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1 FROM GORBACHEV'S MURMANSK SPEECH TO THE PRESENT: 37 YEARS OF INTERNATIONAL COLLABORATION IN NORTHERN RUSSIA

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Introduction

This chapter comprises the personal accounts of three researchers from a large multinational, interdisciplinary EU-funded consortium project who have experienced first-hand the impact of the so-called "special military operation" in 2022 and beyond. Our CHARTER project (2020–2025) addresses the adaptive capacity of Arctic communities to climatic and biodiversity changes through state-of-the-art synthesis based on thorough data collection, analysis, and modelling of Arctic change with major socio-economic implications and feedbacks.[1]

The three of us began working together already in Summer 2010 when we conducted joint fieldwork on the Yamal Peninsula in Western Siberia. In early March 2022, after the Covid-19 pandemic travel restrictions had been lifted, we were planning to travel again to Siberia for meetings with local officials from the Yamal regional government and signing new documents on scientific cooperation among research institutions in the Yamal Region, the University of Hamburg (Germany), and University of Lapland (Finland) for new studies under the CHARTER project.

On the morning of 24 February 2022 Western media channels were showing pictures of the Russian military vehicles with "Z" markings moving into and across the territory of Ukraine. The Russian invasion was internationally condemned, and many countries quickly imposed sanctions against Russia. Moreover, this war has profoundly impacted the work of both Western and Russian universities and research institutions. It has disrupted the research process and scientific work of many people around the world, including our own fieldwork in Yamal.

Germany became the first EU country to announce sanctions on scientific research in Russia in February 2022. The German government instructed universities to freeze academic relations with Russian institutes already on 24 February. A day later, Germany announced the end of long-standing cooperation with Russia

1 The name of the project, CHARTER, comes from its full title, Drivers and Feedbacks of Changes in Arctic Terrestrial Biodiversity. This project is funded by the European Union's the Horizon2020 Research and Innovation Program under grant agreement No 869471. It is a large, international and interdisciplinary consortium project, which involves 21 research institutions across nine countries.

in the fields of science, research and professional education (Science and Business 2022). Soon after, European governments, European universities, and individual scholars across Europe have been forced to choose whether or not to continue ties with Russia.

In Finland the situation quickly began to impact research; it was evident that there would be restrictions on studies in Russia and collaborations with Russian partners. This would immediately affect Finnish-Russian projects and other international initiatives concerning Russia (e.g., the EU Horizon program). In the scientific community, there were moments of great uncertainty. Then on 9 March 2022, the Finnish Ministry of Education and Culture recommended that Finnish higher education institutions abstain from all university and science collaborations with the Russian partner organizations. According to the guidelines, new projects were not to be initiated, and existing inter-organizational cooperation should be suspended indefinitely. Researchers were still permitted to maintain personal contacts with their colleagues, but institutional collaboration was suspended.

This means that with the start of the new geopolitical situation between Ukraine and Russia, Mikhail Gorbachev's 37-year era of scientific diplomacy and cooperation between European and Russian universities and institutions also ended. This chapter consists of three individual testimonials on the respective authors' personal career trajectories through the lenses of East-West scientific collaboration.

No business trips to Yamal!

Roza Laptander

Life after 24 February 2022

It is the morning of 24 February, 2022. I was busy preparing for my next trip to Yamal. Hotels were booked, and tickets were bought back in December. Throughout the autumn, I was busy corresponding by e-mail with our colleagues from the Center for Arctic Studies and the Department of Foreign Affairs in Salekhard, drawing up invitations and other official travel documents for my colleagues from Germany and Finland. When all the bureaucratic paperwork was ready, there were only two weeks left before this new trip to Russia.

Usually when we arrived to Salekhard, it was necessary first to meet with all important Yamal administration officials to discuss plans for further cooperation between the government of Yamal and two foreign institutions in Germany and Finland. Only after this official part, we could continue our travel to the tundra of Yamal. There we had maintained a several "permanent" herbivore "exclosure" fences erected in Summer 2017 for studying tundra vegetation and landscape/permafrost dynamics, in relation to reindeer rangeland and climate dynamic.

While others in the team addressed primarily natural science issues, I spoke with Nenets herders and local fishermen about their life in the tundra and what changes they had noticed in local weather, seasons, landscape, permafrost, tundra vegetation, and health of their reindeer. But on 24 February, a military conflict began, which in the Russian news was called the "Special Military Operation", and in the Western news, Russia's invasion of Ukraine.

I opened my email inbox and received a letter from my university instructing me to immediately cancel all trips to Russia. What should I do? I sent emails to Salekhard and asked our local colleagues to cancel our meetings because we could not travel to Russia, due to the new geopolitical situation. In addition, I cancelled all hotel bookings and refunded all plane tickets. It was a difficult decision, but I could not travel to Russia without a permission from the university.

Very soon the German government had instructed all German universities to freeze academic relations with Russia as the EU debated whether to exclude the country from all research networks and infrastructures in response to its invasion of Ukraine.

1 March, night. Even a full week after the start of the war, I could not stop reading news about Ukraine on my iPhone, as well as watching news on TV every day. Nothing changed… Next day, on March 2nd, was my daughter's birthday, I wanted to get up early to make her a celebratory breakfast. It's funny, her birthday coincides with Mikhail Gorbachev's birthday.

At midnight, my daughter came and woke me up. I was still half asleep, but I knew that something terrible and awful had happened. My heart was pounding… There was something wrong with my body and thoughts were mixed… I wanted to ask my daughter, "What happened?" and suddenly I realized that I forgot how to breathe properly.

My child looked at me and said: "Mom, it's March 2nd. Do you want to congratulate me, it is my birthday!"

Back to Gorbachev time

The War… What could be more terrifying? As a child, I was very afraid that the Americans would drop a nuclear bomb on my little town, and because of this fear, I often had nightmares. Because of my early age, I did not know that Mikhail Gorbachev just stopped doing nuclear tests on the Novaia Zemlia (Island).

I went to school in a little town in Western Siberia, almost at the same time when Mikhail Gorbachev came to power in 1985. Soon he started a set of reforms that also included *uskorenie* ("acceleration"), *glasnost* ("transparency"), *perestroika* ("reconstructing") and *demokratizatsiia* (democratization). My very first lesson at school was about Peace to the World! Our primary school teacher told us briefly about the modern history of the Soviet Union and said that after the end of World War II, our

country, became the most pacifist country in the world, and all Soviet people should be against any military conflicts. We, children, must always remember that we are the winners, we are against war, and we are for peace in the world.

In the Autumn of 1987, I was still at elementary school. I did not pay much attention to the political situation in the country, even though everybody talked about Mikhail Gorbachev and his new politics. But then, an unbelievable event took place in the Far North. I do not remember what I did that day, but most probably I watched Gorbachev's visit to Murmansk on TV, together with my aunt.

In the corridor of a hospital where my aunt worked, there were a few posters with a slogan "No to Nuclear War!" When you read them, you could get some instructions about what people should do in case of an atomic bomb attack. Somehow, this was a so-called "normal" part of everyday life in the Russian North and Siberia, to be prepared for the emergency of the nuclear war. Even children were trained to be prepared for it in their school classes.

In October 1987, Mikhail Gorbachev, then General Secretary of the Communist Party, arrived on a three-day visit to the Kola Peninsula. This visit of Gorbachev to the Soviet polar capital of Murmansk was the first indication of a change in the Soviet approach to the Arctic and it was of particular significance to local and Indigenous people (Åtland 2008). In his speech in Murmansk, Gorbachev called for the "Arctic as a zone of peace," and he set forth a six-point program for international cooperation in the area, including establishment of a Nordic nuclear-free zone in Northern Europe, limiting naval activity in the seas adjacent to that region, peaceful cooperation in exploiting the resources of the North and the Arctic, scientific research in the Arctic, cooperation between Northern countries in environmental protection, and the opening up of the Northern Sea Route to foreign vessels (Vartanov and Roginko 1990). Gorbachev's policies contributed to the end of the Cold War and opened up new opportunities for science, supported the Indigenous peoples of the North, and united many people in joint projects and research across the Arctic (Habeck et al. 2009).

After Gorbachev visited Murmansk, our teachers at school said that "nobody would throw an atomic bomb on our country, and that we, children, should not be afraid of it anymore." It was such a big relief for me, since an American nuclear attack was the most terrible threat that we as children, were always afraid of.

Talks and rumors about the war

20 March 2022. One of the rumors of those days, also common on social networks, was a possible nuclear bombing of Ukraine by Russia. The feeling of fear of the atomic war, which I had forgotten since the days of Gorbachev has come back to me. In the morning, I went to a local store near my house to buy iodine tablets. Unfortunately, all iodine tablets were sold out. Then I realized that many other people were also buying this medicine. Between January 2022 and March 2022, there was a rapid increase in

sales of over-the-counter iodine-containing products in 20 European countries (Kostev et al. 2022). People bought these tablets because they feared two main problems: the potential use of nuclear weapons and the environmental consequences of nuclear contamination.

On *20 April 2022* the University of Hamburg, my current home institution, posted on its website the following rules:

> The Universität Hamburg Executive University Board has decided to suspend all activities with Russian institutions until further notice.
> This includes:
> - all research, teaching, and knowledge exchange collaborations occurring pursuant to a formal agreement
> - all collaborative activities in research, teaching, and knowledge exchange bound to an individual institution, whether with Universität Hamburg or a Russian partner organization – for example, applying for joint third-party funding, courses, events, joint special events (including summer school programs, guest teaching)
> - collaboration on degree programs and collaboration in the field of international student mobility.
>
> No new joint projects will be commenced.
> It also does not affect contact between individuals on a personal level; these may continue to be maintained. Universität Hamburg does not advocate the isolation of individual researchers or students.
> The joint publication of articles with Russian researchers affiliated with Russian institutions is permitted. However, particular care must be taken with data exchange and data protection that may fall under export control regulations and the current sanctions regime.[2]

Following these instructions from the University, I decided not to travel to Russia. However, I registered for a few conferences in Europe, where the status of Western collaboration with Russia was listed on the program.

On 21 *August 2022*, I attended a linguistic conference in Vienna, the Congressus XIII Internationalis Fenno-Ugristarum or CIFU XIII organized by the University of Vienna. Many linguists and researchers of the Finno-Ugrian languages and cultures from Western universities were there, but, surprisingly, also a few scholars who travelled from Russia. I felt a strange mixture of feelings. Of course, I was glad to see them; then I had in my mind questions about how they managed to come to Vienna if officially all borders are closed, and it is not possible to travel from Russia to Europe.

On the first evening, there was a meeting at which five colleagues from Western universities spoke about their difficulties in continuing research in Russia. They elaborated that they had limited access to people from the field with whom they worked before. People from the audience asked questions, but no one from Russia said a word.

2 https://www.uni-hamburg.de/en/uhhhilft-ukraine/faq.html [accessed 15.07.2024]

30 August 2022. After half a year since the war started, I found myself thinking about the former president of the USSR, Mikhail Gorbachev, and his reaction to the war. There was very little news about him. However, one of the articles I read on the Internet, claimed that after 24 February 2002, Gorbachev's attitude towards Putin changed for the worse. According to the post, Gorbachev believed that Putin had "ruined his life's work" (Rodionov 2022). Then on 30 August 2022, came another news about Gorbachev's death. It was a symbolic event, also a symbolic message for many people around the world and Russia that the time of openness to the West was over (Zubok 2022). The passing of Gorbachev was an indicator of the "complete end" of Gorbachev's era and of Russia's associated hopes for cooperation with the West (Rupert 2022).

Fig. 1 On the wall of one of the abandoned bunkers of the Russian army reads "Thank you, Gorby" (German nickname for Mikhail Gorbachev), Fürstenberg, Germany, 2022.

On 27 S*eptember* 2022, there was another anthropological conference in Vienna with yet another meeting about how to work in the Arctic and how to continue research there and with the Russian colleagues and Arctic people in this situation of the ongoing war (Schweitzer and Povoroznyuk 2022). Anthropologists talked about suspending their research in the Arctic, of more than 30 years of productive collaboration, at least at the institutional level. As fieldwork by foreign anthropologists within the Russian Federation and by Russian scholars abroad had become almost impossible, the general question was whether institutional forms of cooperation and, even more importantly, individual contacts in Russia, would survive or whether the new Cold War would dismantle these long-established links.

During this meeting we discussed various options to explore the forms of communication and exchange with colleagues, partners, and interlocutors in Russia under the ongoing war and sanctions. The importance of already collected ethnographic materials and the challenges of relying predominantly on digital and media sources were repeatedly mentioned, as was the importance of continuing to work with trusted partners and colleagues in Russia. Senior scholars who conducted research during

the Cold War time shared their experience. Some people mentioned that certain countries and institutions would, nevertheless, continue to serve as academic bridges between Russian and Western universities.

Additionally, rumors and suspicion that develop during the wartime do not help us to work with the local people. We noticed that some people were afraid to communicate with researchers who came from abroad. We can describe this as a present reality of this troubled time because rumors and gossip are always the markers of social stress, especially under the cloud of fear or threat (see Marwick 1965; Steward and Strathern 2003; Laptander 2021).

This situation made me think about my personal perspectives on travelling to Russia from Europe, now as a Western researcher. Because per current university policies, we can use only the data collected before February 2022 for scientific publications (Laptander et al. 2024).

I presented here a summary of my personal experience growing in the USSR at the end of the Cold War and now living in the West, during the time of a new Cold War. Since February 2022, any anti-war protests and demonstrations against the war in Russia have been ruthlessly supressed and are now totally forbidden by Russian authorities. Any individual who braves to protest, even if alone and in silence, gets punishment and strict sentences from the Russian state. The present political situation means that we are almost completely cut off from all our contacts in Russia within the sphere of science, but we may keep contacts with our friends in Yamal and in the tundra. Also, I remain unsure how I will be able to continue my own studies and whether I will be able to go to the tundra of Yamal in the future. Even talking to people on the phone and social media gives different insights about the present situation. However, the common narrative is that people are waiting for better times when the war will finally end.

A sinking feeling

Bruce C. Forbes

On 21 February 2022, it was Sunday evening at my home in the small village of Sinettä (population 900) in Finnish Lapland, about 15 km north of the Arctic Circle. As usual, I was at my laptop in my home office and anxiously scanning the news headlines. The news that Sunday evening was deeply troubling. Russian President Vladimir Putin had ordered troops to eastern Ukraine, after formally recognizing two Moscow-backed separatist regions. Secondly, the mainstream western media were showing high-resolution satellite imagery of Russian troops massed at several locations along the border with Ukraine. Such detailed information has not normally been shared publicly and the assessment from Western politicians and key Western military leaders was clear:

an invasion of Ukraine appeared imminent and could begin any day. I was booked for a set of high-level meetings in Salekhard, Yamal with my long-term colleague Roza Laptander, and we both planned to fly into Salekhard on 7 March. However, that evening's news enveloped me with a deeply sinking feeling.

My mind soon wandered back to nearly 40 years ago, when my interest in Arctic Russia first developed. It occurred in the autumn of 1985, when I was a Masters student at the Center for Northern Studies (CNS) in Wolcott, Vermont. Oran Young was then the acting director of CNS. Oran, his wife Gail Osherenko, and PhD student Gail Fondahl were among the several lecturers I had that year. The period of *glasnost* and *perestroika* under Gorbachev was soon coming. It ushered in a period of intense research interest in a country containing roughly half of the entire terrestrial Arctic, which had been cut off from most international academic engagement for much of the 20th century. Oran and "the two Gails" piqued my interest in this new opening and by the turn of 1986 I had decided I would eventually visit the Arctic regions of the then-Soviet Union. The "two Gails" and Oran alerted me to the Indigenous peoples on whose territories major multinational corporations were gearing up for hydrocarbon extraction on a scale heretofore unseen within the continuous permafrost zone. "Ground zero" appeared to be the Yamal Peninsula in West Siberia, homeland of the Yamal tundra Nenets. Information on Nenets culture in English was still sparse at that time. However, the more I learned, the more it became clear that I needed to experience how the Arctic's last truly long-distance reindeer nomads shared their social and ecological space with rapidly ramping-up natural gas development.

By the summer of 1987 I had committed to doctoral studies in Geography under social anthropologist George Wenzel at McGill University. In October 1987 the entire world, including myself, learned of Gorbachev's Murmansk speech, in which he declared the Arctic to be a "zone of peace". This was incredible news, ushering in new period of truly circumpolar collaboration, and was perfectly timed for my personal plan to visit Yamal as soon as possible. My first chance came a few years later, and through an invitation extended by permafrost scientists at Tyumen State University, I was able to spend much of July and August 1991 exploring the north-central Yamal Peninsula. Flying north from Tyumen in a massive Antonov An-12 aircraft, we stopped briefly to refuel at Salekhard airport – then still unpaved – and eventually landed on the beach at Kharasavei. From there we made day trips by either helicopter or *vezdekhod* (tracked vehicle, like a civilian tank) to the Bovanenkovo Gas Field and various tundra Nenets nomadic camps.

I ended up leaving Moscow in mid-August 1991, just hours before the coup that presaged the eventual dissolution of the Soviet Union in December 1991. In the pre-internet/pre-smartphone era, if you did not buy a newspaper, hear the radio, or see a TV, you had no idea what was going on in the world. When I landed in New York at JFK airport, my sister greeted me with that day's issue of the *New York Times* and the front page showing the now-famous photo with Boris Yeltsin giving a speech while

standing on a tank. The events leading up to and including the *coup* had all transpired while I was in transit from Moscow and so I was utterly oblivious to the news.

I eventually learned out how lucky I had been when later hearing stories from Western colleagues who were stuck in various locations around the Russian Arctic and found themselves stranded in diplomatic limbo for many months.

Fig. 2 Typical *vezdekhod*, or tracked vehicle in use all across Arctic Russia since the 1960's. The image was taken near the Bovanenkovo Gas Field during fieldwork with long-distance Nenets nomadic herders on Yamal Peninsula by Florian Stammler and Bruce C. Forbes, 2005.

Although the Gorbachev regime ended a few months after that day, the era of *perestroika* and *glasnost*, with its many political, social and economic reforms, was to continue pretty throughout most of the 1990s. This included the nascent opening of Arctic Russia to foreign researchers. On its surface, it seemed to be a boon to Western scholars who had long been itching to visit the vast Russian Arctic completely unknown to them and, at the same time, open the doors to genuine collaboration with Russian colleagues and peers previously known primarily from the literature.

The reality was more complicated since the sudden collapse of the rouble in 1991–1992 meant that helicopters and other costly transport to/from remote Arctic sites was no longer affordable for most Russian institutions. Russian national research funding disappeared virtually overnight. The fact that Westerners were coming in flush with funding to pay for helicopter and fixed-wing aircraft time was met with mixed feelings. Some welcomed a chance to continue their ongoing and treasured monitoring efforts at, for example, long-term ecological research sites that dated to the International Biological Programme era of 1967–1974. Others understandably felt their pride had suffered in that they were involuntarily dependent on foreign funding

for even basic field site access, monitoring and lab costs. And all domestic costs were skyrocketing via hyperinflation.

Fig. 3 Yamal tundra Nenets migrating between summer camps near the Obskaya-Bovanenkovo railway. Roza Laptander is near the front of the caravan. Yuribei River, June 2010.

I was among the peer group to experience first-hand this somewhat awkward transition phase of North American collaboration in Russian Arctic science. I must admit that, personally, I benefited from the development of new instruments for funding designed to transcend international barriers. First came the "Young Investigators' Program," or YIP, jointly developed by the Russian Academy of Science and the US National Academy of Science. It was aimed to select 10 newly minted PhD's in the US to partner with 10 "young" PhD's from Russia. The concept was to spend a month during summer 1993 visiting Arctic and northern boreal research sites and institutions with researchers in Russia (Moscow, Archangelsk, Murmansk, Kirovsk/Apatity, Syktyvkar). Then in 1994 the same cohort of scientists would visit study sites and institutions in Alaska (Anchorage, Fairbanks, Toolik Lake, Happy Valley, Prudhoe Bay).

Overall, the 1990s and 2000s encompassed two decades characterized by exceedingly fruitful East-West Arctic research cooperation unlike anything before. All of my funding and projects during this era involved intensive fieldwork in Russia, albeit with Western funding from various institutions and agencies, like National Geographic, NATO, the Academy of Finland, NASA, NSF and the EU. Whether working on my own or with multinational teams, the research was always multidisciplinary. Topics addressed evolved over time as I began investigating the purely ecological impacts of

hydrocarbon extraction in the Northwest Russian Arctic, specifically in the Nenets and Yamal-Nenets Autonomous Okrugs. It quickly developed into addressing linked social-ecological impacts, which led to my inclusion of the dynamics of reindeer rangelands and the complex political ecology of "overgrazing," a dominant narrative in both Russian and Fennoscandian reindeer management for almost a century.

Fig. 4 Yamal tundra Nenets husband and wife herders detail the dynamics of drying wetlands and recently drained lakes on north-central Yamal Peninsula. Others from left are Anna Skarin (back to camera), Roza Laptander and Nina Meschtyb. Mordy-Yakha River, July 2015.

Even in my very first publication from Yamal, which focused on the tundra vegetation and permafrost soil impacts of wind-blown sand and dust along the Obskaia-Bovanenkovo railway corridor, I included observations from local Indigenous reindeer herders on how the new traffic had rapid negative effects on mushrooms, lichens, and cloudberries far beyond the access road (Forbes 1995). The more time I spent with Yamal Nenets reindeer herders on their long-distance migrations between seasonal tundra (spring, summer, autumn) and forest-tundra (winter) pastures, the more I came to distrust the so-called "carrying capacity" model underpinning the modern reindeer governance regimes in Russia and Fennoscandia.

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After many years of participant observation fieldwork with long-distance Nenets nomads of the Yamal tundra, we noticed a subtle shift in the narratives of "change."

The period of roughly 2006–2014 was punctuated by two extensive rain-on-snow (ROS) events, each characterized by well-documented massive reindeer mortality (Sokolov et al. 2016; Forbes et al. 2016, 2022). Since then, more frequent and intense ROS events have become the norm (Golovnev 2017, Laptander 2020, Stammler and Ivanova 2020).

The "first" Ukrainian invasion, which resulted in the Russian takeover of the Crimean Peninsula in 2014, had relatively little impact on our teams' ongoing research on Yamal. In some public settings, such as the annual "Day of Reindeer Herder" in Yamal, I noticed for the first time subtle anti-Western comments from long-term administrators. Nothing alarming, but I do recall making a mental note as this was so unusual. We continued to develop research proposals with colleagues and Nenets herders. As fate would have it, two of the largest projects of my career were funded within months of each other in autumn 2019 and would run for 4–5 years.[3] Both included intensive study sites in Arctic Russia. CHARTER would encompass sites not only on Yamal, but also in the Nenets Okrug and Komi Republic. Unfortunately, within a couple of months the Covid-19 pandemic hit hard and both Finland and Russia entered an extended period of lockdown, meaning zero biophysical and relatively little social anthropological fieldwork in Russia were possible during 2020 and 2021. This was highly disruptive and stressful, but nothing compared to the catastrophic consequences of the "second" Ukrainian invasion in late February 2022. That invasion was a tsunami that overnight wiped out all possibility of field research.

In Finland the seismic impact on public opinion was immediate. For decades reliable national polling on whether or not to join NATO had never registered support above 22%. Yet within eight months of the war, support for NATO membership rapidly reached 78% (RFE/RL 2022). Instantly new tensions arose. When I arrived in Finland in summer 1994, the border with Russia was almost completely demilitarized. Now, two years after the second invasion of Ukraine, the border is already militarized far beyond what it was during most of the Cold War. New infrastructure and closer attention to the border signal that the future will be characterized by heightened tension (Grove 2024). This is likely to translate into a much smaller operational space for Finnish-Russian collaboration in Arctic research, encompassing all areas of cooperation. At this time, joint fieldwork, inter-institutional sharing of laboratory resources and personnel, and even sharing of data collected since the invasion, are no longer possible.

As with other international projects involving real-time data collection from field sites in Arctic Russia, the war concludes some three decades of close East-West collaboration following long-term trends, such as reindeer pasture vegetation and permafrost dynamics and the frequency, intensity, and geography of ROS events. We

3 First was the Arctic Rain on Snow Study (AROSS funded by the US National Science Foundation's Navigating the New Arctic Program. Second was the project, "Drivers and Feedbacks of Changes in Arctic Terrestrial Biodiversity (CHARTER) for which I am the project coordinator.

worked hard to establish "permanent" fences, herbivore exclosures on north-central Yamal Peninsula in summer 2017.

Fig. 5 A group picture from a field trip to the Yamal peninsula in summer 2017.

The aim was to bring quantitative data to bear on the aforementioned "overgrazing" debate. However, due first to Covid and now the War in Ukraine, we have struggled to maintain contact with our partners living in the tundra who have helped to maintain the exclosures. We have no way to know what will happen, but likely they will eventually be disassembled, and the raw materials (steel poles and wire mesh fencing) will be put to other uses in the northern tundra...

The collapse of long-term research in Yamal and the return to the era of satellite-based "espionage"?

Timo Kumpula

I had been following the news about Russian-Ukrainian relations from the fall of 2021 with a growing concern. Of course, the occupation of Crimea in 2014 and the frozen conflict in Eastern Ukraine had raised increasing doubts about the direction of development in Russia in general. Within the CHARTER project we had been trying to organize a field expedition to Central Yamal for summer 2021 but it had to be cancelled due to the COVID pandemic. Preparations for a summer 2022 fieldwork had been going on since late autumn 2021, and we had gathered a multinational and

multidisciplinary research group of 12 persons to study reindeer and climate-shrub growth-grazing interactions.

In January 2022, I became increasingly worried about the news on the growing diplomatic dispute between Ukraine and Russia. But even then, I was more worried that our expedition plans would fail again because of COVID. On Wednesday, 23 February I was sending mails to expedition participants and asked them to send copies of their passports so we could start the annual research permission process with the Yamal administration. Our plan was to send out the necessary papers for permissions early the following week. Meanwhile in the news Ukraine was in the headlines and the situation seemed to be getting tighter. Despite everything, the news on the morning of 24 February, was shocking. I would have never believed that the situation would develop into a full-scale war. Maybe in hindsight everything was clear, but I just did not want to believe that such a disaster was possible. I was paralyzed and deeply disappointed; I understood that something incredible had happened that should not have taken place again in our time.

Very soon, however, my colleagues and I realized an irreversible change in the course of our small project, and that we would not be able to carry out the work in Yamal planned for the summer of 2022. By the evening of the 24th it was clear that there would be no trips to Yamal in the near future or during the lifespan of the CHARTER project. The following week, we already agreed that we would do similar research as had been planned in Yamal, in the Finnish-Norwegian border area, where we had already worked for more than two decades. The eventual decision to suspend research in Russia came from higher up. As researchers, all we could do was to adapt to the new situation as best as we could.

However, making the change was not easy or trivial. I had visited the Nenets reindeer herders for the first time in 2004. As a doctoral researcher, I was then able to visit the Yamal tundra and experienced first-hand the tundra Nenets herding culture. In the beginning, my research focus was on the gas industry's impact on Nenets reindeer herding, in particular by its spreading infrastructure. Then the research shifted to studies of Arctic warming, greening, and the permafrost. Over almost 20 years, I made ten field trips to Yamal, each of about a month. In addition, there were several shorter trips. Over these years, I published several articles on various topics related to the impact of the oil and gas industry on vegetation, Nenets reindeer husbandry, as well as on permafrost and climate change. During these trips and scientific work, Yamal and its people had become very dear to me.

Since my youth in the 1970s I was very interested in the news and remember well when the Soviet invasion of Afghanistan shook things up in 1979. The early 1980s was a scary time for a Finnish teenager, as the Cold War and the threat of nuclear war was in the air. Then came (Mikhail) Gorbachev and the times changed for the better. In Finland, people were excited about "Gorba" (Gorbachev's Finnish nickname) and for a good reason. In Finland,, the winds of a new era also began to be felt, "Finlandiz-

ation" started to recede, and the fear of the Soviet Union diminished. Eventually the Soviet Union collapsed, and the threat of the Cold War receded. I visited Russia for the first time in 1993, as a geography student at the University of Oulu. The biology department at my university arranged a field course that focused on environment and environmental problems in Northern Russia. We traveled from Oulu to Kostamuksha – Kem – Apatity – Monchegorsk – Kirovsk – Murmansk and Rajajooseppi. The pollution damage around Monchegorsk was especially shocking.

We are in April 2024 now, and the war has been going on for more than two years. I keep following the news and still hope every day that something positive comes up. However, my naturally positive outlook has had to struggle hard to keep going. Hopefully someday, I will be able to return to the Yamal tundra, continue my research activities, and meet my old friends, whom I miss deeply.

Coping with a changing research atmosphere

As restrictions on studies in Russia and on collaboration with Russian partners were imposed, many researchers tried to cope with their ongoing projects and established relations. It became evident that funded projects were no longer able to continue, as paying for research travels or other money transfers to Russian partners became impossible. Some research ventures were able to change their study areas or focus if funding organizations allowed such changes.

The Russian attack on Ukraine has had very broad negative impacts on all fields of Arctic science, specifically because Russia covers such a large portion of the circumpolar area. Therefore, the consequences of the war are scientifically significant on a global scale, as there were already obvious research and data gaps across the vast Arctic region of Russia. Investigations of permafrost thaw, vegetation changes due to warming, and of alterations in winter snow conditions require detailed field data collection to study long-term trends. Additionally, understanding the impacts of changing conditions, such as on reindeer husbandry, would necessitate a multidisciplinary approach, including gathering experience from reindeer herders through interviews.

In my research field we often rely on remote sensing, on-site measurements, and interviews with reindeer herders (assisted by anthropologists and Russian colleagues). We have collected field data including vegetation mapping, measurements of permafrost active layer thickness, various temperature loggers, reindeer fecal counts, and dendrochronological data. Due to the new situation, it is no longer possible to collect new field material or interview local reindeer herders. Therefore, the value of the already collected data becomes even more crucial in many respects. Remote sensing-based research can still be conducted as it has always been done and without new field data. However, using field observations help verify the reliability of remote sensing image analysis.

The role of remote sensing is actually expected to increase significantly in the near future, especially in monitoring land use and climate change-related phenomena in the Russian Arctic. This is somewhat a return to the past; it can be said that one of the motivations behind the development of satellite technology and remote sensing during the Cold War era was precisely the monitoring and espionage of the opposing side. The CORONA reconnaissance satellite program initiated by the USA in the late 1950s, using so-called Keyhole satellites (KH1-4B), aimed to gather information on the Soviet Union missile capacity and other military intelligence. NASA declassified the CORONA campaign remote sensing data in the early 2000s. The CORONA data covers practically the entire European portion of the (former) Soviet Union, including Finland. These datasets provide a unique opportunity to examine environmental changes in the Russian Arctic dating back to the 1960s. Of course, we cannot talk today about "espionage" in the style of the Cold War, at least not concerning commercial satellite companies that provide highly precise resolution data from any location on the globe, as long as the subscriber pays the price.

Fig. 6 Waiting for a helicopter in Yamal. Bruce C. Forbes and Timo Kumpula with colleagues and Nenets herders near Mordy-Yakha in summer 2017.

Future environmental research in the Arctic regions of Russia will largely rely on satellite imagery. The data provided by commercial satellites, as well as open-access remote sensing data produced and distributed by entities like NASA and ESA, are used

extensively in monitoring environmental changes and other research purposes. As mentioned, new field observations are not possible anymore, so the existing datasets are extremely valuable and can be utilized for a long time. Using data from our published articles on the impact of the Bovanenkovo Gas Field on Nenets reindeer herding and environmental changes around 2010 (Forbes et al. 2009; Kumpula et al. 2010; Kumpula et al. 2011; Kumpula et al. 2012) and NASA Landsat 8 and ESA's Sentinel-2 open access satellite imagery, we can monitor the development and expansion of the gas field, for example towards Kharasavei. Field materials collected nearly 20 years ago, along with the photographs and experience in interpreting satellite images from the gas field area, enable a reliable analysis and interpretation of new satellite image series.

Conclusions

During the first half of 2022, when the war started, we found it hard to work and concentrate on our research in the current geopolitical situation. It is still difficult to believe that war remains a new reality of our lives and a factor dictating the political situation across the world. We truly hope that eventually it will end, and we will be able to travel to Russia to continue our studies, even if this is not to happen soon and certainly not within the framework of the current CHARTER project on which we are working. However, we would like to believe that collective knowledge and education, based on many years of joint experience working together, will help us find the right path in this situation of uncertainty.

While we believe that the restrictions imposed by Western research universities and funding institutions to limit contacts with our Russian counterparts cannot be ignored, we strive to maintain personal contact with our Russian colleagues. For Finnish and German universities and nationally funded research, as well as for projects funded by the EU, regulations forbid the use and publication of data collected after February 2022. Fortunately, we can rely on previously existing data that can be officially used for scientific publications. Of course, in practice such datasets in both the social and natural sciences are difficult, if not impossible, to parse so precisely.

At the same time, one cannot ignore the fact that Russia's landmass comprises fully half of circumpolar Arctic territories. For Arctic scientists across many disciplines, Russia is and will remain a deeply ingrained part of our shared universe. Thus, in a situation of rapid global change, it is, in our view, an untenable artifice to treat the Russian Arctic *sensu latu* as a permanently "inaccessible land". Since the time of Mikhail Gorbachev's Murmansk speech, nearly forty years ago, the Russian Arctic has only increased in importance as one of the main regions of interest for the global scientific community. The past decades of ever closer cooperation between East and West have enabled the development of a highly collaborative international community of Arctic scientists. We are far stronger together than when we were divided during the Cold War, which we must endeavor to maintain during this new period of journeys "on hold."

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Figures

1 On the wall of one of the abandoned bunkers of the Russian army reads "Thank you, Gorby" (German nickname for Mikhail Gorbachev), Fürstenberg, Germany. Photo: Roza Laptander, 2022.

2 Typical *vezdekhod*, or tracked vehicle in use all across Arctic Russia since the 1960's. The image was taken near the Bovanenkovo Gas Field during fieldwork with long-distance Nenets nomadic herders on Yamal Peninsula by Florian Stammler and Bruce Forbes. Photo: Bruce C. Forbes, 2005.

3 Yamal tundra Nenets migrating between summer camps near the Obskaya-Bovanenkovo railway. Roza Laptander is near the front of the caravan. Photo: Bruce C. Forbes, Yuribei River, June 2010.

4 Yamal tundra Nenets husband and wife herders detail the dynamics of drying wetlands and recently drained lakes on north-central Yamal Peninsula. Others from left are Anna Skarin (back to camera), Roza Laptander and Nina Meschtyb. Photo by Bruce C. Forbes, Mordy-Yakha River, July 2015.

5 A group picture from a field trip to the Yamal peninsula in summer 2017. Photo: Timo Kumpula, 2017.

6 Waiting for a helicopter in Yamal. Bruce Forbes and Timo Kumpula with colleagues and Nenets herders near Mordy-Yakha in summer 2017. Photo: Roza Laptander, 2017.