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The Russian Maritime Arctic

– LAWSON W. BRIGHAM

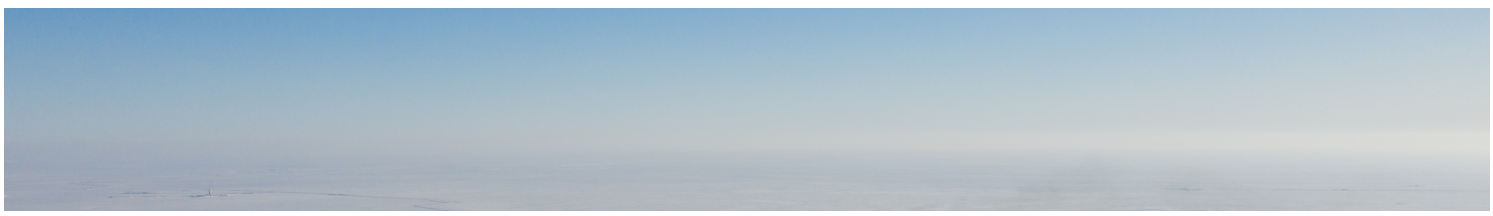
Seven strategic drivers of change and uncertainty.

The Russian maritime Arctic stretches more than 160 degrees longitude from the Norwegian-Russian border in the west, to the Bering Strait in the east. It is

Russia's vast northern coastline, an open border to the Arctic Ocean, and a marine space that presents both strategic vulnerabilities and economic opportunities. The entire coastal area is arguably undergoing the most profound changes of any region in today's Arctic. This essay seeks to identify key influential drivers of change, and uncertainties that will plausibly determine the region's future.

The coastal seas along the northern frontier of Eurasia invite visions of marine transportation systems and shipping lanes connecting the Atlantic and Pacific oceans. Some Arctic shipping concepts are realistic and doable, and others are visionary but implausible. For accuracy, the historic name for the potential marine routes linking the Atlantic and Pacific oceans across the entire Russian maritime is the Northeast Passage (NEP). By Russian law, the Northern Sea Route (NSR) stretches from Kara Gate at the southern tip of the island of Novaya Zemlya east to the Bering Strait, and encompasses all routes taken through the exclusive economic zone (EEZ), 200 nautical miles out from the coast. Notably the special rules and regulations used along the NSR do not apply to the Barents Sea, thus the NSR is not a trans-Arctic (ocean to ocean) routing option. However, whatever one's perspective, the NSR has evolved into Russia's "Arctic national waterway," facilitating the movement of domestic and foreign-flag marine traffic.

One approach to better understand the complexities of the future of the Russian maritime Arctic is to compile and examine select, high level or strategic drivers of change. The drivers and their uncertainties can provide a framework for developing plausible futures or scenarios for this once remote, but now an emerging, Arctic area. Seven influential factors or drivers of regional change stand out and are included in the following narratives:



Yamal natural gas processing plant on the western shore of the Ob Gulf on March 30, 2021. Shutterstock.

Dominant Arctic Natural Resource Development

The Russian Arctic, or more precisely the "Arctic Zone of the Russian Federation," noted in strategic documents, holds one of the world's largest storehouses of natural resources. While oil, natural gas, and coal are abundant and gain global attention, minerals such as nickel, palladium, platinum, copper, and more raw materials are also significant commodities available for export. Widely published data provide an important story: 22% of Russia's total exports and 80% of its gas exports come from the Russian Arctic. The Kremlin's long-term strategy is to increase these export totals so that the region can contribute more to Russia's gross domestic product (GDP). One additional strategic goal is to move more natural gas (and oil) exports to Asian markets, to achieve a better balance with the pipeline gas flows from Western Siberia to European customers.

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Two major complexes in the Russian maritime Arctic are key drivers and hubs for natural resource development. The first is the industrial complex at Norilsk, formerly the enterprise Norilsk Nickel, now named Nornickel, one of the world's largest metal producers (Nornickel is the largest producer of nickel and palladium, the third largest platinum producer, and the fourth largest copper producer). The products are taken by rail to the port of Dudinka on the Yenisey River and loaded aboard icebreaking container ships designed in Finland and built in Germany and Finland. These specialized ships sail on year-round voyages west to Murmansk and European ports, and east through the Bering Strait in summer months to Asian markets.

The second complex of natural resource development projects is in the Ob Gulf. A new LNG plant and the port of Sabetta are located along the western shore of the Yamal Peninsula; in the southern end of the Ob Gulf, another port, Novy Port, has been built as an oil export terminal. Icebreakers, LNG icebreaking carriers, and icebreaking tankers maintain yearlong-navigation on destination voyages from the Ob Gulf along the NSR to Murmansk (and European ports), and into the Pacific in an eight-to-ten month navigation season. Russia aims to establish year-round navigation on the NSR to the east, and into the Pacific. The NSR has experienced exponential growth in cargo tonnage carried annually, with more than 35 million tons carried during 2021; most in oil and natural gas. A decree by President Putin in 2018 set a target of 80 million tons to be carried by the NSR in 2024.

Russia's NSR as an Arctic national waterway is clearly linked to the flow of natural resource exports. Much uncertainty remains in how the NSR and NEP can be developed initially as a seasonal (summer) supplement to the Suez Canal for trans-Arctic navigation. Russian authorities and shippers are developing trans-shipment ports for LNG near Murmansk and on the Kamchatka Peninsula in the Pacific. This system is designed to keep the LNG icebreaking carriers operating in Arctic waters and move the LNG to larger storage sites outside the Yamal. Visionary plans have also been proposed to build a state-owned trans-shipment container operation along the NSR to compete in the future with other global

trade routes. There is little doubt of further development of the NSR and its associated marine infrastructure in support of Russia's economic and security interests.

Climate Change as the Ultimate Disruptor

The short and long-term consequences of anthropogenic climate change in the Russian Arctic are many and profound. No longer a wildcard factor, climate change has become a major disruptive force and driver of environmental change. Arctic sea ice retreat in all seasons, detailed in satellite observations during the past four decades, provides for greater marine access along the length of the NSR and potentially longer seasons of navigation. Higher temperatures throughout the Russian Arctic, with historic summer warming in Siberia, have promoted widespread forest fires and facilitated the thawing of permafrost, frozen ground, or soil. Thawing permafrost creates unstable ground conditions for all built infrastructure such as roads, buildings, runways, pipelines, and ports, and reduces land access in select areas. The Arctic coastline is particularly vulnerable to thawing permafrost that meets an increasingly ice-free ocean; the outcome is accelerating coastal erosion. Any future marine infrastructure initiatives such as rebuilding existing Arctic ports and developing new natural resource projects will need to address projected changes in the surrounding land and subsea permafrost. Highlighting this issue, the Russian government recently approved funding for a national system to monitor Russia's permafrost that covers nearly two thirds of the country's land mass. The data collected will provide not only information on permafrost hazards for infrastructure, but also an assessment of the release of vast amounts of methane and carbon to the atmosphere.

The world's largest icebreakers, Arktika (foreground) and Sibir, being constructed in St. Petersburg, Russia in 2019. Both nuclear icebreakers are now operational along the Northern Sea Route. Sergey Anufriev/Shutterstock.

It should not be surprising that development of the Russian maritime Arctic is a top down, Russian state directed, enterprise.

Much of the current natural resource initiatives in the Russian maritime Arctic are focused on development of oil, natural gas, and coal, and facilitating their ship transport to European and Asian markets. Russia faces a major paradox, a strategy contradictory to emerging global efforts to mitigate future greenhouse gas emissions. Climate change mitigation and adaptation, and a new era of energy transition, will create uncertainties for oil, gas, and coal markets. Uncertainties in markets for hydrocarbons and commodity price volatilities will impact demand in the long-term for Russian Arctic energy resources. The pace of these changes could come as early as the 2040s, creating very serious economic challenges for the Russian Federation and its Arctic development ambitions.

Central Command Economy and a Soviet Legacy

It should not be surprising that development of the Russian maritime Arctic is a top down, Russian state directed, enterprise. In most respects it is a legacy of the Soviet era, with the Arctic region and resource-based activities heavily dependent on central government financing for infrastructure, and subsidizing schemes for industry, mainly through tax incentives. The entire development enterprise is a complex array of key stakeholders and actors including private companies (for example Nordnickel and Novatek), state-owned enterprises (such as Gazprom), central government ministries, regional governments, and unique state agencies such as Rosatom, the Russian State Nuclear Corporation, which not only manages the nuclear icebreaker fleet but is the key developer of marine infrastructure for the NSR.

The importance of Russian Arctic energy and minerals resources to the national economy cannot be overstated. Two key state documents signed by President Putin in 2020 indicate the breadth of Russia's Arctic interests and priorities: a foundations or policy paper released on March 5, 2020 (*Foundations of the Russian Federation State Policy in the Arctic for the Period up to 2035*); and a comprehensive strategy released on October 26, 2020 (*Strategy for the Development of the Arctic Zone of the Russian Federation and Provision of National Security for the Period up to 2035*). These are core documents which highlight the state's interests in Arctic natural resource development, further increasing traffic along the NSR (specifically a push for making the NSR an international waterway), and addressing foreign military-security threats to Russia's Arctic national interests. President Putin's direct involvement in shaping these policies and strategic plans is consistent with his unwavering support of Russian Arctic development during his long tenure. Since his presidency can continue to 2036, these plans should plausibly remain intact. However, the long-term role of Arctic development in a post-Putin regime is uncertain and the picture is more

complicated given future global commodities markets and changes in demand away from carbon-based economies.

National Defense Interplay

The largest and most formidable military-security presence in the Russian Federation is located on the Kola Peninsula. The Russian Navy takes advantage of the year-round, ice-free conditions around the Peninsula in Murmansk, Severomorsk, and other surrounding regional ports. A rebuilding Northern Fleet can effectively deploy from this Arctic location its maritime power out into the Arctic and Atlantic oceans as it did during the Cold War. Russia has also recently re-built and enhanced small air bases on the outlier Arctic islands north of the Russian coast. In summary, Russia has regained sovereign control of its marine and air spaces in its northern regions despite reduced budgets. Military units can conduct large-scale defense exercises within its Arctic EEZ and coastal zone, and they can use the large marine space for advanced weapons testing and research.

How this newly gained control meshes with the civil maritime transportation system, and increasing use of Arctic waters by commercial ships, remains unclear. The nuclear icebreaker fleet operated by Rosatomflot can support the Ministry of Defense in maintaining year-round access to all bases and civilian ports; the icebreaker fleet can also escort naval vessels during any summer operations along the NSR and escort any ships transferring between the Kola Peninsula and the Pacific. Competing interests between the defense and commercial development sectors involve national funding and waterways control. The two are vying for public funding for critical infrastructure and hardware to meet the needs of their differing Arctic strategies. And the two communities have different notions about how to control Russia's Arctic waterways. While the Ministry of Defense seeks to tightly manage and control marine traffic within Russia's EEZ, Arctic development planners and commercial firms (shipping, mining, oil and gas interests) see a more open marine transportation system attracting more foreign-flag ships. Achieving a future balance between the long-term security and economic interests of the state will

balance between the long-term security and economic interests of the state will require high-level presidential and ministerial leadership and tight management oversight.

The LNG icebreaking carrier Vladimir Vize loading gas at the port of Sabetta, Yamal Peninsula, Russia on March 30, 2021. Shutterstock

Innovative and Enabling Arctic Technologies

Advanced technologies play important roles in the development of Russia's Arctic marine transportation system and coastal zone, as well as in future offshore oil and gas developments and communications systems. Foreign technology transfers and international (economic) sanctions early in the 21st century are key factors that deserve consideration in evaluating the uncertainties in the region's

future. Sanctions have essentially blocked the transfer of Western offshore drilling technology to Russia. Marine technology transfer is best illustrated by the design and construction of the initial fleet of fifteen large LNG icebreaking carriers that currently service the Yamal LNG project, operating from the Ob Gulf

to markets in Europe and Asia. The ship design was developed by the Finnish marine firm Aker Arctic Technology in Helsinki and the vessels were constructed in South Korea by Daewoo Shipbuilding & Marine Engineering Company. The ship's unique Finnish design allows independent operations in ice, without icebreaker escort, in nearly all navigation seasons along the NSR.

The flagships of the Russian Arctic fleet, potentially the most prominent Russian ships in the maritime world, are the nuclear icebreakers. The long history of applying Russian civilian nuclear power to ships dates to the operation of the world's first surface nuclear ship, the icebreaker *Lenin*, in service in 1959. The newest icebreakers in service in 2021 and 2022, the *Arktika* and *Sibir*, are the world's most capable icebreakers and can operate in deep water and the shallower gulf waters of the Ob and Yenisey rivers for escorting commercial ships. Other innovative technologies have been applied to a range of capabilities: a floating nuclear power plant, the *Lomonosov*, now serving the city of Pevek in the Russian Far Northeast; new Russian Navy and FSB icebreakers for naval operations and law enforcement; a floating Arctic observation ship, the *Severny Polyus* (North Pole), for Arctic research; and, the nuclear (icebreaking) commercial ship *Sevmorput*, operating since 1988 along the NSR. New fiber optic cables and other communications systems will be employed, and further advanced monitoring and surveillance systems for the entire Russian maritime Arctic should be expected. Advancing technologies to the Russian Arctic will remain a significant enabler of effective and safe cold regions operations.

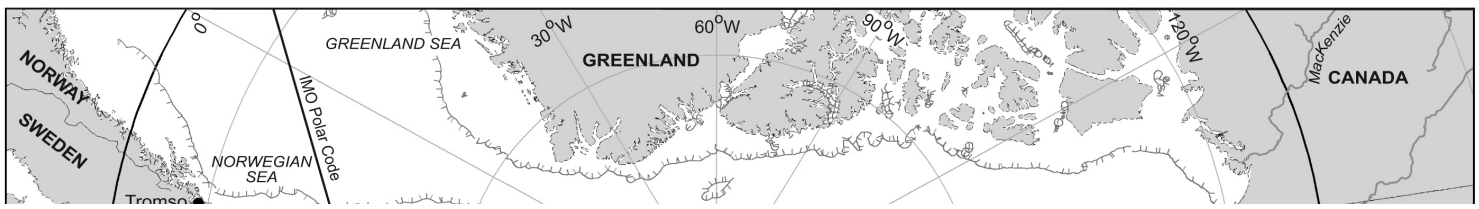
Complex Marine Governance and International Norms

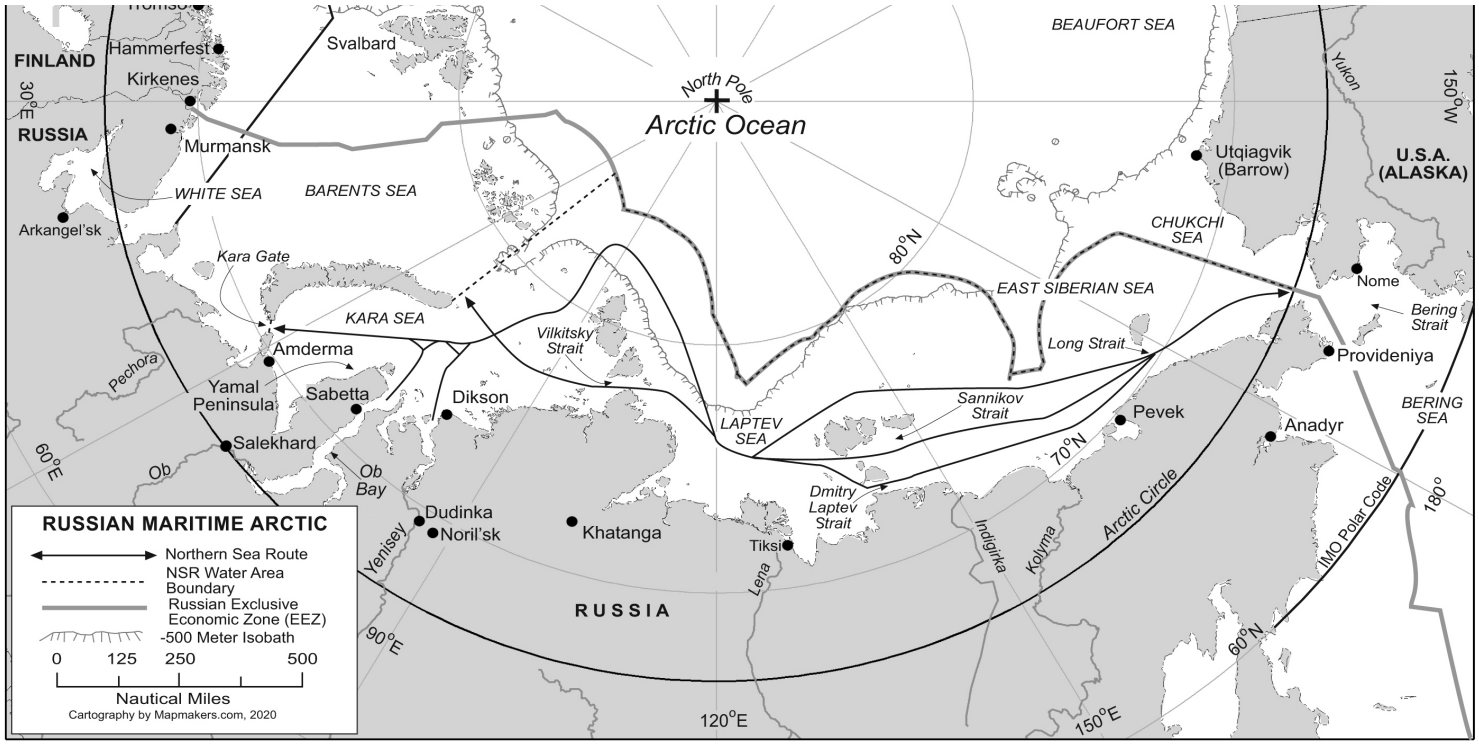
Governance of Russian Arctic waters is driven by a complex suite of international

rules provided by the United Nations Convention on the Law of the Sea (UNCLOS) and specific domestic legislation with several laws dating back to the Soviet era. In 1985, the USSR Council of Ministers established by decree a system of straight baselines enclosing the bays, gulfs, and main navigation straits along the Arctic

coast, making them internal waters of the Soviet state. The legal status of these waters remains controversial particularly in view of the elimination of the right of innocent passage by foreign ships. Having signed UNCLOS in March 1982, the Soviet Union quickly established its twelve-nautical mile territorial sea and 200-nautical mile EEZ to gain sovereignty over its fisheries and seabed resources. Russia, in more recent years, has focused on applying UNCLOS Article 234, the so-called "ice navigation clause," which provides the coastal state with powers to enforce nondiscriminatory pollution prevention, reduction, and control laws within waters of its EEZ that are ice-covered for most of the year. Much uncertainty remains how Article 234 applies to polar waters where Arctic sea ice has retreated. Russia has also defined the NSR water area as most of the Russian Arctic EEZ except for the Barents Sea. In this huge area, rules under the administration of the NSR include mandatory pilotage in select areas and fees for icebreaker escort and support.

A significant, current issue is Russia's plan to implement and enforce the International Maritime Organization's *International Code for Ships Operating in Polar Waters* (the Polar Code), whose mandatory regulations were finalized in July 2018. With the Polar Code, special NSR regulations from domestic laws, and expansive application of UNCLOS articles, the Russian maritime Arctic is among the most closely managed and controlled marine spaces in any ocean. Such a governance regime will remain contentious and could limit international ship traffic in future decades.





Source: Lawson W. Brigham

Investment and Foreign Stakeholders

State investment and subsidizing strategies for private industry are key to the overall development of the Russian North. Foreign investments are also important for specific natural resource development projects, and they indicate more regional integration with the global economy. However, these historic investments add a significant element of uncertainty to the long-term prospects and viability for these commercial ventures. An example of cooperative domestic and foreign investment can be seen in the Joint Stock Company Yamal LNG that developed the LNG1 facility and port of Sabetta on the Yamal Peninsula: The Russian private gas firm Novatek owns 50.1%, and three foreign investors are involved in the remaining ownership: the French national oil and gas company Total, the China National Petroleum Corporation, and China's Silk Road Fund. A second LNG facility (LNG 2) on the eastern shore of the Ob Gulf has been joined by investors from a Japanese consortium led by Mitsui and the Japan Oil, Gas, and Metals National Corporation. Notably only one of the initial fifteen LNG icebreaking carriers operating out of Sabetta is owned by a Russian shipping

company, Sovcomflot, and the remaining ships are owned by five international shipping companies, with three of the firms owned by investors in Japan, China, and Singapore.

> Overall, major economic drivers – Arctic natural resource developments, Russian and foreign investment strategies, global commodities prices, and the economics of the global shipping enterprise – will continue to be most influential and weigh heavily on shaping the future of this region.

The future of long-term investments in Russian Arctic energy sources is uncertain. So too are investments in the development of select hard minerals which could experience higher future demands. The Yamal gas project represents a key case study for understanding the financial risks and challenges of future foreign investments in the Russian Arctic, a relatively recent factor of influence in the region.

Conclusions and the Future

These seven drivers of change illustrate the complexity of factors and broad challenges facing the future of Russia's maritime Arctic. Uncertainty reigns and this select list is only a baseline view of an Arctic region undergoing extraordinary change. Additional plausible factors and wild cards driving change loom large: demographic shifts in the Russian North; greater investment and trade links with China; emerging roles of the Russian Arctic Indigenous peoples; potential marine accidents involving naval or commercial vessels; regional and

potential marine accidents involving naval or commercial vessels; regional and central government political stabilities; changes in public funding priorities for Russian Arctic development; and doubtless more technological, social, and economic megatrends to come.

Anthropogenic climate change for all of Russia, especially historic warming in the Russian Arctic, is a certain game changer and disruptor with profound national and regional consequences. Increasing Arctic marine access responding to sea ice retreat will continue to provide opportunities for expanded shipborne trade. Unanticipated geopolitical events or crises will surely influence state Arctic policies and strategies, but the primary national strategy of Arctic resource development would likely be maintained under most scenarios. Overall, major economic drivers – Arctic natural resource developments, Russian and foreign investment strategies, global commodities prices, and the economics of the global shipping enterprise – will continue to be most influential and weigh heavily on shaping the future of this region. The remote and tightly managed Russian maritime Arctic will have long-term roles in linking Russia to the global economy, but their evolution and future trade partnerships are uncertain.

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Cover photo: Nuclear icebreakerYamal escorting a convoy along the Northern Sea Route on July 14, 2016. Knyazev Vasily/Shutterstock.

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– Evan T. Bloom

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