*, ed. E. Wilson Rowe (Ottawa: University of Ottawa Press, 2009), 129.

206. “Population Statistics of the Russian Far East,” *Russian Analytical Digest*, no. 82 (July 2010): 11, <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?lang=en&id=118673>.

207. Timothy S. Heleniak, “Changing Settlement Patterns across the Russian North at the Turn of the Millennium,” in *Russia’s Northern Regions on the Edge: Communities, Industries and Populations from Murmansk to Magadan*, ed. M. Tykkyläinen and V. Rautio (Helsinki: Aleksanteri Institute, 2008), 25–52.

Azeri Migrants in Norilsk



Source: Photo by Marlène Laruelle during field research.

World Bank-funded Northern Restructuring Project to assist the voluntary resettlement of Chukotka's non-working population to more southerly towns; success has been limited and those who resettled have experienced difficulties in adapting.²⁰⁸ Clearly, difficult living conditions alone are not enough to make the inhabitants relocate outside the Arctic region.

A more detailed analysis, however, yields a less negative and more diverse demographic picture. As was the case during the Soviet period, Russia's Arctic population is younger than the national average (30 compared to 37 years of age in the 2002 census), partly because the oil and gas fields and mines attract youths with a dearth of career opportunities, and indigenous communities typically have a higher birth rate than the local population. However, life expectancy in the Arctic is also shorter, both among indigenous peoples and

208. N. Thompson, "Administrative Resettlement and the Pursuit of Economy: The Case of Chukotka," *Polar Geography* 26, no. 4 (2002): 270–288, <http://www.tandfonline.com/doi/abs/10.1080/789610150#VbkswfViko>. See also the project funded by the BOREAS scheme of the European Science Foundation, "Moved by the State: Perspectives on Relocation and Resettlement in the Circumpolar North (MOVE)," <http://www.alaska.edu/move/>.

ethnic Russians.²⁰⁹ Moreover, despite this picture of Arctic depopulation, closer analysis reveals that towns linked to the mineral resource extraction sector have experienced positive migration rates during the 2000s. The Khanty-Mansi and Yamalo-Nenets Districts, which account for about 60 percent of the entire economic output of the Russian Arctic, remain attractive to both Russian and foreign (principally Central Asians and Caucasians) migrants.²¹⁰

The future development of the Russian Arctic requires a labor force that, in view of the country's demographic dynamics, is lacking today. The current pattern of migration to the Russian Arctic is a key engine of Russia's current Arctic economic growth. Although the data on migration are difficult to collect and interpret, experts are in agreement that Russia has become the second largest receiving country of migrants in the world, after the United States.²¹¹ Although most of the migrants would prefer to work in Moscow and its suburbs, greater job opportunities and reduced job competition from Russian nationals push them to settle in Arctic cities, resulting in more multicultural and multi-religious circumpolar regions. For example, the first and oldest mosque—the Nord Kamal Mosque—constructed north of the Arctic Circle is in the city of Norilsk. Built in 1998 and one of the northernmost mosques in the world, the Nord Kamal Mosque can be viewed as a symbol of the growing presence of Islam in the Arctic.

In the 1990s, companies working the large oil deposits of the Tyumen' region were the only ones that continued to pay profitable salaries and thus readily attracted labor from outside the region. The oil and gas regions of Tyumen' and Khanty-Mansi have quickly become privileged destinations for Central Asians and Caucasians, in particular Azeris, Tajiks, and some Kazakhs seeking employment at extraction sites, while Tajiks and Uzbeks are massively involved in the construction sector. Already at the start of the 2000s, foreigners made up half of the workforce on some construction sites in the Far East; in the Tyumen' region they constituted about two-thirds of salaried workers.²¹² Developing the Yamal megaproject is expected to require about 50,000 workers, and there are reportedly already nearly 20,000 foreigners working there on infrastructure construction sites.²¹³ Lastly, the city of Norilsk has by some estimates a population of 50,000 migrants, mainly from Azerbaijan, Dagestan, and Central Asia.²¹⁴

It remains difficult to ascertain what long-term role the migrating populations will play in the Russian Arctic, and particularly whether they will settle permanently. Either way,

209. I. Øverland and H. Blakkisrud, "The Evolution of Federal Indigenous Policy in the Post-Soviet North," in *Tackling Space: Federal Politics and the Russian North*, ed. H. Blakkisrud and G. Hønneland (Lanham, MD: University Press of America, 2006), 181.

210. Heleniak, "Growth Poles and Ghost Towns in the Russian Far North," 146–148.

211. The status of second after the United States in terms of migrations has been attained by Russia since 2006. A. Mansoor and B. Quillin, eds., *Migration and Remittances. Eastern Europe and the Former Soviet Union* (Washington, DC: World Bank, 2006).

212. Fiona Hill and Clifford G. Gaddy, *The Siberian Curse: How Communist Planners Left Russia Out in the Cold* (Washington, DC: Brookings Institution Press, 2003), 179.

213. Pami Aalto, Helge Blakkisrud, and Hanna Smith, *The New Northern Dimension of the European Neighbourhood* (Brussels: Center for European Policy Studies, 2008), 135.

214. Information given by Russian experts on the Arctic, SOPS, Moscow, October 25, 2010.

Mosque in Norilsk



Source: Photo by Marlène Laruelle during field research.

these migrants are likely to form a growing share of the Russian population, and indeed of its workforce. Regardless of whether all of the Arctic industrial projects currently projected become a reality, or whether the demand for labor recedes after infrastructure construction is either slowed or completed and the deposits have become operational, the urban fabric has already been profoundly modified by interaction with migrants. Since the 1970s, numerous Azeri, Tatar, and Bashkir engineers have settled in the northern regions, and Islam has quickly become a part of the local scenery, a trend strengthened today by Central Asian immigration. It is also possible that Chinese migrants, already based in the Far East, might look to settle farther north. Two migratory spurts, one involving Chinese and the other Central Asians, might thus come into competition with one another in the Russian Arctic. This is already the case in the cities of the Far East, where construction sites in Chinese hands have been taken over in recent years by Central Asians.²¹⁵ The capacity of the Russian state to formulate a new civic identity and to integrate its growing migrant community therefore will be crucial for the country's future, and for local Arctic identities.

215. Marlène Laruelle's fieldwork in Vladivostok, October 2010.

3 | Securing Russia's Arctic Frontier

There is a critical historical and heroic myth narrative to Russia's development of its Arctic region, and in particular the Northern Sea Route. A 1932 decision by the Council of People's Commissars of the USSR established the Northern Sea Route (NSR) and marked the beginning of the route as an administered, legal entity under full Soviet jurisdiction and control.¹ Moreover, in the 1930s and 1940s, the Stalinist myth of the Northern Maritime Route, *Sevmorput'*, was used to exert Russia's military and industrial prowess.² In 2008, General Vladimir Shamanov, commander-in-chief of the Russian Airborne Troops, announced that a team of Russian paratroopers would conduct a symbolic landing at the North Pole to commemorate the 1949 landing of two Soviet scientists, Vitali Volovich and Andrei Medvedev.³ However, the commemorative landing did not take place, and it was not until April 2014—for the first time in modern Russian history—that 90 Russian paratroopers landed at the drifting Barneo research station close to the North Pole.⁴

After the end of the Cold War, the military-strategic role of the Arctic was given low priority as the collapse of the Soviet Union greatly diminished Russia's military presence in its northernmost region where many Soviet closed cities⁵ (seven such cities were located in the Arctic) were largely abandoned. In 1989, before the collapse of the Soviet Union, the Soviet Navy had 69 strategic submarines in operation, including 63 nuclear-powered ballistic missile submarines (SSBNs) and 6 ballistic missile submarines (SSBs).⁶ Today, Russia's Navy has 12 strategic submarines. On July 1, 1991, Russia formally opened the Northern Sea Route to international shipping with the stipulation that those utilizing the route would comply with coastal state regulations.

1. Willy Østreng, "Shipping and Resources in the Arctic Ocean: A Hemispheric Perspective," in *Arctic Yearbook 2012*, ed. Lassi Heininen (Akureyri, Iceland: Northern Research Forum, 2012), 249, <http://www.arcticyearbook.com/ay2012/#/1/>.

2. Marlène Laruelle, "Russian Military Presence in the High North: Projection of Power and Capacities of Action," in *Russia in the Arctic*, ed. Stephen J. Blank (Carlisle, PA: Strategic Studies Institute, 2011), 65, <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1073.pdf>.

3. Alexandr' Golts, "The Arctic: A Clash of Interests or Clash of Ambitions," in Blank, *Russia in the Arctic*, 44.

4. Trude Pettersen, "Russian paratroopers conquer North Pole," *Barents Observer*, April 10, 2014, <http://barentsobserver.com/en/security/2014/04/russian-paratroopers-conquer-north-pole-10-04>.

5. Closed cities refers to a settlement where residency and entrance restrictions are applied. In modern Russia, these cities are officially referred to as "closed administrative-territorial formations." For more information on closed cities in Russia, see Nadezhda Kutepova and Olga Tsepilova, "A Short History of the ZATO," in *Cultures of Contamination: Volume 14: Legacies of Pollution in Russia and the US*, eds. Michael Edelstein, Maria Tysianchnoiuk, and Lyudmila V. Smirnova (Greenwich, CT: JAI Press, 2007), 148–149.

6. International Institute for Strategic Studies (IISS), *The Military Balance 1989* (Oxford: Pergamon, 1989), 33.

However, during his first term in office (2000–2008), President Putin initiated a broad program to modernize the Russian military with specific attention to Russia’s Arctic region and its strategic nuclear deterrent. In many ways, this modernization was an understandable pursuit as an increasingly ice-free Arctic presented both new economic opportunities as well as rapidly thawing borders to patrol and secure in Russia’s Far North. From 2008 to the present, there has been rapid development and modernization of the Russian Navy, particularly the Northern Fleet, the reopening of military bases in the Russian Arctic, the holding of large and complex military exercises, and the substantial increase of Russia’s military presence in the Arctic through the creation of Arctic brigades and command centers. Russia’s enhanced military activity in the Arctic has largely paralleled its renewed assertiveness in international affairs, yet it is challenging to discern the purpose of Russia’s enhanced Arctic military presence. Is it designed to demonstrate global power projection capabilities, specific capabilities for the Arctic region, or both? The growing uncertainty about Russia’s Arctic intentions raises questions and concerns among other Arctic states.

Protecting Russia’s Arctic Border

THE FEDERAL SECURITY SERVICE

The Federal Security Service (FSB) is responsible for protecting Russia’s external borders, including the land border with Norway and Finland, and the coastline borders to the Arctic Ocean. The FSB is also responsible for monitoring the security of the Northern Sea Route and for providing coastal defense along the shipping route. As the Arctic Ocean becomes an increasingly blue water ocean, military and security forces are required to monitor and regulate increased human and commercial activity in the region. These forces include FSB troops, border troops, and internal troops, as well as a coast guard to patrol Russia’s Arctic waters. Following the collapse of the Soviet Union, the Federal Border Guard Service (FBS) of Russia was established in 1993 as a separate government agency with 11 regional directorates, including one for the Arctic.⁷ In 2003, President Putin changed the status of the Federal Border Guard Service into a branch of the FSB, and in 2005, the Coastal Defense of the Federal Border Service—also referred to as the Coast Guard—was created. In addition to the Federal Border Service, the FSB also includes services for counterintelligence, protection of the constitutional system and combating terrorism, economic security, supplying and maintaining FSB facilities, scientific and technical operations, and oversight of the FSB.

According to Russia’s 2008 *The Fundamentals of State Policy of the Russian Federation in the Arctic in the Period up to 2020 and Beyond*, security in its Arctic region will be achieved through the following:

7. Gordon Bennett, *The Federal Border Guard Service* (Oxford: Conflict Studies Research Centre, March 2002), 6, <http://studies.agentura.ru/centres/csrg/pogran.pdf>.

in the sphere of national security, the protection of the national border of the Russian Federation . . . it is necessary: to create general purpose military formations drawn from the Armed Forces of the Russian Federation, [as well as] other troops and military formations (most importantly, border units) in the Arctic zone of the Russian Federation, capable of ensuring security under various military and political circumstances.⁸

Instead of creating a new military district, the 2008 Arctic policy recommends enhancing the role of the FSB in patrolling and securing Russia's Arctic border.⁹ In order to enhance the role of the FSB, as well as its Border Guard Service and the Coast Guard, in protecting and defending Russia's Arctic borders, the FSB is establishing two regional border guard commands for the Arctic—one based in Murmansk for the western regions and the other based in Petropavlovsk-Kamchatka for the eastern regions—which will coordinate Russia's Arctic border controls.¹⁰

In 2013, the Coast Guard division of Russia's Federal Security Service announced its intention to deploy four new warships by 2020 after Colonel General Nikolai Rybalkin announced, "Formation of the Coast Guard system was declared a major area of the Russian Border Service reform."¹¹ According to Rybalkin, the deputy head of the FSB, 11 border protection facilities will also be built in Russia's Arctic region as part of the Russian Federation state border protection program for 2012 to 2020.¹² In 2012, Nikolai Patrushev, the former head of the FSB and the current secretary of the Security Council, announced that Russia would create a number of "dual-use" facilities in the Arctic that are expected to host both commercial craft and Northern Fleet vessels, in addition to serving as border stations for the FSB.¹³ The reference to "dual-use" has led many analysts to believe that these bases will be co-located with the proposed 10 search-and-rescue (SAR) centers along Russia's Arctic coast. The initial purpose of these facilities will be to provide ships with fuel and ammunition, as well as light repairs of deployed military vehicles; however, the goal is to eventually develop these installations into fully operational military bases within 10 to 15 years.

Currently, the FSB operates the Nagurskoye airfield base in Franz Josef Land in the Arkhangelsk District, the world's northernmost border guard station; the base is capable of

8. Ariel Cohen, "Russia in the Arctic: Challenges to U.S. Energy and Geopolitics in the High North," in Blank, *Russia in the Arctic*, 18–19.

9. Roger McDermott, "Russia Planning Arctic Military Grouping," *Eurasia Daily Monitor* 6, no. 72 (April 15, 2009), http://www.jamestown.org/programs/edm/single/?tx_ttnews%5Btt_news%5D=34857&tx_ttnews%5BbackPid%5D=485&no_cache=1#.VaZ4gflViko.

10. Trude Pettersen, "New vessels for Russia's Coast Guard," *Barents Observer*, June 2, 2015, <http://barentsobserver.com/en/security/2015/06/new-vessels-russias-coast-guard-02-06>.

11. Interfax, "Russia to build four Coast Guard ships in Arctic by 2020," *Russia Beyond the Headlines*, May 27, 2013, http://rbth.com/news/2013/05/27/russia_to_build_four_coast_guard_ships_in_arctic_by_2020_26391.html.

12. Sam LaGrone, "Russia to Build New Ships for Arctic," *USNI News*, May 29, 2013, <http://news.usni.org/2013/05/29/russia-to-build-new-ships-for-arctic>.

13. Mark Adomanis, "Russia Plans Massive Arctic Expansion," *USNI News*, May 29, 2013, <http://news.usni.org/2012/08/09/russia-plans-massive-arctic-expansion>.

Map of Russian Military Bases and SAR Centers in the Arctic



Source: Image created based on research by the Center for Strategic and International Studies.

servicing military transport aircraft. In February 2015, the Kremlin announced plans for a €107 million upgrade of the military base on Franz Josef Land, including a new airfield and living quarters, all to be completed by 2017.¹⁴ Border infrastructure has also been strengthened on Kolgoyev Island in the eastern Barents Sea and in Dikson, Russia's northernmost outpost located on the Taimyr Peninsula of the mainland.¹⁵

As part of efforts to reform the Federal Border Service in the early 2000s, the government proposed 15 to 30 percent reductions in the number of FBS groups in the Arctic regions and Kaliningrad, as well as Russia's Northwest, Far East, and Pacific Ocean regions.¹⁶ Since then, however, there has been a renewed focus on the development of Russia's Arctic and the Kremlin has prioritized increasing the number of Russian Special Forces in the Arctic by 30 percent.¹⁷ In early 2014, President Putin declared to the FSB, "As a priority, we must continue the development of the border infrastructure in the Arctic region, as well as on the southern strategic direction."¹⁸ President Putin also called on the FSB to work closely

14. Trude Pettersen, "Russia builds new airfield on Franz Josef Land," *Barents Observer*, February 16, 2015, <http://barentsobserver.com/en/security/2015/02/russia-builds-new-airfield-franz-josef-land-16-02>.

15. Thomas Nilsen, "Putin urges FSB to develop Arctic border," *Barents Observer*, April 7, 2014, <http://barentsobserver.com/en/borders/2014/04/putin-urges-fsb-develop-arctic-border-07-04>.

16. Bennett, *The Federal Border Guard Service*, 25.

17. Sohrab Ahmari, "The New Cold War's Arctic Front," *Wall Street Journal*, June 9, 2015, <http://www.wsj.com/articles/the-new-cold-wars-arctic-front-1433872323>.

18. Nilsen, "Putin urges FSB to develop Arctic border."

with the border infrastructure state agency, Rosgranitsa, and the Federal Migration Service to improve and strengthen the security of checkpoints along Russia's northern borders. As part of this effort to secure Russia's Arctic regions, security service agents from Murmansk, Arkhangelsk, and the Yamal-Nenets Autonomous District conducted major joint exercises in June 2014. The exercise included more than 500 security service personnel and was centered on the Varandey oil terminal located on the Pechora Sea coast. The training scenario also included how to respond to a terrorist attack against the Varandey oil terminal in which hostages were taken.¹⁹

In 2013, Russian FSB border guards responded to a Greenpeace protest at an offshore oil rig in the Pechora Sea. When two of the protesters scaled the oil rig, Russian border troops were dropped by helicopter, fired warning shots during the protest, and then seized Greenpeace's *Arctic Sunrise*.²⁰ The seizure of the ship and detainment of the Greenpeace protesters was a sharp contrast to a similar incident in 2012 when Greenpeace activists scaled the same oil rig but were not detained. Although the activists and the *Arctic Sunrise* were later released, according to some Russian officials, the protesters were seen as a threat to Russia's national security interests.

ARCTIC MILITARY BASES AND BRIGADES

The Russian Arctic is divided into four military districts: the Leningrad Military District (from the Murmansk region to Arkhangelsk region); the Volga-Urals Military District (from Yar to the Yamalo-Nenets Autonomous District); the Central Military District (from Leskinen to Kozhevnikovo; formerly known as the Siberian Military District); and the Far East Military District (from the Republic of Sakha Yakutia to the Chukotkyi Autonomous District).²¹ In 2014, President Putin announced the creation of a new strategic command for the Arctic, which became active by the end of 2014. The Northern Fleet–United Strategic Command (OSK “Sever”) has the status of a military district (the four current military districts will not change), will report to the National Defense Control Center in Moscow, and will consist of the Northern Fleet, as well as units from other military branches.²²

Over the past couple of years, Russia has undertaken a “construction blitz” in its Arctic region with the planned construction of 13 airfields, 10 search-and-rescue stations, 16 deep-water ports, and 10 air defense radar stations to secure its Arctic border and the Northern Sea Route.²³ In November 2014, Russia announced its plans to build a drone base for military reconnaissance. Located in Anadyr in the Chukotka region, the proposed base

19. Atle Staalesen, “FSB trains counter-terrorism at Arctic oil installation,” *Barents Observer*, June 17, 2014, <http://barentsobserver.com/en/security/2014/06/fsb-trains-counter-terrorism-arctic-oil-installation-17-06>.

20. Steven Lee Myers, “Russia Seizes Greenpeace Ship and Crew for Investigation,” *New York Times*, September 20, 2013, <http://www.nytimes.com/2013/09/21/world/europe/russia-seizes-greenpeace-ship-for-investigation.html>.

21. Golts, “The Arctic,” 55.

22. Trude Pettersen, “Russian Arctic Command from December 1st,” *Barents Observer*, November 25, 2014, <http://barentsobserver.com/en/security/2014/11/russian-arctic-command-december-1st-25-11>.

23. Jeremy Bender, “US Coast Guard Chief: We are ‘not even in the same league as Russia’ in the Arctic,” *Business Insider*, July 6, 2015, <http://www.businessinsider.com/us-not-even-in-the-same-league-as-russia-in-arctic-2015-7>.

will be within 420 miles of mainland Alaska and just over 300 miles from St. Lawrence Island.²⁴

Russia has been working over the past few years to modernize and reopen many of its military airfields in the Arctic. In 2014, Colonel General Viktor Bondarev, commander-in-chief of the Russian Air Force, announced that approximately 50 military airfields will be repaired and modernized by 2020.²⁵ The following year, Deputy Defense Minister Dmitry Bulgakov announced that 10 military airfields in the north would be reopened by the end of 2015, giving Russia a total of 14 operational airfields in its Arctic region. By the end of 2014, military bases on Wrangel Island and Cape Schmidt, both located in the Chukotka region, had reopened with stationed troops,²⁶ including the landing of a tactical airborne team from the 83rd Separate Air Assault Brigade of the Airborne Forces and the 155th Separate Marine Brigade of the Pacific Fleet for exercises.²⁷ In addition, Russia is restoring its Arctic aerodromes, including the Rogachevo airfield on Novaya Zemlya, as well as airfields in Vorkuta, Alykel, Tiksi, and on Cape Schmidt. Beginning in 2013, Russia has renovated the Temp air base on Kotelny Island in the New Siberian Islands archipelago, which permanently houses the 99th Arctic Tactical Group and will eventually accommodate Ilyushin Il-76 heavy military transport planes.²⁸ In 2014, Kotelny Island was equipped with Pantsir-S1 missile and artillery systems as part of the new Northern Fleet–United Strategic Command.

In 2012, Colonel General Alexander Postnikov, commander of the Russian Ground Forces, announced that the first Arctic brigade will be established by 2015 in the Murmansk region.²⁹ On January 14, 2015, the first Russian infantry brigade troops arrived at the reopened base in Alakurtti, which is only 50 kilometers from the Finnish border.³⁰ It is estimated that 3,600 soldiers will be stationed at Alakurtti over the coming years. In addition to the infantry brigade at Alakurtti, the 200th Independent Motorized Infantry Brigade is based in Pechenga on the Kola Peninsula, 10 kilometers from the Russian-Norwegian border and according to Colonel General Oleg Salyukov, the brigades will “demonstrate to other Arctic nations Russia’s military presence in the increasingly contested region.”³¹

24. Damien Sharkov, “Russia to Open Arctic Military Drone Base 420 Miles off the Alaskan Coast,” *Newsweek*, November 13, 2014, <http://europe.newsweek.com/russia-open-arctic-military-drone-base-420-miles-alaskan-coast-284240>.

25. “Russia to upgrade 50 military airfields by 2020,” ITAR-TASS, August 11, 2014, <http://en.itar-tass.com/russia/744503>.

26. “Russian Military Opens 2nd Arctic Base,” *Moscow Times*, November 27, 2014, <http://www.themoscowtimes.com/news/article/russian-military-opens-2nd-arctic-base/511974.html>.

27. Interfax, “Part of Western, Central, Eastern military districts’ forces to be attached to Arctic Strategic Command,” *Russia Beyond the Headlines*, November 25, 2014, http://rbth.com/news/2014/11/25/part_of_western_central_eastern_military_districts_forces_to_be_attached_41659.html.

28. “Russian Arctic island to serve as base for military transport planes,” ITAR-TASS, August 11, 2014, <http://tass.ru/en/russia/744479>.

29. Trude Pettersen, “Russian Arctic brigades put off to 2015,” *Barents Observer*, February 22, 2012, <http://barentsobserver.com/en/topics/russian-arctic-brigades-put-2015>.

30. “Russia moves first troops to Arctic base near Finnish border,” *Alaska Dispatch News*, January 15, 2015, <http://www.adn.com/article/20150115/russia-moves-first-troops-arctic-base-near-finnish-border>.

31. “Russia to Form Arctic Military Command by 2017,” *Moscow Times*, October 1, 2014, <http://www.themoscowtimes.com/business/article/russia-to-form-arctic-military-command-by-2017/508199.html>.

These two brigades, as well as the 61st Independent Red Banner Naval Infantry Regiment located in Pechenga, which is being expanded and reorganized into a brigade, are all under the new Northern Fleet–United Strategic Command. In cooperation with the FSB, these Arctic brigades will patrol the Russian Arctic coastline, guard current and future military installations along the coast, ensure free passage of the NSR, and clearly demonstrate Russia’s military presence in the Arctic.

In spite of Russia’s massive effort to mobilize and modernize its armed forces, recent reports indicate that Russia’s plans to modernize its military are falling behind schedule. In a briefing with President Putin, Deputy Defense Minister Yuri Borisov explained that government defense contracts have fallen behind schedule largely due to reduced financing and the inability to import materials and technology as a result of Western-imposed sanctions, as well as a general decline in domestic industries.³² The production of Navy guard ships, Beriyev Be-200 amphibious aircraft, anti-tank missiles, radio monitoring equipment for surface-to-air missiles, and weapon launch systems for Tupolev-160 strategic bombers have all been delayed over the past several months. In 2011, President Putin stated the government’s goal was to invest approximately 20 trillion rubles (\$351 billion) to reequip the Russian military with hi-tech weapons by 2020; however, this was before the fall in global energy prices and the drop in the value of the ruble.³³

Modernizing the Northern Fleet and Russia’s Strategic Deterrence

Analysts believe that Russia’s Navy, and specifically its Northern Fleet, is “a particularly well-suited tool to enhance the country’s international visibility, demonstrate its power and highlight global ambitions . . . and the Northern Fleet has played a central role in the Russian “come-back” strategy.”³⁴ In 20 to 30 years, the Russian Navy aims to become the second most powerful navy in the world, with a significant naval presence in the Arctic. Russia’s 2020 state armament program allocated 4.7 billion rubles to purchase 51 new surface ships, 8 Borei-class strategic submarines, and 16 multipurpose submarines, including 8 Yasen-class nuclear-powered attack submarines, and 6 Kilo-class diesel-electric submarines.³⁵ The modernization of the Russian Navy is also to include the development of multipurpose vessels and is expected to begin in 2015. However, it is anticipated that there will be delays in construction due both to Russia’s weak economic situation and limited access to the most advanced technology. The Russian Navy experienced the largest reduction of military budgets across all Russian military services from the mid-1990s to

32. Anna Dolgov, “Russian Military Struggling to Modernize,” *Moscow Times*, July 17, 2015, <http://www.themoscowtimes.com/business/article/russian-military-struggling-to-modernize/525782.html>.

33. *Ibid.*

34. Katarzyna Zysk, “Military Aspects of Russia’s Arctic Policy: Hard Power and Natural Resources,” in *Arctic Security in an Age of Climate Change*, ed. J. Kraska (Cambridge: Cambridge University Press, 2011), 89.

35. Marta Carlsson and Niklas Granholm, *Russia and the Arctic: Analysis and Discussion of Russian Strategies* (Stockholm: FOI—Swedish Defense Research Agency, 2013), 28, http://www.foi.se/ReportFiles/foir_3596.pdf.

Parade of Ships from Russia's Northern Fleet



Source: Wikimedia Commons. Photo by Alexey Pavlov, https://commons.wikimedia.org/wiki/File:Parad_korabley.JPG.

2010, with its share of the defense budget decreasing from 23 percent to a mere 9 percent.³⁶ It was not until the implementation of the third State Program for the Armed Forces (2007–2015) that the Navy was placed on par with other military services and its dwindling budget reassessed. It is also important to note that in 2011 the majority of ships in the Russian Navy were planned to be decommissioned within the next 15 to 20 years, which could significantly diminish the Navy's capabilities unless new ships are constructed within this time frame.³⁷

Russia's Northern Fleet "is still Russia's biggest naval fleet and includes most of Russia's missile-carrying strategic submarines."³⁸ In 2006, the Northern Fleet's strategic submarines resumed their operations near or under the Arctic ice after a hiatus of 11 years.³⁹ Today, all the Northern Fleet bases are located in the Arctic: Severomorsk, Polaryaroye, Gadzhievo, Ostrovnoye, Nerpichya Guba, Olenya Guba, Sayda-Guba, Bolshaya Lopatka, Iokange (Gremikha), Granite, and Vidyaevo.⁴⁰ The Northern Fleet contains the largest number of icebreakers and nuclear submarines, as well as about two-thirds of the Russian Navy's nuclear force. As of early 2015, the Northern Fleet consists of 33 submarines, including 9 strategic and 24 tactical submarines; 11 principal surface combatants ships; 9 patrol and coastal combatants vessels; and 4 amphibious landing ships.⁴¹ Aviation forces within the Northern Fleet include 18 Su-33 fighter jets; 5 Su-25UTG attack aircraft; 13 Tu-142M/MR anti-submarine aircraft; 3 electronic warfare aircraft; 9 military transport aircraft; 1 Ka-27 anti-submarine warfare helicopter; and 1 Ka-29 military transport helicopter.⁴²

36. Golts, "The Arctic," 70.

37. Carlsson and Granholm, *Russia and the Arctic*, 29.

38. Paal Sigurd Hilde, "Armed Forces and Security Challenges in the Arctic," in *Geopolitics and Security in the Arctic: Regional Dynamics in a Global World*, ed. Rolf Tamnes and Kistine Offerdal (New York: Routledge, 2014), 154.

39. Carlsson and Granholm, *Russia and the Arctic*, 29.

40. Golts, "The Arctic," 54.

41. IISS, *The Military Balance 2015* (London: Routledge, February 2015), 192.

42. Ibid.

Finally, the Northern Fleet includes one motorized rifle brigade with a second brigade being formed, one naval infantry brigade, and one naval infantry regiment.⁴³

Many Typhoon-class strategic submarines are to be rearmed to carry long-range cruise missiles; so far only the *Dmitri Donskoy* has been modernized and placed with the Northern Fleet for testing and training with Bulava missiles.⁴⁴ Eventually, the Russian government hopes to replace the Delta III-class submarines with the Borei-class nuclear-powered submarines, including three that are currently under construction at the Severodvinsk shipyard and an additional eight that are expected to be completed by 2020.⁴⁵

In June 2014, the first new Yasen-class nuclear attack submarine joined the Northern Fleet and three additional submarines are expected to follow.⁴⁶ Yet it remains important to note that the Northern Fleet is still a former shadow of its Cold War self, consisting of 17 nuclear-powered submarines compared to some 78 in 1989, and 9 strategic submarines compared to 39 in 1989.^{47, 48} It is estimated that 40 to 70 percent of the vessels in the Northern Fleet are no longer fully operational.⁴⁹ In addition, the Northern Fleet is severely lacking coastal ships capable of conducting rapid intervention and rescue operations in the Arctic and many of the ships in the Northern Fleet are not designed to ice-class standards, thus limiting their ability to operate in Arctic waters.⁵⁰ In order to rectify this imbalance within the Russian Navy, and particularly the Northern Fleet, the third State Program for the Armed Forces (2007–2015) proposed roughly \$5.5 billion in investments for the development of Russia's shipyards by 2015.⁵¹

The Northern Fleet is also responsible for protecting the country's economic interests in the Russian Arctic region and specifically the "protection of Russian energy interests," a role that justifies for the cost of the Northern Fleet's modernization, and strengthens and legitimizes its military role.⁵² The Northern Fleet has now expanded its role to include new "brown water" functions, including anti-terrorism protection of oil and gas installations and tanker traffic, which is a very different role from its traditional function of providing a credible nuclear deterrence.⁵³ The Northern Fleet will become the base of a new strategic formation, the Northern Fleet–United Strategic Command (OSK "Sever"), with the primary

43. Ibid.

44. Laruelle, "Russian Military Presence in the High North," 74.

45. Ibid.

46. Matthew Bodner and Alexey Eremenko, "Russia Starts Building Military Bases in the Arctic," *Moscow Times*, September 8, 2014, <http://www.themoscowtimes.com/business/article/russia-starts-building-military-bases-in-the-arctic/506650.html>.

47. IISS, *The Military Balance 2015*, 192.

48. IISS, *The Military Balance 1989*, 38.

49. Matthew Bodner, "Russia's Polar Pivot," *Defense News*, March 11, 2015, <http://www.defensenews.com/story/defense/policy-budget/warfare/2015/03/11/russia-arctic-bases-soviet-northern-command-navy-fleet-siberian-island/24335619/>.

50. Carlsson and Granholm, *Russia and the Arctic*, 30.

51. Laruelle, "Russian Military Presence in the High North," 70.

52. Ibid., 76.

53. Kristian Atland, "Russia's Armed Forces and the Arctic: All Quiet on the Northern Front?," *Contemporary Political Security* 32, no. 2 (August 2011): 272, http://www.contemporarysecuritypolicy.org/archive/volume32_issue2.shtml.

objective of defending Russia's interests in the Arctic. The new strategic command consists of the Northern Fleet's roughly 40 surface vessels and 40 submarines, units of other military branches, and possibly the 200th Infantry Brigade in Pechenga in order to help defend Russia's Arctic border with Norway.⁵⁴

NUCLEAR DETERRENCE IN THE ARCTIC

The Arctic serves as a staging ground for Russia's strategic nuclear capabilities. As the only non-NATO littoral state in the Arctic, the region is a geostrategically valuable location that can impact both American and Chinese strategic calculations. In 2011, 67 percent of Russia's 576 sea-based nuclear warheads were on nuclear submarines deployed with the Northern Fleet,⁵⁵ and it is estimated that nearly 81 percent of these warheads are based with the Northern Fleet today.⁵⁶ And since 2004, regular missile tests have been conducted in the White and Barents Seas, as well as the Arctic Ocean. Stations for monitoring intercontinental ballistic missile (ICBM) launches are located in Norilsk, Yakutsk, and Mirny.⁵⁷ The Russian Ministry of Defense is constructing several anti-missile radar stations that will ultimately cover the entire Russian territory. Two radar stations, one in Kaliningrad and the other in Siberia's Irkutsk region became operational in 2014.⁵⁸ Construction of the prefabricated Voronezh radar stations has begun in the Orenburg region and trans-polar area. These missile attack warning radars will be put in combat duty in the Altai and Krasnoyarsk regions by 2020, according to Colonel General Oleg Ostapenko, former commander of the Aerospace Defense Forces.⁵⁹

Disturbingly, according to the latest exchange of data under the New START (Strategic Arms Reduction Treaty) agreement for 2015, the number of Russian-deployed nuclear warheads and deployed launchers increased from 1,400 in 2013 to 2,472 in 2015; the number of deployed intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and heavy bombers rose from 473 in 2013 to 515 in 2015.⁶⁰ In comparison, the United States reduced its number of deployed warheads and deployed launchers from 1,688 in 2013 to 1,597 in 2015, and the number of deployed ICBMs, SLBMs, and heavy bombers dropped from 809 to 785.⁶¹ The 2010 New START Treaty requires Russia and the United States to reduce the number of strategic nuclear missile launchers by half; however,

54. RIA Novosti, "Russia to Set up Naval Infrastructure in Arctic—Patrushev," August 6, 2012, http://en.ria.ru/military_news/20120806/175015455.html.

55. Atland, "Russia's Armed Forces and the Arctic," 267.

56. Thomas Nilsen, "More than 100 new nukes in northern waters," *Barents Observer*, October 2, 2014, <http://barentsobserver.com/en/security/2014/10/more-100-new-nukes-northern-waters-02-10>.

57. Golts, "The Arctic," 55.

58. "Two New Russian Radars to Start Work Next Year," *Sputnik International*, June 6, 2013, <http://sputniknews.com/military/20130606/181543455.html>.

59. "New Anti-Missile Radars to Cover Entire Russia in 5 Years," *Sputnik International*, October 10, 2014, <http://sputniknews.com/military/20141010/193899932.html>.

60. U.S. Department of State, Bureau of Arms Control, Verification and Compliance, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," fact sheet, July 1, 2015, <http://www.state.gov/documents/organization/240274.pdf>.

61. U.S. Department of State, Bureau of Arms Control, Verification and Compliance, "New START Treaty Aggregate Numbers of Strategic Offensive Arms," fact sheet, October 1, 2013, <http://www.state.gov/documents/organization/215212.pdf>.

based on the current trends in Russia, it seems unlikely that Russia will meet its treaty obligations. As if these increases in nuclear warheads and launchers were not noticeable enough, President Putin publicly reminded the world that, “Russia is one of the leading nuclear powers” and that “we should always be ready to repel any aggression towards Russia.”⁶²

Over the past year Russia has been testing and modernizing its strategic nuclear capabilities located in the Arctic. In December 2014, a third new Borei-class nuclear submarine officially became part of the Russian Navy, with an additional three nuclear submarines under construction.⁶³ By 2020, the Russian Ministry of Defense aims to have eight new Borei-class submarines join the Northern Fleet.⁶⁴ The Borei-class submarines are considered some of the most advanced nuclear submarines in the world and each carries 16 Bulava ballistic missiles with 6 warheads per missile. Twice in 2014, Russia simulated massive retaliatory nuclear attacks in the Barents Sea.^{65, 66} In the same year, Russia’s nuclear submarines *Vladimir Monomakh* and *Yuri Dolgoruky* each successfully test launched an intercontinental ballistic Bulava missile.^{67, 68} While these recent tests were largely successful, the Bulava missile has a history of failed tests since the early 2000s and doubts remain as to whether the missile is properly ready for deployment.⁶⁹

More recently in 2015, the Russian Navy’s nuclear units conducted exercises in the international waters beneath the northern ice cap, which was perceived as a response to NATO’s announcement in early February that it would reinforce its eastern European border with Russia and a “threatening reminder” of Russia’s nuclear capabilities.⁷⁰ The crews of several Borei-class nuclear submarines took part in the exercise that tested Arctic warfare and tactical maneuvering of weapons.

RUSSIAN AIR POWER IN THE ARCTIC

As of 2013, there were 18 Su-33 fighter aircraft and 2 surface-to-air missile (SAM) regiments based on the Kola Peninsula; another missile regiment is based in Severodvinsk, close to

62. Alexei Anishchuk, “Don’t mess with nuclear Russia, Putin says,” Reuters, August 29, 2014, <http://uk.reuters.com/article/2014/08/29/russia-putin-conflict-idUKL5N0QZ3HC20140829>.

63. “3rd Russian Borei-class nuclear sub raises its colors,” RT, December 19, 2014, <http://rt.com/news/214155-russia-submarine-vladimir-monomakh/>.

64. “Russia’s First Borei Class Submarine ‘Almost Combat-Ready,’” *Moscow Times*, April 17, 2014, <http://www.themoscowtimes.com/news/article/russia-s-first-borei-class-submarine-almost-combat-ready/498289.html>.

65. Thomas Nilsen, “Putin plays nuclear war games ahead of Victory Day,” *Barents Observer*, May 8, 2014, <http://barentsobserver.com/en/security/2014/05/putin-plays-nuclear-war-games-ahead-victory-day-08-05>.

66. Trude Pettersen, “Northern Fleet drills in the Barents Sea,” *Barents Observer*, August 6, 2014, <http://barentsobserver.com/en/security/2014/08/northern-fleet-drills-barents-sea-06-08>.

67. “Russian Nuclear Submarine to Test Launch Bulava ICBM Within Two Days: Source,” *RIA Novosti*, September 9, 2014, <http://en.ria.ru/russia/20140909/192761908/Russian-Nuclear-Submarine-to-Test-Launch-Bulava-ICBM-Within-Two.html>.

68. “Russian nuclear sub test-fires Bulava strategic missile,” RT, October 30, 2014, <http://rt.com/news/200659-russia-nuclear-sub-test/>.

69. Pavel Podvig, “Bulava missile test history,” *Russian Strategic Nuclear Forces* (blog), November 28, 2014, <http://russianforces.org/navy/slbms/bulava.shtml>.

70. Damien Sharkov, “Russia Sends Nuclear Submarine Troops on Arctic Exercise,” *Newsweek*, February 6, 2015, <http://www.newsweek.com/russia-sends-nuclear-submarines-arctic-exercise-304931>.

MiG-31 at the Khotilovo Airbase in the Tver region



Source: Wikimedia Commons. Photo by Vitaly Kuzmin, https://commons.wikimedia.org/wiki/File:MiG-31_790_IAP_Khotilovo_airbase.jpg.

Arkhangelsk.⁷¹ In 2012, the Russian Ministry of Defense announced that a group of interceptor MiG-31s would be deployed to the Rogachevo airfield on Novaya Zemlya, an archipelago between the Barents and Kara Seas, by 2013.⁷² According to the Ministry of Defense, the purpose of the MiG-31s is to create a missile defense system and protect Russia from attacks from the north, including the nuclear test range of Novaya Zemlya, as well as to secure Russian economic and military interests in the Arctic. In 2014, a Russian military official announced that the number of troops on Novaya Zemlya would be doubled by 2020.⁷³

REGIONAL ASSERTIVENESS

Less than a month prior to Russia's invasion of Georgia, on July 14, 2008, the Russian Navy announced that its fleet had "resumed a warship presence in the Arctic."⁷⁴ Although Russia claims that this military presence is necessary to secure its national interests,

71. Carlsson and Granholm, *Russia and the Arctic*, 26.

72. Ibid., 27.

73. Eben Blake, "Russia Doubling Military Troops on Novaya Zemlya In Arctic by 2020," *International Business Times*, July 9, 2015, <http://www.ibtimes.com/russia-doubling-military-troops-novaya-zemlya-arctic-2020-2001221>.

74. Cohen, "Russia in the Arctic," 22.

particularly in relation to the Northern Sea Route, Russian warships have also been patrolling the area around the Spitsbergen, or Svalbard, archipelago. As stipulated in the 1920 Spitsbergen Treaty, the signatories recognize “the full and absolute sovereignty of Norway over the Archipelago of Spitsbergen” while any “ships and nationals of all the High Contracting Parties shall enjoy equally the rights of fishing and hunting in the territories specified in Article 1 and in their territorial waters.”⁷⁵ However, Russia continues to dispute Norway’s right to an exclusive economic zone (EEZ) around Spitsbergen. In 2008, as part of its heightened presence near Spitsbergen, Russia deployed an anti-submarine warfare (ASW) destroyer, as well as a guided missile cruiser armed with 16 long-range, anti-ship cruise missiles that are designed to destroy aircraft carriers.⁷⁶

Russia had also resumed its strategic patrols in and around other states’ air defense identification zones. Since 2007, Russian strategic bombers, including the Tupolev Tu-95, and supersonic bombers Tu-160 and Tu-22M3 have flown regular patrols over the Arctic Ocean.⁷⁷ In 2007, the North American Aerospace Defense Command (NORAD) reported that its 12-mile air defense identification zone surrounding Alaska had been penetrated 18 times by Russian bombers, reminiscent of the incursions during the Cold War.⁷⁸ While these patrols are not new, they began to intensify around the time of increased protests in Ukraine after the government’s failure to sign an Association Agreement (AA) with the EU. For instance, on the morning of October 28, 2013, three escort planes and two Russian bombers practiced bombing runs first over the Gulf of Finland, then near Polish and Baltic airspace, and finally over the southern tip of Öland in Sweden.⁷⁹

The number of Russian air incursions, however, increased significantly after Russia’s illegal annexation of Crimea in March 2014. In May 2014, Finland was forced to scramble its fighter jets when two Russian-owned planes were suspected of flying over the Gulf of Finland without authorization.⁸⁰ Three months later, Russian aircraft entered Finnish airspace again without authorization three times in one week.⁸¹ Finnish defense minister Carl Haglund commented that four to six incidents a year are normal but this increased number of unauthorized incursions is cause for serious concern; former Swedish minister of foreign affairs Carl Bildt stated at the time that “the threshold for Russia’s use of military

75. “Treaty of 9 February 1920 relating to Spitsbergen (Svalbard),” Royal Ministry of Justice, 1988, 3, <http://app.uio.no/ub/ujur/oversatte-lover/data/lov-19250717-011-eng.pdf>.

76. RIA Novosti, “Russian Navy Resumes Military Presence Near Spitsbergen,” July 14, 2008, <http://en.ria.ru/world/20080714/113914174.html>.

77. Cohen, “Russia in the Arctic,” 21.

78. Rowan Scarborough, “Russian flights smack of Cold War,” *Washington Times*, June 26, 2008, <http://www.washingtontimes.com/news/2008/jun/26/russian-flights-smack-of-cold-war/?page=all>.

79. David Cenciotti, “Russian Bombers Practiced Bomb Runs on Sweden, Baltic States and Poland, Swedish Armed Forces Say,” *Aviationist*, November 13, 2013, <http://theaviationist.com/2013/11/13/russian-bombers-sweden-new-attack/>.

80. Heather Saul, “Finland scrambles jets after two Russian aircrafts ‘violate airspace,’” *Independent*, May 22, 2014, <http://www.independent.co.uk/news/world/europe/finland-scrambles-jets-after-two-russian-aircrafts-violate-airspace-9415541.html>.

81. Associated Press, “Finland suspects Russian airspace violation,” August 28, 2014, <http://www.bigstory.ap.org/article/finland-suspects-russian-airspace-violation>.

force in its neighborhood has clearly been lowered.”⁸² In 2014, Norway intercepted 74 Russian fighter jets along its coast, an increase of 27 percent from 2013.⁸³ In October 2014, a Russian Su-27 fighter jet was photographed flying only a few meters away from a Swedish surveillance aircraft.⁸⁴ According to Anders Grenstad, deputy director of operations in the Swedish Armed Forces, there should typically be a distance of 50 to 150 meters between aircraft. The Baltic countries have also reported an unusually high level of Russian military provocations in 2014. NATO fighters had to scramble 68 times along Lithuania’s border and Latvia registered 150 “close encounters” where Russian aircraft were observed for risky behavior.⁸⁵ In early 2015, two Tupolev Tu-95 long-range Russian bombers entered NATO-surveyed airspace close to Iceland, the first time Russia has flown so close to Iceland since 2006.⁸⁶

North America has not been immune to Russia’s air incursions either. On September 17, 2014, two U.S. fighter jets were scrambled to intercept six Russian planes that had neared U.S. airspace off the Alaskan border. On the same day, Canada also scrambled jets to intercept two Russian Bear long-range bombers in the Beaufort Sea that were within 40 nautical miles of the Canadian coastline.⁸⁷ Perhaps this date was symbolically chosen as that date was the 75-year anniversary of the Soviet invasion of Poland in 1939.

In addition to increased air incursions, there has also been a notable increase in the presence of Russian submarines in the North Atlantic, particularly between the so-called Greenland–Iceland–United Kingdom (GIUK) gap as well as in the North Pacific. As it was during the Cold War, the GIUK gap is the principle outlet for Russian submarines based on the Kola Peninsula.⁸⁸ The United Kingdom requested assistance from NATO allies in response to the reported sighting of a foreign submarine in late November 2014.⁸⁹ The incident came just over a month after Sweden halted its own search efforts for a foreign submarine in the Stockholm archipelago. These incidents are drawing more attention from the U.S. military, and the U.S. Navy in particular is increasing its focus on the threat from Russia. In 2015, Vice Admiral James Foggo III, commander of the U.S. Navy’s Sixth Fleet,

82. Atle Staalesen, “Flexing muscles for Nordic neighbors,” *Barents Observer*, March 20, 2014, <http://barentsobserver.com/en/security/2014/03/flexing-muscles-nordic-neighbors-20-03>.

83. David Barno and Nora Bensahel, “The Anti-Access Challenge You’re Not Thinking About,” *War on the Rocks* (blog), May 5, 2015, <http://warontherocks.com/2015/05/the-anti-access-challenge-youre-not-thinking-about/?singlepage=1>.

84. “Russian fighter jet 10 m from Swedish plane,” Swedish Radio, October 2, 2014, <http://sverigesradio.se/sida/artikel.aspx?programid=2054&artikel=5982035>.

85. Richard Milne, Sam Jones, and Kathrin Hille, “Russian air incursions rattle Baltic states,” *Financial Times*, September 24, 2014, <http://www.ft.com/intl/cms/s/0/9d016276-43c3-11e4-baa7-00144feabdc0.html#axzz3dFGMS87d>.

86. Zoë Robert, “Two Russian Bombers Fly Close to Iceland,” *Iceland Review*, February 19, 2015, <http://icelandreview.com/news/2015/02/19/two-russian-bombers-fly-close-iceland>.

87. Steve Brusk and Ralph Ellis, “Russian planes intercepted near U.S. Canadian airspace,” CNN, updated November 13, 2014, <http://www.cnn.com/2014/09/19/us/russian-plane-incidents/>.

88. Thomas Harding, “Russian subs stalk Trident in echo of Cold War,” *Telegraph*, August 27, 2010, <http://www.telegraph.co.uk/news/uknews/defence/7969017/Russian-subs-stalk-Trident-in-echo-of-Cold-War.html>.

89. Jonathan Beale, “UK called on Nato help in sub search,” BBC News, December 9, 2014, <http://www.bbc.com/news/uk-scotland-30398114>.

commented on the upsurge in Russia's air and naval presence in the Baltics, calling such maneuvers provocative and worrisome.⁹⁰ According to Admiral Viktor Chirkov, Russian Navy commander-in-chief, the deployment of Russian ballistic and multipurpose nuclear submarines in the Pacific Ocean has increased nearly 50 percent between January 2014 and March 2015.⁹¹

Protecting the Northern Sea Route

There has been an increasing sense of urgency in Russia to develop and exert sovereignty over the Northern Sea Route and Russia's EEZ. In 2008, Russia produced the *Transport Strategy of the Russian Federation up to 2030* that "emphasizes the need to develop the Northern Sea Route, the shipping along it and the infrastructure on its shores."⁹² In 2011, the Russian government announced that it would invest over 21 billion rubles to develop and secure the NSR, including the creation of monitoring and communications systems.

Another top priority in developing the NSR includes renewing and expanding Russia's icebreaker fleet. In 2011, Russia had six nuclear-powered icebreakers, four heavy Arktika-class icebreakers, and two heavy Taimyr-class icebreakers, the latter of which have been used primarily to escort ships into ports along the NSR.⁹³ As with much of Russia's Navy and the Northern Fleet, Russia's icebreaker fleet is seriously outdated. Much of the icebreakers were constructed in the 1970s or 1980s, and by 2020, it is expected that all but one of the icebreakers will be decommissioned.⁹⁴ Some experts have estimated that Russia will need to construct 6 to 10 nuclear icebreakers over the next 20 years in order to maintain its current level of involvement and operations in the Arctic.⁹⁵ In 2009, Rosatom director Sergey Kirienko announced that the federal budget would allocate \$57 million for new nuclear icebreakers, and roughly \$150 million for the 2010–2011 period. According to Russia's transport strategy, three new nuclear-powered icebreakers and possibly six diesel-electric icebreakers are scheduled to be built and the first new icebreakers are expected to be in service by 2016 or 2017. In April 2015, construction on the *Ilya Muromets*, the first of four diesel-electric icebreakers ordered by the Russian Ministry of Defense, began and the icebreaker is expected to be operational by 2017. According to Admiral Viktor Chirkov, the *Ilya Muromets* will be stationed with the Northern Fleet in support of the navy's Arctic

90. Steven Beardsley, "Back in Europe, Navy commander faces new threats in Russia, Islamic State," *Stars and Stripes*, July 23, 2015, http://www.stripes.com/news/back-in-europe-navy-commander-faces-new-threats-in-russia-islamic-state-1.359376?pp_u=GOe91IuJ1AzSsYIYTefVtH&setAuth_-jmtl7NTsKXjcoZnYuS2qB=1437680040169&utm_source=Sailthru&utm_medium=email&utm_term=%2ASituation%20Report&utm_campaign=SitRep0724.

91. Roman Kretsul, "More Russian nuclear submarines deployed in the Pacific," *Russia & India Report*, April 2, 2015, http://in.rbth.com/economics/2015/04/02/more_russian_nuclear_submarines_deployed_in_the_pacific_42335.html.

92. Carlsson and Granholm, *Russia and the Arctic*, 22.

93. Ibid.

94. Ibid., 23.

95. Cohen, "Russia in the Arctic," 23.

Nuclear-Powered Icebreaker *Yamal*, 2009



Source: Wikimedia Commons. Photo by Pink floyd88 a, https://commons.wikimedia.org/wiki/File:Yamal_2009.JPG.

units and activities.⁹⁶ However, some delays have been reported at the Baltiysky yard where the world's most powerful diesel-engine icebreaker, the LK-25, is under construction.⁹⁷

Although the current volume of shipping and traffic does not warrant such a significant level of protection (as noted previously, in 2013, 71 large ships were able to navigate the NSR, while only 53 vessels traversed the route in 2014⁹⁸), Russia's nationalistic rhetoric regarding its need to project and protect Russian sovereignty has increased. In part, this is a nationalistic reaction to the increased presence of non-Arctic states' vessels in the Arctic. In 2013, the Chinese-owned *Yong Sheng* became the first container-transporting vessel to transit along the NSR.⁹⁹ As some Russian experts have warned, "If we do not start immediately

96. Trude Pettersen, "New icebreaker for the Northern Fleet," *Barents Observer*, April 23, 2015, <http://barentsobserver.com/en/security/2015/04/new-icebreaker-northern-fleet-23-04>.

97. Atle Staalesen, "New icebreakers open way for Russia in Arctic," *Barents Observer*, May 5, 2015, <http://barentsobserver.com/en/arctic/2015/05/new-icebreakers-open-way-russia-arctic-05-05>.

98. Associated Press, "Number of Ships Transiting Arctic Waters Falls in 2014," *New York Times*, January 5, 2015, http://www.nytimes.com/aponline/2015/01/05/us/ap-us-arctic-shipping.html?_r=0.

99. Atle Staalesen, "First container ship on Northern Sea Route," *Barents Observer*, August 21, 2013, <http://barentsobserver.com/en/arctic/2013/08/first-container-ship-northern-sea-route-21-08>.

reviving the Arctic transportation system, voyages on the Northern Sea Route will be led by the Japanese or the Americans.”¹⁰⁰

Russia also has significant economic ambitions for the Northern Sea Route. By the year 2020, the Atomflot chief of naval operations Vladimir Arutyunyan estimates the volume of transit goods on the NSR to grow to 15 million tons per year, while the Russian Ministry of Transport expects the volume of cargo transportation to reach 40 million tons by 2020 and 70 million tons by 2030, estimates that support Russia’s belief that the NSR will be a viable international shipping route.¹⁰¹ Although these estimates are extremely ambitious, Russia recognizes that to make the NSR viable as an international transit route, greater search-and-rescue capabilities are a necessity to address the heightened risk of maritime accidents. In 2009, Russia allocated 910 million rubles (approximately €20.6 million) to construct 10 search-and-rescue centers from Murmansk to Provideniya.¹⁰² In 2012, the Russian Duma adopted a new law regarding shipping along the NSR that stipulates that any ships entering the NSR must use an icebreaker escort or a pilot specialized in operating in icy conditions.¹⁰³ By October 2014, 3 of the 10 search-and-rescue centers—located in Naryan-Mar, Dudinka, and Arkhangelsk—were operational, and the remaining centers are expected to be completed and operational by the end of 2015.¹⁰⁴ Equipped with fire-fighting, diving, and oil spill cleanup capabilities, concerns remain that the existing centers along the Northern Sea Route are improperly equipped to provide adequate support to ships utilizing the route.

As previously noted, these search-and-rescue stations are expected to eventually double as military bases in the Arctic. Russia’s Coast Guard units have also been expanding their capabilities with the construction of several new patrol vessels, and at least two new ice-going vessels for operations in the Arctic over the past few years. Launched in May 2014, the *Polyarnaya Zvezda*, an Okean-class ice-going patrol vessel, will be stationed in Russia’s eastern Arctic region with an operational endurance of 60 days; it is equipped with a Ka-27 helicopter, as well as unmanned aerial vehicles (UAVs).¹⁰⁵

Although not unique to the Russian Arctic alone, communications systems in the Arctic remain extremely insufficient with very high frequency (VHF) radio, medium frequency (MF) and high frequency (HF) systems, as well as satellite, only providing adequate coverage for the lower parts of the NSR.¹⁰⁶ An estimated 17,000 kilometers of Russia’s Arctic coastline is not covered by radio communications.¹⁰⁷ In fact, many analysts argue that the

100. Cohen, “Russia in the Arctic,” 25.

101. “Atomflot: Traffic on the Northern Sea Route will reach 15 million tonnes per year by 2020,” Arctic Info, April 10, 2013, <http://www.arctic-info.com/News/Page/atomflot-traffic-on-the-northern-sea-route-will-reach-15-million-tonnes-per-year-by-2020>.

102. Andrey Vokuev, “Russia opens first Arctic search and rescue center,” *Barents Observer*, August 27, 2013, <http://barentsobserver.com/en/arctic/2013/08/russia-opens-first-arctic-search-and-rescue-center-27-08>.

103. Carlsson and Granholm, *Russia and the Arctic*, 24–25.

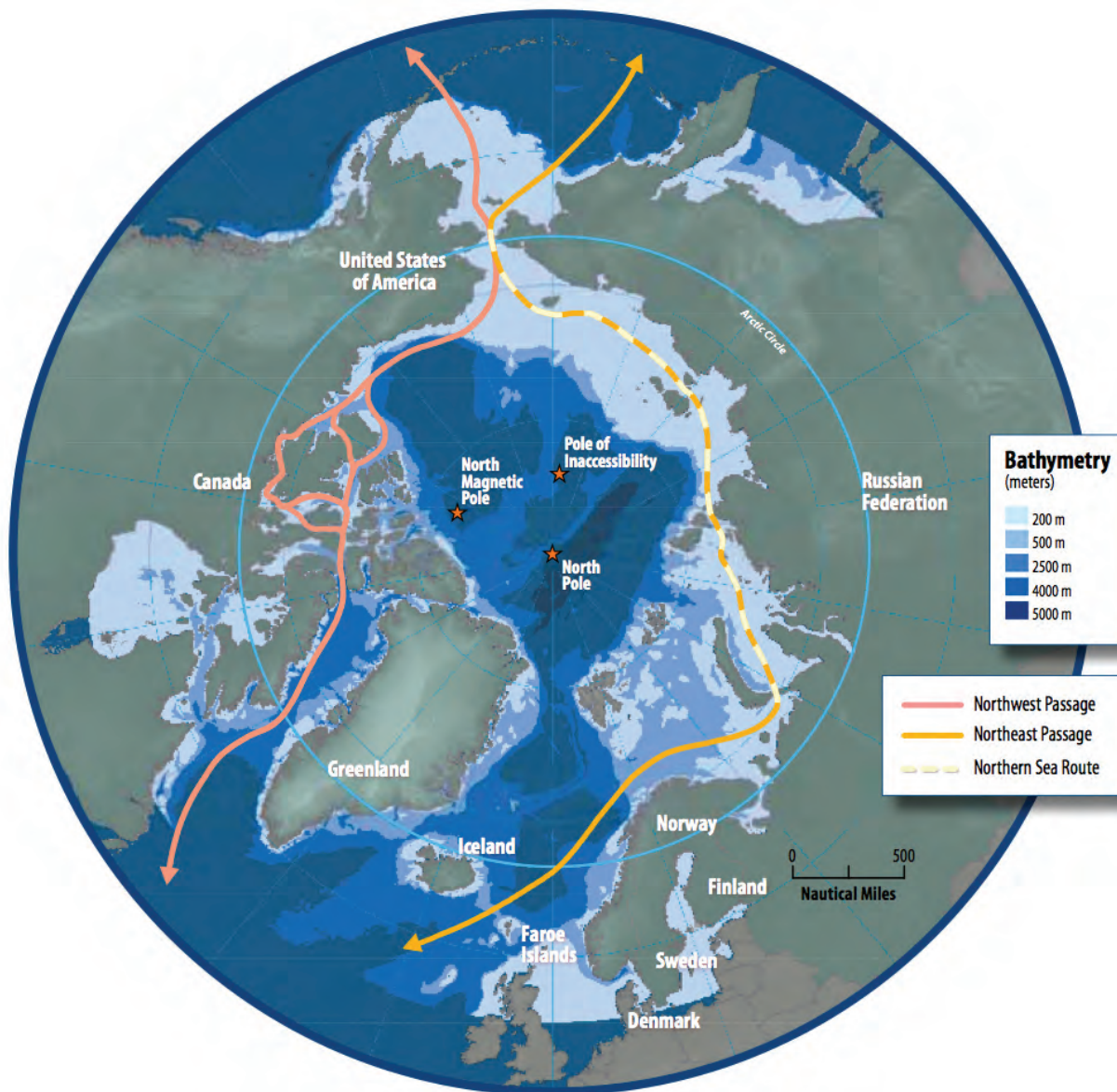
104. Trude Pettersen, “Third Arctic search and rescue center opened,” *Barents Observer*, October 15, 2014, <http://barentsobserver.com/en/arctic/2014/10/third-arctic-search-and-rescue-center-opened-15-10>.

105. Pettersen, “New vessels for Russia’s Coast Guard.”

106. Østreng, “Shipping and Resources in the Arctic Ocean,” 257.

107. Laruelle, “Russian Military Presence in the High North,” 84.

Map of the Northern Sea Route



Source: Wikimedia Commons. Image by Susie Harder, https://commons.wikimedia.org/wiki/File:Map_of_the_Arctic_region_showing_the_Northeast_Passage,_the_Northern_Sea_Route_and_Northwest_Passage_and_bathymetry.png.

recent decline in vessel traffic along the route was not a result of Western-imposed sanctions, but a realization by Asian clients that, unless Russia upgrades and maintains its aging infrastructure, the risks and costs of utilizing the Northern Sea Route are too high.¹⁰⁸

It is interesting to note that the Russian Ministry of Transport recently called for development of legislation that would prohibit Russian companies from exporting Russian Arctic

108. Pavel Baev, "Russia's Arctic aspirations," in *Arctic Security Matters*, ed. Juha Jokela (Paris: EU Institute for Security Studies, June 2015), 52, http://www.iss.europa.eu/uploads/media/Report_24_Arctic_matters.pdf.

oil and gas using foreign-registered ships.¹⁰⁹ In sum, it seems difficult to comprehend how Russia will simultaneously sustain its ambitious economic vision for the Northern Sea Route while limiting foreign vessels' utilization of the NSR, which is already constrained by limited infrastructure and communications.

Demonstrating Arctic Capabilities

Over the past few years, Russia has repeatedly demonstrated its military capabilities through large-scale exercises in the Arctic. In 2013¹¹⁰ and then again in 2014, the Northern Fleet conducted missile exercises around the Rybachy Peninsula, roughly 30 kilometers from the Norwegian border in the Barents Sea.¹¹¹ In September 2014, Russia staged the largest post-Soviet military drills, Vostok-2014, with roughly 100,000 servicemen, over 6,000 pieces of military hardware and nearly the entire Pacific Fleet.¹¹² The exercise was designed to test Russia's Far East forces, including command and control, rapid mobilization, and the use of both conventional and unconventional arms. However, many analysts perceived the exercise as a demonstration of strength and Russia's willingness to defend its strategic interests in light of the crisis in Ukraine and tensions with NATO.¹¹³

In February 2015, the Russian Navy's nuclear units conducted exercises in the international waters beneath the North Pole shortly after NATO's announcement that it intended to reinforce its border in Eastern Europe.¹¹⁴ In the same month, over 40 Russian fighter jet crews conducted exercises over the Barents Sea. The exercises included MiG-31 fighter-interceptors and Su-24 attack bombers from the Central Military District that practiced destroying an enemy missile attack.¹¹⁵ Then in March 2015, President Putin called the Northern Fleet to "full combat readiness" in an unannounced Arctic exercise that involved more than 45,000 Russian troops, 41 warships, and 15 submarines.¹¹⁶ This exercise appears to be in response to Norway's Joint Viking drills, which only involved about 5,000 troops and were notified to the Russian government two years prior. At the same time, Russia also conducted exercises with 5,000 troops in Russia's Far East Military District, as well as

109. Atle Staalesen, "Russian Arctic for Russian ships," *Barents Observer*, June 19, 2015, <http://barentsobserver.com/en/energy/2015/06/russian-arctic-russian-ships-19-06>.

110. Atle Staalesen, "Shooting cruise missiles in the borderland," *Barents Observer*, October 16, 2013, <http://barentsobserver.com/en/security/2013/10/shooting-cruise-missiles-borderland-16-10>.

111. Atle Staalesen, "Navy shooting in the borderland," *Barents Observer*, July 30, 2014, <http://barentsobserver.com/en/security/2014/07/navy-shooting-borderland-30-07>.

112. "Russia tests 100,000 troops in 'Vostok 2014', biggest-ever post-Soviet drills," RT, September 23, 2014, <http://rt.com/news/189900-kamchatka-military-drills-shoigu/>.

113. Roger McDermott, "Vostok 2014 and Russia's Hypothetical Enemies (Part One)," *Eurasia Daily Monitor* 11, no. 167 (September 23, 2014), http://www.jamestown.org/programs/edm/single/?tx_ttnews%5Btt_news%5D=42859&cHash=bb0e68111832039d5c8997b2355b2942#.VYRA1PIVikq.

114. Sharkov, "Russia Sends Nuclear Submarine Troops on Arctic Exercise."

115. Kukil Bora, "Russia's Su-34, MiG Fighter Jets Begin Combat Exercises; Dutch Military to Inspect Southern Russia," *International Business Times*, February 17, 2015, <http://www.ibtimes.com/russias-su-34-mig-fighter-jets-begin-combat-exercises-dutch-military-inspect-southern-1818600>.

116. Thomas Grove, "Russia starts nationwide show of force," Reuters, March 16, 2015, <http://www.reuters.com/article/2015/03/16/us-russia-military-exercises-idUSKBN0MC0JO20150316>.

a drill with 500 troops in the North Caucasus region of Chechnya.¹¹⁷ Russia conducted a “massive surprise inspection” in May 2015, a four-day drill involving roughly 12,000 forces and 250 aircraft from the Central Military District.¹¹⁸ The snap exercise began the same day that the Norway-led Arctic Challenge exercise began with 3,600 troops and 115 aircraft from 9 countries. Since 2013, there has been a large discrepancy between the size of NATO and Russian military exercises, with Russian drills generally 10 times as large as operations conducted by NATO.¹¹⁹ In response to questions about these large and frequent military exercises in the region, Deputy Prime Minister Dmitry Rogozin responded that “tanks don’t need visas.”

For the first time, Russia will conduct joint force drills that focus on the defense of economically strategic facilities in the Arctic. The exercises, which will take place in late 2015 near Norilsk, will include amphibious assault forces, motorized infantry divisions from the new Arctic brigades, airborne troops, and Russian Special Forces.¹²⁰ Northern Fleet commander Admiral Vladimir Korolev also indicated that additional drills and another amphibious landing will be conducted on the rougher terrain of the New Siberian Islands. The announcement of these drills came at the same time that President Putin approved a new version of its maritime doctrine, outlining measures to strengthen Russia’s naval presence in six regions, including the Arctic and Atlantic.¹²¹ According to the updated maritime doctrine, the Northern Fleet’s presence in the Arctic should be strengthened in order to defend Russia’s economic interests, particularly its EEZ, as well as Russia’s access to the Northern Sea Route.¹²² With the increased presence of NATO in Europe in response to the ongoing conflict in Ukraine, Russian military officials also see the Arctic as a strategic access point for the Northern Fleet to enter both the Atlantic and Pacific Oceans.

Russia’s announcement in the late 2000s that it would increase its military presence in the Arctic and develop its security capabilities was in response to the dramatic environmental changes in the Arctic, as well as the increased commercial and human activity along the Northern Sea Route. Other Arctic nations took similar—albeit smaller—steps to protect their Arctic borders and develop their infrastructural resources in the region. With the largest Arctic coastline, it is important for Russia to develop its search-and-rescue centers, modernize its Coast Guard and Navy, and protect its borders. But is it necessary to conduct unannounced, large-scale military exercises in the Arctic or deploy a strategic nuclear force that is reminiscent of the Cold War to achieve this goal? The answer is clearly no.

117. Ibid.

118. “Russia begins massive air force exercise,” BBC News, May 26, 2015, <http://www.bbc.com/news/world-europe-32877936>.

119. Ian J. Brzezinski and Nicholas Varangis, “The NATO-Russia Exercise Gap,” Atlantic Council, February 23, 2015, <http://www.atlanticcouncil.org/blogs/natosource/the-nato-russia-exercise-gap>.

120. “Russia to Hold First Arctic Drills on Strategic Facilities Defense in 2015,” *Sputnik International*, July 25, 2015, <http://sputniknews.com/military/20150725/1025032949.html>.

121. Roland Oliphant, “Putin eyes Russian strength in Atlantic and Arctic in new naval doctrine,” *Telegraph*, July 27, 2015, <http://www.telegraph.co.uk/news/worldnews/europe/russia/11765101/Putin-eyes-Russian-strength-in-Atlantic-and-Arctic-in-new-naval-doctrine.html>.

122. Vladimir Putin, “Morskaya Doctrina Rossisyskoi Federatsiy” [Maritime Doctrine of the Russian Federation], July 26, 2015, <http://static.kremlin.ru/media/events/files/ru/uAFi5nvux2twaqjftS5yrIZUVTJan77L.pdf>.

4 | The Effects of Climate Change and Environmental Concerns

Permafrost Thaw and Coastal Erosion

Currently, 34 percent of the world's coastlines are covered in permafrost, defined as any ground that is continuously frozen for at least two years. As these buffer zones increasingly disappear due to rising temperatures, coastal erosion accelerates and threatens infrastructure and coastal communities. With 50 percent of the total Arctic coastline located in Russia's Arctic region, Russia's Arctic infrastructure and coastal communities are likely to experience a considerable impact from permafrost thaw. The Intergovernmental Panel on Climate Change (IPCC) estimates that permafrost in the northern hemisphere will decline by 20 to 35 percent by the mid-twenty-first century and the United Nations Environment Programme suggests that non-surface permafrost could decrease by as much as 30 to 85 percent by 2100.¹ Already, the maximum extent of seasonally frozen ground in the northern hemisphere has decreased by about 7 percent from 1901 to 2002, with a further decrease of up to 15 percent during the spring season. In addition, the maximum depth of permafrost has decreased about 0.3 meters in Eurasia since the mid-twentieth century.²

In the Russian Arctic, the maximum depth of seasonal permafrost thaw has increased about 0.2 meters from 1956 to 1990.³ Russia's permafrost is divided into three zones: insular, discontinuous, and continuous. The insular and discontinuous zones experience greater temperature fluctuations that could cause serious infrastructural damage. Vladislav Bolov, head of the Emergency Situations Ministry's Center for Forecasting and Monitoring, predicts that permafrost in Russia could decrease by 10 to 18 percent in the next 25 to 30 years.⁴ The process of permafrost thaw is gradual and Russian Railways estimates that the ground temperature is rising by approximately 0.2 degrees Celsius per decade in Russia's northern region, and 0.5 degrees Celsius in the east.⁵ In Russia's

1. United Nations Environment Programme, "Policy Implications of Warming Permafrost," 2012, iii, <http://www.unep.org/pdf/permafrost.pdf>.

2. Peter Lemke, Jiawen Ren et al., "Observations: Changes in Snow, Ice and Frozen Ground," in *Climate Change 2007: The Physical Science Basis. Contribution of Working Group 1 to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. S. Solomon et al. (Cambridge: Cambridge University Press, 2007), 340, <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter4.pdf>.

3. Ibid.

4. Roland Oliphant, "Counting the Cost of Russia's Melting Permafrost," *Moscow Times*, October 6, 2011, <http://www.themoscowtimes.com/business/article/counting-the-cost-of-russias-melting-permafrost/444890.html>.

5. Ibid.

northern regions, such as the Sakha Republic, permafrost thaw causes building foundations to fracture due to the reduced load-bearing capacity of the frost during the summer months. For instance, in Yakutsk, a city in the Russian Far East that is 450 kilometers below the Arctic Circle, over 300 buildings have sustained serious damage over the past 30 years due to thawing permafrost and the sagging ground.⁶ In the southern regions, on the other hand, the threat to roads, railways, and pipelines is much more severe because pockets of non-frozen ground are beginning to emerge next to the permafrost, creating shifting and unstable boundaries and dramatic changes in topography. Subsidence, a process when the ground recedes, can cause pipelines to shift; frost heaving, a process in which the soil swells upward, can cause pipelines and their vertical piles to rise, ultimately warping pipelines until they eventually break. It is believed that soil subsidence may have contributed to a 1994 pipeline accident near Usinsk in northern Russia, in which the pipeline spewed over 160,000 tons of oil in one of the largest land spills.⁷

As Russia is becoming increasingly economically dependent on the development of its Arctic region, permafrost thaw presents significant challenges to development plans and poses a considerable threat to Russia's oil and gas infrastructure, as well as general regional infrastructure. Moreover, the costs to constantly repair damaged infrastructure in the Arctic are extremely high. According to a 2009 report by an environmental watchdog, Russia spends up to \$1.9 billion a year on repairs to pipelines and infrastructure damaged by permafrost in western Siberia.⁸ In March 2009, Russia celebrated the inauguration of its longest railway bridge, which spans the Yuribei River on the Northwest Siberian peninsula of Yamal and serves as a major transport route leading to the Bovanenkovo oil and gas fields.⁹ The bridge is the longest that has been constructed on permafrost and was expected to last until at least 2050, but only six months after its inauguration in March, the bridge began to crumble due to thawing permafrost beneath the bridge's foundations.

Besides the serious and expensive threat that permafrost thaw poses to infrastructure in the Arctic, it also has a damaging effect on the environment and climate change. A 2011 study conducted by the University of Colorado Boulder's Cooperative Institute for Research in Environmental Studies argues that up to two-thirds of the Earth's permafrost will likely thaw by 2200 and as a result will unleash vast quantities of carbon into the atmosphere.¹⁰ According to the study, an estimated 190 billion tons of carbon could be released over the next 100 years due to thawing permafrost and the subsequent decay of carbon and release of carbon dioxide. Although the Arctic has not yet become a source of carbon to the atmosphere, this amount of carbon predicted to be released by 2200 is about one-fifth of the total

6. Lina Zernova, "Russian North on shaky ground as permafrost keeps melting," Bellona Foundation, November 5, 2009, http://bellona.org/articles/articles_2009/Russia_on_thin_ice.

7. Blake Sobczak, "Thawing permafrost jeopardizes massive maze of Russian pipelines," *Energy Wire*, January 30, 2013, <http://www.eenews.net/stories/1059975505>.

8. "Permafrost thaw threatens Russia oil and gas complex: study," *Independent*, November 21, 2009, <http://www.independent.co.uk/environment/permafrost-thaw-threatens-russia-oil-and-gas-complex-study-1825137.html>.

9. Zernova, "Russian North on shaky ground as permafrost keeps melting."

10. University of Colorado at Boulder, "Thawing permafrost likely will accelerate global warming, study finds," *Science Daily*, February 17, 2011, <http://www.sciencedaily.com/releases/2011/02/110216132100.htm>.

Pile Foundations to Prevent Sinking from Thawing Permafrost in Yakutsk, Russia



Source: Wikimedia Commons, https://en.wikipedia.org/wiki/File:Yakoutsk_Construction_d%27immeuble.jpg.

amount of carbon currently in the atmosphere.¹¹ The 2010 *Arctic Climate Impact Assessment* also found that Siberia will be the main source of carbon release as its immense expanse of permafrost continues to thaw and that roughly half of global permafrost stores of carbon in yedoma (carbon-rich permafrost) are located in Siberia.¹²

In the summer of 2014, scientists identified methane-eruption craters in the Yamal Peninsula. Scientists have found a total of seven craters in Russia, five of which are in the Yamal Peninsula.¹³ According to scientists, the craters are a result of thawing permafrost, which causes a rise in pressure of the trapped methane and eventually an explosion. There is a growing concern that rising global temperatures will produce more craters with dangerous repercussions. In addition to the explosion itself, the gas is extremely flammable. One methane burst has already caught on fire. This is of particular concern on the Yamal Peninsula because of the close proximity to drilling rigs, oil and gas fields, and pipelines.

11. Ibid.

12. Susan A. Crate, "Climate Change and Human Mobility in Indigenous Communities of the Russian North," Brookings-LSE Project on Internal Displacement, January 30, 2013, 11, <http://www.brookings.edu/~media/research/files/papers/2013/1/30%20arctic%20russia%20crate/30%20climate%20russia%20crate%20paper.pdf>.

13. Terrence McCoy, "The Siberian crater saga is more widespread—and scarier—than anyone thought," *Washington Post*, February 26, 2015, <http://www.washingtonpost.com/news/morning-mix/wp/2015/02/26/the-siberian-crater-problem-is-more-widespread-and-scarier-than-anyone-thought/>.

Furthermore, Siberian crater B2 has turned into a lake while still leaking methane gas; it is located just six miles from Bovanenkovo, a major Gazprom gas field.¹⁴

The issues of permafrost thaw and coastal erosion are closely linked as thawing permafrost increases the susceptibility of coasts to higher rates of erosion. Coastal erosion is also exacerbated by an increasing lack of coastal sea ice, which is no longer available to serve as a buffer from land erosion caused by severe Arctic storms. The Laptev Sea region is especially vulnerable to erosion with 25 percent of its 7,500-kilometer coastline composed of very ice-rich permafrost deposits.¹⁵ Some coastlines in the Russian Eastern Arctic have retreated as much as 30 to 50 kilometers over the past 4,000 to 5,000 years.¹⁶

As far back as 1932, the Soviet Union established a coastal monitoring and investigations system along the Northern Sea Route.¹⁷ This integrated management system was eventually abandoned in favor of a more traditional, national-based system with an increased focus on industrial requirements. Until recently, social and environmental issues, while highlighted in Russian strategic documents, were not integrated into the Russian coastal framework and were viewed as secondary to industrial objectives. According to the 2009 *Strategic Action Programme for Protection of the Russian Arctic Environment*, the goal of establishing social-ecological monitoring networks in Russian Arctic communities was to be completed by 2012.¹⁸ However, these monitoring networks do not seem to be in place yet. In 2014, Deputy Defense Minister General Dmitry Bulgakov announced that “a regional environmental center of the Northern Fleet is to be created in the near future.”¹⁹

After serving as the Soviet Union’s nuclear dump for several decades, the Kola Peninsula still bears the scars of contamination and severe ecological damage. During the Cold War, roughly 150 nuclear submarines were stationed on the Kola Peninsula in the Murmansk region; as of 2005, the peninsula contained 20 percent of the world’s nuclear reactors.²⁰ It is estimated that the Soviet military dumped 17,000 containers, 19 vessels with radioactive waste, and 14 nuclear reactors in the Kara Sea, while low-level liquid waste was poured directly into the water.²¹ Moreover, Russia’s Northern Fleet deliberately sank

14. Ibid.

15. F. Günther, P. P. Overduin, A. V. Sandakov, G. Grosse, and M. N. Grigoriev, “Short- and long-term thermo-erosion of ice-rich permafrost coasts in the Laptev Sea region,” *Biogeosciences*, January 19, 2013.

16. Donald L. Forbes, ed., *State of the Arctic Coast 2010: Scientific Review and Outlook* (Geesthacht, Germany: Helmholtz-Zentrum Geesthacht, April 2010), 44, http://library.arcticportal.org/1277/1/state_of_the_arctic_coast_2010.pdf.

17. Ibid., 95.

18. Russian Maritime Board, *Strategic Action Programme for Protection of the Russian Arctic Environment*, (Moscow: Ministry for Economic Development of the Russian Federation, June 2009), 24, http://www.uarctic.org/media/14227/RussianEnvironment_SpuoC.pdf.

19. Trude Pettersen, “Russia to build military Arctic environmental center,” *Barents Observer*, October 14, 2014, <http://barentsobserver.com/en/security/2014/10/russia-build-military-arctic-environmental-center-14-10>.

20. Erich Wiedemann, “Cold War Legacies: Nuclear Waste in the Russian Arctic,” *Spiegel International*, December 12, 2005, <http://www.spiegel.de/international/spiegel/cold-war-legacies-nuclear-waste-in-the-russian-arctic-a-390715.html>.

21. Laurence Peter, “Russia explores old nuclear waste dumps in Arctic,” BBC News, January 25, 2013, <http://www.bbc.com/news/world-europe-21119774>.

13 nuclear submarines around the Novaya Zemlya archipelago,²² including the K-278 and the K-27 (referred to as a “nuclear time bomb”²³), both of which remain at the bottom of the Norwegian and Kara Seas. The K-159 submarine, which sank in the Barents Sea in 2003, is a mere 130 kilometers from Norway and is considered “one of the most radioactively dangerous objects on the bottom of the Arctic seas.”²⁴ Unconfirmed reports of radioactive leaks from the submarine have raised international concern due to the submarine’s location in highly fertile fishing grounds. Begun by Germany in 2005, other international donors have contributed to the construction of a containment facility in Saida Bay on the Kola Peninsula, which will handle the entire cycle of radioactive waste management.²⁵ Despite the history of nuclear waste contamination on the Kola Peninsula, Rosatom director Sergey Kirienko announced in 2011 the planned construction of the Kola NPP-2 nuclear power plant, with construction of the first reactor expected to begin in 2015.²⁶

Ocean Acidification

Since the start of the industrial revolution, rising carbon dioxide levels have led to a 26 percent increase in the acidity of the Arctic Ocean. Scientists have found decreases in seawater pH of roughly 0.02 per decade since the late 1960s in both the Iceland and Barents Seas.²⁷ The Arctic Monitoring and Assessment Programme’s (AMAP) report on ocean acidification also found that the primary driver of ocean acidification is an increase in the amount of carbon dioxide emitted to the atmosphere via human activities. Due to the large quantities of fresh water in the Arctic Ocean, it is much more susceptible to acidification because it is less effective at neutralizing carbon dioxide’s acidifying effects. “The Arctic Ocean is the *one place* on Earth where these forces [sea-ice retreat and increasing supplies of fresh water and organic carbon] have come together on such a grand scale to intensify the acidification driven by atmospheric carbon dioxide.”²⁸

While more research is required, studies indicate that ocean acidification will have significant direct and indirect effects on Arctic marine ecosystems. In some cases, it is possible that marine organisms will be negatively affected by increased acidification, even to the point of local extinction, while food sources may be impacted for other marine wildlife. In particular, it is expected that ocean acidification could be a significant factor in the

22. Wiedemann, “Cold War Legacies.”

23. Thomas Nilsen, “Urgent to lift dumped K-27 nuclear sub,” *Barents Observer*, September 25, 2012, <http://barentsobserver.com/en/nature/urgent-lift-dumped-k-27-nuclear-sub-25-09>.

24. Charles Digges, “Radiological survey of sunken K-159 finally puts to sea after mechanical delays,” Bellona Foundation, September 1, 2014, <http://bellona.org/news/nuclear-issues/radioactive-waste-and-spent-nuclear-fuel/2014-09-radiological-survey-sunken-k-159-finally-puts-sea-mechanical-delays>.

25. Thomas Nilsen, “Giant radioactive waste complex taking shape,” *Barents Observer*, October 15, 2013, <http://barentsobserver.com/en/security/2013/10/giant-radioactive-waste-complex-taking-shape-15-10>.

26. Thomas Nilsen, “Russia announces new nuclear power plant on Kola,” *Barents Observer*, October 6, 2011, <http://barentsobserver.com/en/briefs/russia-announces-new-nuclear-power-plant-kola>.

27. Arctic Monitoring and Assessment Programme (AMAP), *Arctic Ocean Acidification 2013: An Overview* (Oslo: AMAP, 2014), ix, <http://www.amap.no/documents/doc/Arctic-Ocean-Acidification-2013-An-Overview/1061>.

28. *Ibid.*, ix, 11.

alteration of the composition of fish species in the Arctic Ocean. According to the AMAP report, “Ocean acidification is likely to affect the abundance, productivity, and distribution of marine species,” as well as the quantity, quality, and predictability of commercially viable fish stocks.²⁹ The Barents Sea, in particular, and its fish stocks are likely to be more vulnerable to increasing acidification because the low temperatures in the Barents Sea means it absorbs higher amounts of carbon dioxide.³⁰ Scientists estimate that if carbon dioxide emissions continue at the current rate, the Barents Sea could experience a pH drop of 0.35 in the next 60 years.³¹ Ultimately, the impacts of ocean acidification on Arctic marine ecosystems will also affect the indigenous communities that are dependent on these resources.

Biodiversity Changes and Potential Loss

Climate change, as well as pollution, is already having a significant impact on biodiversity and ecosystems in the Arctic. Northern Russia is home to 50 percent of the world’s boreal forest, yet global climate models (GCMs) predict that Russia could lose up to 50 percent of its boreal forest reserves in the near future due to climate change in the Arctic.³² Forest and shrub ecosystems in Russia have shrunk to such an extent that it is doubtful whether they can ever be fully restored. Studies have found that land degradation in the Arctic is more severe in industrial centers and near pipelines, railways, and highways. In the Russian Arctic, each year about 5,000 to 6,000 hectares in the oil industry, 2,500 to 3,000 hectares in the natural gas industry, and 400 to 500 hectares under pipeline construction become un-rehabilitated lands.³³

In addition to climate change, the uncontrolled use of biological resources is having a negative impact on biodiversity in the Arctic. Overfishing, poaching, and unregulated hunting of marine and terrestrial wildlife are contributing to the general loss of biodiversity in the Arctic, including some regions of the Russian Arctic. According to the *Strategic Action Programme for Protection of the Russian Arctic Environment*, released in 2009, “the alternation of ecosystems in the Russian Arctic has long been confined to no more than 1–3 percent of the areas of the polar deserts and tundra.”³⁴ Due to large-scale developments and increasing fragmentation of the soil (the breakdown and crumbling of soil aggregates), the threat to Arctic ecosystems and biodiversity loss is increasing. For instance, areas of degraded reindeer pastures have been discovered in the Nenets and Yamalo-Nenets Autonomous Districts. Fewer pastures are available for reindeer herding due to the increased presence of mining and petroleum industries. Biotic pollution, or the introduction of a foreign

29. Ibid., x.

30. Margaret Cappa, “Ocean acidification could cause loss of biodiversity in Barents Sea,” *Barents Observer*, May 18, 2010, <http://barentsobserver.com/en/sections/business/ocean-acidification-could-cause-loss-biodiversity-barents-sea>.

31. Ibid.

32. Crate, “Climate Change and Human Mobility in Indigenous Communities of the Russian North,” 9.

33. Russian Maritime Board, *Strategic Action Programme for Protection of the Russian Arctic Environment* (Moscow: Ministry for Economic Development of the Russian Federation, June 2009), 8.

34. Ibid.

Taiga (Boreal Forest) in Verkhoyansk Valley



Source: Wikimedia Commons, https://en.wikipedia.org/wiki/File:Talkessel_von_Werchojansk.JPG.

or invasive species, could also become an issue as climate change and economic activity influence the migration of species. Of particular concern at the moment are the spread of the Kamchatka crab and Far Eastern salmon species into the Atlantic sector of the Arctic, as well as the general northward expansion of weedy plants and synanthropic animals that are known to drive out native flora and fauna.³⁵

Over the past few decades, Russia has experienced an increase in the number of fires, particularly in Siberia's peat lands. As early as the 1920s, the Soviets drained swamps throughout Russia to obtain peat for electrical power stations. The swamps were never refilled and the result has been an increased number of peat fires.³⁶ It is estimated that there are over 560,000 hectares of peat marshes in Russia, with the main concentrations in West

35. Ibid., 9.

36. Andrew E. Kramer, "Past Errors to Blame for Russia's Peat Fires," *New York Times*, August 12, 2010, http://www.nytimes.com/2010/08/13/world/europe/13russia.html?_r=0.

Siberia, Kamchatka, and the northern part of European Russia.³⁷ While peat fires generally burn a smaller area than forest fires, they produce significantly larger quantities of smoke and can burn up to 10 times more biological mass than above-ground fires. In 2010, Russian officials reported approximately 1,100 peat fires that covered nearly 4,200 acres³⁸ and the smog from the fires was so severe that visibility in Moscow was reduced to 55 yards.³⁹

Researchers at the International Institute for Applied Systems Analysis reported that gas flaring from oil extraction accounts for 42 percent of the black carbon in the Arctic, yet only 3 percent of black carbon emissions in the rest of the world.⁴⁰ Although gas flaring is preferred to venting (releasing the gas into the atmosphere) because flaring eliminates flammable methane, if inefficient technologies are used, gas flaring can produce large quantities of black carbon.⁴¹ In 2008, Russia was responsible for approximately one-third of global gas flares⁴² and in 2011, satellite data from the National Oceanic and Atmospheric Administration (NOAA) revealed that Russia flared 35 billion cubic meters of gas.⁴³ A 2010 study also found that the highest concentrations of black carbon in the entire Arctic region were in northern Russia, with particularly high concentrations near Vorkuta, which is located near an area associated with high levels of gas flaring.⁴⁴ In 2009, the Russian government adopted the Decree on Measures to Stimulate the Reduction of Air Pollution from Associated Gas Flaring Products with the goal of utilizing 95 percent of associated petroleum gas (APG) by 2012.⁴⁵ While much of Russia has struggled to meet this 95 percent goal, the Khanty-Mansiysk Autonomous District in West Siberia increased the volume of efficiently used APG from 7.9 percent in 2007 to 86.4 percent in 2010, and companies in the region invested roughly \$1 billion in 2012 on APG utilization projects.⁴⁶

IMPACT ON ARCTIC COMMUNITIES

The Russian Arctic is the most populous portion of the circumpolar Arctic, with approximately 1.9 million inhabitants. Russia's indigenous communities comprise only 2 percent

37. Gleb Fedorov, "Peat and forest fires blazing around Russia after hot spell," *Russia Beyond the Headlines*, August 7, 2014, http://rbth.com/science_and_tech/2014/08/07/peat_and_forest_fires_blazing_around_russia_after_hot_spell_38829.html.

38. Kramer, "Past Errors to Blame for Russia's Peat Fires."

39. Fedorov, "Peat and forest fires blazing around Russia after hot spell."

40. International Institute for Applied Systems Analysis (IIASA), "Gas flaring and household stoves speed Arctic thaw," September 10, 2013, http://www.iiasa.ac.at/web/home/about/news/Oil_industry_and_household_stoves_speed_Arctic_thaw.en.html.

41. Arctic Council Task Force on Short-Lived Climate Forcers, *Recommendations to Reduce Black Carbon and Methane Emissions to Slow Arctic Climate Change* (Tromsø, Norway: Arctic Council, 2013), <http://www.arctic-council.org/index.php/en/document-archive/category/447-slcfc-tf?download=1764:task-force-on-short-lived-climate-forcers-final-summary-report-english>.

42. A. Stohl, Z. Klimont, S. Eckhardt et al., "Black carbon in the Arctic: the underestimated role of gas flaring and residential combustion emissions," *Atmospheric Chemistry and Physics* 13 (2013): 8834–8855, <http://www.atmos-chem-phys.net/13/8833/2013/acp-13-8833-2013.pdf>.

43. "Igniting Solutions to Gas Flaring in Russia," World Bank, November 12, 2013, <http://www.worldbank.org/en/news/feature/2013/11/12/igniting-solutions-to-gas-flaring-in-russia>.

44. Stohl et al., "Black carbon in the Arctic," 8849.

45. Climate Action Tracker (CAT), "Russian Federation," April 2, 2015, <http://climateactiontracker.org/countries/russianfederation.html>.

46. "Igniting Solutions to Gas Flaring in Russia," World Bank.

of the entire northern Russian population.⁴⁷ However, their subsistence area is roughly 60 percent of the total territory of the Russian Federation. These indigenous communities are highly dependent on the natural environment for their sustainment, livelihood, and cultural identity. Surveys among Nenets reindeer herders have found that these indigenous peoples are fully engaged in traditional activities; they herd reindeer year-round, fish for a five to sixth month period, and hunt for two to three months a year.⁴⁸ Yet it is becoming increasingly difficult for indigenous communities to fully sustain their way of life as oil, gas, and mining industries continue to push northward in pursuit of resource development. The increased presence of these industries in the Arctic is resulting in the loss of pasture lands, pollution of rivers, lakes, and ground water, and the disruption of animal migration routes. Between 1984 and 2002, pastures that could sufficiently sustain reindeer herding had been reduced by 20 percent.⁴⁹ As of 2008, Russia was the only Arctic nation that had not yet prohibited the use of heavy vehicles on unfrozen tundra ground in connection with oil exploration.⁵⁰ Studies have found that even a single passage of an off-road vehicle can cause visible damage to the tundra for decades, as well as impacting the growth of vegetation.⁵¹

Due to the rising presence of pollutants in the Arctic, water security is becoming a serious problem. In the Nenets Autonomous and Yamalo-Nenets Autonomous Districts, the concentration of petroleum hydrocarbons in the drinking water is as high as 10 to 35 of the maximum allowable concentrations (MACs).⁵² Persistent organic pollutants (POPs) are also becoming a significant threat to indigenous Arctic communities as POPs accumulate in the fatty tissues of species, including polar bears, seals, and whales. According to the 2009 *Strategic Action Programme*, “In the Russian Arctic, the POPs concentrations that are a threat to the health of the indigenous population are the highest in the circumpolar Arctic.”⁵³ Pollution has also affected fish populations, especially in many of Russia’s northern rivers, thus reducing and even eliminating a form of subsistence for indigenous communities. Oil leaks from old or damaged pipelines are also having a deleterious effect on the health of Russia’s Arctic communities. In the village of Ust-Usa, located where the Usa River meets the Pechora River, the incidence of cancer in 2012 was 50 percent higher

47. Mark Nuttall, “Hunting, Herding, Fishing, and Gathering: Indigenous Peoples and Renewable Resource Use in the Arctic,” in *Arctic Climate Impact Assessment*, ed. Arctic Climate Impact Assessment (Cambridge, Cambridge University Press, November, 2005), 679, http://www.acia.uaf.edu/PDFs/ACIA_Science_Chapters_Final/ACIA_Ch12_Final.pdf.

48. Iulie Aslaksen et al., “Interdependency of Subsistence and Market Economies in the Arctic,” in *The Economy of the North 2008*, ed. Solvie Glomsrød and Iulie Aslaksen (Oslo: Statistics Norway, November 2009), 90, http://www.ssb.no/a/english/publikasjoner/pdf/sa112_en/sa112_en.pdf.

49. Winfried K. Dallmann, Vladislav V. Peskov, and Olga A. Murashko, eds., *Monitoring of Development of Traditional Indigenous Land Use Areas in the Nenets Autonomous Okrug, Northwest Russia* (n.p.: International Polar Year, 2010), 42, <http://ipy-nenets.npolar.no/pdf%20files/MODIL-NAO%20EN%20final%202010-03-05.pdf>.

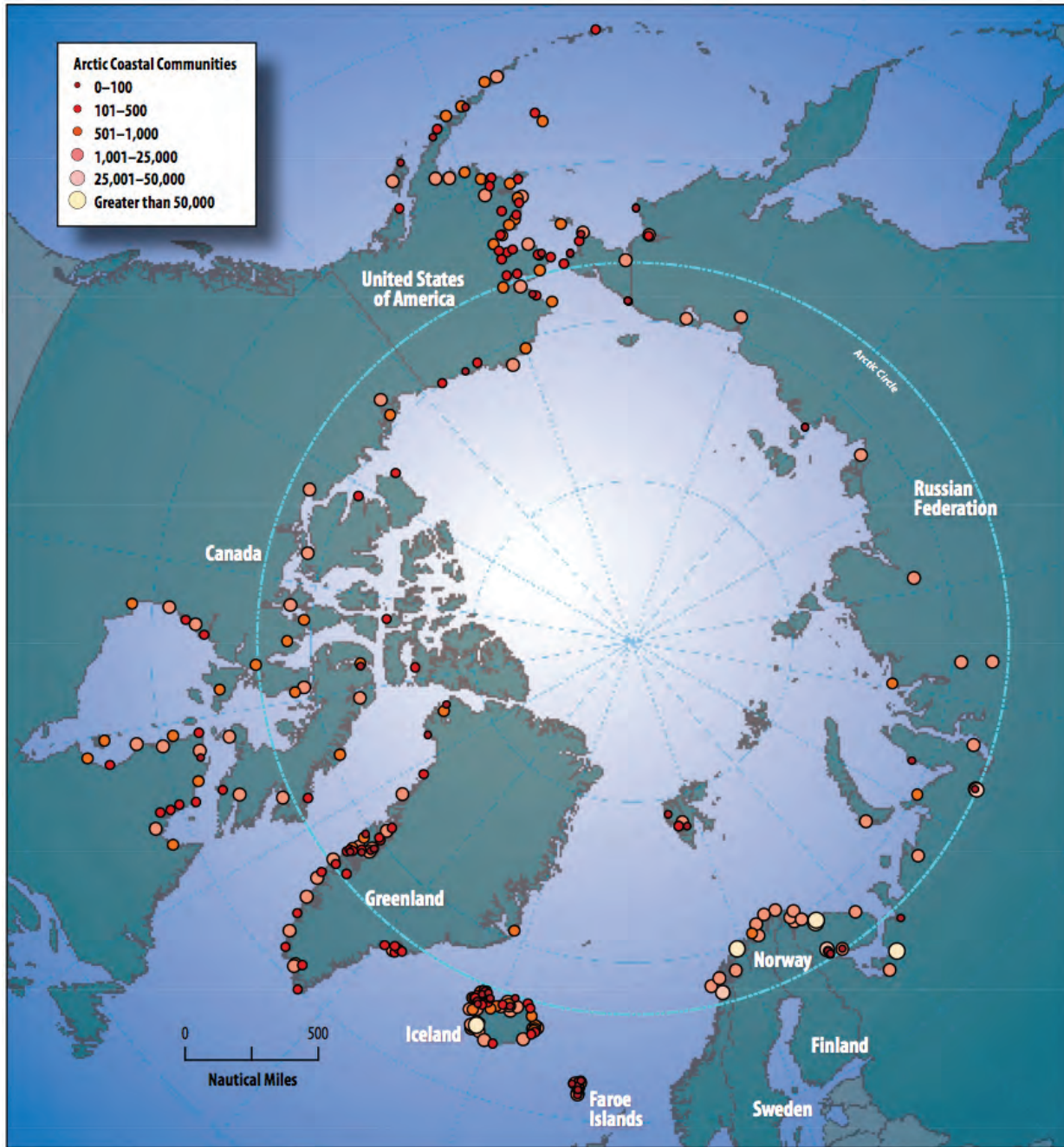
50. Aslaksen et al., “Interdependency of Subsistence and Market Economies in the Arctic,” 90–91.

51. Timo Kumpula, Anu Pajunen, Elina Kaarlejarvi et al., “Land use and land cover change in Arctic Russia: Ecological and social implications of industrial development,” *Global Environmental Change* (2011): 2, <http://www.arcticcentre.org/loader.aspx?id=28286a21-4744-4413-b821-d229fe6a0ad7>.

52. Russian Maritime Board, *Strategic Action Program*, 7.

53. Ibid.

Map of Circumpolar Coastal Human Population Distribution (Indigenous and Nonindigenous), 2009



Source: Wikimedia Commons. Image by Susie Harder, https://commons.wikimedia.org/wiki/File:Circumpolar_coastal_human_population_distribution_ca._2009.png.

than it was in 2000 and the average life expectancy is 58, compared with the national average of 70.⁵⁴

54. Benjamin Bidder, Matthias Schepp, and Gerald Traufetter, “‘The Black Plague’: Russia Plays Game of Arctic Roulette in Oil Exploration,” *Spiegel International*, August 24, 2012, <http://www.spiegel.de/international/business/russian-oil-exploration-in-arctic-circle-causes-major-environmental-damage-a-851617.html>.

The Russian Association of Indigenous Peoples of the North (RAIPON) promotes the rights and interests of Russia's indigenous communities and is represented at international organizations including the Arctic Council, the United Nations Permanent Forum on Indigenous Issues, and the International Working Group of Indigenous Affairs (IWGIA). RAIPON represents the interests of 41 indigenous groups consisting of approximately 250,000 people, 34 different regional and ethnic organizations, and encompassing roughly 60 percent of the territory from Murmansk to Kamchatka.⁵⁵

Unfortunately, after operating in Russia for 22 years and representing the interests of indigenous communities, in November 2012, the Russian Ministry of Justice ordered RAIPON to close due to alleged irregularities in its organizational statutes. According to the Russian Ministry of Justice, RAIPON's operations would be suspended for six months because its statutes were not in line with federal law.⁵⁶ However, many observers viewed the suspension of RAIPON as a way to eliminate one of the last barriers preventing companies and states from extracting valuable resources in the north. RAIPON made repeated attempts to adjust its statutes in line with federal law and the requirements of the Ministry of Justice; however, the steps were not approved.⁵⁷ The crackdown on RAIPON spurred international involvement. At a meeting in November 2012, the Arctic Council members, including the Russian senior Arctic official Anton Vasiliev, expressed their concern regarding the absence of RAIPON. The Arctic Council members also issued a joint statement calling on "the Senior Arctic Official of the Russian Federation in close cooperation with RAIPON and the Ministry of Justice of the Russian Federation to facilitate, as appropriate, the fulfillment of RAIPON's important role as a permanent participant in the Arctic Council."⁵⁸ In March 2013, RAIPON was permitted to reopen after the Ministry of Justice approved the amendments to the organization's statutes.⁵⁹ However, shortly after this hard-won victory, there was speculation that Moscow directly interfered with the election of the organization's new president when indigenous rights activist Pavel Sulyandziga unexpectedly withdrew his candidature.⁶⁰ As a result, Gregory Ledkov, deputy of the State Duma from the Yamal-Nenets Autonomous District and member of the United Russia political party, was elected to lead the organization.

55. "Russia strangles international indigenous peoples organization as war on NGOs continues," Bellona Foundation, November 5, 2012, <http://bellona.org/news/russian-human-rights-issues/russian-ngo-law/2012-11-russia-strangles-international-indigenous-peoples-organization-as-war-on-ngos-continues>.

56. Jon Spaul, "Russian indigenous peoples' organization ordered to close," *Survival*, November 22, 2012, <http://www.survivalinternational.org/news/8845>.

57. Atle Staalesen and Thomas Nilsen, "Moscow orders closure of indigenous peoples organization," *Barents Observer*, November 12, 2012, <http://barentsobserver.com/en/arctic/moscow-orders-closure-indigenous-peoples-organization-12-11>.

58. Atle Staalesen, "Crackdown on RAIPON spurs international concern," *Barents Observer*, November 15, 2012, <http://barentsobserver.com/en/arctic/crackdown-raipon-spurs-international-concern-15-11>.

59. Atle Staalesen, "Hard-fought new life for RAIPON," *Barents Observer*, March 15, 2013, <http://barentsobserver.com/en/society/2013/03/hard-fought-new-life-raipon-15-03>.

60. Thomas Nilsen, "Moscow staged RAIPON election thriller," *Barents Observer*, April 3, 2013, <http://barentsobserver.com/en/politics/2013/04/moscow-staged-raipon-election-thriller-03-04>.

Russia's Environmental Protection Strategies

According to some estimates, the shores of the Arctic Ocean are littered with approximately 4 million tons of industrial and construction waste, some of which is toxic.⁶¹ Russia's 2009 *Strategic Action Programme* identified the growing importance of protecting the Arctic environment in the regional and global context.⁶² According to the report, over 100 "hot spots" have been identified in the Russian Arctic.⁶³ A hot spot is a limited area within which man-induced pollution sources have adverse environmental impacts.

In April 2011, the Kremlin introduced, by government decree, the Comprehensive Plan of Implementing the Russian Federation's Climate Doctrine for the Period until 2020. For the 2011–2020 period, the plan suggests that Russia's Ministry of Economic Development introduce changes into Russia's long-term macroeconomic forecasts in order to take "into account climate risks, mitigation of anthropogenic impacts on the climate, and adaptation to climate change."⁶⁴ The plan also charges the Ministry of Transport with the responsibility of developing measures to reduce carbon dioxide emissions from civil aviation by 2015 and from commercial sea and river transport by 2020. The creation of the new Russian Arctic Commission does not seem to have impacted the 2011 implementation plan.

Beyond its national policies, Russia has also been joining international climate initiatives. In August 2012, the Ministry of Foreign Affairs submitted an application for Russia to join the Clean Air and Climate Coalition (CCAC) in conjunction with the United Nations Environment Programme (UNEP). However, Russia's climate initiatives have not been driven by a concern for how climate change could impact Russian territory. Instead, these initiatives have been motivated by the possible impacts of climate change and international mitigation policies on Russia's energy export-based economy.⁶⁵ In spite of Russia's 2011 climate doctrine and its outward appearances of joining climate initiatives, there has been little substantive action.

Impact of Russia's NGO Law

In July 2012, the Duma passed legislation that requires non-profit organizations and non-governmental organizations (NGOs) to register as foreign agents with Russia's Ministry of Justice if they receive foreign donations or serve as the instrument of a foreign power. The Foreign Agent Law increases registration barriers, subjects existing NGOs to costly audits, and generally deters these organizations from engaging in political activities or activism.

61. Vladislav Inozemtsev, "Forget Polar Bears, The Arctic is the Land of The Rusty Drum," Worldcrunch, September 12, 2012, <http://www.worldcrunch.com/business-finance/forget-polar-bears-the-arctic-is-the-land-of-the-rusty-drum/oil-arctic-environment-pollution-russia/c2s9564/>.

62. Russian Maritime Board, *Strategic Action Program*, 4.

63. Ibid.

64. "Russian government introduces plan to enforce presidential climate doctrine," Bellona Foundation, May 6, 2011, http://www.bellona.org/articles/articles_2011/climate_plan_enforcement.

65. Alexey Korokin and Anna Koropo, "Russia's Post-Kyoto Climate Policy," *FNI Climate Perspectives* 10 (May 2013), 5, <http://www.fni.no/doc&pdf/FNI-Climate-Policy-Perspectives-10.pdf>.

The law has been particularly devastating for environmental organizations, 70 percent of which receive funding via grants from foreign governments and organizations.⁶⁶ Alexander Nikitin, head of the St. Petersburg-based Environment Rights Center Bellona argues that one of the most challenging things is the vague language of the law and the uncertain meaning of “political activity.” According to Nikitin, “If you are talking about saving rabbits, then it’s not politics, but if you take a stand on nuclear energy or encroachment on preserved lands [by oil companies] then it’s politics.”⁶⁷

Besides negatively affecting many environmental NGOs, there is concern that the Foreign Agent Law could inhibit important Arctic cooperation between Norway and Russia. For 20 years, Norway and Russia have cooperated on Arctic research through organizations such as Akvaplan-niva (a Norwegian research institute), the University of Tromsø, and the Murmansk Marine Biological Institute of the Russian Academy of Science. In light of the Foreign Agent Law, there is concern that this collaborative relationship could come to an end. Rune Rafaelsen, head of the Norwegian Barents Secretariat, argues that “contacts and cooperation between young researchers across the borders in the Barents Region are of key importance.”⁶⁸

Russia has the most to gain economically from an increasing ice-free Arctic; environmentally, Russia has the most to lose of the five Arctic coastal states due to the size of the population directly impacted, its substantial northern infrastructure, the length of its coastline, and its massive tundra and permafrost regions. Strategically and intellectually, Russian officials understand the magnitude of the challenges it faces due to climate change. Although Russia’s numerous Arctic strategies emphasize the need for strong, sustainable development practices, when it comes to the implementation of these strategies, Russia’s Arctic economic imperatives far outweigh the need for enhanced environmental stewardship and adequate resource application for climate resilience.

66. Charles Diggs, “NGOs to be called ‘foreign agents’ in devastating new bill under consideration in Russia’s Duma,” Bellona Foundation, March 7, 2012, http://www.bellona.org/articles/articles_2012/NGO_foreign_agents.

67. Ibid.

68. Thomas Nilsen, “Fears NGO-law could halt Barents research,” *Barents Observer*, June 18, 2013, <http://barentsobserver.com/en/society/2013/06/fears-ngo-law-could-halt-barents-research-18-06>.

5 | Shared Interests: U.S.-Russian Bilateral Arctic Cooperation

The United States and Russia have a long-standing history of relations in the Arctic region that have shaped both their bilateral relationship and the development of the Arctic. During World War II, the Arctic symbolized the close wartime alliance between the then Soviet Union and the United States, serving as a supply lifeline to the Soviet Eastern Front via the Port of Murmansk. However, as the wartime allies transformed into Cold War archenemies, the Arctic region again reflected contemporary geopolitical times, serving as an “Ice Curtain” between the two superpowers.

As Soviet president Mikhail Gorbachev’s perestroika reforms were undertaken and the Berlin Wall fell, the geopolitical ice in the Arctic began to figuratively melt between the two superpowers. The region reflected both the increased uncertainty and the promise of a new direction in the bilateral relationship. The years subsequent to the dissolution of the Soviet Union are characterized by periods of heightened Arctic cooperation. For instance, the signing of the October 1995 memorandum of understanding by Admiral Robert E. Kramek of the U.S. Coast Guard (USCG) and General Andrei Nikolayev, director of the Federal Border Service (FBS) of the Russian Federation, set the framework for maritime cooperation between the two countries, particularly with regard to search and rescue and maritime law enforcement. While FBS and U.S. Coast Guard cooperation continues, the U.S.-Russia relationship has now hardened, infused with renewed animosity.

There have been numerous instances of U.S.-Russian cooperation in the Arctic, most notably the effective U.S.-Russian maritime cooperation along the narrow Bering Strait. There have also been joint efforts to protect the pristine Arctic environment and indigenous cultural heritage, as well as to understand the impacts of climate change, such as the Shared Beringian Heritage Program, which links the Beringia National Park in Chukotka, Russia, with the Bering Land Bridge National Preserve and Cape Krusenstern National Monument in the U.S. state of Alaska. The program aims to improve local and international understanding of Arctic resources and to preserve and promote the vitality of indigenous communities.¹ Recently, the United States and Russia took a step to improve people-to-people relations by introducing a visa waiver for indigenous residents in Chukotka and

1. National Park Service, “Shared Beringian Heritage Program,” U.S. Department of Interior, December 12, 2014, <http://www.nps.gov/akso/beringia/about/>.

Alaska, making it easier for relatives across the Bering Strait to reconnect.² In the science and research arena, the Russian-American Long-term Census of the Arctic (RUSALCA) has conducted expeditions since 2004 to monitor changes in nutrients and marine life from the Bering Strait to the Chukchi Sea.³

However, there have also been several sobering security incidents in the Arctic that reiterate the potential effects of geopolitical uncertainty. For instance, between December 2007 and February 2008, two Russian nuclear submarines inexplicably appeared in the North Atlantic. In June 2012, Russia conducted exercises over the central Arctic Ocean, deploying approximately 30 strategic nuclear bombers and support aircraft. In March 2015, Russia conducted unannounced military exercises in the Arctic that involved over 45,000 forces. Over the past several years, Russian military aircraft have increasingly tested U.S. and Canadian air defense identification zones (ADIZs) on a number of occasions, with at least 16 incursions into the U.S. ADIZ over a 10-day period in 2014.⁴ While both the United States and Russia strive to maintain and further foster cooperation in the Arctic, these and other incidents serve as a cautionary reminder of the potential spillover effect from geopolitical tensions.

Areas of Cooperation: The Bilateral Presidential Commission

In an effort to reposition or “reset” the U.S.-Russia bilateral relationship following the 2008 Russian-Georgian conflict, U.S. president Barack Obama and former Russian president Dmitry Medvedev created a Bilateral Presidential Commission (BPC) in July 2009. The purpose of the BPC was to identify areas of cooperation and pursue joint projects and actions that strengthen strategic stability, international security, economic well-being, and the development of ties between the Russian and American people. The BPC was similar in structure and size to a previous bilateral commission from the mid-1990s, the Gore-Chernomyrdin Commission that sought to promote cooperation on issues of space exploration, energy, science and technology, and trade and business development.

Since its creation, the BPC’s structure has grown significantly with the addition of 21 working groups and over 60 U.S. and Russian government agencies supporting the work of the commission.⁵ In 2011, under the auspices of the BPC, U.S. and Russian armed forces

2. Jennifer Monaghan, “Bilateral Visa Waiver Announced for Indigenous Peoples of Alaska, Russia’s Chukotka,” *Moscow Times*, July 23, 2015, <http://www.themoscowtimes.com/news/article/bilateral-visa-waiver-announced-for-indigenous-peoples-of-alaska-russias-chukotka/526095.html>.

3. National Oceanic and Atmospheric Administration (NOAA), “RUSALCA 2014 Expedition Report, July 8–17, 2014,” 1, http://www.arctic.noaa.gov/rusalca/sites/default/files/atoms/files/Rusalca14_expeditionReport_8-27-2014.pdf.

4. Bill Gertz, “Russian bombers penetrated U.S. airspace at least 16 times in past 10 days,” *Washington Times*, August 7, 2014, <http://www.washingtontimes.com/news/2014/aug/7/russian-bombers-penetrated-us-airspace-least-16-ti/>.

5. U.S.-Russia Bilateral Presidential Commission, “U.S.-Russia Bilateral Presidential Commission: Spring 2012 Joint Report,” March 26, 2012, 4, <http://www.state.gov/documents/organization/187041.pdf>.

USS *Fitzgerald* Destroyer (Left) with the Russian Navy Cruiser RFS *Varyag* during the 2011 Pacific Eagle Military Exercise



Source: U.S. Navy photo by Cmdr. Jason W. Orender, [https://commons.wikimedia.org/wiki/File:US_Navy_111015-N-ZZ999-257_The_Arleigh_Burke-class_guided-missile_destroyer_USS_Fitzgerald_\(DDG_62\),_left,_is_underway_opposite_the_Russian_Federat.jpg](https://commons.wikimedia.org/wiki/File:US_Navy_111015-N-ZZ999-257_The_Arleigh_Burke-class_guided-missile_destroyer_USS_Fitzgerald_(DDG_62),_left,_is_underway_opposite_the_Russian_Federat.jpg).

performed joint exercises and carried out more than 50 military-to-military activities, an unprecedented level of engagement between the two powers. Joint operations included the Pacific Eagle exercise in which U.S. and Russian navies completed training operations to improve maritime relations and enhance interoperability, as well as the Northern Eagle exercise in 2012 that included the Russian, U.S., and Norwegian navies and tested interoperability at sea. The commission has also fostered and strengthened people-to-people relations. In 2011, the BPC reached an agreement establishing multiple-entry, three-year visas as the norm for American and Russian businesspeople and tourists.⁶ At the inaugural meeting of the BPC Innovation Working Group (IWG) in 2011, an agreement was signed between the IWG and the Skolkovo Foundation to develop bilateral cooperation on innovation and to discuss their respective legal frameworks and identify best practices to promote entrepreneurship and innovative collaboration.⁷

6. Ibid., 5.

7. Ibid., 27.

However, in response to Russia's illegal annexation of Crimea and military aggression in eastern Ukraine, the United States "has temporarily suspended several projects planned under the auspices of the U.S.-Russia Bilateral Presidential Commission as well as some cooperative law enforcement activities. Funding for these activities will instead be used to contribute to a package of U.S. assistance to Ukraine . . . which will support economic reform and address other pressing needs, including combatting corruption and recovering stolen assets."⁸

Regional Fisheries Organizations

Increased human and economic activity in the Arctic will demand greater cooperation between Arctic coastal states, and particularly between the United States and Russia where their borders meet in the Bering Strait. As previously noted, there has been extensive coordination of the management of the Bering Strait between the USCG and the FSB concerning environmental regulations and maritime safety. In 1997, both services agreed to start sharing law enforcement information related to fisheries, including vessel locations. Their collaboration in the Bering Sea has since expanded to include search-and-rescue operations, protection of their respective exclusive economic zones (EEZs), maritime border security, and prevention of terrorism and smuggling at sea.⁹ The USCG and the FSB have also developed a cooperative relationship through the North Pacific Coast Guard Forum (NPCGF), which was established in 2000 and also includes Japan, China, Canada, and South Korea. The NPCGF fosters multilateral cooperation in the North Pacific through joint operations and exercises, information exchange, and combined efforts on fisheries enforcement and combating illicit trafficking.¹⁰ At the 2014 NPCGF annual summit, hosted by the United States, USCG commandant Admiral Paul Zukunft emphasized, "No one country has the capacity to meet all of the challenges in the North Pacific. We must work together toward solutions that make the Pacific safe and secure."¹¹

Due to the valuable fish stocks in the Bering Sea, there is also a long-standing history of cooperation on fisheries issues. In 1994, the United States and Russia, as well as Japan, South Korea, Poland, and China, signed the Central Bering Sea Pollock Agreement.¹² After years of overfishing in the central Bering Sea, the agreement closed the area to pollock fishing until a scientific assessment could be conducted and a set of conservation conditions established. The year 2013 marked the 25-year anniversary of the 1988 Agreement

8. "U.S.-Russia Bilateral Presidential Commission: 2012 Joint Report," U.S. Department of State, April 2014, <http://www.state.gov/p/eur/ci/rs/usrussiabilat/index.htm>.

9. James Kraska, "From Pariah to Partner: Russian-American Security Cooperation in the Arctic Ocean," *ILSA Journal of International & Comparative Law* 16, no. 2 (2000): 5, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1648907.

10. Michael Arguelles, "In the Spirit of Cooperation: The North Pacific Coast Guard Forum," *Coast Guard Proceedings: Journal of Safety and Security at Sea* 71, no. 1 (Spring 2014): 28, https://www.uscg.mil/proceedings/archive/2014/Vol71_No1_Spr2014.pdf.

11. Lieutenant Stephanie Young, "A safe, secure North Pacific," *Coast Guard Compass* (blog), September 17, 2014, <http://coastguard.dodlive.mil/2014/09/a-safe-secure-north-pacific/>.

12. Pew Charitable Trusts, "Central Bering Sea Pollock Agreement," <http://www.pewtrusts.org/en/projects/arctic-ocean-international/solutions/central-bering-sea-pollock-agreement>.

between the Government of the United States of America and the Government of the Union of Soviet Socialist Republics on Mutual Fisheries Relations, which outlined conservation and sustainable management of fisheries resources polices between both nations.¹³ In April 2013, the United States and Russia signed the Joint Statement on Enhanced Fisheries Cooperation, which updated the 1988 agreement and agreed to develop a joint research program for living resources in Arctic waters. According to the agreement, “Scientists of Russia and the United States intend to identify areas of cooperation in scientific research in the Arctic Ocean in order to better understand the condition of fish stocks and the ecosystems in which they live.”¹⁴ The agreement also stipulates that the United States and Russia will collaborate to ensure that any commercial fisheries located in international waters in the Arctic are effectively managed.

Both countries have also indicated that, in the long term, they intend to finalize and sign an agreement regarding interaction and cooperation to detect, deter, and combat illegal, unreported, and unregulated (IUU) fishing. Since 2008, the United States and Russia have been negotiating a fisheries law enforcement agreement that would enhance their ability to combat IUU fishing.¹⁵ In July 2013, a Russian Federation fisheries representative reported that this law enforcement agreement was making progress and that the U.S. State Department had indicated its plans to sign an IUU agreement with Russia by September of that year.¹⁶

As the sea ice in the central part of the Arctic Ocean continues to diminish, new fishing areas may emerge, raising questions regarding future regulation and protection, although there are currently no fish stocks in the Central Arctic Ocean. One of the most promising potential fishing areas in the Central Arctic Ocean is the Chukchi Plateau, adjacent to the 200 nautical mile EEZs of both Russia and the United States but outside the fishery jurisdictions of both Arctic states.¹⁷ The five Arctic littoral states have been conducting a series of negotiations concerning the regulation of fisheries in the Central Arctic Ocean; however, at the 2014 meeting in Nuuk, the states agreed that there is currently no need to develop an additional regional fisheries management organization (RFMO) to regulate and protect fisheries in the Central Arctic Ocean.¹⁸ Despite ongoing tensions over the crisis in Ukraine, in May 2015, Russia announced it would sign, along with the other Arctic coastal states, an

13. NOAA Fisheries, “Strengthening U.S.-Russia Cooperation on Fisheries,” April 30, 2013, http://www.nmfs.noaa.gov/ia/slider_stories/2013/04/us_russia.html.

14. “Russia and the United States intensify cooperation on the study and conservation of fish stocks,” Arctic Info, April 30, 2013, <http://www.arctic-info.com/News/Page/russia-and-the-united-states-intensify-cooperation-on-the-study-and-conservation-of-fish-stocks->.

15. “Warming up relations in cold waters,” World Fishing & Aquaculture, June 12, 2013, <http://www.worldfishing.net/news101/Comment/ben-yami/warming-up-relations-in-cold-waters>.

16. Jeanine Stewart, “Russia representative: US-Russia IUU treaty coming as early as September,” Undercurrent News, July 9, 2013, <http://www.undercurrentnews.com/2013/07/09/russia-representative-us-russia-iuu-treaty-coming-as-early-as-september/>.

17. Andrei Zagorski, A. I. Glubokov, and E. N. Khmelyova, *International Cooperation in the Arctic: 2013 Report* (Moscow: Russian International Affairs Council, 2013), 19, http://russiancouncil.ru/common/upload/Arctic_Report_Eng.pdf.

18. “Chairman’s Statement,” Meeting on Arctic Fisheries in Nuuk, Greenland, February 24–26, 2014, <http://naalakkersuisut.gl/~media/Nanoq/Images/Nyheder/250214/Chairmans%20Statement%20from%20Nuuk%20Meeting%20February%202014%202.docx>.

agreement establishing a moratorium on commercial fishing in the Central Arctic Ocean.¹⁹ After being delayed more than a year by the crisis in Ukraine, on July 16, 2015, the United States, Russia, Canada, Norway, and Denmark signed the agreement to ban their respective fishing fleets from the Central Arctic Ocean.²⁰ The agreement also calls for additional research on the Arctic's marine resources and the impact of climate change on migratory patterns.

Scientific and Environmental Cooperation

In 2009, as part of the Bilateral Presidential Commission, the Science and Technology Working Group was created to identify opportunities for the United States and Russia to conduct research on natural hazards, climate science, and nanotechnology. In 2011, Russia hosted a meeting on international nanotechnology standards and the U.S. National Institute for Occupational Safety and Health (NIOSH) has teamed up with the Far Eastern Federal University and Kazan University to further the study of nanotoxicology.²¹ In addition, seven large-scale projects have been deployed within the carbon cycle monitoring sub-working group. Furthermore, through the Bilateral Presidential Commission's Environment Working Group, the United States and Russia cooperate on environmental issues, including wildlife and habitat conservation, management and disposal of waste, reduction of harmful pollutants such as black carbon and methane, and sustainable tourism.²²

First established through the 2003 agreement between the U.S. National Oceanic and Atmospheric Administration and the Russian Academy of Sciences (RAS), the RUSALCA program (Russian-American Long-term Census of the Arctic) has been conducting expeditions since 2004 to monitor changes in nutrients and marine life from the Bering Strait and the Chukchi Sea.²³ Other organizations, including the Russian Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet), the National Science Foundation (NSF), the U.S. Department of Interior, and the U.S. Office of Naval Research have participated in the program's research and expeditions. After obtaining special permission from the U.S. National Security Council to continue operations, RUSALCA began their excursion to collect physical, chemical, and biological oceanographic data in the Chukchi Sea in July 2014.

U.S. and Russian scientists continue to live and work at the Tiksi Observatory, located in the Russian Far East. Developed through a partnership between the National Science Foundation, the National Oceanic and Atmospheric Administration, Roshydromet, and the Finnish Meteorological Institute, the observatory was established to research the effects of

19. Andrew E. Kramer, "Russia and U.S. Find Common Cause in Arctic Pact," *New York Times*, May 19, 2015, http://www.nytimes.com/2015/05/20/world/russia-and-us-find-common-cause-in-arctic-pact.html?_r=2.

20. Reuters, "Russia, U.S. Agree Fishing Ban in Arctic as Sea Ice Melts," *New York Times*, July 16, 2015, http://www.nytimes.com/reuters/2015/07/16/world/europe/16reuters-russia-arctic.html?_r=0.

21. U.S.-Russia Bilateral Presidential Commission, "U.S.-Russia Bilateral Presidential Commission: Spring 2012 Joint Report," 33.

22. *Ibid.*, 23.

23. NOAA, "RUSALCA 2014 Expedition Report," 1.

Tiksi Weather Station



Source: NOAA image, https://commons.wikimedia.org/wiki/File:Tiksi_Russia_Weather_Station.jpg.

melting permafrost, including stores of methane, mercury, and carbon. Despite the positive U.S.-Russian science and research agenda in the Arctic, there have been numerous instances since 2014 where the Russian government has fined or deported Western scholars conducting research in Russia on the basis of alleged visa violations.²⁴ One scholar, who was deported for allegedly violating the terms of his visa by studying historical documents in a Russian archive, has been banned from entering Russia for five years.

A significant portion of U.S.-Russian bilateral scientific and technological cooperation in the Arctic has occurred through the intergovernmental Arctic Council, including a strong focus on reducing Arctic pollutants such as black carbon and methane through the work of the Arctic Council's Task Force for Action on Black Carbon and Methane. In 2005, the Arctic Council launched the Project Support Instrument (PSI), a financial initiative that focuses on actions aimed at preventing pollution in the Arctic. Since its launch in 2005,

24. Carl Schreck, "Western Scholars Alarmed by Russian Deportations, Fines," *Moscow Times*, April 1, 2015, <http://www.themoscowtimes.com/news/article/western-scholars-alarmed-by-russian-deportations-fines/518432.html>.

Russia has been the main contributor to PSI and in 2014, Russia allocated €5 billion to help implement the Arctic Council's environmental projects on Russian territory.²⁵ From 2013 to 2015, the main priorities of the Arctic Council's PSI included integrated hazardous waste and organic pollutants management; mitigation of mercury release to the environment; and reduction of short-lived climate pollutants.

Other examples of cooperation through the Arctic Council include the 2013 Agreement on Cooperation on Marine Oil Pollution Preparedness and Response, improving the health and well-being of Arctic indigenous communities, and climate change assessments. Russian officials have often praised organizations like the Arctic Council and Barents Euro-Arctic Council (BEAC) for “building stability and trust through practical cooperation, indeed as models for East-West cooperation.”²⁶ While the Arctic Council has been a leading forum for scientific and environmental cooperation in the Arctic, even this intergovernmental institution is experiencing a strategic spillover effect from the crisis in Ukraine. For instance, in April 2014, Canada and the United States boycotted the Arctic Council's working group meetings in Moscow that addressed the issue of black carbon and methane, two pollutants that threaten to have an increased impact on the Arctic.²⁷ And in April 2015, Russian foreign minister Sergei Lavrov did not attend the Canadian-hosted Arctic Council Ministerial in Iqaluit, sending in his place Russia's minister of environment and natural resources.

Furthermore, Russia and the United States continue to co-chair the Arctic Council Task Force for Enhancing Scientific Cooperation in the Arctic. Established in 2013 at the Kiruna Ministerial, the task force is working toward establishing a “memorandum of understanding to enhance the exchange of data, access to scientific infrastructure, and simplification of movement of scientists and their equipment.”²⁸ The task force's mandate was extended at the 2015 Iqaluit Ministerial and it will continue to work toward a legally binding agreement on international scientific research cooperation during the U.S. chairmanship of the Arctic Council.

Maritime Safety and Stewardship Cooperation

In addition to contributing to, and even leading on various cooperative environmental issues, Russia also advocated for collaboration between the Arctic Council and International Maritime Organization (IMO) to adopt a mandatory regime on shipping in polar waters,

25. “Russia allocates €5 billion to Arctic environmental projects,” ITAR-TASS, July 16, 2014, <http://en.itar-tass.com/economy/740918>.

26. Ingmar Oldberg, “Soft security in the Arctic: The role of Russia in the Barents Euro-Arctic Council and the Arctic Council,” Swedish Institute of International Affairs, March 17, 2011, 51, <http://www.ui.se/upl/files/52240.pdf>.

27. “Arctic Council Task Force for Action on Black Carbon and Methane Summary Report,” Arctic Council, May 8, 2014, <http://www.arctic-council.org/index.php/en/document-archive/category/563-public-documents>.

28. “Tromsø hosts 4th meeting of Scientific Cooperation Task Force,” Arctic Council News Archive, November 12, 2014, <http://www.arctic-council.org/index.php/en/resources/news-and-press/news-archive/952-tromso-hosts-4th-meeting-of-scientific-cooperation-task-force>.

Russian Coast Guard Border Patrol Vessel *Volga* during the 2007 North Pacific Coast Guard Forum



Source: U.S. Coast Guard photo by Petty Officer Jonathan R. Cilley, https://commons.wikimedia.org/wiki/File:Russian_coast_guard_vessel_183.jpg.

also known as the Polar Code, which was recently adopted in November 2014.²⁹ Moreover, when the Arctic Council and the Barents Euro-Arctic Council began addressing Arctic maritime safety and security issues, as well as accident response and preparedness, Russia participated in discussions and even civil-military cooperation and operations. Russia also agreed to co-chair an Arctic Council task force with the United States with the goal of fostering an international agreement on maritime safety.

Prior to the crisis in Ukraine, the U.S. Coast Guard and the Russian FSB had a constructive working relationship. In September 2009, the USCG Cutter *Sycamore* paid a working visit to Vladivostok as part of an official visit of the USCG to the Regional Border Guard of the Russian FSB.³⁰ During the visit, Vice Admiral Jody A. Breckeridge, commander of the USCG Pacific Area, and her Russian counterpart, General-Lieutenant Valeriy Putov, discussed the productive negotiations held on the progress of U.S.-Russian cooperation. In late 2012, a delegation from the USCG's 17th District visited Russia's Far Eastern Chukotka Autonomous

29. Oldberg, "Soft security in the Arctic," 45.

30. "U.S. Coast Guard Cutter Visits Vladivostok," U.S. State Department, September 18, 2009, <http://vladivostok.usconsulate.gov/coastguard.html>.

Area to discuss with Russia's FSB ways for the two countries to combat IUU fishing.³¹ The visit also included a review of U.S.-Russian joint activities in 2012, as well as the signing of a cooperation plan for 2013.

In May 2013, the U.S. Coast Guard presented its Arctic strategy, which included enhancing international cooperation and partnerships. One of the most visible by-products of its strategy was the creation of an Arctic Coast Guard Forum (ACGF).³² The ACGF, which will be formally launched in the fall of 2015 at the U.S. Coast Guard Academy in New London, Connecticut, includes the eight Arctic Council states' coast guards or their equivalents. The ACGF will share best practices, identify areas of cooperation, and conduct joint exercises and operations to improve search-and-rescue and response capabilities envisioned under two international, legally binding agreements to facilitate Arctic search and rescue and oil spill prevention and response. However, since the suspension of bilateral military cooperation between the United States and Russia in March 2014, there has been significant concern that the development and implementation of the Arctic Coast Guard Forum may not proceed. However, in February 2015, a USCG representative emphasized that, in spite of current geopolitical tensions, all eight Arctic nations remain committed and that Russian participation is absolutely essential to the success of the forum.³³ In addition, as part of the U.S. chairmanship of the Arctic Council, the United States has proposed to conduct a full-scale, live search-and-rescue exercise in 2016, as well as a tabletop exercise in 2015.³⁴

In sum, the Arctic—as both a region and an issue—was largely absent from the U.S.-Russian bilateral agenda with the exception of maritime border and scientific interaction. This was a missed policy opportunity prior to the current crisis in Russia's relationship with the West. Ironically, the Arctic is now viewed as one of the few issues where a constructive multilateral dialogue with Russia can be maintained with the U.S. special representative to the Arctic, Admiral Robert Papp, maintaining that Russia is a partner in the Arctic and that “to exclude Russia would have terrible consequences [in the Arctic].”³⁵ As the two-year U.S. chairmanship of the Arctic Council—with its strong focus on climate change impacts, environmental protection, and ocean stewardship—proceeds, it is likely that U.S.-Russian Arctic cooperation will continue successfully unless there is a dramatic deterioration of Europe's and therefore the Arctic's security environment.

31. “U.S. Coast Guard Delegation Arrives in Russia,” *Sputnik International*, October 1, 2012, <http://sputniknews.com/russia/20121001/176328757.html>.

32. “United States Coast Guard Arctic Strategy,” United States Coast Guard, May 2013, 27, http://www.uscg.mil/seniorleadership/DOCS/CG_Arctic_Strategy.pdf.

33. “Understanding U.S. Arctic Policy Coordination: An Executive Order Considered,” CSIS Conference, February 26, 2015, <http://csis.org/event/understanding-us-arctic-policy-coordination-executive-order-considered>.

34. U.S. Department of State, “Arctic Council United States Chairmanship 2015–2017” (presentation at Yellowknife, Canada, November 3, 2014), <http://www.knom.org/wp-audio/2014/11/2014-11-03-US-Chair-Arctic-Council.pdf>.

35. Yereth Rosen, “Top Arctic official says cooperation key for Arctic Council under US leadership,” *Alaska Dispatch News*, May 26, 2015, <http://www.adn.com/article/20150526/top-arctic-official-says-cooperation-key-arctic-council-under-us-leadership>.

6 | Conclusions and Policy Recommendations

The Arctic is a strategically important region to Russia, from its enormous economic potential to the role the region plays in securing Russia's long and rapidly changing frontier. While Russia may have the most to economically gain from the Arctic, it also has the most climate adaptations to finance, as Russia will disproportionately suffer from the effects of permafrost thaw, coastal erosion, and ocean acidification. With its strong national Arctic identity and the location of its strategic nuclear deterrent in the Far North, Russia views itself as *the* Arctic superpower, as the Kremlin is increasingly willing to use the Arctic to demonstrate Russia's return to power on the global stage and in the region.

In light of Russia's ongoing destabilization of Ukraine and the persistent duality of Russia's Arctic policies—belligerence and practical cooperation—it is difficult to divine what Russia's intentions are in the Arctic. Many of Russia's Arctic developments over the past decade are appropriate and entirely within Russia's purview as a large, Arctic coastal state. Russia is entitled and expected to develop its Arctic coast, and indeed its economic plans are exceedingly ambitious, including security infrastructure to protect Russia's borders and ensure safe passage along the Northern Sea Route. And like other Arctic nations, including the United States, the Kremlin has created a senior-level department within the federal government designated to addressing economic, political, and security issues in Russia's Arctic region.

Yet this report suggests that there has been a noticeable and disturbing shift in Russia's Arctic rhetoric and policy behavior, culminating in the acceleration of Russia's military and security posture in the Arctic. Russia's snap military exercises in the spring of 2015, which called the Northern Fleet to full alert and mobilized over 45,000 troops, is global posturing and a show of strength in response to NATO and Nordic-led activities in the region. Moreover, President Putin's appointment of Deputy Prime Minister Dmitry Rogozin, who has made frequent nationalistic statements about the Arctic and has long-standing ties to Russia's defense industry, represents a shift to a more security-driven approach to the Arctic. And following President Putin's return to the Kremlin in 2012, Russia's Arctic development policies have become increasingly centralized and controlled by members of President Putin's inner circle, such as Rosneft CEO Igor Sechin, Gazprom CEO Alexey Miller, and Russian oligarch Gennady Timchenko, as well as Kremlin-appointed, as opposed to elected, local authorities. Russian ministries with Arctic responsibilities primarily play a managing

and implementing role, while the strategic decisions related to the development of Russia's Arctic region are handled by the presidential administration and Putin's confidants. Recent efforts to "Russify" Russia's Arctic energy and transportation sector, including proposed legislation to prohibit the use of foreign-registered ships for exporting Russian oil and gas further solidify the presidential administration's control over the Russian Arctic's economic resources. The 2012 NGO law aimed at preventing Russian organizations from receiving Western financial assistance and the crack-down on indigenous and environmental organizations that are active in the Arctic underscore the Kremlin's repeated moves to centralize control over key Arctic sectors.

Policy Recommendations

As Russia tightens its control of its Arctic resources and heightens its military presence, is it possible for the United States and Russia to promote greater cooperation in the Arctic? The United States and Russia share two important regional objectives in common: the desire for greater international cooperation in the Arctic (particularly within the Arctic Council) and the need to ensure enhanced safety in the Bering Strait (the narrow strait that connects the Pacific Ocean with the Arctic Ocean, which is 44 nautical miles wide at its narrowest point). Could the Arctic, rather than becoming yet another policy victim of growing East-West tensions, become a region where trust can be rebuilt? The following section provides some new policy thinking on ways to potentially rebuild regional trust in the Arctic.

AN ORGANIZATION FOR ENHANCED COOPERATION IN THE ARCTIC (OECA)?

The Arctic Council turns 20 in 2016, offering an important moment for reflection for the next 20 years of Arctic governance amidst greater geopolitical tensions. Over the past five years, several new agreements and entities have been created that are not part of the Arctic Council, including the Arctic Economic Council, the soon-to-be launched Arctic Coast Guard Forum, and two legally binding treaties on search and rescue and oil spill response and preparedness.

The Arctic states and observer states are currently focusing on three baskets of issues: environmental protection, science cooperation, and indigenous community well-being; economic issues; and security issues. These three baskets are reminiscent of the structure of the 57-member Organization for Security and Cooperation in Europe (OSCE).

- *Security-Related Issues.* It is ironic that, at U.S. insistence, the Arctic Council was not permitted to discuss military or security matters for fear that this could send mixed and harmful signals of a potential militarization of the Arctic. Nearly 20 years later, the Arctic is beginning to become militarized and there is no forum or place to discuss security-related issues and to promote greater transparency and confidence. The United States, in cooperation with Russia and the other Arctic Council states, will launch a new Arctic Coast Guard Forum (ACGF) in the fall of 2015 in New London,

Connecticut. The ACGF will include the eight Arctic Council states' coast guards or their equivalents and will focus on search-and-rescue capabilities and oil spill response and prevention in the Arctic or, as it has been suggested "to keep people and oil out of the water." This is an important multilateral vehicle to maintain contact with the Russian Federal Security Service (FSB) while bilateral military contacts are currently suspended indefinitely.

Beyond performing a tabletop exercise in 2015 and a live search-and-rescue exercise in 2016, the ACGF should create a U.S.-Russia joint working group to focus on enhancing safety and improving maritime domain awareness in the Bering Strait. The U.S. Coast Guard (USCG) has proposed a vessel traffic management scheme for the U.S. side of the Bering Strait.¹ The USCG should engage with Russian FSB counterparts to seek coordination of vessel traffic lanes, discuss speed restrictions for vessels, and designate restricted areas. This initiative would be in anticipation of increased liquefied natural gas (LNG) tanker traffic in route to Asia from the Yamal LNG project. U.S. and Russian officials should cooperate to update hydrographic charting in the Bering Strait, share weather forecasting information, and enhance navigational aids. Specific emergency response exercises should be designed for the Bering Strait in the 2015–2016 period.

Most importantly, the eight Arctic Council states should begin to negotiate a non-binding political statement to serve as a "Declaration on Military Conduct in the Arctic" in line with the OSCE's confidence-building measures. This declaration should outline provisions to include the mandatory notification by every country 21 days in advance of major military exercises (25,000 forces and above) and the requirement that the eight Arctic Council states be invited as observers to these exercises. Each year these eight states will submit an annual military exercise plan and update their respective emergency contact and communication information. Each nation would agree that all aircraft would have operational transponders and would send appropriate electronic signaling when in flight.

- *Economic Issues.* More attention should be given to enhancing sustainable economic development in the Arctic and encouraging business-to-business linkages across the region. The formation of the Arctic Economic Council gives a tremendous boost to enhancing business-to-business ties; however, there should be more focused work on regional and cross-border cooperation. Although recent Russian legislation prevents Russian entities from accepting Western funds unless registered as a foreign agent, opportunities should be identified to strengthen regional economic ties between the states of Alaska and Washington and the Russian Far East.
- *Environment, Science, and Indigenous Cooperation Issues.* The so-called human dimension of Arctic cooperation is the central and founding mission of the Arctic Council. The six working groups of the Arctic Council should continue their important work

1. Seth Borenstein, "Coast Guard proposes Bering Strait shipping route," *Alaska Dispatch News*, December 5, 2014, <http://www.adn.com/article/20141205/coast-guard-proposes-bering-strait-shipping-route>.

on such issues as enhancing biodiversity, protecting the Arctic marine environment, assessing climatic impacts, and reducing environmental pollutants. Should the Arctic Council members negotiate a legally binding international science agreement for the Arctic, barriers must be removed from greater scientist-to-scientist engagement and joint U.S.-Russian science missions.

Is a separate organization needed or could the OSCE—of which all eight Arctic Council states are members—form an Arctic consultative group based on OSCE principles? Unfortunately, the OSCE is not a successful organization today, although its principles and approach are as urgently needed in Europe as they are in the Arctic. Would the Kremlin be willing to consider a three-basket cooperative approach to the Arctic?

Without international cooperation in the Arctic, Russia cannot fully realize its economic potential that is so vital to its future development. Without predictability, transparency, and trust, there will be no international cooperation in the Arctic. This report demonstrates how much Russia has and will continue to invest in the Russian Arctic economically and militarily, yet this investment is at profound risk if instability in the region persists. A new initiative to balance Arctic security, economic, environmental, and indigenous interests could potentially save Russia's investment and begin to pave a path back to improved East-West relations.

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