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## Arctic: Toward the End of the Exception?

Strategic, Nuclear and Maritime  
Issues in the Region

Jean-Louis LOZIER



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Cover: French multipurpose frigate *Bretagne* sails among icebergs, Northern Atlantic Ocean, October 2018. © Marine nationale/Defense, France

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# Abstract

Through multiple international initiatives, including the creation of the Arctic Council at the end of the Cold War in 1996, the Arctic appears to be one of the last areas of peaceful cooperation in the world. This “Arctic exception” is also devoid of any serious territorial dispute between the neighboring countries, some of which are nevertheless great powers: Russia, the United States, Canada, but also Sweden, Norway, Denmark (via Greenland), Iceland and Finland.

However, this peaceful cooperation is not exempt from strategic rivalries: for some years now, these States in the Arctic have been redefining their strategic postures, notably through the publication of roadmaps and the deployment of new military forces trained to fight in this hostile environment. Russia thus remains the dominant power in the Arctic, in the face of a China with growing ambitions and a Western world – represented in particular by the United States – which is lagging behind after years concentrated on other military conflicts. Furthermore, the war in Ukraine that started in February 2022 also carry the germs of a broader destabilization of the region.

Conventional competition is therefore renewed between these great powers, while the nuclear balance is partially maintained. It is indeed worth noticing that the Arctic is an area of direct contact between the Russian Federation and the United States. As such, it had a special significance during the Cold War as the shortest route between both adversaries for a potential ballistic missile and was a privileged position for deploying chains of radars and advanced detection systems.

Finally, the shrinkage of the ice pack caused by global warming is also triggering the neighboring or more distant states’ greed, whether through the drilling possibilities for raw materials under the ice floe or the creation of new maritime routes. The latter would notably enable Russia to revitalize its northern flank and offer alternatives to existing transit routes.

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# Introduction

On October 27<sup>th</sup>, 1962, an American U2 spy plane on a reconnaissance mission from an Alaskan base to the North Pole veered off course and entered Soviet airspace. With the Cuban crisis in full swing, the Soviets sent two MiG-21 fighters to intercept it. U.S. command regained control of the aircraft and directed it back towards the Alaskan coast, but it also dispatched two F-102 fighters carrying nuclear-armed *Falcon* air-to-air missiles to intercept the U2 if needed. The MiGs, out of fuel, turned back before a hypothetical encounter with the F-102s, but the world came close to experiencing its first engagement involving tactical nuclear weapons.<sup>1</sup>

Twenty-five years later, on October 1<sup>st</sup>, 1987, in Murmansk, Mikhail Gorbachev gave a seminal speech, calling for the Arctic to become a “pole of peace”. The last Soviet leader defined objectives for the region as protection of the environment, development of scientific research and peaceful exploitation of natural resources. In 1996, the Arctic Council was created in line with this project, bringing together the eight States with territories north of the Arctic Circle.<sup>2</sup> This is how the myth of an “Arctic exception” was created, an idea according to which the Far North would be a zone of cooperation where external disturbances would not interfere with cooperation between riparian States.

On December 8<sup>th</sup>, 2017, the icebreaking LNG carrier *Christophe de Margerie* loaded the first shipment of liquefied natural gas produced by the Yamal LNG complex at the port of Sabetta in Siberia, unloading a few days later at a terminal in the United Kingdom. In January 2021, this same LNG carrier would become the first vessel to operate without assistance from a dedicated icebreaker between Sabetta via the Bering Strait to Asia, at such a late stage in the winter.<sup>3</sup>

Although these three events, each a quarter of a century apart, share only the fact of taking place in the Arctic, they illustrate several aspects of this region: an area of competition between great powers, the Arctic also represents the hope of regional cooperation in the fields of environmental protection and sustainable development. Finally, the region is also home to numerous energy and mineral resources that are now becoming more easily accessible due to global warming.

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1. M. Dobbs, *One Minute to Midnight: Kennedy, Khrushchev, and Castro on the Brink of Nuclear War*, New York: Alfred A. Knopf, 2008.

2. Ottawa Declaration, September 19, 1996.

3. J.-C. Bourbon, “Grands débuts de Yamal, projet géant de Total dans l’Arctique”, *La Croix*, December 8, 2017, available at: [www.la-croix.com](http://www.la-croix.com).

The geography of the region, crisscrossed by the shortest trajectories between two sufficiently distant points from East to West in the Northern Hemisphere (United States-Russia, United States-China or Europe-China), explains the special role of the Arctic in the competition between powers. The end of the Cold War gave rise to the idea of a space for interregional cooperation under the aegis of the Arctic Council.<sup>4</sup> Though the revival of competition between powers and the emergence of China as a new Arctic player has not impacted this “Arctic exception”, the Russian invasion of Ukraine in 2022 could. Observations of renewed military buildup in the area, along with the world’s appetite for new energy and mineral resources, regularly raise the question of possible future confrontations or clashes in this area. This risk of increased tensions is further exacerbated by the impact of global warming and its consequences for the area, in particular the opening of maritime routes during a significant portion of the year, thus linking the Euro-Atlantic and Indo-Pacific regions.

Following a brief description of the theater, covering geographical, legal and climatic aspects, this note will present the policies and strategies of the main actors in the area. It will then focus on the military aspects of the region, in particular the developments observed in the field of deterrence and undersea operations, two closely related themes. Finally, specific maritime issues will be addressed, in particular the opening of new polar routes and their nuclearization.

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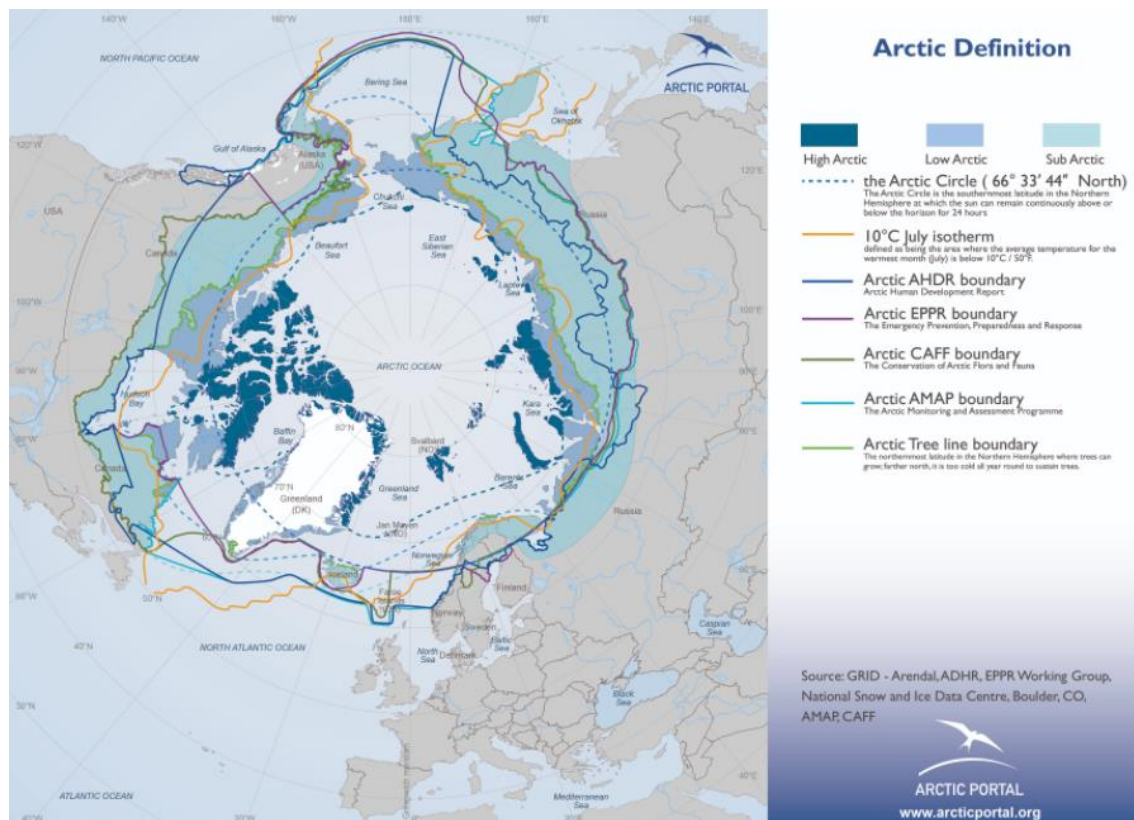
4. For a description of the way the Arctic Council works and general issues at the Poles read: M. Mered, *Les Mondes polaires*, Paris: PUF, 2019 ; F. Lasserre, A. Choquet and C. Escudé-Joffres (eds.), *Géopolitique des pôles : vers une appropriation des espaces polaires ?*, Paris: Le Cavalier Bleu Editions, 2021.

# The Arctic Region

## Defining the Boundaries

According to the common definition, the Arctic covers the geographical area bounded by the Arctic Circle in the Northern Hemisphere. Although the eight member States of the Arctic Council (the Russian Federation, Canada, the United States, Iceland, Denmark through Greenland, Norway, Sweden and Finland) all have a part of their territory, land or sea, in this area, the Arctic is not limited to this zone. For example, the different working groups of the Council, dealing with human development (Arctic Human Development Report, AHDR), protection of fauna and flora (Conservation of Arctic Flora and Fauna, CAFF), assessment and monitoring (Arctic Monitoring and Assessment Program, AMAP) or risk prevention (Emergency Prevention, Preparedness and Response, EPPR) have different perimeters of action and areas studied, as shown on the map below.

**Map No. 1: An arctic space with variable geometry**



Source: Arctic Portal.



Other, even broader definitions exist, such as the one used by the U.S. Navy, which defines the Arctic region as extending “from the State of Maine across the Arctic Ocean and the Pacific to the southern tip of the Aleutian Island chain.”<sup>5</sup> From a strictly military viewpoint, it is especially important to take into account the environmental and climatic discontinuity factors that may affect operational deployments. The Arctic is therefore divided between zones that are not conducive to conventional operations and those where they can be more readily envisaged: the Barents Sea, free of ice under the influence of the Gulf Stream, thus appears to be a continuation of the North Atlantic, which is not the case with Canada’s Nunavut, for example. Arbitrary separations such as the Greenland-Iceland-United Kingdom (GIUK) Gap towards the Atlantic make little strategic sense. On the Pacific side, while the Bering Strait constitutes a clearer boundary at the level of the Arctic Circle, the Bering Sea, by virtue of the environmental conditions that prevail there, can also be attached to this strategic Arctic entity.

## Contested Areas?

A viewpoint that is still too widely spread claims that the Arctic is a region whose boundaries have yet to be defined, and where the riparian powers would be ready for confrontation, if necessary, to exploit its resources. This viewpoint is false. The disputes concerning land and maritime boundaries, with one exception, have all been settled between the Arctic States, which have developed legal and scientific cooperation to resolve them.<sup>6</sup> Those concerned with the extension of their continental shelf have agreed to seek a solution within the framework of the Convention on the Law of the Sea (UNCLOS),<sup>7</sup> which has been signed and ratified by all the Arctic States except the United States, which respects its principles and ensures that other maritime powers respect it. The dispute settlement agreements can be summarized as follows:

- The oldest treaty in the area is the Svalbard (or Spitsbergen) Treaty, signed in 1920, recognizing Norway’s sovereignty, restricted in certain areas, over this archipelago. Article 9 prohibits in particular naval bases and fortifications, as well as the use of Svalbard “for warlike purposes”.

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5. “A Blue Arctic”, US Department of the Navy, January 2021.

6. A. Østhagen and C. Schofield, “The Arctic Ocean: Boundaries and Disputes”, *Arctic Yearbook*, 2021.

7. The Convention specifies the different categories of maritime areas over which coastal States can claim sovereignty: internal waters, territorial waters, contiguous zone, exclusive economic zones (EEZs) and continental shelf (underwater extension of a State’s territory up to 200 nautical miles). Beyond that, the waters and seabed come under the regime of the high seas. Each coastal State thus exercises its sovereign rights up to 200 nautical miles from the coast. If a State considers that its continental shelf exceeds 200 nautical miles, it can submit a so-called extended continental shelf claim to the Commission on the Limits of the Continental Shelf (CLCS). The CLCS examines the data presented by the State (geomorphological and sedimentary criteria in particular) and issues scientific and technical opinions in support of the decision taken to establish the outer limits of the extended continental shelf.

- The limit between Denmark (Greenland) and Canada was defined in 1973, with some adjustments added in 2004. Only one dispute remains, relating to sovereignty over a small island (1km<sup>2</sup>) in the Nares Strait, and both States have agreed to live with and ignore this disagreement. The agreement was supplemented in 2012 by another relating to exclusive economic zones (EEZ) in the Lincoln Sea. A few points remain contentious, but the two States created a joint task force in 2018 to resolve them.
- The maritime boundary between the United States and Russia in the Bering Strait, the Arctic Ocean and the Bering Sea was defined in 1990 (at the time of the USSR). Although the Russian Federation has not ratified this agreement, it nevertheless respects its terms.
- The limits of the maritime domains between Denmark (Greenland) and Norway (Svalbard) were set in 2006.
- Existing differences between Norway and Russia in the Barents Sea were resolved by an agreement signed in 2010.
- The delimitation of the EEZ boundaries between Canada and the United States in the Beaufort Sea has not yet been agreed upon, as additional scientific research is being undertaken to achieve this.<sup>8</sup>

In the Central Arctic, beyond the limits of the EEZ, the planting of a titanium flag at the North Pole on August 2<sup>nd</sup>, 2007 by a Russian exploration submarine at a depth of 4,200m could have suggested an attempt by Russia to appropriate this area. However, Russia has declared that it will comply with international law and has filed a submission concerning the limits of its continental shelf with the Commission on the Limits of the Continental Shelf (CLCS – Article 76 of UNCLOS), together with Denmark and Canada. These three States agreed in 2008 to settle disputes over the recovery of their extension claims peacefully and through the CLCS, which, however, is not expected to issue an opinion for several years.

In the end, none of the border disputes or disputes over the extent of limited sovereignty zones defined by UNCLOS seem likely to evolve, in the short term, into open conflict between Arctic littoral States, as the five States concerned have agreed to settle them peacefully, and above all have no interest in seeing them degenerate.

## Accelerated Global Warming

In addition to the concertation of state powers that has succeeded so far in avoiding territorial conflicts, another geographical characteristic of the Arctic is its sensitivity to global warming. The latest report by the

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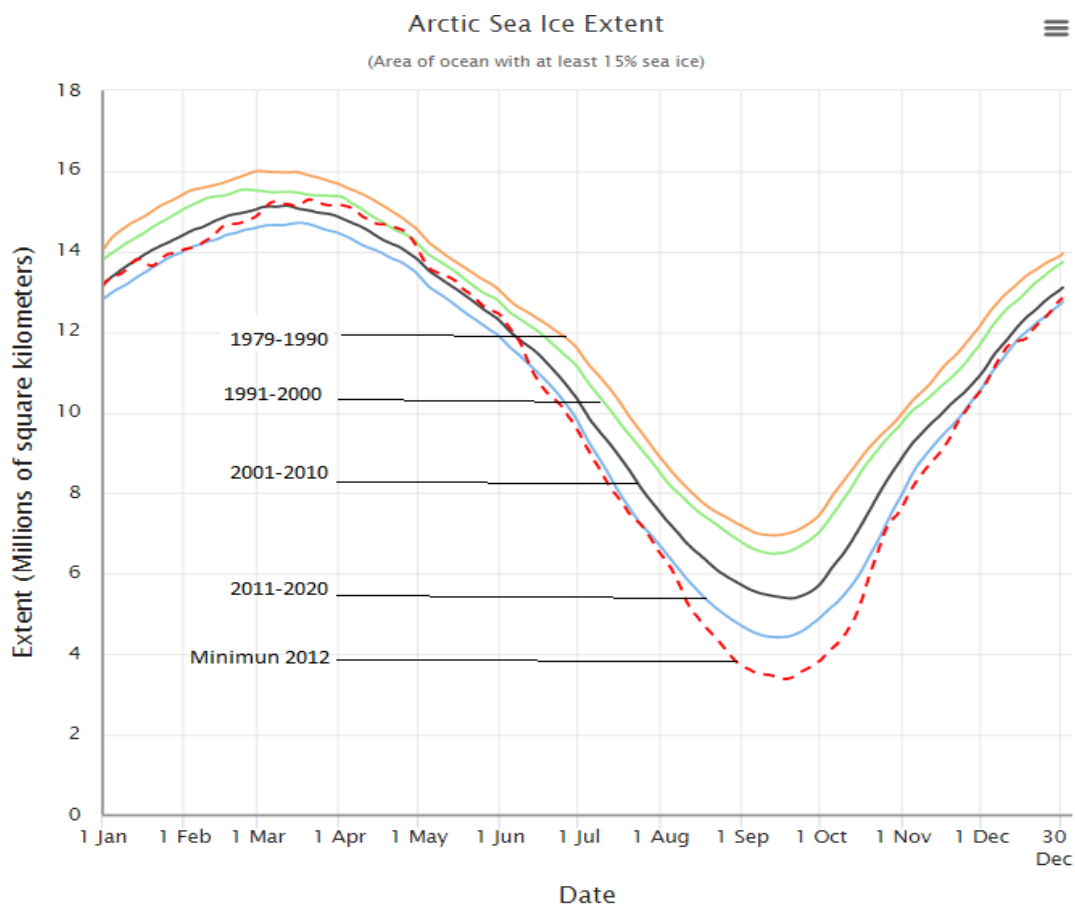
8. *Ibid.*

Intergovernmental Panel on Climate Change (IPCC) indicates that this region will warm up more than twice as fast as the rest of the planet. The Arctic is expected to experience an increase in minimum temperatures on the coldest days at about three times the rate of warming worldwide.

The Arctic Ocean ice pack has already undergone a significant reduction in area, losing about 40% between the 1980-1989 decade and the 2010-2019 decade. The IPCC indicates that the ocean should experience a first ice-free episode (less than 15% of the area of the 1980s decade) at least once before 2050. In qualitative terms, we are witnessing a disappearance of multi-year ice. These trends open the door for an increase in the use of polar routes, north of Siberia or Canada, or even transpolar routes. The strategic and economic consequences of these hypotheses will be analyzed below.

Another consequence of global warming is the melting of permafrost, which softens the ground in a number of regions, weakening the urban, industrial or military infrastructure located there.

**Graph No. 1: Average area of Arctic sea ice  
(change by decades)**



Source: National Snow and Ice Data Center.

# New Competitive Strategies

Over the last ten years, which have seen the emergence of new actors in the Arctic, notably China, the historical powers in the region, namely Russia and the United States, have developed new strategies and doctrines aimed at ensuring their territorial sovereignty in the area, jointly exploiting resources or asserting a military presence.

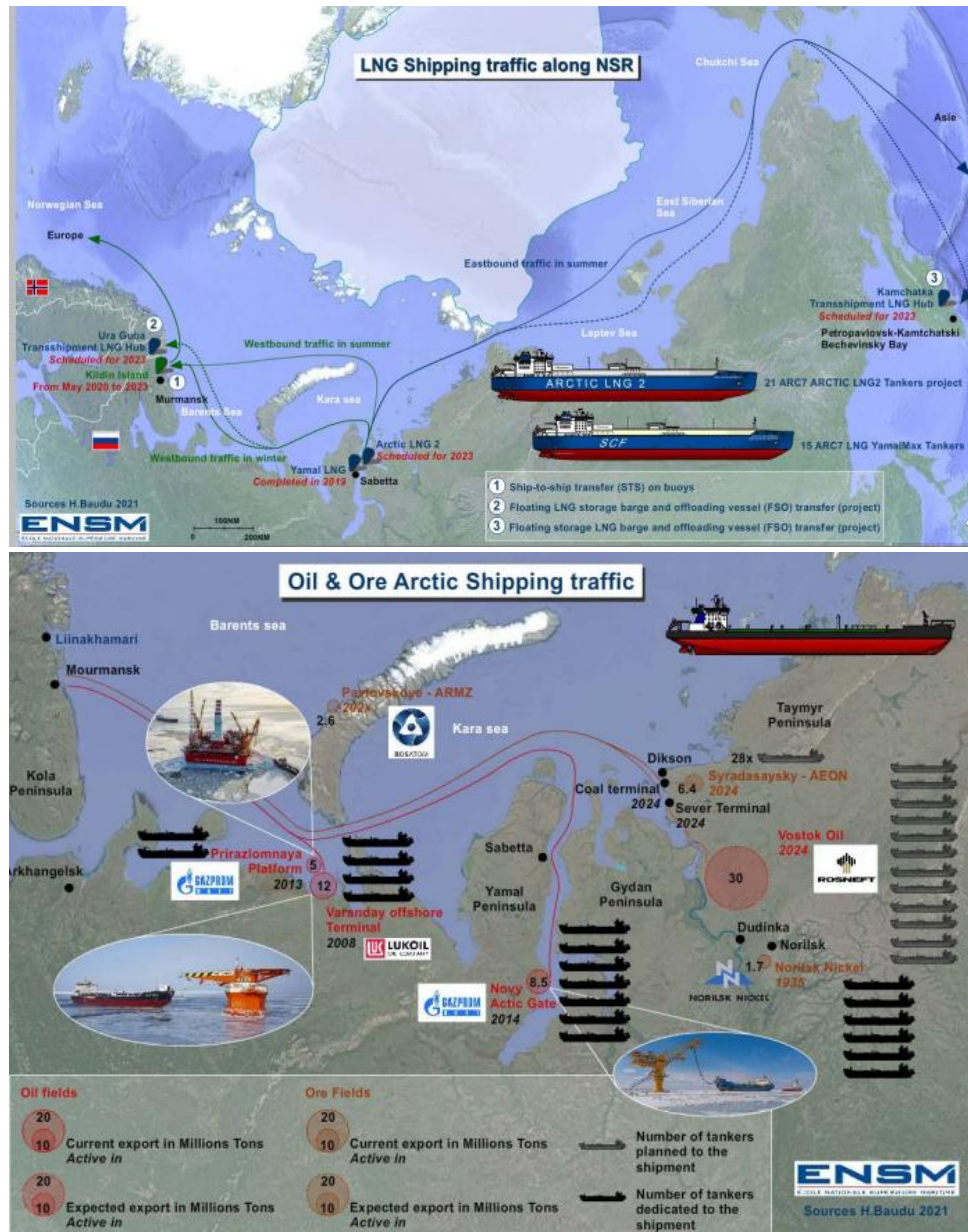
## Russia: A Dominant Arctic Power

Russia is geographically, historically, and economically the dominant power in the Arctic. Its territory extends over 160° of longitude from west to east, from the border with Norway to the shores of the Bering Strait. The area over which it exercises sovereignty (territorial and internal waters) and economic rights (EEZ) represents 45% of Arctic waters.

These waters have a strong historical significance. From the 16<sup>th</sup> to the 18<sup>th</sup> century, when Russian territory did not extend to the shores of the Baltic and the Black Sea, the Arctic and the White Sea were the main gateway for maritime trade with Western Europe. It was in 1553 that an English expedition, which initially set out to discover the Northeast Passage to connect Europe with Asia, entered the White Sea for the first time and dropped anchor at the mouth of the Northern Dvina River, at the location of what would become the city of Arkhangelsk in 1584. Russian expeditions, both on land and at sea, from the 17<sup>th</sup> century with Dezhnev, and particularly those of the 18<sup>th</sup> century, with Bering, Laptev or Liakhov, contributed to the Russification of a large part of the Arctic.

The maritime link between Russia and Europe via the Norwegian Sea and the Barents Sea, both of which are ice-free all year round due to the influence of the Gulf Stream, diminished in importance after the victorious wars of Peter the Great, which gave Russia access to the shores of the Baltic Sea on a permanent basis. However, it played an essential role during World War I and II when the ports of Murmansk (founded in 1915 on the Kola Peninsula) and Arkhangelsk were the main access routes for Allied supplies to Russian territory — between 1941 and 1945 about a quarter of American aid to the USSR passed through the Arctic.

### Map No. 2: Main Russian terminals in the Arctic (gas, oil, minerals)



Source: H.Baudu, ENSM, 2021.

The Arctic continues to wield considerable economic weight today. At the turn of the 2020s, the area generated between 12 and 15% of Russian gross domestic product (GDP)<sup>9</sup> and about 20% of tax and customs revenues<sup>10</sup> for a population representing only 1% of the whole Federation. This is mainly thanks to exports of oil and especially gas, with Arctic gas

9. V. Plotnikov, M. Kutepova and O. Sushko, "The Economy of the Russian Arctic: State and Specifics of Development", *Atlantis Press*, May 2018.

10. Arctic Russia, Blog *Investment Portal of the Arctic Zone of the Russian Federation*, available at: <https://arctic-russia.ru>.



accounting for 83% of Russian gas exports in 2021.<sup>11</sup> The Yamal Peninsula's gas operations, the port of Sabetta and the fleet of icebreaking LNG carriers for exporting liquefied natural gas to Asian and European markets are the symbol of the economic development of this part of Russia. With the expected growth of gas production in the area, the Northeast Passage or “Northern Sea Route” (NSR), which connects the Atlantic and Pacific Oceans along the Siberian coast, will become increasingly important as a route for transporting these resources to Asian and European markets. The traffic evolution to European markets will depend on the progress of the conflict and the sanctions imposed on Russia.

The planned development of the Russian Arctic is the subject of regularly updated documents. The framework document of this policy entitled “Foundations of the Russian Federation State Policy in the Arctic for the Period up to 2035”, was approved by President Putin in March 2020 and thus sets out the general objectives of Russia in this region:

- Ensuring Russian sovereignty and territorial integrity in the Arctic;
- Preserving the Arctic as a territory of peace, stability and mutually beneficial partnership for the Arctic States;
- Increasing the quality of life and well-being of the population of the Arctic zone of the Russian Federation (AZRF);
- Developing the AZRF as a strategic resource base, and its sustainable use to accelerate Russian economic growth;
- Developing the Northern Sea Route (NSR) as a competitive maritime route in the world market;
- Protecting the environment and preserving the native lands and traditional way of life of indigenous peoples residing in the AZRF.

While economic development is of major interest to Russia, as is the improvement of the well-being of the population with a view to stemming the demographic decline of the region, the primary objective — to which all others are naturally subordinate — is to ensure territorial integrity and Russian sovereignty. Despite the absence of territorial disputes (cf. above), the preservation of this integrity and the protection of the zone according to a “bastion” strategy has resulted in progressive militarization, visible since the 2000s. This dynamic responds to three different objectives:<sup>12</sup>

- Restoration of the Russian military presence in the Arctic after the period of the 1990s which saw it decline significantly: military investments in the region have thus followed the rebound of Russian

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11. *Ibid.*

12. M. B. Petersen and R. Pincus, “Arctic Militarization and Russian Military Theory”, *Orbis*, Vol. 65, No. 3, June 2021.

military spending on a national scale since 2008;

- The modernization of Russian military capabilities in the region: rather than resorting, as in the days of the USSR, to the mass deployment of capabilities all along the 7,000km of coastline, efforts are now focused on a few key bases equipped with state-of-the-art detection and defense systems, while relying elsewhere on the strategic mobility of forces capable of moving quickly to points threatened by a possible adversary;
- The protection of critical infrastructures: on the one hand, the new gas, oil and mining installations, as well as the NSR, which are vital to the development of the region and to the exploitation and export of resources; and on the other hand, all the strategic installations, mainly concentrated in the Kola Peninsula, which is home to the Northern Fleet with about two-thirds of Russian SSBNs, essential to ensure a second-strike capability, and all the associated bases.

## China: the Ambitions of a New Player

Not possessing any part of its territory north of the Arctic Circle, but experiencing in its northern part climatic conditions close to those encountered in the harshest regions of the Arctic, China has claimed since the beginning of the 21<sup>st</sup> century a “polar identity” that it intends to assert even more in the future.

A party to the Svalbard Treaty since 1925, China only began to express its desire to play an “active role” in the Arctic in 2005, an expression that has been continually reinforced since then. In 2013, Beijing included the desire to become a polar nation as a key element of its maritime strategy.<sup>13</sup> In 2014, President Xi Jinping, who had recently taken office, gave a speech aboard the icebreaker *Xue Long* in Hobarth Harbor, affirming China’s vocation to become a great polar power. On January 18<sup>th</sup>, 2017, during a speech in Geneva before the United Nations, he reaffirmed that the poles were a new frontier for cooperation between nations, as were the ocean floor, space and cyberspace.

In 2018, China published its Arctic White Paper,<sup>14</sup> in which it defined itself as a “Near-Arctic State”. Acknowledging the sovereignty of the eight States over internationally recognized territories, the document also reaffirmed that other nations, including China, have rights there, including on the high seas, in the “Area” as defined by Article 137 of UNCLOS, and finally within the perimeter covered by the 1925 Svalbard Treaty. It clearly states China’s goal to participate in the governance of the Arctic. Recalling the importance of environmental protection, the White Paper also stresses the importance of the

13. A.-M. Brady, *China as a Polar Great Power*, Cambridge: Cambridge University Press, 2017.

14. *China’s Arctic Policy*, The State Council Information Office of the People’s Republic of China, January 2018.

Arctic for China in terms of: maritime routes, in particular the “Polar Silk Road”; exploitation of oil, gas and mineral resources; and fishing. Politically, China reiterated its interest in the Arctic in the joint statement between President Xi Jinping and President Putin at the opening ceremony of the Winter Olympic Games on February 4<sup>th</sup>, 2022, supporting Sino-Russian cooperation for sustainable development of the region.<sup>15</sup>

All of these speeches and publications, aimed primarily at an audience outside China, assert China’s ambition in the Arctic, but in an attractive and conciliatory manner, by prioritizing “win-win” cooperation, respect for treaties and international law, science and environmental protection. Other documents intended for internal use, on the other hand, present the Arctic as a new realm of competition between great powers for the exploitation of resources. Commentators see science and diplomacy only being put forward to support Chinese economic and military ambitions.<sup>16</sup> The idea expressed in the *Science of Military Strategy* (2013) is that China will have to defend its interests in this new frontier in order to acquire strategic resources and secure access to sea routes, just as it does in the other common spaces of oceans, space and cyberspace. Moreover, regular references are made to the idea that control of the Arctic confers a major advantage in controlling three continents, two oceans and the main powers of the Northern Hemisphere.<sup>17</sup>

In pursuit of this strategy of asserting China’s rights over the Arctic, Beijing’s efforts in the area were initially diplomatic, with numerous visits by high-level leaders in the early 2010s, such as President Hu Jintao’s visit to Canada or that of Xi Jinping, then vice-president, to Finland and Sweden. These efforts were crowned with success in 2013 with China’s admission as an observer to the Arctic Council. This diplomatic activism has continued with the creation of, or participation in, numerous bilateral or regional dialogues, such as the China-Russia Arctic Forum, high-level dialogues on the Arctic with Japan and South Korea, or discussions with Norway to reach a free trade agreement.

In the economic sphere, Chinese activism has mainly resulted in investments in the energy and mining sectors in Russia, but also in other coastal territories such as Greenland. However, this activism is now being impacted by a new approach by several States, which are less inclined to give up strategic mining assets, as illustrated by the Canadian government’s refusal to sell the Hope Bay mine to Chinese interests at the end of 2020. These Chinese investments also concern high-tech industries, FinTech,

15. Joint Statement of the Russian Federation and the People’s Republic of China on the International Relations entering a New Era and the Global Sustainable Development, February 4, 2022.

16. R. Doshi, A. Dale-Huang and G. Zhang, “Northern Expedition: China’s Arctic Activities and Ambitions”, *Foreign Policy at Brookings*, April 2021, pp. 8.

17. *Ibid.*, pp. 13.



BioTech, GreenTech and semiconductors.<sup>18</sup> Sweden has been the main gateway for these investments, attracting the largest share of Chinese investments in Europe in 2018.<sup>19</sup>

China is also very active in the scientific field. In addition to numerous partnerships with research centers and universities, it has been conducting regular scientific expeditions to the Arctic since 1999 aboard its icebreakers, the *Xue Long* and the *Xue Long 2*.<sup>20</sup>

## The United States: a Delayed Reaction

The United States has possessed Arctic territory since the purchase of Alaska from Russia for the modest sum of seven million dollars in 1867. Economically and politically, this area represents a minor interest for Washington: in 2020, Alaska’s GDP represented about 0.24% of that of the entire Union, of which Alaska has only been a full member since 1959 — before that, it had the status of a territory, with no representation on Capitol Hill.

Militarily, the Arctic region began to play an active role for the United States in June 1941, when American troops landed in Iceland with the agreement of the Reykjavik Parliament. This role increased and took on major significance during the Cold War with a key role in early warning and strategic strike (see below) before undergoing a substantial decline in the 1990s and 2000s. One indicator of this low American interest in the region is the number of icebreakers — the U.S. Coast Guard now possesses only two aging vessels. However, after a long period of disinterest, the United States resumed activity in the region beginning in 2018 to address Russian military rebuilding and modernization as well as Chinese political and economic activism. President Trump’s statement in August 2019 that he wanted the U.S. to “purchase” Greenland, while diplomatically clumsy, reflected its renewed interest in the Arctic.

The Department of Defense’s (DoD) publication of an Arctic Strategy<sup>21</sup> outlines this U.S. response. To achieve the desired goal of a secure and stable region, in which U.S. national security interests are safeguarded and nations cooperate to address shared challenges, this document clearly defines American Arctic strategy as part of the global strategy of competition with Russia and China. However, it takes a cautious approach, aimed in particular at not aggravating competition in the area. The

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18. H. A. Conley and J. Lewis “Chinese Technology Acquisitions in the Nordic Region”, Center for Strategic and International Studies, September 24, 2020.

19. \$3.6 billion in Sweden, against \$1.6 billion in the UK, \$1.5 billion in Germany and \$1.4 billion in France.

20. The first was purchased from Ukraine in 1993, the second was built in China, with Finnish assistance, and launched in 2018.

21. *Report to Congress: Department of Defense Arctic Strategy*, Office of the Under Secretary of Defense for Policy, June 2019.

document makes cooperation with allies in the area the cornerstone of American Arctic strategy. Finally, it identifies three sets of operations:

- Reinforcing situational awareness capability, in the air and space domain to compensate for an aging detection system (North Warning System) and in the maritime and underwater domain in the GIUK region;
- Increasing the number of operations conducted in the region;
- Strengthening the international rules-based order.

Each service (Army, Navy, Air Force) then translated these DoD directives into its own strategy,<sup>22</sup> emphasizing increased deployments and cooperation with allies in the area, particularly through joint exercises. The U.S. Coast Guard has also published an updated Arctic strategy.<sup>23</sup> The strategy identifies three lines of effort: strengthening U.S. capabilities in the Arctic through the construction of new icebreakers and improved communications; strengthening the international rules-based order; and innovating to support resilience and prosperity in the region.

## Other Western Powers

While Russia, China and the United States are the main protagonists in the new competition between powers at the global level, with a particular focus of application on the Arctic, other States are implementing Arctic policies, starting naturally with the Arctic States not yet mentioned.

Taking into account the rapid changes in the region, Norway,<sup>24</sup> Sweden<sup>25</sup> and Finland<sup>26</sup> have each drafted or updated their Arctic policies during 2020-2021. Denmark is also expected to soon publish its new Arctic strategy for the period 2021-2030. On the military side, these four States have also started modernization or renewal of their capabilities for action in the area. Only Canada, in its Arctic and Northern Policy Framework issued in November 2019, does not mention the changing strategic context.

Among other non-Arctic States but keen observers of the area, the United Kingdom defines itself as the “nearest neighbor to the Arctic” in its 2021 defense review,<sup>27</sup> and sets out the goal of containing regional tensions and enhancing cooperation there. The UK has just published its strategy for

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22. “Arctic Strategy”, US Department of Air Force, July 2020; “A Blue Arctic”, US Department of the Navy, January 2021; “Regaining Arctic Dominance”, US Department of the Army, January 2021.

23. “Arctic Strategic Outlook”, US Coast Guard, April 2019.

24. *The Norwegian Government’s Arctic Policy*, January 2021.

25. Sweden’s Strategy for the Arctic Region, November 2020.

26. Finland’s Strategy for Arctic Policy, June 2021.

27. *Global Britain in a Competitive Age: The Integrated Review of Security, Defence, Development and Foreign Policy*, HM Government, March 2021.

the Arctic, announcing the reinforcement of the periodic deployments of its armed forces in the area.<sup>28</sup>

France has also published a document on its defense policy in the Arctic.<sup>29</sup> Retaining freedom of action, knowledge of the Arctic environment and secure energy supply routes are described as key areas going forward. The French Navy is regularly deployed there to participate in situation assessment, particularly in the undersea domain, and to improve its knowledge regarding the conduct of operations in this difficult zone. It is the only western navy to have sent a vessel through the entire Northeast Passage, without the assistance of a Russian icebreaker (see paragraph 4.2).

Finally, the European Union also published a new Arctic strategy in October 2021, highlighting cooperation, sustainable development and ecological, economic and social issues related to global warming.

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28. The UK's Defence Contribution in the High North, Ministry of Defence, March 29<sup>th</sup>, 2022.

29. “La France et les nouveaux enjeux stratégiques en Arctique”, Direction générale des relations internationales et de la stratégie (DGRIS), November 2019.

# A Shifting Balance of Power

## Renewed Competition in the Conventional Domain

### *The Russian "Bastion"*

The rebuilding of Russian conventional military power in the Arctic and the increased importance of this region for Russia were reflected on an organizational level by the creation in December 2014 of the Northern Fleet Joint Strategic Command (OSK Sever), which became a fifth independent military district on January 1<sup>st</sup>, 2021, alongside the Western, Southern, Central and Eastern districts. It is logically the Navy that largely dominates the Russian military posture in the Arctic with the renowned Northern Fleet, whose HQ is based in Severomorsk, near Murmansk, and its fleets of submarines (8 nuclear-powered ballistic missile submarines, 13 nuclear attack submarines and 5 conventionally-powered attack submarines), surface ships (10 large cruisers/destroyers), as well as its naval aviation group, and important capabilities in mine warfare, coastal defense and naval infantry.

### **Image No. 1: Nagurskoye Russian Military Airport**



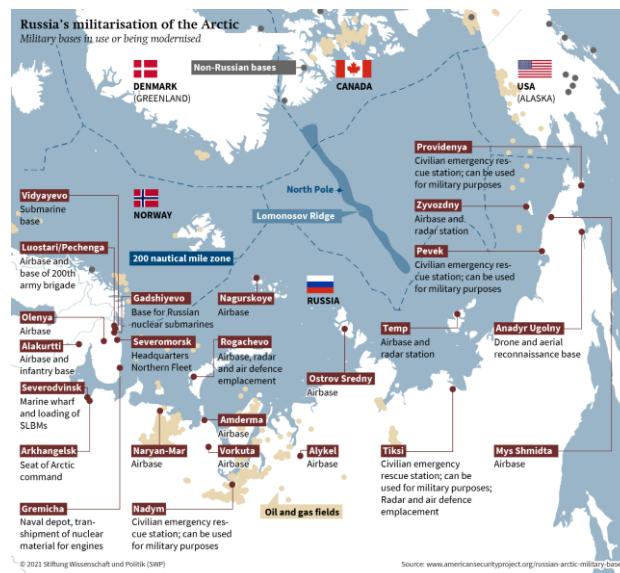
Source: Russian Ministry of Defense, 2017.

To complete this system, Russia has undertaken the renovation, or even the complete reconstruction of numerous infrastructures dating from the Soviet era. At the heart of this effort are three “tricolor” bases located in Franz Josef Land (Nagurskoye), on Kotelny Island (Sredny Ostrov) and in Novaya Zemlya (Rogacheco), respectively.

Designed to operate autonomously for a year or more, housing a few hundred men, these bases are equipped with long-range (S-300 or S-400) and short-range (*Pantsir*) air defense systems, as well as anti-ship missile systems (K-300P *Bastion* and 4K51 *Rubezh*).<sup>30</sup> These three bases are also equipped with runways that can be used by MiG-31s. The bases in Franz Josef Land and Novaya Zemlya also play a special role in the defense of strategic installations on the Kola Yamal peninsulas.

Beyond the efforts undertaken at these three bases, Russian defense policy in the Arctic was also marked by the creation in 2015 of an Arctic Land Forces Brigade, deployed near the Norwegian and Finnish borders, consisting of several motorized infantry regiments, a heavy tank regiment (T-80 BVM) and an organic artillery battalion. In addition, several airborne divisions (VDVs) are now receiving specific training for Arctic operations.<sup>31</sup> The Russian Ministry of Defense actively publicized an exercise in which paratroopers specially equipped to face extreme environmental conditions were dropped at a latitude of 80°N in Franz Josef Land.<sup>32</sup>

### Map No. 3: Russian military presence in the Arctic



Source: M. Paul, G. Swistek, "Russia in the Arctic. Development Plans, Military Potential, and Conflict Prevention", SWP Research Paper 3/2022 (© Stiftung Wissenschaft und Politik, Berlin, 2022).

30. M. Boulègue, "Russia's Military Posture in the Arctic: Managing Hard Power in a 'Low Tension' Environment", *Chatham House*, June 2019, pp. 13.

31. *Ibid.*, pp. 18.

32. T. Nilsen, "Paratroopers Jump at 10000m over Russian Arctic Base", *The Barentz Observer*, April 26, 2020, available at: <https://thebarentsobserver.com>.

This entire military presence, covering recently-built new economy infrastructure in the RFAZ, has primarily a defensive role, as many analysts have pointed out.<sup>33</sup> However, in addition to the Arctic Brigade, positioned close to Western borders, and the parachute divisions, which are mobile by definition, the Northern Fleet, based on the Kola peninsula, can play a role that is not purely defensive, as shown through the deployment of several units in the Black Sea to support the Ukraine invasion (see below).

### ***The West Keeping a Low Profile***

Washington sees the Arctic region as “vital”, in particular for its natural resources and its navigation routes which have become geopolitically very sensitive, and which could become a theater of conflict in the future.<sup>34</sup> Thus, the United States intends to strengthen its military presence there, as evidenced in March 2021 with the publication of the Army’s *Regaining Arctic Dominance* strategy. It details how the Army plans to organize and equip its forces for operations in the Arctic area.<sup>35</sup> The goal is to improve the capabilities of the armed forces to operate in extreme cold, mountainous and high latitude environments.<sup>36</sup> Washington, however, maintains a discourse of non-militarization of the Arctic, not for “a question of security, but of freedom of movement”.<sup>37</sup>

The American military presence in the Arctic is essentially under the umbrella of the Alaskan Command (ALCOM) – a joint subordinate unified command of the United States Northern Command (USNORTHCOM) – responsible for operations in and around the state. Indeed, most of the permanent American Arctic posture’s bases and units are located in Alaska and divided into three components: air (11<sup>th</sup> USAAF), land (United States Army Alaska) and sea (United States Naval Forces Alaska). ALCOM’s combined forces include more than 16,000 Air Force, Army, Navy and Coast Guard personnel, as well as 3,700 Guardsmen and Reservists. Finally, the Thule air base is an exception in this system because it is in Greenland and contributes to the American territory’s defense by serving as a link in the anti-missile shield (NORAD).

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33. A. Sergunin and V. Konyshov, “Russian Military Strategies in the Arctic: Change or Continuity?”, *European Security*, Vol. 26, No. 2, 2017, pp. 171-189; M. Laruelle, “La politique arctique de la Russie: une stratégie de puissance et ses limites”, *Russie.Nei.Visions*, No. 117, Ifri, March 2020; M. B. Petersen and R. Pincus, “Arctic Militarization and Russian Military Theory”, *Orbis*, Vol. 65, No. 3, June 2021.

34. I. Houdassine, “L’armée américaine souhaite une présence accrue de ses capacités terrestres dans l’Arctique”, *Rcinet*, May 17, 2021, available at: [www.rcinet.ca](http://www.rcinet.ca).

35. P. Chapleau, “L’US Army veut adapter ses moyens au théâtre arctique”, *Ouest France*, January 27, 2021, available at: <http://lignesdedefense.blogs.ouest-france.fr>.

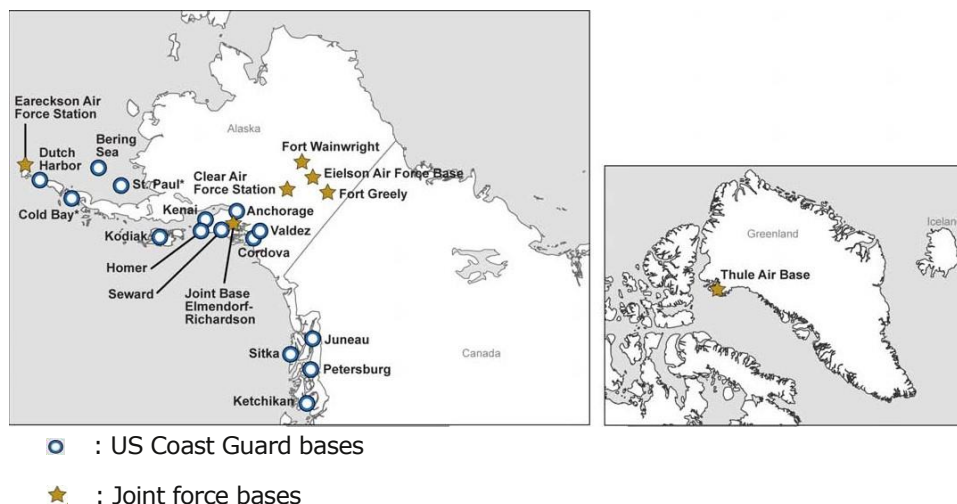
36. US Army Public Affairs, “Army Announces Release of Arctic Strategy”, March 16, 2021, available at: [www.army.mil](http://www.army.mil).

37. J.-S. Soldaini, “Arctique : pourquoi ça chauffe entre la Russie et les États-Unis”, *Europe 1*, May 19, 2021, available at: [www.europe1.fr](http://www.europe1.fr).



As part of the United States’ Arctic reinforcement strategy, General James McConville (current Chief of Staff of the Army) has suggested the creation of specialized units such as “multi-domain task force” and “an Arctic-focused brigade”.<sup>38</sup> On the material level, the Army should soon acquire new Cold Weather All-Terrain Vehicle (CATV).<sup>39</sup> Moreover, acclimatization to polar environment requires ad hoc training. At the national level, the Army’s Northern Warfare Training Center (NWTC) located in Alaska offers two Arctic-focused courses: the Cold Weather Leaders Course and the Cold Weather Orientation Course.<sup>40</sup> The 2021 edition of the Arctic Warrior exercise was also conducted during the coldest weeks of the year in order to train as faithfully as possible in arctic conditions.<sup>41</sup> In a similar vein, the Pentagon turns to its allies (Finland, Norway, Sweden, and Canada) in order to capitalize on their respective experiences of operating in extreme climatic conditions.<sup>42</sup>

**Map No. 4: US military bases in the Arctic  
(Alaska and Greenland)**



Source: U.S. Department of Defense, *Arctic Report and Coast Guard's High Latitude Study*, 2011.

The Scandinavian armed forces, on the other hand, have a smaller force but a confirmed expertise. The Norwegian army, strongly integrated into NATO, has a single brigade – the country’s main combat formation – known as the Northern Brigade. Located north of the polar circle in the Troms og Finnmark county, it is trained to fight in extreme climatic conditions. Similarly, the Navy can operate in this environment thanks to the acquisition of five Nansen-class (Navantia) *AEGIS* frigates, designed

38. P. Chapleau, “L’US Army veut adapter ses moyens au théâtre arctique”, *Ouest France*, January 27, 2021, available at: <http://lignesdedefense.blogs.ouest-france.fr>.

39. *Ibid.*

40. *Ibid.*

41. C. Woody, “The US Army Wants to Regain ‘Dominance’ in the Arctic, and It’s Looking All Over the World for Help”, *Business Insider*, April 27, 2021, available at: [www.businessinsider.com](http://www.businessinsider.com).

42. *Ibid.*

with more cold-resistant steel, and its special forces unit *Marinejegerkommandoen* (MJK). Furthermore, the country organizes many exercises each year with its NATO allies or its Swedish and Finnish neighbors. The government’s decision to relocate its joint staff further north also highlights the desire to strengthen Norwegian military capabilities in the Arctic.<sup>43</sup>

Helsinki does not have an Arctic strategy per se “simply because everything in defense is designed to function in Arctic conditions”.<sup>44</sup> Over the eight brigades that make up the Finnish Army, the Jaeger brigade, its northernmost unit, is specialized in Arctic training and ground air defense.<sup>45</sup> The brigade is also responsible for the development of warfare tactics and equipment in this environment. The Finnish armed forces are renowned for their expertise: their exercises are therefore popular with foreign armies who regularly participate in them.<sup>46</sup>

The Swedish arctic posture focuses exclusively on the Norrbotten regiment. It is an arctic armored, light infantry and commando regiment. The Norrbotten Regiment comprises two armored battalions, a special reconnaissance battalion, a number of home guard arctic light infantry battalions, as well as the Swedish Armed Forces Winter Unit. In addition, the Norrland Dragoon Regiment K 4 unit, specializing in Arctic warfare and special operations, disbanded since 2004, was reactivated on September 24, 2021.<sup>47</sup>

For its part, Denmark set up a Joint Arctic Command on October 31, 2012, responsible “to ensure the sovereignty of the Kingdom’s unity by monitoring the area around the Faroe Islands and Greenland” whose headquarters are stationed in Nuuk.<sup>48</sup> Its main tasks are the military defense of Greenland and the Faroe Islands, fisheries inspection, and search and rescue (SAR).

In recent years, members of the Atlantic alliance and their partners have begun to articulate their new Arctic strategies in military terms. A strong signal of this renewed interest of the allies was exercise Trident Juncture 2018. Organized in October and November 2018 in Norway and the Norwegian Sea, it brought together around 50,000 troops, 250 aircraft and 65 ships from alliance members joined by Sweden and Finland, on an Article 5 North Atlantic Treaty implementation scenario.

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43. Observatoire de l’Arctique, “Place et capacités des forces armées dans le dispositif national”, *Observatoire arctique*, available at: [www.observatoire-arctique.fr](http://www.observatoire-arctique.fr).

44. J. Kuusela, “A View from Finland: Security and Defense in the Arctic”, *Defense News*, May 12, 2020, available at: [www.defensenews.com](http://www.defensenews.com).

45. Finnish Defence Forces, “Jaeger Brigade”, *Maavoimat*, 2022, available at: <https://maavoimat.fi>.

46. J. Kuusela, “A View from Finland: Security and defense in the Arctic”, *op. cit.*

47. P. Chapleau, “La Suède recrée cinq régiments et une escadrille équipée de Gripen”, *Ouest France*, October 19, 2021, available at: <http://lignesdedefense.blogs.ouest-france.fr>.

48. “Commandement interarmées de l’Arctique”, *Stringfixer*, available at: <https://stringfixer.com>.



The United States, the United Kingdom and France also regularly conduct deployments in the area, often in conjunction with the Norwegian armed forces. In particular, one can note the operations carried out by several U.S. Navy destroyers accompanied by a Royal Navy frigate in May 2020 in the Barents Sea, or the deployment of U.S. Air Force B-1 bombers in Norway in March 2021.<sup>49</sup>

Several States have embarked on armament programs to modernize their armed forces or renew their Arctic infrastructures. Thus, one can note the acquisition of F-35 Lightning II fighters by the United Kingdom, Norway, Denmark and Finland, P-8 Poseidon anti-submarine warfare aircraft by the United Kingdom and Norway, and the acquisition by Denmark of new maritime and air surveillance capabilities (radars and UAVs in Greenland and the Faroes, satellites).<sup>50</sup>

Finally, Chinese conventional military operations in the Arctic have so far remained limited in scale, e.g. a group of five ships sent to the Bering Sea along the coast of Alaska in 2015.<sup>51</sup>

Despite this remilitarization and the renewed activity of conventional, Russian and Atlantic Alliance forces, direct confrontations still seem very unlikely given the stabilizing role of the respective nuclear deterrents.

## **Nuclear Balances: Continuities and Some Novelties**

### ***In Space and in the Air...***

At the beginning of the Cold War, particularly after the USSR acquired nuclear weapons, the Arctic took on particular importance as an area of direct contact between the north of the American continent and the Eurasian area covered by the USSR. Thus, Thule base in Greenland was secretly built from 1951 by the Americans for the operation of B-36 and B-47 bombers. An intermediate-range missile base was also planned nearby. However, the Arctic was only one access route for this type of bomber, which was also deployed in Spain, Morocco and Turkey. On the Soviet side, many bases north of the Arctic Circle, from Narguskoye in Franz Josef Land to Anadyr in the Siberian Far East, were built to accommodate bombers.

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49. T. Nilsen, “U.S. B-1 Bomber Makes First Landing Inside Norway’s Arctic Circle”, *The Barents Observer*, March 9, 2021, available at: <https://thebarentsobserver.com>.

50. “Agreement on Arctic Capabilities”, Danish Ministry of Defence, February 2021.

51. P. Stewart, “Five Chinese Ships in Bering Sea as Obama Visits Alaska”, Reuters, September 2, 2015, available at: <https://thebarentsobserver.com>.

However, the United States, except for Alaska, was beyond the range of the first Soviet bombers, Tu-4 then M4 Bison A.<sup>52</sup>

From the 1960s onwards, with the progressive deployment of intercontinental missiles (R-7 and R-16, then SS-18 on the Soviet side, Minuteman on the American side), long-range bombers (B-52 for the Americans, Tu-95 *Bear* for the Soviets), and finally the arrival of the first ballistic missile submarines (SSBN), the Arctic became a major theater of confrontation between the two superpowers. In order to receive the earliest possible warning of bomber attacks or launches of intercontinental missile salvos, each side installed radar chains on its northern borders: the Distant Early Warning (DEW) line<sup>53</sup> on the North American side, and the *Dnepr* and *Dnestr* systems on the Soviet side.

**Map No. 5: The DEW Line**



© Léo Périá-Peigné, Ifri.

52. S. J. Zaloga, *Target America: The Soviet Union and the Strategic Arms Race 1945-1964*, Novato: Presidio Press, 1993.

53. P. Whitney Lackenbauer *et al.*, “The DEW Line: A Bibliography and Documentary Resource List”, *The Arctic Institute of North America*, 2005.

During the first two decades of the Cold War, the Arctic also became the primary zone for testing Soviet strategic weapons and ballistic missiles and for nuclear tests. From 1955 onwards, Novaya Zemlya hosted three separate nuclear test sites. In total, 130 nuclear tests were conducted there, including 88 atmospheric tests, three underwater explosions and 39 underground explosions.<sup>54</sup> The most powerful nuclear weapon in the world (*Tsar Bomba*, 50 Mt) was tested there on October 30<sup>th</sup>, 1961.

The end of the Cold War naturally changed the terms of the confrontation, allowing for the establishment of the “Arctic exception”, though confrontation was not eliminated in the nuclear domain: bombers and missiles on both sides remained in a low-alert posture, within the framework permitted by the START 1 and START 2 treaties, and then New START.

In the field of surveillance and early warning, the Americans transformed the DEW line into the North Warning System (NWS), closing numerous sites in northern Canada at the end of the 1980s, without any subsequent modernization. As the global coverage by infrared satellites was deemed sufficient to monitor possible launches from Russia, the United States preferred to concentrate on surveillance systems for “rogue States”, e.g. deployment of radars in Japan and Alaska to monitor North Korea or in Turkey to monitor Iran.

Following the disappearance of the USSR, Russia faced the need to replace the radars in the republics that had become independent with a new chain of radars completely contained inside the borders of Russia. The first Voronezh ABM radar was tested in 2005 near St. Petersburg. This chain, which is nearing completion, includes two radars located north of the Arctic Circle, one at Olenogorsk in the Kola peninsula, and one at Vorkuta in the Pechora mountains.<sup>55</sup>

Although not directly linked to missile early warning, it should be remembered that the Arctic is also of interest for the installation of ground stations for Earth observation satellites in polar orbit. The American base of Thule hosts such ground stations. The Svalsat station, located in Svalbard, also controls many satellites, including Galileo satellites. China has built a station at the Esrange Space Center near Kiruna in northern Sweden.<sup>56</sup>

Nuclear rivalry with China also has an Arctic dimension. As in the case of U.S.-USSR confrontation, the Arctic is also the shortest route between the United States and China. However, the American nuclear arsenal, now about

54. *Nuclear Explosions in the USSR: The North Test Site Reference Material, Version 4*, The Division of Nuclear Safety and Security of the International Atomic Energy Agency, December 2004.

55. P. Podvig, Blog *Russian Strategic Nuclear Forces*, available at: <https://russianforces.org>.

56. S. Chen, “China Launches Its First Fully Owned Overseas Satellite Ground Station near North Pole”, SCMP, December 16, 2016, available at: [www.scmp.com](http://www.scmp.com).

40 years old,<sup>57</sup> has not evolved since the end of the Cold War. While bombers, which can be refueled in flight and have bases in the Pacific, can use other routes than the Arctic (which has the disadvantage of involving overflight of Russia) to reach targets in China, this is not the case for ICBMs.

### Map No. 6: Main air routes between North America and Asia through the Arctic



Source: Arctic Portal, 2021.

The converse is of course true for the Chinese. While they are rapidly increasing their ballistic missile force, they remain concerned about the development of American ballistic missile defense (BMD). China believes that BMD, designed by the United States to counter the emerging North Korean ballistic missile threat, is in fact intended for China. China's recent test of a "Fractional orbital bombardment system" (FOBS) in July and August 2021, allowing it to use orbital trajectories passing through the southern hemisphere, out of range of American interceptor missiles based in the Aleutian Islands, may be an answer to this concern. This system also avoids overflying Russian territory.

The American withdrawal from the ABM Treaty in 2002 followed by the development of American BMD systems also worried the Russians. This concern partly explains the development of new weapon systems: *Avangard* hypersonic gliders, *Burevestnik* nuclear-powered missiles,

57. The Office of the Deputy Assistant Secretary of Defense for Nuclear Matters, *Nuclear Matters Handbook 2020*, pp. 6.

*Poseidon* nuclear-powered underwater drone<sup>58</sup>, *Kinzhal* nuclear-capable air-to-ground missiles.<sup>59</sup> The Arctic is the main area for testing these new weapons systems, though this is not without risk to the environment, as demonstrated by the failure of a *Burevestnik* test at the Nenoksa site in the White Sea in August 2019, during which five people died and which resulted in contamination in this area.<sup>60</sup> The Arctic remains the primary region for training Russian nuclear forces, such as the *Grom* exercises during which ballistic missiles are regularly launched from the Barents Sea to the Sea of Okhotsk and vice versa.

### **... And beneath the Waves**

From the early days of the Cold War, intelligence gathering operations by conventional submarines were carried out in the Arctic. One of the very first was marked by the loss of an American submarine, USS *Cochino*, in the Barents Sea in 1949.<sup>61</sup> These submarine operations increased with the arrival of nuclear propulsion, starting with USS *Nautilus* in 1954, and the first transit from the Pacific Ocean to the Atlantic Ocean via the North Pole passing beneath the ice pack in August 1958. Two years later, the commissioning of the first nuclear-powered ballistic missile submarine, the USS *George Washington*, marked the dawn of oceanic nuclear deterrence. Given the short range of the first Polaris missiles (around 1,500km), the American SSBNs had to patrol in the Arctic zone.<sup>62</sup> This was also the case for the first British and French SSBNs.

Conversely, the first Soviet SSBNs (*Hotel* class, then *Yankee*) were obliged to deploy far from their bases around Murmansk to reach patrol zones along the American coast. These transits were closely monitored by the American fleets and their allies. With the extension of the range of submarine-launched missiles in the 1970s and 1980s, a reversal of patrol zones took place, with Western SSBNs moving away from the Soviet approaches, while the Soviets established the Arctic as a “bastion”, protected by attack submarines and listening devices, particularly under the ice pack, to allow them to carry out patrols by their D4 and *Typhoon* SSBNs.<sup>63</sup>

For some thirty years, the Barents Sea and the Norwegian Sea were the scene of intense underwater confrontation, including collisions, such as the one between a Soviet SSN and the American SSBN USS *James Madison* in

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58. Poseidon operational and technical credibility still have to be proven.

59. H. Notte *et al.*, “Russia’s Novel Weapons Systems: Military Innovation in the Post-Soviet Period”, *The Nonproliferation Review*, August 19, 2021.

60. *Ibid.*

61. S. Sontag *et al.*, *Blind Man’s Bluff: The Untold Story Of American Submarine*, New York: Harper Paperbacks, 1999, pp. 1-34.

62. *Ibid.*, pp. 63.

63. *Ibid.*, pp. 295.



1974,<sup>64</sup> many of which have probably still not been made public. In order to monitor these activities, each side deployed acoustic surveillance devices, attached to the seabed like the American Sound Surveillance System (SOSUS), or via devices towed by surface vessels (American T-AGOS vessels), or even under floating ice stations.<sup>65</sup>

The end of the Cold War did not immediately put an end to these confrontations, as shown by further collisions between American and Russian submarines in 1992 and 1993. Russia's economic difficulties and defense budget cutbacks nevertheless led to a reduction in the activity of the Northern Fleet, in particular the submarine forces, marked in 2000 by the loss of the *Kursk* submarine. Meanwhile, the United States and its allies engaged in the Arctic, also affected by cutbacks and involvement in new theaters of operations, moved out of the Arctic almost completely. An example of this disengagement was the closure of the Norwegian base of Olasvern, near Tromsø, offering a port of call for allied SSNs deployed in the area.

The renewed competition between powers was reflected in a significant uptick in the activity of Russian submarine forces after the invasion of Crimea and the imposition of sanctions by the West. While in 2015 the Russian submarine forces were still mainly made up of units dating from the last decade of the Cold War (*Delta 4* SSBNs, *Victor 3* and *Akula* SSNs, *Oscar 2* nuclear-powered cruise missile submarines), a modernization effort is in progress. The new *Borei* class SSBN, equipped with *Bulava* missiles, now counts five vessels, with a sixth to be launched at the end of 2021.<sup>66</sup> Two are currently assigned to the Northern Fleet, while the other three in service are deployed in the Pacific Fleet to replace aging *Delta 3* SSBNs. Turning to SSGNs, the Northern Fleet received its second vessel under the *Yasen 885M* project, the *Kazan*,<sup>67</sup> in 2021, following the *Severodvinsk* which entered service in 2014.

These new submarines, reputed to have very low acoustic signatures, are armed with *Kalibr* cruise missiles and P800 *Oniks* anti-ship missiles and could eventually receive the *Tsirkon* hypersonic missile. Deployed in the Atlantic, they would thus be able to threaten new targets (vital military or economic sites in Europe or the United States) assigned to Russian naval

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64. *Ibid.*, pp. 397-403.

65. In 1962, the CIA conducted an operation to inspect a scientific station built on a piece of drift ice abandoned by the Soviets. One of the objectives was to verify if the Soviets were installing acoustic monitoring devices as the Americans were doing. The answer was positive! (cf. W. M. Leary and L. A. LeShack (eds.), *Project Coldfeet: Secret Mission to a Soviet Ice Station*, Annapolis: Naval Institute Press, 1996).

66. T. Nilsen, “Russia Launches New Borei-A Class Ballistic Missile Sub”, *The Barentz Observer*, December 25, 2021, available at: <https://thebarentsobserver.com>.

67. N. Novichkov, “Russian Navy Commissions Project 885M Submarine *Kazan*”, *Janes*, May 10, 2021, available at: [www.janes.com](http://www.janes.com).

forces in the framework of non-nuclear deterrence.<sup>68</sup> The upcoming commissioning of the *Belgorod*<sup>69</sup> — capable of deploying unmanned underwater vehicles and exploration submarines, and especially the *Poseidon* nuclear-powered and nuclear-armed torpedo — also represents a new threat for Europe and the United States. The Russian submarine fleet in the Arctic is expected to receive many new vessels of the *Borei*, *Yasen* and *Belgorod* classes. At the beginning of January 2022, 13 submarines of these three classes were in various stages of construction at the Sevmash shipyards in Severodvinsk: five *Borei* class SSBNs, five *Yasen* class SSGNs and three *Belgorod* class submarines.<sup>70</sup> All of these new capabilities are expected to enter service in the Northern or Pacific fleet by 2030.

This fleet modernization and renewed Russian interest in the area have been accompanied by an increase in the number of deployments of Russian submarine forces in the Atlantic and the Norwegian Sea for several years. Deployments of up to around ten vessels are regularly mentioned by operational sources, putting Western anti-submarine forces under pressure. This point was clearly mentioned by the Chief of Staff of the French Navy, Admiral Vandier, during his hearing before the Foreign Affairs Commission of the French Senate in October 2021: “Coalition operations have continued in the various theaters covered by the French Navy, starting with anti-submarine warfare operations in the North Atlantic. The Russians are conducting submarine campaigns in powerful ‘surges’ that test the credibility of the Western operational posture of the United Kingdom, United States and France. No fewer than seven Russian submarines kept us and our allies busy for more than six months last year in the Atlantic.”

Submarine confrontation in the Arctic, which is by nature discreet, is nevertheless regularly highlighted by some of the protagonists. For example, the U.S. Navy’s annual ICEX exercises, in which British SSNs occasionally participate, are extensively publicized by the U.S. Navy.

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68. *FOUNDATIONS of the Russian Federation State Policy in the Arctic for the Period up to 2035*, Russia Maritime Studies Institute, March 5, 2020, art. 19

69. T. Nilsen, “Gigantic Special Mission Submarine Starts Sea Trials in White Sea”, *The Barentz Observer*, June 28, 2021, available at: <https://thebarentsobserver.com>.

70. T. Nilsen, “Russia’s Nuclear Submarine Construction Reaches Post-Soviet High”, *The Barentz Observer*, January 6, 2022, available at: <https://thebarentsobserver.com>.

**Image No. 2: Two U.S. SSNs (USS *Connecticut* and USS *Hartford*) surface in the Arctic during exercise ICEX 2018.**



*Source: US Navy, 2018.*

In 2021, the Russian Navy conducted a similar communication operation, also aimed at emphasizing its ability to transit under the icepack,<sup>71</sup> during exercise UMKA 2021.

**Image No. 3: Exercise UMKA 2021**



*Source: Russian Ministry of Defense, 2021.*

71. Reuters, “Three Russian Submarines Surface and Break Arctic Ice during Drills”, Reuters, March 26, 2021, available at: [www.reuters.com](https://www.reuters.com).



## Hybrid Strategies

In the Arctic, as in other parts of the world, nuclear and conventional balances open the door to confrontations in other types of conflict. Thus seabed warfare and influence operations are active fields in this region.

Seabed warfare was already an active area of combat during the Cold War. The submarine USS *Parche*, specially equipped for operations on the seabed, was regularly deployed in the Barents Sea from 1979 onwards. It installed listening devices on the underwater communication cables between the Northern Fleet HQ and the various Soviet bases on the Kola peninsula.<sup>72</sup> These eavesdropping devices allowed American intelligence services to analyze Russian reactions during exercise “*Able Archer*” in November 1983.<sup>73</sup>

On July 1<sup>st</sup>, 2019, a dramatic accident aboard the *Losharik* research submarine, resulting in the death of fourteen Russian undersea special operations officers, focused attention on the Main Directorate of Deep-Sea Research (GUGI) and its equipment. This service, directly attached to the Russian Ministry of Defense, focuses on special underwater operations.<sup>74</sup> It uses an oceanographic surface vessel, the *Yantar*, and several submarines, some of them acting as “mother” submarines — such as the *BS-64 Podmoskovye*, a former Delta 4 class SSBN — and others as spy submarines operating discreetly from these “mother” submarines, such as the *Losharik*. This nuclear-powered submarine is equipped with a manipulator arm and is reportedly capable of landing on the seabed.<sup>75</sup> Though there is no certainty in such matters, these special operations being discreet by definition, the unexplained disappearance of a few kilometers of submarine cables connected to listening acoustic devices off the northern coast of Norway at the end of 2021,<sup>76</sup> followed by the cutting of one of the two cables linking Norway to Svalbard, and in particular to the Svalsat satellite control station in early January 2022, in a context of tensions between Russia and the West over the Ukraine, are probably attributable to the GUGI. On the American side, it is likely that USS *Jimmy Carter*, which has been modified for seabed operations, is regularly deployed in the Arctic, like the other submarines of its class (USS *Connecticut* and USS *Seawolf*).

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72. S. Sontag *et al.*, *Blind Man's Bluff: The Untold Story Of American Submarine*, New York: Harper Paperbacks, 1999, pp. 303 and following pages.

73. *Ibid.*, pp. 346.

74. M. Kofman, “Fire aboard AS-31 Losharik: Brief Overview”, Blog Russian Military Analysis, July 3, 2019, available at: <https://russianmilitaryanalysis.wordpress.com>.

75. H. I. Sutton, Blog *Covert Shores*, available at: [www.hisutton.com](http://www.hisutton.com).

76. “4.3 Kilometers of Subsea Cable Vanished Off North Norwegian Coast”, *High North New*, November 10, 2021, available at: [www.highnorthnews.com](http://www.highnorthnews.com).

China does not have a strong presence today in the conventional military domain, but is actively pursuing influence operations, as the Swedish and Canadian cases demonstrate.<sup>77</sup> In Sweden, after a period of peaceful and constructive relations, marked by high-level visits (Xi Jinping as vice-president in 2010) and numerous Chinese investments in Swedish technology companies, with a positive impact on employment, things began to change in 2018. The new Chinese ambassador in Stockholm, faced with criticism from Swedish media regarding human rights in China and Hong Kong, tried to put pressure on them, even resorting to intimidation against Swedish journalists.<sup>78</sup> These actions ultimately led to a deterioration in relations between the two countries. In Canada, China has attempted to divide society, influence government decision-making and electoral processes, particularly through the Chinese minority population and even criminal organizations, and has not hesitated to take coercive action in the form of lawsuits, harassment and intimidation, and cyberattacks.<sup>79</sup> However, these actions have contributed to a serious degradation of China's image among the Canadian population. These two cases in the Arctic are representative of the hardening of Chinese influence operations, though they are a long way from proving their effectiveness.

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77. P. Charon and J.-B. Jeangène Vilmer, *Les opérations d'influence chinoises. Un moment machiavélien*, report from the Institut de recherche stratégique de l'École militaire (IRSEM), Paris: ministère des Armées, 2<sup>nd</sup> ed., October 2021, pp. 521-588.

78. *Ibid.*, pp. 517.

79. *Ibid.*, pp. 542-588.

# Transformation Underway

We have seen that, for the time being, the Arctic is a stable region marked by equilibrium between conventional and nuclear powers, but the effects of global warming will profoundly modify the physical, geographic and economic characteristics of the Arctic Ocean, with possible consequences on geopolitical dynamics. The question of Arctic routes — possibly replacing the routes linking Asia to Europe or to the Atlantic coast of the United States via the Suez or Panama canals — comes to the fore and with it that of the legal status of certain straits. One of the consequences of these transformations, due to Russia's political and technical choice of nuclear-powered icebreakers, is the accelerated civilian nuclearization of the Arctic, which inevitably raises questions about the negative impact of Soviet nuclear waste in this ocean. Finally, global warming offers new opportunities for laying submarine cables.

## An Alternative to the Southern Routes?

The quest for a direct northern sea link between Europe and Asia, without using the southern routes around the Capes of Good Hope or Cape Horn, controlled at the time by the Spanish and Portuguese, is a long-standing one. At the end of the 15<sup>th</sup> century, the first expeditions led by John Cabot, commissioned by King Henry VIII, set out to discover the “Northwest Passage”, sailing around the American continent on the northern side and leading directly to the Indies. The 16<sup>th</sup> century saw numerous attempts by both French (Jacques Cartier) and English (Martin Frobisher) navigators to discover this route. Though unsuccessful, these expeditions explored the Canadian coastline and expanded knowledge of the area. It was not until the Amundsen expedition, from 1903 to 1905, that this route was finally opened up.

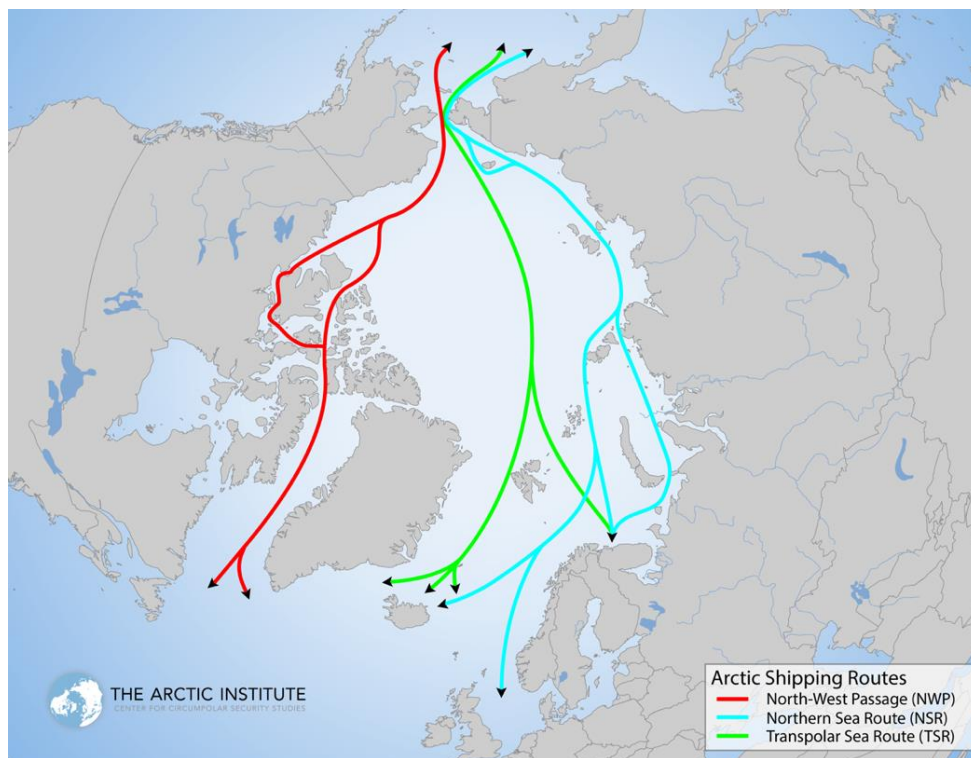
Fueled by the same desire to find an alternative passage to Asia, an English expedition led by Sir Hugh Willoughby set out in 1553 to explore the “Northeast Passage”. This objective was not achieved but it opened up the first maritime link between Moscow and Western Europe. It was not until July 1879 and the expedition led by Finland's Nordenskiöld that the Atlantic Ocean was directly linked to the Pacific Ocean. This direct route took on strategic significance in 1940 when Nazi Germany devised a plan to use armed merchant ships to attack British trade in the Pacific Ocean. In the end, the auxiliary cruiser *Komet* was the only one to use this passage, with the

indispensable assistance of Soviet icebreakers, before leading a successful campaign against British interests in the Pacific and the Indian Ocean.<sup>80</sup>

With global warming and the gradual melting of the ice pack, three different trade routes can be envisaged in the future:

- The Northwest Passage (NWP) along the northern coast of the North American continent;
- The Northeast Passage, or “Northern Sea Route” (NSR) for the Russians, along the coast of Siberia;
- The transpolar route, passing through the center of the Arctic Ocean, avoiding the straits and the relatively shallow waters of the other two routes.

### Map No. 7: The three Arctic Shipping Routes



Source: Malte Humpert, *The Arctic Institute*, 2011.

These routes are about 30% shorter than those passing through the Strait of Malacca to connect northern Asia (northern China, Korea, Japan) to northern Europe (Netherlands, Germany), and could, theoretically, present an alternative to them in the future, for five to six months of the year. Thus, the blocking of the Suez Canal by the *Ever Given* container ship

80. T. R. Philbin, *The Lure of Neptune: German-Soviet Naval Collaboration and Ambitions, 1919–1941*, Columbia: University of South Carolina Press, 1994.

in March 2021 gave the Russian authorities the opportunity to highlight the advantages of the NSR in avoiding these bottlenecks in global trade flows.

However, the future feasibility of these new routes has yet to be demonstrated, particularly in the case of the Northwest Passage. Given the currents in the region, the ice pack during break-up tends to accumulate on the northwestern coasts of the American continent. The Northwest Passage is therefore the route least likely to be of future interest. As for the transpolar route, which is potentially of greatest interest, as it avoids the constraints of the NSR (shallow depths of certain straits), it is not currently accessible and will probably not be until around 2050. Even then, it will be affected by many difficult environmental conditions: drifting ice and icebergs, fog, polar lows.

The NSR, which is used today, especially for Russian oil, gas and mineral exports, is the one that will see the greatest changes in the next two decades. Traffic has already increased significantly in a few years, from 5 MT in 2015 to 34.9 MT in 2021. Most of this traffic is destined for, or originating from, Russian ports, with only 2 MT of transit traffic. Russia aims to increase this figure to 130 MT by 2035.<sup>81</sup> Targets for transit traffic are more modest — 10 MT by 2035. This reflects the numerous factors that limit the advantages of this route compared to traditional routes: multiple straits, one of which does not exceed 13 meters in depth, incomplete hydrography, request for authorization to use the NSR, need for escort by a Russian icebreaker for vessels that do not have an Ice Category allowing them to transit alone, insurance surcharges in polar zones, etc.<sup>82</sup> The development of the NSR justifies the heavy investments necessary for the construction of the icebreakers mentioned above.

While 2021 saw a new traffic record, destined to be broken year after year, it also illustrated some of the risks, when two dozen ships were stranded by early season sea ice in the eastern part of the NSR for several weeks in November 2021.<sup>83</sup>

On balance, the NSR will play a key role in Russia’s Arctic development strategy. Its development is of direct interest to China<sup>84</sup> in order to gain access to Russian gas and mineral resources. While it is not expected to replace regular container ship lines between Asia and Europe in the next two or three decades, it could be of interest to cargo ships chartered for one-

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81. Decree of the President of the Russian Federation on the strategy of development of the Arctic zone for the period to 2035, October 26, 2020.

82. H. Baudu, “La maritimisation des pôles: réalité et perspectives”, *Annuaire français de relations internationales*, Vol. XX, 2019.

83. M. Humpert, “Early Winter Freeze Traps Ships in Arctic Ice, Highlighting Weak Safety Regime”, *High North News*, November 26, 2021, available at: [www.highnorthnews.com](http://www.highnorthnews.com).

84. Joint Statement of the Russian Federation and the People’s Republic of China on the International Relations entering a New Era and the Global Sustainable Development, February 4, 2022.

off transports or to navies wishing to deploy rapidly, during the summer and autumn months, from the Pacific to the Atlantic, or vice versa.

## Status of the Straits

Since the new maritime routes in the Arctic, even taking account of the limitations mentioned above, may become attractive in the future for trade, but also for movements of military vessels, the status of certain straits used by these routes needs to be examined.

The two States concerned by these routes, Canada for the NWP and Russia for the NSR, have introduced restrictive rules for the use of these straits, based on Article 234 of UNCLOS, on the one hand, and on the definition of large parts of the sea between the mainland of these two countries and the islands as historic waters, on the other. Article 234 restricts the right of unimpeded transit passage defined by Articles 37 and 38 of the same Convention applying to international straits between one part of the high seas or EEZ and another part of the high seas or EEZ. It thus allows a coastal State:

“to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of maritime pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance.”

Article 236 of the same Convention specifies, however, that the provisions of the Convention regarding the protection and preservation of the marine environment (and thus the provisions of Article 234) do not apply to warships and other vessels owned or operated by a State, provided that they are engaged in non-commercial public service missions.

In practice, however, Canada and Russia have implemented regulations that differ from those of UNCLOS. Canada considers its sovereignty in the Arctic to be indivisible, covering the land, sea and ice.<sup>85</sup> It justifies its claim to the disputed waters as internal waters in terms of historical rights transferred by the Inuit, who lived on both land and ice, to Canada. This position has been widely criticized, particularly by the United States, which nevertheless signed a cooperation agreement with Canada in 1988 in which it undertook to systematically request from Canada the right to transit through the NWP, particularly for U.S. Coast Guard vessels, which are the main ones involved, though without approving the Canadian

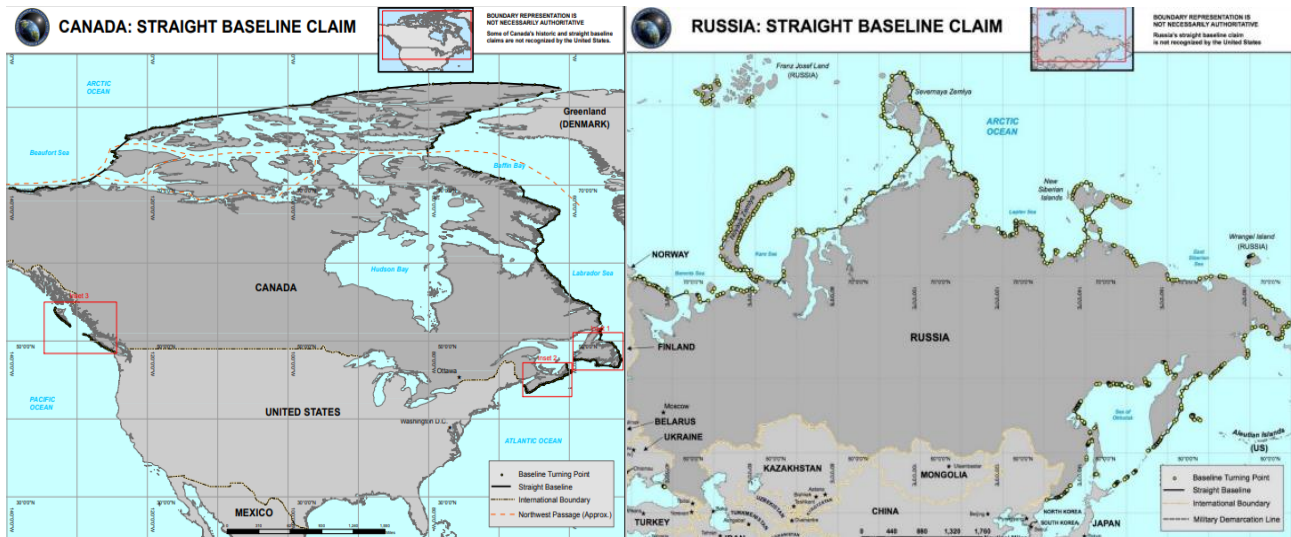
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85. D. Ortolland and J.-P. Pirat, *Atlas géopolitique des espaces maritimes. Frontières, énergie, pêche et environnement*. Paris: Technip, 2008, pp. 190.



interpretation of the status of the waters in this passage. Russia has also defined the waters of several islands or archipelagos along its Siberian coastline as internal waters: Novaya Zemlya, the Severnaya Zemlya archipelago and the New Siberian Islands.

### Map No. 8: Canadian and Russian Arctic inland water boundaries



Source: U.S. Navy Judge Advocate General's Corps, 2021.

Under Article 234, Russia has laid down a number of rules applicable to commercial shipping. The NSR Administration, which is responsible for their implementation, has made it clear in the past that it does not deal with the navigation of military vessels. The main legal difficulty concerning passage of these vessels in the NSR is the transit through internal waters proclaimed by the USSR, then Russia. This classification as internal waters excludes *de facto* the right of innocent passage (art. 17, 18, 19 UNCLOS) and *a fortiori* unhindered transit. If accepted, this classification imposes the requirement for a formal request for authorization to use these different straits.

This interpretation is clearly contested by several States, including the United States and France. This is why France transited a naval vessel, the *Rhône* offshore support and assistance ship,<sup>86</sup> from the Norwegian Sea to the Pacific Ocean in September 2018, using several of the straits claimed as internal waters by Russia,<sup>87</sup> and without making a formal request for permission from Russia. The French Navy deliberately chose an auxiliary ship, not a combat vessel, so as not to send a signal that could be interpreted in a threatening manner by Russia.

86. Offshore support and assistance ship.

87. For example, the Vilkitski Strait, between the Kara Sea and the Laptev Sea. This strait has a minimum width of about 30 nautical miles, which is about twice the width of the Pas de Calais. Its classification as inland waters is clearly inappropriate.

#### Image No. 4: Arctic transit of the Rhône offshore support and assistance ship



Source: French Navy/Jonathan Bellenand, 2018.

A few months after this transit, Russia announced that foreign military vessels using the NSR had to submit a request with 45 days' notice and take on board a Russian pilot, reserving the right to take measures, including the use of force,<sup>88</sup> to enforce this new rule. This claim is clearly outside the scope of the international law of the sea as provided by UNCLOS. At this stage, it does not appear to be included in Russian legal texts.<sup>89</sup> The United States, for its part, has regularly expressed its desire to conduct freedom of navigation operations (FONOPS) in the Arctic. However, it has not yet carried out such activities in the disputed straits, as many analysts warn that such an operation would be escalatory and, above all, that it lacks the appropriate equipment, particularly icebreakers,<sup>90</sup> to free warships that might inadvertently become stranded in the ice pack.

## Transpolar Submarine Cables Coming Soon

The importance of intercontinental submarine cables, which carry nearly 98% of data between the world's major economic hubs, is well known. Today, the vast majority of cables between these centers are deployed in the North Atlantic and the Pacific. The commercial cables that currently exist in

88. A. Staalesen, "Russia Sets Out Stringent New Rules for Foreign Ships on the Northern Sea Route", *Arctic Today*, March 8, 2019, available at: [www.arctictoday.com](http://www.arctictoday.com).

89. C. Overfield, "FONOP in Vain: The Legal Logics of a U.S. Navy FONOP in the Canadian or Russian Arctic", *Arctic Yearbook*, 2021, pp. 11.

90. D. Auerswald, "Now is Not the Time for a FONOP in the Arctic", Blog War on the rocks, October 11, 2019, available at: <https://warontherocks.com>; R. Pincus, "Rushing Navy Ships into the Arctic for a FONOP is Dangerous", USNI, January 2019, available at: [www.usni.org](http://www.usni.org).



the Arctic have a regional function, providing links between coastal sites in Alaska or Hudson Bay, or connecting North America or Northern Europe to Greenland, Iceland or Svalbard.

Several projects have been launched to link the world’s major economic hubs via the Arctic, thereby improving the speed of exchanges. The most advanced is the Polar Express project, developed by the Russian Ministry of Transport, to lay a 12,500km cable between the Murmansk region and the city of Vladivostok. Work began in August 2021 with an expected completion date of 2026.<sup>91</sup>

Two other projects are under study. Initially led by a Finnish company, the Arctic Connect project, aimed at linking Northern Europe to Asia, is now led by an international consortium, which however suspended work in May 2021 pending additional feasibility studies. Another project, Far North Fiber, involving Finnish, Canadian and American companies, aims to lay a 14,000km cable between Japan and Europe (Norway and Ireland), using the NWP, and serving Alaska, the Canadian Arctic, Greenland and Iceland. Launched at the end of December 2021, it is expected to be operational in 2025.

## Civil Nuclearization and Development of the Russian Arctic

Today, Russia is the only country in the world to operate a fleet of civilian nuclear-powered ships. These ships are icebreakers, with the exception of the *Sevmorput*, a cargo ship with icebreaking capability. They are based in Murmansk, where their support base and maintenance facilities adapted to nuclear propulsion are located. At the beginning of 2022, in addition to the *Sevmorput*, five icebreakers were in service: four of the older generation, the most recent of which should remain in service until 2035,<sup>92</sup> and one new-generation ship (Project 22200), the *Artika*, which will be followed by four others. These icebreakers, with a displacement of about 34,000 tons and capable of breaking through 3m-thick pack ice, should be followed by a new class (Project 105010), with a displacement of 70,000 tons, capable of breaking through 4m pack ice. This last class will probably be commissioned between 2030 and 2035, giving ROSATOM, the operator of these ships, a fleet of eight modern icebreakers at this date. It should also be noted that at that time Russia might no longer be the only power to operate such ships: China is also considering the construction of a nuclear-powered icebreaker.<sup>93</sup>

91. Blog Submarine Cable Networks, available at: [www.submarinenetworks.com](http://www.submarinenetworks.com).

92. T. Nilsen, “Nuclear Reactors in Northern Russia”, *The Barentz Observer*, June 2019.

93. M. Humpert, “China to Use First Atomic Icebreaker as Test for Future Nuclear Aircraft Carriers”, *High North News*, December 30, 2019, available at: [www.highnorthnews.com](http://www.highnorthnews.com).

The civilian nuclear-powered fleet is not the only atomic feature of the Arctic. The region is also the first to have seen the commissioning of a floating nuclear power plant, the *Akademik Lomonosov*. This power plant comprises a barge carrying two 35MW reactors. Built in St. Petersburg and towed to Murmansk in 2018 for fuel loading, it was then towed to Pevek in the province of Chukotka in eastern Siberia in the summer of 2019, delivering its first electrical kWh in December 2019.<sup>94</sup> Four new floating nuclear power plants were ordered in 2021 to supply power to a copper mine located in Baimsky in the same province. These new plants would each be equipped with 55MW reactors and are expected to be operational around 2026.<sup>95</sup> These new orders could allow ROSATOM to develop and lower the costs of a new energy source in the Arctic: floating nuclear power plants, which should find a promising market in many regions of the world.<sup>96</sup> There are also plans for submerged nuclear power plants to supply electricity to offshore oil and gas platforms.

Finally, it should be noted that ROSATOM is also developing its onshore activities in the Arctic. The company has announced the construction of a power plant featuring a small modular reactor (SMR) in Yakutia, eastern Siberia, with commissioning planned for 2022.<sup>97</sup> The icebreakers of the “22200 Project” as well as the next floating power plants in Baimsky, along with the above-mentioned land-based plant, will be equipped with the 55MW RITM-200 SMR. ROSATOM will thus be able to rapidly acquire valuable experience with these reactors and will subsequently be well placed on export markets.

## Cleaning Up

Given past, present and future nuclearization of the Arctic, nuclear safety and environmental issues are of primary importance. The end of the Cold War left an Arctic legacy of pollution due to widespread dumping of nuclear waste and contaminated materiel. Responsibility lies mainly on the Soviet side, but the American forces also caused pollution following the crash of a B-52 bomber near Thule Air Base in January 1968. While a cleanup was undertaken on land,<sup>98</sup> a nuclear bomb sank and was never recovered.

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94. T. Nilsen, “Christmas Tree Lighted with First Electricity from Arctic Floating Nuclear-power Plant”, *The Barentz Observer*, December 19, 2019, available at: <https://thebarentsobserver.com>.

95. C. Digges, “Moscow Aims to Build Four More Floating Nuclear Plants by 2026”, Bellona, August 4, 2021, available at: <https://bellona.org>.

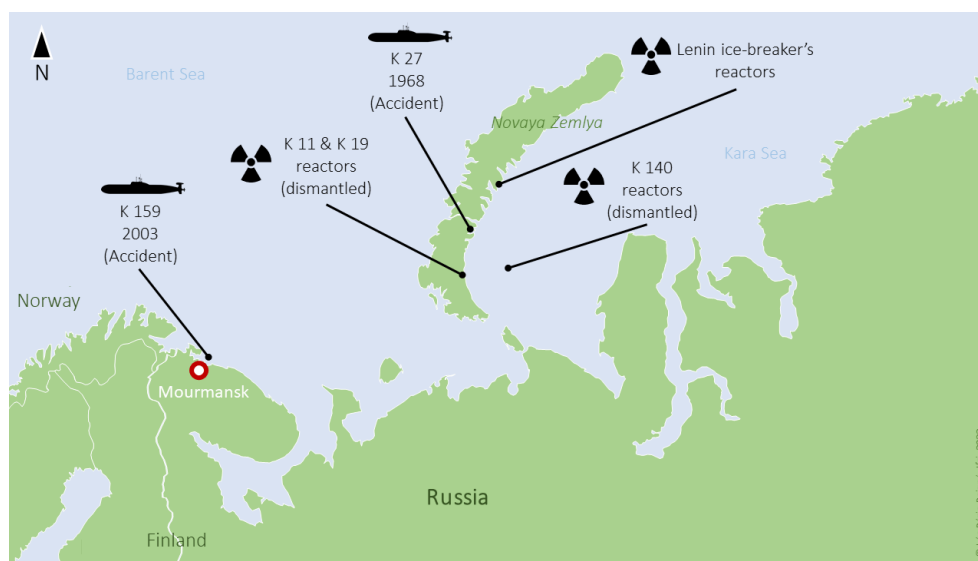
96. H. Lecomte, “Centrales nucléaires flottantes et immergées: Vers l’émergence de thalassocraties énergétiques?”, Université Lyon 3, April 2020, available at: [www.univ-lyon3.fr](http://www.univ-lyon3.fr).

97. C. Digges, “Rosatom to Build Plant Running on Small Modular Reactors in Eastern Siberia”, Bellona, January 11, 2021, available at: <https://bellona.org>.

98. More than 10,000 t of ice, snow and contaminated debris were sent to a reprocessing center.

On a much larger scale, the Soviets used the Kara Sea and the Barents Sea as a dumping ground for radioactive waste. According to information provided by the Russian government in 2012,<sup>99</sup> 17,000 containers of radioactive waste (low or high levels of radioactivity), 19 ships containing radioactive waste, 14 nuclear reactors, five of which with the core still intact, and 735 other various radioactive elements were dumped there. The map below indicates the locations of several submarines or their reactor compartments.

### Map No. 9: Russian nuclear submarine wrecks in the Arctic



© Léo Péria-Pigné, Ifri.

The Soviet nuclear attack submarine K-27, scuttled with its core intact, is probably the wreck that needs to be watched most closely. It was equipped with two experimental fast reactors using a liquid metal coolant (bismuth-lead). Following an accident affecting one of the reactors in 1968, the submarine was quickly taken out of service. In 1982, the Soviet Navy decided to scuttle the submarine, along with its damaged reactors, in the Kara Sea, at a depth of about thirty meters, after filling the reactor compartment with an asphalt-based mixture.

At the end of the Cold War, given the danger posed by the numerous nuclear vessels of the Soviet navy and their support facilities on land, vast disassembly programs were launched, financed mainly by the G7 States and the European Union, via the European Bank for Reconstruction and Development. These programs resulted in the dismantling of about 200 former Soviet submarines,<sup>100</sup> and the construction of onshore reactor storage

99. C. Digges, “Russia Eyes Raising Thousands of Radioactive Relics from Watery Arctic Graves”, Bellona, February 3, 2020, available at: <https://bellona.org>.

100. C. Digges, “Russia Plans to Raise Radioactive Wrecks in the Arctic”, Bellona, May 12, 2020, available at: <https://bellona.org>.

facilities.<sup>101</sup> During one of these operations, however, another accident occurred in 2003, when submarine K-159, with its reactor core still loaded, sank while being towed to its disassembly site. Resting at a depth of about thirty meters, it still poses a danger of contamination in the medium term.

The Institute of Nuclear Safety of the Russian Academy of Sciences estimates that there are still about 1,000 objects that pose a contamination risk. ROSATOM has announced plans to refloat the K-27 and K-159 in 2030.<sup>102</sup> This announcement was made during Russia’s chairmanship of the Arctic Council, one of whose historical roles is environmental preservation. In this respect, the Arctic Council’s Emergency Prevention, Preparedness and Response (EPPR) working group set up an expert group on radiation and nuclear incidents in 2019.<sup>103</sup> Its objective is to assess risks, prepare responses to possible accidents and improve information exchange. Although Russia, through the exchanges it has with Norway in particular, is showing greater transparency in its nuclear activities, it has nevertheless refused to shed light on the two accidents involving nuclear weapons systems in the summer of 2019 (the failure of the *Burevesnik* test and the *Losharik* accident, mentioned above).

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101. Institute of Nuclear Safety of the Russian Academy of Sciences’ website

102. C. Digges, “Rosatom Official Puts Deadline on Raising Old Nuclear Submarines”, Bellona, October 6, 2021, available at: <https://bellona.org>.

103. Emergency Prevention, Preparedness and Response (EPPR), *EPPR Expert Group in Radiation (RAD EG) Mandate*, Reykjavik: December 4, 2019.

# Conclusion

The strategic significance of the Arctic, which has been substantial since the middle of the 20<sup>th</sup> century, will continue to increase under the effect of global warming. Having celebrated its 25<sup>th</sup> anniversary in 2021 under the presidency of Russia, the Arctic Council continues to play a central role in regional diplomacy and has demonstrated the resilience of Arctic cooperation until the beginning of 2022.<sup>104</sup> From this point of view, the Arctic exception, considered as “the desire to preserve the cooperative foundations of Arctic regional governance”,<sup>105</sup> has persisted. Following the invasion of Ukraine by Russia, however, this operation could be disrupted: the seven other members of the Arctic Council announced the suspension of their works on March 8, 2022. If it is too early to statue on its future, the will expressed by the coastal States and by the more distant countries but claiming a role there – to preserve peace, stability and cooperation for the benefit of the populations’ well-being in order to drive sustainable development there and fight against the effects of global warming – constitutes an opportunity to resume dialogue with Russia. Nevertheless, in the near future, defense and security issues are probably going to prevail over those related to environmental protection.

Under the effect of global warming, the region is undergoing a transformation. Today Russia is the main actor. The dynamism of Russia – which could nevertheless be largely hampered by recent Western economic sanctions – is illustrated by the exploitation of fossil fuels or minerals necessary for the energy transition, the construction of port or energy infrastructures necessary for this transition, the development of the NSR with, in particular, the construction of a fleet of modern nuclear-powered icebreakers, and the laying of submarine cables. It should be noted that Russia will take the lead in SMRs with the development of several floating or land-based power plants equipped with this type of reactor. The exploitation of natural resources – to varying extents, however, depending on the degree of determination of governments to protect the environment – is also supported by the other riparian States. Nevertheless, the image sometimes circulated of States ready to fight over the resources of the North Pole is false. The absence of serious disputes between the Arctic States over land and maritime boundaries and the willingness of the States involved to settle disputes over the extension of their continental shelf within the

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104. C. Escudé-Joffres, “La diplomatie arctique en 2021”, *L’année arctique 2021*, Observatoire de la politique et la sécurité de l’arctique (OPSA), 2021.

105. M. Mered, *Les Mondes polaires*, op. cit.

framework of the CLPC and by seeking amicable agreements, eliminate the grounds for confrontation. Above all, the interest of the players, starting with Russia, in taking advantage of the development of the region and the resulting financial benefits reduces tensions to a minimum. Two potential points of friction remain:

- The continental shelf extensions mentioned above will significantly reduce the size of the “Zone” in the Arctic. The reaction of China, which in its White Paper on the Arctic (see 2.2) insists on defending its rights in this space, will require close scrutiny;
- The status of the straits on the NWP and the NSR is still the subject of differences between the two riparian States involved and multiple maritime nations. Occasional confrontations cannot therefore be ruled out, especially on the NSR.

Finally, the Arctic is one of the theaters of renewed competition between powers that the world has been witnessing since 2014. Closely linked to the Euro-Atlantic space since World War II and the Cold War, the Arctic will also be increasingly connected to the Indo-Pacific space, and is likely to reflect the frictions between powers in that region, particularly after the Ukraine invasion.

As a major power in the Arctic, betting on the economic development of its Far North, Russia enjoys the position of a *status quo* power. The militarization observed has therefore primarily a defensive purpose. Nevertheless, as Russia is behaving more and more like a revisionist power in other regions, particularly in Europe as evidenced by the invasion of Ukraine, this militarization is clearly a matter of concern for the other riparian States, which are reacting by reinvesting in their defense. This concern is even manifested in renewed debates in Sweden and Finland on the advisability of joining the Atlantic Alliance. Moreover, the deployment in large numbers, and with increasing frequency, of modern submarines from the bases of the Kola peninsula towards the Atlantic, with offensive intent and potentially threatening maritime lines of communication, as well as the implementation of oceanic deterrence by the three Western navies possessing these capabilities, can only lead to the deployment of anti-submarine warfare systems in the Barents Sea and Norwegian Sea.

China, a revisionist power aiming for world leadership by mid-century, is increasingly present in the Arctic. Its power is today exercised primarily in the political sphere, with the implementation of influence, financial and economic operations. Its military presence, weak today, will also inevitably be reinforced. As soon as it has the means to do so, it is likely that it will support its Polar Silk Road with military vessels transiting from the Pacific to northern Europe. Depending on the evolution of the relation between Russia on one hand and the United States and Europe on the other hand,



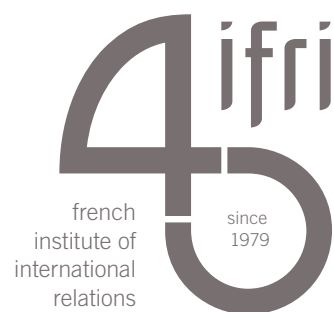
that could translate into an increased dependency of Russia relative to China, an acceleration of Chinese presence could be observed.

Despite this strong growth in armaments and antagonisms, a confrontation remains unlikely. The various protagonists are either nuclear powers, members of a nuclear alliance or allies of nuclear States, thus preventing extreme reactions and the outbreak of an armed confrontation. However, the renewed competition between the powers could lead to an acceleration of contestation and friction. As in other regions of the world, in the Arctic it will be necessary to win the war before the war. France must be prepared for this. In the diplomatic sphere, it must continue to show firm support for our Nordic allies against hostile influence operations. It must also firmly defend the law of the sea, as it does elsewhere in the world. Militarily, it must continue to strengthen its position in the field of “invisible” operations, whether in the cyber domain or beneath the waves, including seabed operations. In the field of underwater warfare, it will inevitably have to review the format of its dedicated assets, given the sharp increase in activity of submarines based around Murmansk.

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- Raphaël Briant, Jean-Baptiste Florant and Michel Pesqueur, [“La masse dans les armées françaises : un défi pour la haute intensité”](#), *Focus stratégique*, No. 105, Ifri, June 2021.
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