



# Academia Europaea Bergen Special Report

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# The Future of Arctic Science and Science Diplomacy

## Author's foreword

Both scientific and evidence-based state-to-state cooperation has historically been intertwined and of high importance in the Arctic. This tight connection between science and (science) diplomacy has helped to reduce geopolitical tensions and facilitated international management programs, e.g., the international agreement effective from 2021 banning commercial fishing in the Central Arctic Ocean.

In line with the current sanction regime, western countries and the EU has paused bilateral and institutional collaboration and contact with Russia after the full-scale invasion of Ukraine in 2022. This applies to scientific organisations as well.

The current war involves a high risk for severe drawbacks on the international Arctic cooperation needed for security, climate change mitigations, biodiversity and ecosystem conservation, and food security.

Academia Europaea Bergen, under the leadership of Academic Director Eystein Jansen, has initiated a project to investigate the status and prospects of Arctic science and science diplomacy in light of the Russian war against Ukraine.

This report describes what the project has revealed as current challenges and reflections on potential avenues for future Arctic collaboration.

I want to thank all the scientists and experts who contributed with their time and knowledge to enlighten the issues investigated. In addition, I want to thank the Academia Europaea Bergen team; Kristin Bakken for proof reading and input on the structure of the report, Nils Olav Sæverås for communications support and Eystein Jansen for a broad involvement and for having trusted and appointed me as project manager.

Project manager and author  
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# 1. Brief introduction, methodology and historical overview

## 1.1 Introduction

The Arctic is often defined as the area north of the Arctic Circle. A large part of the Arctic is a frozen ocean surrounded by land that has been covered in ice year-round for the last 5 500 years. Its diverse landscapes, from sea ice to coastal wetlands, tundra, mountains, ice sheets, wide rivers and the sea itself, support abundant wildlife. The Arctic is home to around four million people, with Indigenous communities spread across all eight Arctic countries: Canada, Finland, Iceland, Norway, Russia, Sweden, Greenland and the USA. The Arctic has attracted increasing global attention in the last 10–15 years. The growing interest is a result of accelerating climate change (the region is warming nearly three times more quickly than the rest of the world), natural resources and perspectives linked to transport corridors between west and east. The situation requires increased knowledge about nature, ecosystems and livelihoods for a sustainable management and responsible policymaking in the Arctic. Changes in the Arctic can be locally devastating, but because of how the Earth's climate systems work, they also affect the rest of the world and require cooperation both in and beyond the Arctic.

For decades the Arctic was a region of collaboration and peaceful coexistence. Substantial political, industrial, and economic resources have been invested in science collaboration across national borders. In periods when dialogue and relationships were strained in other regions, virtual bridges and channels in the Arctic remained operative. Since the Russian invasion of Ukraine in February 2022 this is no longer the case. An already strained relationship between Russia and the west has entered an ice-cold face, also in the Arctic.

A potent example is the pausing of Arctic Council activities<sup>1</sup> from March 2022. The Arctic Council with its many working groups is *'the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic Indigenous peoples and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic'*<sup>2</sup> The Arctic Council has been at the centre of arctic science collaboration and thus been crucial for a knowledge based sustainable development of the region. In addition, numerous people-to-people initiatives, conferences, business projects and scientific collaborations that historically have served as platforms for mutual understanding, common knowledge, and relationships are under severe pressure or on hold.

The seven non-Russian Arctic countries have all implemented national sanction regimes regulating scientific cooperation. The European Commission<sup>3</sup> has decided to suspend *all* science collaboration with Russian entities. This includes withdrawal of research funding. The current sanctions on science collaboration have no historical precedence. Then again through the last decades science has become increasingly globalised. Environment and climate issues have in particular grown as research fields since the 1970s. As international research collaboration has grown, so has the politicisation of science. At a time in history

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<sup>1</sup> <https://www.state.gov/joint-statement-on-arctic-council-cooperation-following-russias-invasion-of-ukraine/>

<sup>2</sup> [Organization | Arctic Council \(arctic-council.org\)](https://arctic-council.org/)

<sup>3</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_22\\_1544](https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1544)

when the importance and interdependence of global science collaboration has never been greater, we now experience a sanction regime on science without precedence.

Arctic science is not *one* field but consists of a myriad of different sciences. It often includes research of phenomena related to geographical areas in the Arctic, such as mainland areas, islands, seas, lakes, rivers, important cities and settlements. This comes in addition to research on natural phenomena strongly associated with the Arctic area, such as ice drift in the Arctic Ocean, Arctic ecosystems, the magnetic North Pole and the Northern Lights. Research on population groups native to the Arctic area, is also usually included in Arctic research<sup>4</sup>.

Using the funding received by the different research areas as a measure of scale, the largest ten arctic research areas are: Earth sciences, biological sciences, environmental sciences, engineering, medical and health sciences, information and computing sciences, studies in human societies, education, chemical sciences, and physics<sup>5</sup>. Earth science is by far the largest, receiving almost 2/5 of the total Arctic research funding. It is also worth noticing that earth science also has a much higher share of its total *global* research related to the Arctic than other research areas. Arctic earth science is mainly related to oceanography and climate studies. The largest research fields have been given special attention in this project.

Without collaboration with Russian scientists and access to Russian territory, arctic research data become incomplete. This creates a knowledge crisis on top of the crisis the war has created. Research conducted in the Arctic is to a large degree of relevance to climate and ocean research. Reduced scientific cooperation may have severe consequences also for topics such as biodiversity, ocean management and thus food security. The Arctic has some of the world's most productive marine areas, and as the global population grows, providing more food from the oceans is crucial. Global warming sends an increasing part of the harvestable biomass in the ocean further north<sup>6</sup> making scientific knowledge from the Arctic states' territorial waters vital.

Science collaboration, science-based management, and science diplomacy are central terms in this report. There are however large overlaps in the definition and interpretation of these terms, and they often co-occur, especially in the Arctic. While the first two terms are intuitive, the term Science Diplomacy might need a clearer definition. It can be described as *the use of science as an instrument to advance a state's strategic international interests*. It is part of a state's soft power arsenal in which scientific cooperation can be used to open channels, build relationships, facilitate future cooperation, and build bridges<sup>7</sup>.

Using this as a backdrop AE-Bergen initiated a project where these questions have been central:

1. *What is the status of Arctic science diplomacy and science collaboration in 2023?*
2. *What are the effects of war on scientific collaborations in the north?*

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<sup>4</sup> [Kartlegging av arktisk kunnskap i forskningssektoren i Tromsø](#) (2021, Technopolis)

<sup>5</sup> [International Arctic Research](#) (Uarctic report 2017)

<sup>6</sup> [Shifting fish distributions in warming sub-Arctic oceans](#) (Nature)

<sup>7</sup> [Science diplomacy in the Arctic: Contributions of the USGS to policy discourse and impact on governance](#)

3. *What are the effects of the war on the volume and value of Arctic science?*
4. *What is the future of Arctic science and science diplomacy?*

This report is based on the Academia Europaea Bergen initiated project. The issues will be followed up and developed further through a UArctic (University of the Arctic) funded project '*Rethinking Arctic Collaboration*' that will run from September 2023 until August 2025, under the lead of Academia Europaea Bergen, hosted by the University of Bergen. In addition to Academia Europaea Bergen the UArctic-project includes partners from Alfred Wegener Institute in Germany, Nord University in Norway, the International Centre of Reindeer Husbandry, Dartmouth College in USA and the Macdonald-Laurier Institute in Canada.

## 1.2 Methodology and sources

Amongst the sources used are 25 semi-structured interviews of Arctic scientists and other experts from different fields and from various countries, both Arctic and non-Arctic, conducted by the author.

In addition, several publications on the subject have been scrutinised. Among these are blog posts, peer reviewed papers, books and news articles. In addition, perspectives and knowledge has been harvested from various conference-events and ongoing debates. One conference-event was a side event<sup>8</sup> at the Arctic Frontiers conference in Tromsø in February 2023, directly linked to the project this report emerges from.

The many effects of the war and the sanctions being studied in this project are currently unfolding and developing, and the informal information provided through the many interviews have been especially valuable. The respondents are all actors that are deeply embedded in the work of science diplomacy or science collaboration.

The report focuses on arctic research related issues in general but illuminates some of the consequences of the war through case descriptions. These cases are chosen from the largest arctic research fields.

## 1.3 Historical overview (pre-full-scale invasion of Ukraine in 2022)

The Arctic has been a region of collaboration and peaceful coexistence for decades. Massive political, industrial, and economic resources have been deployed into people to people and science collaboration projects across borders in the Arctic, resulting in a myriad of arctic collaborations.

It was however not given that the Arctic was to become a region of such extensive collaboration. A combination of several elements in formative years in and around the end of the cold war was in place to facilitate collaboration and peaceful coexistence. From the late 1970s observations of very high levels of toxins and other pollutants in the Arctic led to the understanding of this as a long-transported pan Arctic problem. Scientists and experts working on these issues sought knowledge and understanding across national borders throughout the 1980s. Into this mix also entered a growing knowledge of climate change and

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<sup>8</sup> [Link to the recorded Arctic Frontiers 2023 side-event](#)

the Arctic's role in the climate systems, and scientists on both sides of the 'iron curtain' sought collaboration and knowledge sharing across the divide.

Towards the end of the 1980s the deterrence between the East and the West gave nutrition to these embryonic collaboration structures and to science diplomacy entrepreneurs who started building a stronger foundation for science collaboration in the Arctic. Political leaders on both sides of the divide were looking for collaboration possibilities that could support this development. The Arctic, with low population density, few cross-border conflict areas and common challenges across borders was a convenient place to look for projects. And in the spirit of peace-making and tension-reduction the soviet leader Michael Gorbachev in 1987 gave a speech, later known as the Murmansk speech, which in many people's views served as a road sign towards the peaceful Arctic of the decades that followed.

Gorbachev's speech was based on six elements: Limited naval activities; Nuclear-free zone; Peaceful cooperation in development of arctic resources; benefiting from the Northern Sea Route for international shipping; Scientific research; and Cooperation to protect the Arctic's environment. In particular the latter two elements became central for the development of a more formal arctic science collaboration on which several regional cross-border and pan-arctic institutions were established or became engaged. These include the International Arctic Science Committee, the University of the Arctic, the Northern Forum, the Nordic Council of Ministers, the Inuit Circumpolar Council, the Barents-Euro Arctic Council, and the Barents Secretariat. And, since 1996 at the centre of it all, the Arctic Council.

During these 30-40 years, institutions have been built, MOUs have been signed, and various projects implemented. Through these processes friendships and personal connections were established in collaborative projects and structures across borders. Institutions like the Arctic Council and the Barents secretariat were established in a window of historical opportunity, in a period of enough trust and common belief in a peaceful future. These institutions have been of high importance both in initiating and shielding science collaboration and establishing knowledge-based management across arctic borders.

Many of the initiatives that emerged from the increased cooperation were circumpolar or multilateral. One *bilateral* agreement worth mentioning is the Russian-Norwegian fisheries collaboration. Following initiatives by the Soviets in the late 1950s, an agreement to secure good management of the plentiful fish stocks in the Barents Sea was established when the cold war was at its coldest; in the mid-1970s. The 1970s expansion of maritime exclusive economic zones and development of the new UN Ocean Law called for agreements on maritime boundaries and borders. The Russian-Norwegian agreement was a pragmatic solution to a structural problem and based on a joint research and management solution. As time went by, the collaboration expanded and came to include agreements on mutual fish landing in ports from the 1990s.

Strengthening ties between states and across the 'iron curtain' through the Arctic was important for science and management, but it also improved the soft security dimension. Various practical collaboration arrangements in addition to the growing arctic science community within and surrounding the Arctic Council built channels that could be utilised also when fronts otherwise hardened between arctic countries. There is a common

understanding that arctic connections have influenced non-arctic processes in a positive way. The arctic collaboration has also been an inspiration for other regions. One example is the Third Pole initiative<sup>9</sup>; a platform promoting information and discussions on the Himalaya watershed and rivers. Key arctic actors have served as advisors to this initiative.

Since 1996 the Arctic Council has been the primary forum for circumpolar, arctic cooperation. It has promoted cooperation, coordination and interaction among the Arctic states and indigenous peoples and is the leading intergovernmental forum on arctic issues. The member states are Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the USA. Organisations representing indigenous peoples have status as permanent participants. In addition, thirteen states, thirteen intergovernmental and interparliamentary organisations and twelve non-governmental organisations have observer status. The Arctic Council has contributed to international climate processes such as the IPCC and to many ground-breaking projects on various aspects of climate change in the Arctic. With six standing Working Groups and one Expert Group on Black Carbon and Methane, the Arctic Council provides science-based knowledge upon which informed decision making can be made. The Arctic Council has been the negotiating forum of three important legally binding agreements: 1) on search and rescue in 2011, 2) marine oil pollution and preparedness and response in 2013, and 3) enhancing international arctic science cooperation in 2017.

The Arctic collaboration during the 2000s broadened and grew, with climate research and business as the main drivers, but so did the Russian economy and self-esteem. Putin's Russia grew more self-confident and revealed a new agenda. One obvious and early sign of Russia's new path was Putin's speech at the *Munich Security Forum* in 2007 where he strongly attacked USA and NATO's expansion eastward<sup>10</sup>. The following year Russia started the first European war in the twenty-first century by sending troops into Georgia. The international reactions to this military campaign were not strong, and Russia suffered few retaliations. This incident did not severely impact arctic collaboration either<sup>11</sup>. A turning point came, however, in 2014 with the Russian attack on Crimea. Although the Arctic institutional framework to a large extent remained intact, the western will to collaborate with Russia grew weaker.

Despite this, Russia has to a far extent been a constructive and reliable partner in the Arctic. Their approach has been mostly cooperative, and more aggressive expressions in the Arctic, e.g., the flag planting on the North Pole seabed in 2007, have been interpreted primarily to be aimed at a domestic audience. Russia has had an interest in arctic collaboration, most likely for three reasons: 1) the complex nature of arctic operations calls for collaboration in terms of logistics, hardware, and technology; 2) many arctic issues move across borders, not least environmental protection issues; and 3) economic development and investments, a key interest of the Russian regime<sup>12</sup>.

In many ways Russia has acted as a constructive partner also on climate issues. The years leading up to the invasion of Ukraine in 2022 showed a Russia increasingly complying with

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<sup>9</sup> <https://www.thethirdpole.net/en/about/>

<sup>10</sup> [Speech and the Following Discussion at the Munich Conference on Security Policy](#) (kremlin.ru)

<sup>11</sup> [The 2008 Russo-Georgian War: Putin's green light](#) (Atlantic Council)

<sup>12</sup> [Maintaining Arctic Cooperation with Russia - Planning for Regional Change in the Far North \(2017\)](#)



the global consensus of global warming being man made. In 2019 Prime Minister Dmitry Medvedev ratified Russia's participation in the Paris agreement<sup>13</sup>. Russia held the chairmanship of the Arctic Council in the period from 2021 to May 2023, with one of four priority areas being *Environment protection, including Climate Change*<sup>14</sup>. Russian scientists and science institutions must likely have given inputs to the government on global warming, though it is likely that their decision of complying with the COP21 has had as much to do with concern of losing economic and geostrategic positions if they did not. In the period leading up to the Russian chairmanship it was not Russia, but the USA, who acted as the disruptor of arctic collaboration. In a speech at a ministerial meeting in May 2019, the USA Secretary of State Pompeo blocked a joint statement to prevent any mention of climate change. He also declared a new age of strategic engagement in the Arctic, and attacked both China's presence in the region and what he described as a pattern of aggressive Russian behaviour<sup>15</sup>.

## 2. Current status of Arctic science-based collaboration

### 2.1 Effect on actors and institutions

The soft security dimension and scientific cooperation is closely intertwined in the Arctic, and for decades arctic science collaboration and knowledge-based management has profited from the science diplomatic and soft security dimension. Research and knowledge-based management is the main rationale for investing in these collaborations, but the soft security dimension has been a positive and politically desired side effect. After decades with soft security motivations for Western-Russian cooperation, benefiting e.g., science cooperation, the situation is now reversed.

An important component of the arctic science collaboration formula is the personal relationships that have been cultivated through the decades. Today collaboration between western and Russian institutions is banned by the western countries, and on both sides the incentives to collaborate have grown much weaker. Some western countries allow scientists to collaborate on a personal (non-institutional) level, but scientists on both sides are cautious of collaboration and, at least in the west, are discouraged from maintaining connections.

On the western side, the sanctions have had a deep impact on early career arctic scientists, the potential builders of arctic science networks in the future. The Alfred Wegener Institute e.g., had 15 PhD candidates who could not finalise their original thesis research because they were relying on data they had collected with Russian colleagues, data-use that Germany has placed sanctions on<sup>16</sup>.

Western scientists report that they are cautious of connecting with Russian colleagues. They fear negative reactions from both colleagues and funding bodies. In addition, Western security services are explicit on the potential of science arenas being used for spy activities,

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<sup>13</sup> [Russia gives definitive approval to Paris climate accord](#) (Reuters, 2019)

<sup>14</sup> <https://arctic-council.org/about/russian-chairmanship-2/>

<sup>15</sup> [After the ice - The Arctic and European security](#) (Friends of Europe, 2020)

<sup>16</sup> Dr. Nicole Biebow, Alfred Wegener Institute. Side-event at Arctic Frontiers 2023

and the threat of Russian scientists being used as ‘agents’ is real<sup>17</sup>. Another, and maybe more important reason for western scientists to cut ties is the fear of negative consequences for their Russian colleagues.

The result is that e.g., invitations from Russian colleagues to collaborate are being declined by western scientists out of fear for security threats, repercussions or stigmas. Being cut off like that, on a personal level can assumably be perceived negative for Russian researchers who have no influence on the ongoing war. It is reasonable to believe that the young generation of Russian scientists who were internationally orientated now see a lesser prosperous future for international science cooperation. There is also a general ‘brain drain’ from Russia being enhanced by the war. The damage on relations is deepened by the way the Russian regime uses the ban on collaboration in their propaganda. It enforces the image the regime is portraying implying that ‘the west hates us Russians and is out to get us’. Being abandoned by western partners might push Russian scientists to adhere to this narrative and turn previous anti-regime scientists to support the regime. The long-term effects of this aggregated picture might be that many of those who were willing and fit for international cooperation are likely to be disillusioned and discouraged to work with western partners or to leave science.

*They just prefer to shut these doors. And of course, to them [the Russian scientists] it feels like everyone hates them, including people who are Russian, you know, says anonymized Russian scientist living and working in Norway.*

The soft security dimension also suffers from the sanction regime, as international cooperation serves as cross-border ‘listening posts’. Science diplomacy has been used to influence the thinking of central actors and stakeholders in the Arctic, across national borders. If previous western oriented Russian arctic scientists turn away from their more liberal oriented western colleagues, this channel of influence is lost or even reversed.

Arctic science networks consist of personal relationships that have been built and nurtured for years and decades, essential to the development of the vast arctic science collaboration. Whether the Arctic science collaboration is broken or frozen rests to a large degree on how long it will take for these connections to be restored and revitalised.

## 2.2 Reactions from the international science community

The Russian war on Ukraine led to two distinct categories of reactions from the international science community. The first was a direct reaction to the war by condemning Russia and aiding the Ukrainian science community. The second was a reaction to the sanction policy and to the speed of the implementations of it. All science projects that included Russian institutions were affected overnight. This raised several questions. Could this be seen as political instrumentalization of science? If so, isn't it a paradox that the west is limiting the freedom of thought to fight a dictatorship? Would it not be better to maintain dialogue with liberal forces within Russian science environments and utilize research cooperation as science diplomatic channels to influence Russian politics in a positive way? Does this imply

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<sup>17</sup> [PSTs nasjonale trusselvurdering 2023](#)

that the outcome of science is not considered more important in a long run than a temporary, and in a global context, local European war?

There are ongoing discussions within the science community on the dilemma between sanctioning a brutal regime breaching international law on the one hand and tackling the even larger climate crisis challenges to biodiversity and humanity on the other hand.

The sanctions on science collaboration have no historical precedence. There was significantly more collaboration between western and Russian scientists in the 1950s and -60s. In 1968, only weeks after the Soviet attack on Czechoslovakia, western scientists visited Moscow to discuss reindeer herding.

*Western science have never been as detached from Russian scientists, even during the cold war as we are now, says UArctic President Lars Kullerud<sup>18</sup>.*

Then again through the last decades science has become increasingly globalised and funded through international collaboration, and more heavily invested in by governments through public funding. Especially environment and climate have grown as research fields since the 1970s. As international research collaboration has grown so has the politicisation of science, partly explaining the current western sanction-regime on science cooperation. The western scientific community has unanimously condemned the Russian aggression. Regarding the sanctions however, the scientific community is somewhat divided<sup>19</sup>, even though most European scientists seem to be in favour of sanctions on science cooperation with Russia<sup>20</sup>.

Scientific freedom, freedom of speech, freedom of thought, freedom of exchange of ideas are core values of the west and of science. But currently scientists, for example in Sweden are not even allowed to talk to a scientist in Russia. This is clearly a paradox. Interestingly, there seems to be variations in implementations of the current science sanction regime among western countries.

### 2.3 Coping strategies

Though the war and sanctions have paused the collaboration between Russian and western scientists, Arctic science collaboration has by no means ended and the seven western Arctic states are expanding partnerships between them. Norwegian universities for example are building new scientific partnerships with Canada, USA and Greenland. In addition, a stronger Nordic science collaboration is being established. Seeking new sources of data, many European scientists have started working more intensely in the USA and Canadian Arctic. And scientists are connecting closer at a European level, sharing experiences, best practises, and data<sup>21</sup>. Organisations like the EU Polar Net, European Polar Board and the EU Polar Cluster are being of high value in the current situation.

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<sup>18</sup> Kullerud, Lars, President of UArctic. Side-event at Arctic Frontiers 2023

<sup>19</sup> [The war in Ukraine: science community is divided over the justification for science sanctions against Russia](#) (Science|Business, 2022)

<sup>20</sup> [Most European researchers support science sanctions on Russia](#) (Science|Business, 2022)

<sup>21</sup> Side-event at Arctic Frontiers 2023

The lack of scientific data from Russia is problematic, but strategies exist for scientists to close some data gaps. E.g., scientists cooperate more intensively with the earth observation community to get space-based observations from the Russian Arctic. Researchers in the USA for example are reaching out to other colleges across the world, including to non-Arctic states to try to close knowledge gaps. For some long running data series, the situation is more damaging. The Alfred Wegner Institute, with a long history of working in Russia, try to keep their long-term observatories in Russia running. These are now served exclusively by Russian researchers. The Alfred Wegner Institute hopes to get access to the data when the geopolitical situation improves<sup>22</sup>.

On the more commercial side, institutes doing commissioned research have lost much of their Russian market. This market has decreased since the 2014 attack on the Crimea. Still, there have been ongoing projects including Russian partners after that. It has been especially challenging for these institutes that the 2022-sanctions were implemented with immediate effect. Some projects had direct funding from Russia. In these cases, the institutes have faced real threats of not getting reimbursed because of the sanctions. Different measures have been taken in these cases, e.g., using a third country to transit money. Previous investments from these institutes in building networks and competence on Russian culture and science topics also stand a chance of being sunk capital.

#### 2.4 Pragmatism regarding management of fisheries

The previously mentioned Russian-Norwegian fisheries collaboration is still active in 2023, and the Marin Institute of Norway and its Russian counterpart PINRO have kept their collaboration running. The cooperation includes research and the setting of fishing quotas for the Barents Sea. Norway is the only western country allowing access to Russian fishing vessels, and though access to Norwegian ports have been reduced in numbers, three are still open. Russian officials have stated that if this number is further reduced Norway should no longer feel bound by the agreement.

Russian vessels catch 80% of their Barents Sea fish in the Norwegian zone while Norwegian vessels catch only 1.5% of their fish in the Russian zone<sup>23</sup>. All though the relationship is skewed it seems to be in both countries interests to let 'sleeping dogs' lie, to sustain a sustainable management of the area.

Norwegian authorities have continued their three-port access policy despite criticism both at home and abroad. It seems that jeopardising the collaboration is not in the interests of neither Russia or Norway and thus both countries approach the issue with pragmatism. This mutual pragmatism gives the above-mentioned institutions the resilience they need to proceed cooperation also in the current situation. The underlying motivation is the mutual will to keep the Barents Sea controlled by the two countries. If the collaboration should fail Russia has the most to lose as a much larger part of Russian cod catches are harvested in the Svalbard zone as opposed to Norway who catches more by far along its coast.

But also, the more hardliner EU is shown to be pragmatic. Russia, the other arctic countries, and EU are all parties of the Central Arctic Ocean Fisheries Agreement and have participated

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<sup>22</sup> Dr. Nicole Biebow, Alfred Wegner Institute, interview, 2022

<sup>23</sup> [Fiskeriavtalen: Over 80 prosent av russiske fiskekvoter fiskes i norske havområder](#) (NRK Troms og Finnmark)

in meetings [including Russian representatives] after the invasion. EU's arctic ambassador argues that this agreement is amongst the key points in the EU's arctic policy, that proper implementation is a key priority, and that EU is legally bound to participate<sup>24</sup>. This shows that there are areas where also the EU is willing to show some more flexibility than their general principles allow.

## 2.5 Loss of Russian research data

The Arctic systems are under transformation in unprecedented ways. The temperature increase is three times faster in the Arctic than the global average, leading to continued loss of sea ice and melting glaciers<sup>25</sup>. Arctic near-surface air temperature warms much faster than the global average, a phenomenon known as Arctic Amplification. The change of the underlying Arctic Ocean could influence climate through its interaction with sea ice, atmosphere, and the global ocean<sup>26</sup>. Thus, the Arctic has a pivotal role in our understanding of the climate system and the way the climate is developing. Forty-five percent of the arctic territory in which climate data can be collected is Russian. As Russia represents the largest Arctic nation with a long polar coastline and control over large Arctic Sea areas, the halt of broad research cooperation with Russian scientists has major negative consequences.

*We have fifty percent of the Arctic that we don't have good data from. It wasn't fantastic beforehand; it was always a challenge. But now we don't have any, says Chair of the US Arctic Research Commission Mike Sfraga<sup>27</sup>.*

### 2.5.1. Climate related research data

The recent sixth assessment report of the IPCC from 2023 states that decisions being made in this decade may affect the Earth for millennia<sup>28</sup>. In this perspective losing vital climate research data might weaken the knowledge basis for appropriate policy decisions. This adds to the crisis the war itself has created. One effect of the lack of research cooperation is increased uncertainty. It is difficult to understand and or verify data of climate gas emissions (e.g., methane) and permafrost melting from Russian territory without reliable field work. Satellites can provide some information but less so in the long dark season of the Northern Hemisphere. Even though previous Russian data were incomplete and sometimes unreliable, and although technology provide some information, the loss of data and know-how is a set-back for understanding various climate mechanisms.

The thawing of permafrost has increasingly been addressed by climate researchers. And methane and black carbon emissions were among focus areas for more ambitious mitigation goals during the Russian chairmanship of the Arctic Council. Scientists have increasingly better methods for measuring gas that emerges from the permafrost as the temperature in the Arctic rises. Large volumes of methane are released directly into the atmosphere, but scientists don't know how much is emitted from the vast areas of Siberia, and how this has changed and could change over time.

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<sup>24</sup> Ganslandt, Clara, EU Special Envoy for the Arctic, Side-Event Arctic Frontiers 2023

<sup>25</sup> <https://www.npolar.no/en/themes/climate-change-in-the-arctic/>

<sup>26</sup> <https://www.science.org/doi/10.1126/sciadv.abn9755>

<sup>27</sup> Sfraga, Mike, Chair of the US Arctic Research Commission. Side-event at Arctic Frontiers 2023

<sup>28</sup> <https://www.ipcc.ch/>

The thawing of permafrost in Svalbard is already dramatic and goes deeper than previously anticipated, resulting e.g., in release of methane and carbon dioxide gas to the atmosphere. The observed methane emissions are surprising scientists as the volume is much higher than anticipated. To get the full-scale picture these data should be combined with data from Russian research partners. The war has not only led to loss of data, but also to a loss of knowledge and competence. New data shows that much of the methane emissions are biology-driven and in need of new methodologies, being a field where Russian scientists have high expertise. Western scientists can build up competence and collaborate with other scientific communities. But the Russian know-how in combination with the proximity to the Siberian system gives them an advantage. The permafrost in Svalbard is in some aspects different from the permafrost in the Canadian and the Siberian Arctic, and a major piece of the puzzle is now lacking<sup>29</sup>.

*Not long-ago Russian experts were close partners, now they don't even respond to emails anymore, says Lise Øvreås, Professor, University of Bergen<sup>30</sup>.*

However, some data from Russia, relevant for understanding the systemic changes ongoing in the Arctic, is still crossing borders. The World Meteorological Organisation, a UN body, still collect data from Russia. Meteorological data are necessary for short term weather forecasts, but they are also central for assessing and understanding climate change<sup>31</sup>.

#### 2.5.2. Ocean related research data

Scientists have discovered 'hotspots' where some parts of the Barents Sea have started to closely resemble the Atlantic in terms of their water mass properties. This phenomenon has been termed Atlantification. The north-flowing ocean currents transport the warm and salty waters of the Atlantic into the Arctic Ocean through the Barents Sea. Warming of the Barents Sea have already shown effects on sea ice and marine ecosystems<sup>32</sup>. The extent of Atlantification and its possible impact on the wildlife that follow ocean currents are active areas of research. The data needed to monitor this development are primarily in Russian waters.

The German Alfred Wegener Institute is a major arctic science provider and has worked in the region for a long time. A major recent venture into arctic waters is the Mosaic expedition organised by the institute. This would never have been possible under the current situation as Russia was the institute's main partner for logistics and change of personnel. The Russian support allowed this expedition to continue even during the Covid pandemic. An international project of this scale would be impossible in the Arctic today.

Some experts are however less worried about severe direct effects on ocean science. Research on the Arctic Ocean can still be conducted in large parts of the Arctic. Collaboration with Russian scientists was often not effective as Russian scientists would publish their results in Russian language journals and did not always share all relevant data. In addition, expeditions into Russian waters could in many ways be complicated<sup>33</sup>.

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<sup>29</sup> Lise Øvreås, Professor, University of Bergen, Side-event Arctic Frontiers 2023

<sup>30</sup> Professor Lise Øvreås, University of Bergen, Side-event Arctic Frontiers 2023

<sup>31</sup> Professor Eystein Jansen, University of Bergen, interview

<sup>32</sup> [Arctic Ocean Amplification in a warming climate in CMIP6 models | Science Advances](#)

<sup>33</sup> Professor Wassman, Paul F., University of Tromsø, The Arctic University of Norway, interview 2022

### 3. The Arctic in flux

The war and the subsequent sanctions have had severe effects on arctic cooperation, arctic institutions and on long-existing human relations in the region. And it is not clear to what extent the Arctic has been in the mind of decision makers when the decision(s) were taken. Regardless, the Russian aggression and clear breach of international law called for strong reactions. There seems to be no specific plans concerning the Arctic made prior to implementation of the sanctions. This is understandable given the need for both a fast and strong international response to the aggression. It is well documented that the Arctic is undergoing dramatic environmental, oceanic and climate changes. Now the Arctic is truly in flux, also geopolitically. So, what might the long-term consequences and potential future avenues be?

#### 3.1 Towards a divided Arctic?

The Russian coat of arms is an eagle with two heads, one facing the east and one facing the west. The symbol epitomises this vast country's identity dilemmas. Sometimes towards liberalism and sometimes towards despotism. Sometimes towards the west and sometimes towards the east. For the western countries the loss of Russian partnerships creates a strong incentive to find new partners, within the Nordic countries, across the Atlantic and generally towards a stronger cooperation between the western seven arctic countries. The western world has banned collaboration with Russia, but large parts of the rest of the world has not. And as the *arctic seven* connect tighter, Russia orients itself to the east.

China's Arctic ambassador stated at the *Arctic Circle* conference in Reykjavik in the fall of 2022 that there is *no Arctic without Russia*. Although China has not endorsed the Russian attack on Ukraine, the war seems to have brought the two countries closer together. Another Asian major actor is India. India is not part of the sanctions on Russia. Whilst Europe, the USA and Canada has brought almost all interaction with Russia to a halt, India has strengthened its Russian commercial and energy connections. Russia on its side is investing heavily in oil tankers, increasing its potential for oil and gas export to non-European countries. As stronger commercial channels and transport routes are being established, it is not unlikely that research and management collaboration will follow.

The Northern Sea Route along the coast of Siberia has been one of the drivers behind the interest in the Arctic in the past decades. China has incorporated this in their massive cross-continental infrastructure program *Belt and Road*. Russia has followed up by NSR investment plans in the trillions. As global warming has reduced the size of the arctic ice cap, the potential of this route has become interesting for an increasing number of shipping companies. Though still very low in absolute numbers, at least in comparison with its main competitor, the Suez Channel, there has been a substantial growth in relative numbers of ships using the Northern Sea Route between Asia and Europe. However, since the invasion in 2020 only Russian and Chinese ships have been sailing the Northern Sea Route<sup>34</sup>. During a three-day state visit to Moscow in March 2023, Chinese leader Xi Jinping and Russian President Putin agreed to closer cooperation in the Arctic energy and transportation

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<sup>34</sup> [International Shipping on Northern Sea Route Collapses as Foreign Companies Stay Away](#) (High North News, 2022)

sectors (NSR)<sup>35</sup>. The joint statement signed during the state visit includes a plan to “continue consistently intensifying practical cooperation for the sustainable development of the Arctic”<sup>36</sup>.

We are today witnessing a reinforcement of Russia's eastern trading channels, cementing the relationships with China and India. One effect might be an Arctic in which Russia, India, China, and other powers in the east collaborate on industry, knowledge-based management and science projects. This might lead to a future division of the Arctic in an eastern and a western part. However, both China and India are approaching the other arctic states and pan-Arctic science organisations to find ways for Arctic collaboration. After Russia attacked Crimea in 2014 the interest from Chinese universities in UArctic increased drastically, and several Indian universities have approached the UArctic for membership after the attack in 2022<sup>37</sup>. Scientists are likely to seek the best qualified international partners to work with, and these are not only to be found in Russia. This makes the scenario of an Arctic divided into a western and an eastern part less likely, but still a possibility if the conflict turns out to be long-lasting with a continuous ban on western-Russo science collaboration.

### 3.2 Keeping the flame burning?

The Arctic Council has often been described as the Arctic’s United Nations, and in some ways, this might work as a description of the organisation. However, the UN and other international organisations such as the IMF and the World Bank are built on very rigid structures and bureaucracy, whilst the Arctic Council has been a highly flexible organisation. This flexibility, some will claim, has made it possible for the institution to endure through difficult periods. For others, the flexibility is seen as a weakness; whilst the UN has continued its activities “as usual” the Arctic Council was set on pause after the invasion, and was for a period at least, not able to shield vital arctic science and management operations. With a too rigid structure on the other hand, the western countries might have chosen to terminate the Arctic Council instead of pausing its activities.

Until Norway took over in May 2023, Russia held the chairmanship of the Arctic Council. Despite that the seven western countries at this point refused to cooperate with Russia on any level since March 2022, the Russians chaired the Arctic Council with a business-as-usual approach. In the launch of the Norwegian Arctic Council chairmanship priorities, The Norwegian Minister of Foreign Affairs, Anniken Huitfeldt stated that collaboration with Russia on a political level would not happen with an ongoing war. Still Huitfeldt stressed the importance of continuing the work in some form or another due to great challenges that must be solved together. In an interview in High North News<sup>38</sup> (Tromsø March 29) Huitfeldt says [translated from Norwegian by the author]:

*The Arctic Council's further work will reflect the political reality. We will however do what we can to ensure that the council continues as a body where we can deal with the most urgent and cross-border challenges we face in the region. Such as data for*

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<sup>35</sup> [Putin and Xi Discuss Further Deepening of Arctic Partnership](#) (High North News, 2023)

<sup>36</sup> [Joint Statement of the Russian Federation and the People's Republic of China \[...\]](#) (kremlin.ru)

<sup>37</sup> Lars Kullerud, President of UArctic, side-event at Arctic Frontiers 2023

<sup>38</sup> [Norge overtar lederskapet i Arktisk råd: Viktig å få til samarbeid med Russland om klima](#) (High North News, March, 2023)



*climate knowledge, and the need for sustainable resource management that takes into account both nature, wildlife and people living in the Arctic.*

At a combined online and in-person Arctic Council meeting in Russian Siberia in May 2023, representatives of the eight Arctic States and six Indigenous Permanent Participants concluded the Russian Chairmanship period and marked the beginning of the Norwegian leadership. All arctic states issued a joint statement where the historic and unique role of the Arctic Council for constructive cooperation, stability and dialogue between people in the arctic region was recognised<sup>39</sup>.

For many, careful optimism for prolonged existence of the Arctic Council rests on the Norwegian chairmanship's ability to steer the council wisely through its most challenging period. Finland's Senior Arctic Official Petteri Vuorimäki has stated that:

*If it is any country that could best steer the Arctic Council forward in an orderly fashion that is Norway<sup>40</sup>.*

In September 2023 Norway proved worthy of this trust, having managed to achieve new guidelines for cooperation that all the arctic countries, including Russia, agree on. In a High North News interview in September 2023 of Morten Høglund, Arctic Ambassador for Norway and Chair of the Senior Arctic Officials under the Norwegian chairmanship, he states that<sup>41</sup>:

*This is an important first breakthrough which makes it possible to resume activities in the working groups that involve all the member states, including Russia. We have not made any overall decision on what is to be cooperated on or how extensive the cooperation will be. Getting back to the collaboration we had before the invasion of Ukraine in February 2022 will require a lot of time, of course. But we aim to resume large parts of our work in several important fields, such as climate, and start new projects.*

Still, even though the Arctic Council has a highly central role, arctic science collaboration is much broader than what is organised under the Arctic Council and its working groups. Until the EU and the Arctic nations lift their sanctions, arctic science collaboration will to a large extent be without Russian scientists, institutions and data.

### 3.3 Frozen or broken?

The shutdown of Russian science collaboration creates large holes in our understanding of vital processes and systems in the Arctic, being especially worrying for climate research and knowledge production for resource management. If long-lasting the damage to the institutions, networks and cross border science community in the Arctic can be dramatic. The construction of the arctic science collaboration architecture was in many ways coincidental, and should it break down, the 'window of opportunity' might not be there for it to reemerge.

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<sup>39</sup> [All Arctic States Behind Joint Arctic Council Statement](#) (High North News, May 2023)

<sup>40</sup> Vuorimäki, Petteri, Ambassador for Arctic and Antarctic Affairs, Finland. Arctic Frontiers side-event in 2023

<sup>41</sup> [Light at the End of the Tunnel for the Arctic Council](#) (High North News, September 2023)

So, the fundamental question is whether the arctic collaboration is just frozen or already broken. If it is frozen it could thaw come better times with warmer relations between Russia and the west. If it is broken it will have to be rebuilt at some point or a different structure all together must be made. Though there seems to be a general perception that it is only frozen now, there is also a clear understanding that it will break down should the freezing last.

The general understanding seems to be that if the situation lasts for more than five to ten years the structure will break. Lars Kullerud, the president of the UArctic states:

*If the conflict and embargos last for ten years or more, a new arctic science collaboration architecture has to be built from scratch. Ten years without [western and Russian] students and young researchers meeting will destroy the foundation, even though the more senior scientists may find back to one another. And it will be a steeper start than in 1990 because then some relationships existed, like the polar bear convention, Sami council and the fisheries agreement, and the polar year<sup>42</sup>.*

There is no doubt that the erosion already has started. Western officials have made it very clear that the embargo will stand until the war has ended. Unlike the start of the war, which was surprising and sudden, the end is likely to be slow and long-winded. We see no end to the war now, and after the war there will likely be a period of normalisation before a rebuilding can start. As Mike Sfraga, Chair of the US Arctic Research Commission puts it:

*If the war stops tomorrow, miraculously, things just don't turn back on... If the war stops the leadership of Russia perhaps does not. And what does that look like? This is going to take years and what's the fall-out? What about the humanitarian side and possible war crimes? The layers and layers of issues will take us many, many years to work through. And the degradation of researcher-to-researcher cooperation: We might be in the same position five years from now, talking about some time in the future when we can re-engage with Russian colleagues, and they are yearning to re-engage with the west. It's a tectonic shift here that we need to be thinking about, not just six months from now or a year from now. We need to be thinking on the five, ten, fifteen year timescale. How is this going to affect research globally, how is this reverberating around the globe? There are ripples beyond the Arctic<sup>43</sup>.*

Though it was very likely not the intention from either the western or Russian side, the nexus of arctic collaboration has undoubtedly been damaged by the war and the sanctions. Ever since the onset of the conflict, discussions on whether the Arctic science cooperation architecture will survive has been running amongst people interested in the Arctic.

Though there are signals that certain elements of the Arctic Council's projects and processes might be opened to include Russian partners, the ban from the various countries and the EU is quite likely to stand unchanged. Though details of the sanctions might be debated, the common view of western arctic actors is that they 'had to be strong', and that they are very hard to reverse or soften without being perceived as soft on Russia by domestic audiences

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<sup>42</sup> Kullerud, Lars, President of UArctic. Side-event at Arctic Frontiers 2023

<sup>43</sup> Sfraga, Mike, Chair of the US Arctic Research Commission, Side-event at Arctic Frontiers 2023

or worse, by the Russian regime, who might perceive a softening as a concession to continue or even escalate its aggression.

Leaders and stakeholders need to find a way forward either towards a new arctic architecture or building a bridge to a time when collaboration may be restored and collaboration with Russia may be normalised. Knowledge from all of the Arctic is vital for a healthy planet and for good management of the region itself, its ecosystems, wildlife and peoples. Although most of the Arctic science collaboration, with its institutions, MOUs, personal connections and standing in the science community and public eye is very likely to erode, there is a hope that a wise and pragmatic use of the Arctic Council can build a bridge to a time that comes after the war.



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