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MURMANSK REGIONAL BRANCH

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FEDERAL RESEARCH CENTRE

MURMANSK MARINE BIOLOGICAL INSTITUTE RAS

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Security of arctic frontiers: ecology, history, images of the future

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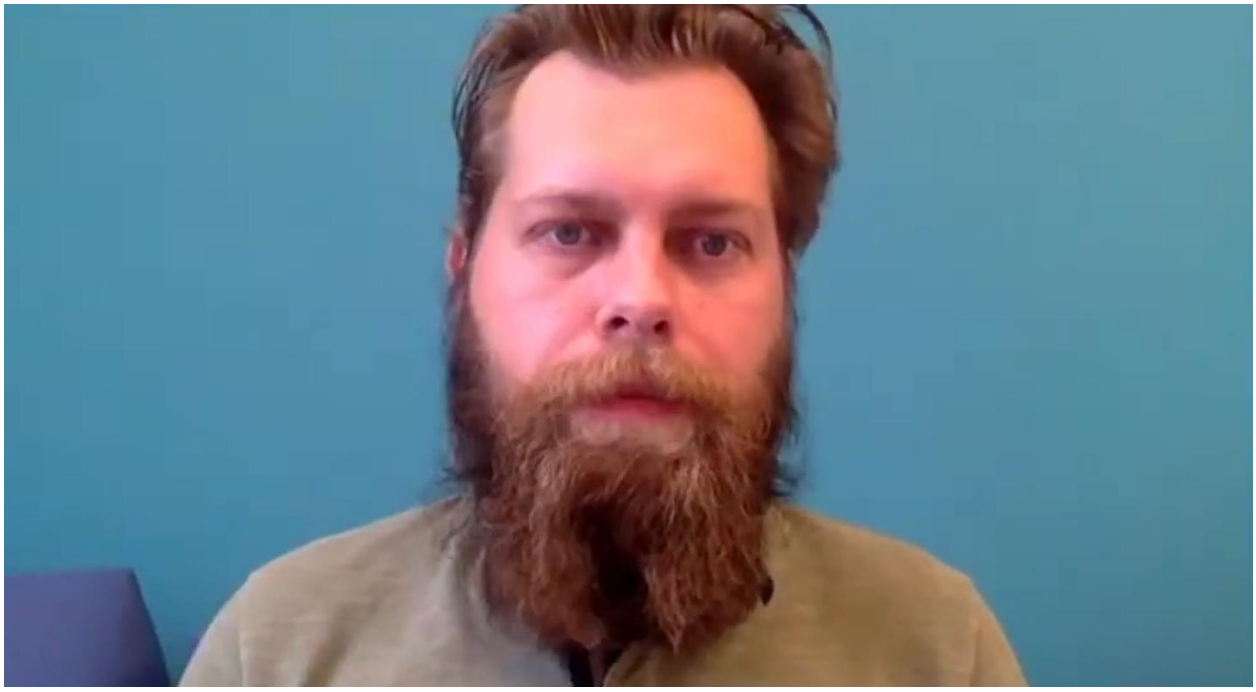
SECTION I. THE ARCTIC – A REGION OF SUSTAINABLE DEVELOPMENT, DIALOGUE AND COOPERATION

The role of science in the exploration and development of the Arctic

Report. Kola Science Center of the Russian Academy of Sciences: more than 90 years of continuous research of polar territories

Analyst of the Scientific and Organizational Department of the KSC RAS Grigory Ilyin



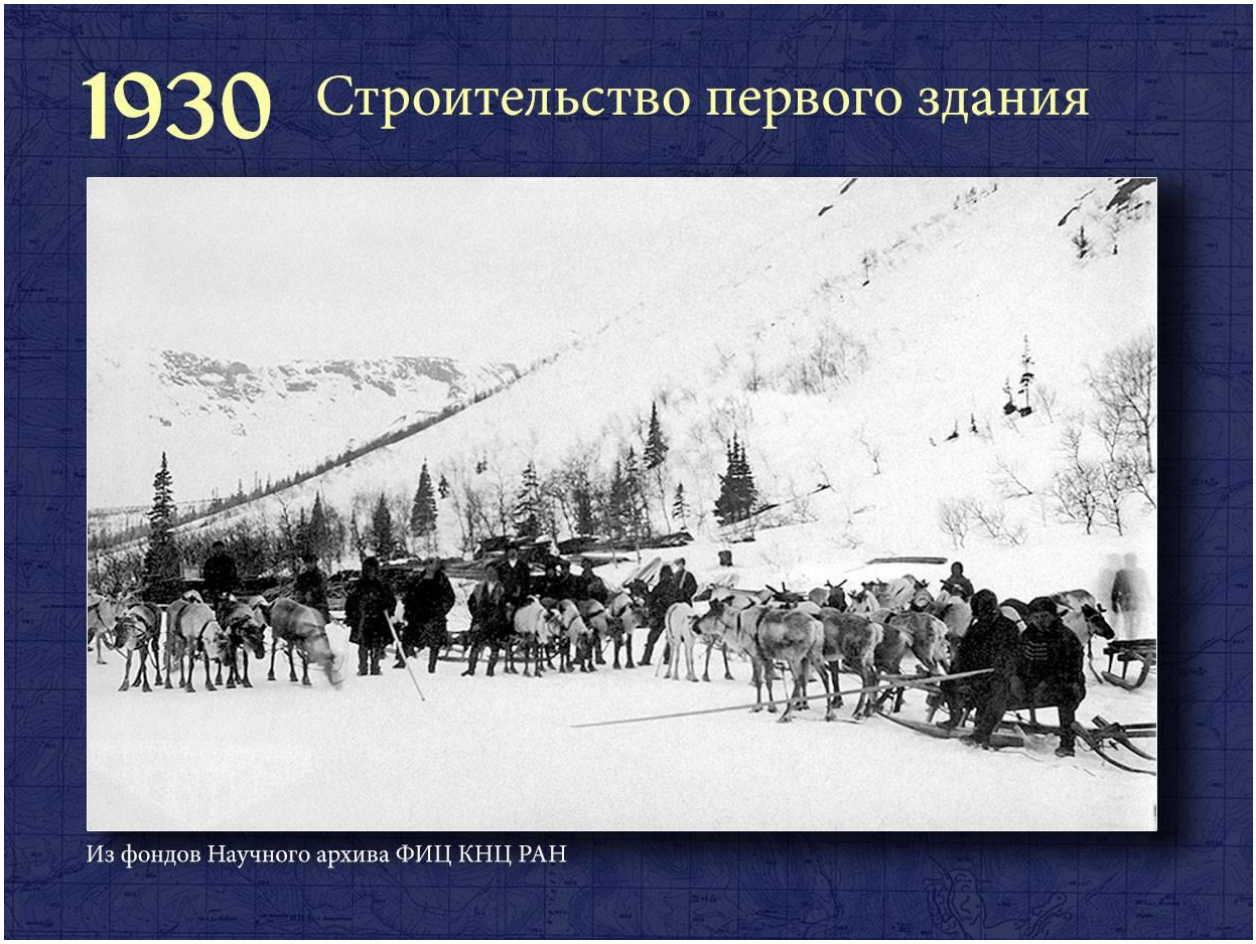
The history of the scientific station, which opened in 1930, began 10 years before that, when the Northern Scientific and Fishing Expedition was created. As part of this expedition, in June 1920, a special train was sent along the newly built Murmansk Railway with a commission to identify the productive forces of the North. This commission included high-ranking people of that time: the President of the Russian Academy of Sciences A.P. Karpinsky, the Chairman of the Russian Geographical Society Y.M. Shokalsky, the young academician A.E. Fersman.

During the long train stopping at the Imandra station in the area of the Mannepahk mountain, the participants went on a short excursion up that mountain. By coincidence, there, on the border of forest and tundra, a rather interesting vein with rare minerals was found. Fersman, of course, was interested. Over the next few years, several expeditions were conducted, exploring both the Khibiny tundra and the neighboring Lovozero tundra. More than 2000 km of routes were covered, more than 4 tons of samples were collected. And, of course, the results impressed both Fersman and his team. In addition to the rare minerals and mineral veins they found, significant, epoch-making discoveries were also made. For example, mineral apatite, which has been mined in Khibiny for 90 years. The apatite was first found in August 1921 in the area of the Vortkeuaive pass. By 1926, primary deposit of apatite-nepheline ores were discovered on the Rasvumchorr plateau. Application poles were installed, technological sampling of apatite-nepheline ore was carried out, and they showed that the quality was very high. By 1929 - events were progressing rapidly – a team of geologists began working on the Kukisvumchorr mountain, and almost immediately, at the end of the year, the first apatite mine was launched.

In 1930 the construction of a scientific station began on the shore of Maly Vudyavr Lake. Even during the first expeditions, Fersman dreamed of arranging houses in the Khibiny, so that it would be easier for the scientists to hide from the bad weather, get warm, look through the collected materials. But at that time, the

leadership of the Academy of Sciences and the leadership of the country did not take these ideas seriously. However, when the largest deposits of apatite-nepheline ores were discovered and the region began developing quickly, various organizations, including the Academy of Sciences and the Colonization Department of the Murmansk Railway allocated funds for the construction of the first house for scientists in Khibiny. It was a completely new experience, a new approach to the organization of science in the country – the scientific center was built where the object of research was located, and not in a large center like Leningrad or Moscow. This, of course, caused a lot of difficulties, but they were quickly solved.

Building materials for the first house on the shore of the Maly Vudyavr Lake, in the heart of the Khibiny Mountains, were brought on reindeer through the snow. This is five kilometers further than the city of Khibinogorsk, modern Kirovsk, and this is where the real wild mountains begin. This place still isn't very developed and there aren't many roads.



The place was chosen in advance, back in the fall of 1929. This is where during the first expedition Fersman found the Sami vezha, a simple building of the indigenous people, which was used in the summer season for fishing on the Maly Vudyavr Lake. The academician liked the lake and the valley very much, and the construction of a new scientific station began where Vezha once stood.

Construction lasted several months, and in mid-July 1930 the building was completed. On July 19, the first conference was held there, which ended on July 20 with the grand opening of the scientific station that was then called the Khibiny Mountain Station. Fersman named it "Tietta", which can be translated from Finnish as "knowledge", "school". The Sami indigenous population also used this word to denote these concepts.

Very quickly, by October of the same year, the Academy of Sciences accepted the Khibiy Mountain Station, and it became part of the USSR Academy of Sciences.

Fersman invited various specialists to work at the station.They had to move from Leningrad in order to work here, in the Khibiny, in these harsh polar conditions, and to make constant observations. One of these specialists was Vladimir Fridolin, who was a zoologist, and also headed the laboratory for fighting blood-sucking insects, which greatly distracted geologists from work, and in the summer field seasons interfered with the work of various detachments. The well-known botanist Sergey Ganeshin was also invited, but unfortunately, he tragically died on Vudyavrchorr Mountain at the end of the summer of 1930. His work was subsequently continued by another young botanist, Nikolai Avrorin. Thus, the Polar-Alpine Botanical Garden was born. It is also celebrating its 90th anniversary this year.

In 1931, construction of the main building began next to the first house. A small standard one-story building could not accommodate neither serious laboratories, nor many scientists. Over the next two years, the construction of the main large wooden building with unique architecture was carried out, it was completed by April 1932.

In early April, the first Polar Scientific Conference began in Khibinogorsk. It was attended by many famous scientists. As part of this conference, on April 10, 1932, the main building of the Khibiny Mountain Station was opened.

Fersman recalled that the station looked like a big ship among the ice and snow of the Khibiny Mountains. Indeed, such a beautiful building fits well into a picturesque mountain valley. This building had three floors. In addition to the laboratories, there were rooms where employees could live with their families. In addition, there was a weather station for conducting observations. Academician Fersman also donated his extensive library of 10 thousand volumes to the Mountain Station so that scientists working at the station could have at hand a large amount of the most diverse information about the northern regions of our planet.

A lot of interesting facts about life of the scientific station of the period when the main building was opened can be found in the memoirs of Evgenia Khalezova. Her memoirs, where she describes her childhood on Tietta, were published by the Kola Science Center last year. In 1932, her mother, Irina Borneman-Starynkevich, was personally invited by Fersman to work for Tietta as a chemist. A real chemical laboratory was organized at Tietta, equipped with the latest technology of that time. It was headed by Irina Borneman-Starynkevich. She conducted experiments with newly discovered minerals, determined their chemical composition. Irina Borneman-Starynkevich lived at the station with two children and a nanny for several years without leaving. Thanks to the memoirs of her daughter, Evgenia Khalezova, we can now learn a lot of interesting details about her life and about the lives of other employees.

Elena Kessler, a regular participant of Fersman's expeditions of the 20s, who also was his relative, was in charge of the station, the entire household, and all the support. She joined the expeditions back in 1921 and for many years was engaged in providing expeditions with various equipment, food, etc. Starting in 1930, she became in charge of all the provision at the station, the accommodation of scientists, food supply.

Life on the Tietta was very active. In the summer, a large number of field units came, including geologists, zoologists, botanists. The research was conducted very comprehensively. In winter, chemists and meteorologists remained at the station - those were the specialists whose work required constant participation, constant observation.

By that time, the research had developed very widely, and was no longer limited to the Khibiny mountains, neighboring areas were also explored: Monche tundra, Lovozero tundra, distant Kejvy. Therefore, since the research was already carried out on the territory of almost the entire Kola Peninsula, in 1934 the Khibiny Mountain Station was renamed and became the Kola base of the Academy of Sciences.

After a while, Antonina Orangireeva became the head of the station and began to keep the archive. Thanks to her efforts, we can now study page by page the story

of the creation and life of Tietta of that time. It has now become a huge full-fledged scientific archive of the Kola Science Center. The number of employees also grew. From the memoirs of Evgenia Khalezova, we can learn that on Tietta zoologist Vladimir Fridolin, who was engaged in the study of blood-sucking insects, was called the "mosquito king" because his laboratory was all filled with aquariums and jars with mosquitoes. As a result of his efforts, he even found exemplary ways to combat the mosquitoes by draining swamps and breeding dragonflies.

Fersman saw his station not only as a center of science, he wrote about this, for example, in the "Nature" magazine. He thought that Tietta station should not be limited only to science and its application to the improvement of the Kola Peninsula. He also saw it as a tourism center – he wanted to use it for excursions, for popularizing the knowledge and experience that Tietta employees received. That is why the first mineralogical museum opened inside the Tietta. At that time it looked like samples laid out in boxes on tables. Tourists who came to Khibinogorsk could go to the station and take a real, full-fledged excursion, get acquainted with the nature of this region.

Life at the station went on, by the end of the 30s a whole small village was formed, with more families living there. They even celebrated the New Year – a large New Year tree was placed inside the station, in the hall two floors high.

Evgenia Khalezova remembers how children and employees made garlands out of colored paper. There was even a bus connection with the city of Kirovsk and a small grocery store next to the station. The development as a whole went quickly. But, unfortunately, the Great Patriotic War interrupted this development. In 1941, the building remained empty. Employees, laboratories and the library were evacuated to Syktyvkar. The empty building, apparently, was not properly guarded, and at some point, for some unknown reason, a fire broke out at the station and very quickly destroyed the wooden buildings. There was no trace left of the large, beautiful building of the house of scientists. After the war, almost immediately after the declaration of victory, on May 20, 1945, its creator, academician Fersman, also died.

In the summer of 1945, employees of Tietta had to continue working without their leader.

The new house was allocated first in the working village of Kukisvumchorr, where ore was mined and where the first apatite mine was opened. Subsequently, by the 1960s, the Kola Branch of the USSR Academy of Sciences moved to a specially built campus in the future city of Apatity, about 30 km from the place where Tietta was originally located.

Report. Kola Science Center of the Russian Academy of Sciences: more than 90 years of continuous research of polar territories

First Deputy Chairman of the KSC RAS Vladimir Dyadik

Grigory told us about the main milestones of the Kola Science Center. I would like to briefly repeat these main milestones. From 1930 to 1934 there was the Khibiny Mountain Station of the USSR Academy of Sciences, then in 1934 it was reorganized into the Kola Base of the USSR Academy of Sciences and remained in this status until 1949. Further, until the end of the 1980s, we worked in the legal status of the Kola Branch of the USSR Academy of Sciences, then we became the Kola Science Center of the USSR Academy of Sciences, later the Kola Science Center of the Russian Academy of Sciences, and in 2017 we reconvened into a single Federal Research Center and are now called the Federal Research Center "Kola Science Center of the Russian Academy of Sciences".

Who are we now? First of all, I would like to state that the responsibility to be the only Federal Research Center of the Russian Academy of Sciences located beyond the Arctic Circle, which we assumed in the 1930s of the last century, remains with us. The Kola Science Center is the only FRC, an institution of this scale, located beyond the Arctic Circle.

It feels good to state that this fact is realized and perceived by the leadership of the Russian Academy of Sciences. The President of the Russian Academy of Sciences, A. Sergeev, noted that if we are talking about science in the Arctic, in the scientific community, in the community of professionals, the Kola Science Center remains extremely reputable.

КОЛЬСКИЙ НАУЧНЫЙ ЦЕНТР РАН

АРКТИЧЕСКАЯ НАУКА

ПРЕЗИДЕНТ РОССИЙСКОЙ АКАДЕМИИ НАУК АКАД. А.М. СЕРГЕЕВ

https://tass.ru/interviews/6350656

— Какие российские институты сегодня задают тон в исследованиях Арктики?

— Я бы не хотел кого-то выделять, но могу сказать, что у нас десятки институтов, расположенных не только в северной, северо-западной части или в северо-восточной части России, ведут исследования в этой области. У нас десятки университетов занимаются этой проблематикой. **Конечно, если говорить в целом, это институты, прежде всего, Кольского научного центра**, питерские институты, Сибирского отделения Российской академии наук. Отдельно стоит сказать о якутских институтах. В последнее время со стороны наших якутских коллег есть большое желание развивать исследования Арктики.

Today we have ten separate structural divisions and branches. The total number of employees is more than 1200 people. We have more than 460 researchers, 57 doctors of sciences, 222 candidates of sciences, and a very significant proportion of young researchers under the age of 39 – 177 people. The last indicator is very important for us, we try to attract young people to our work.

The main mission of the Kola Science Center is to conduct scientific research focused on achieving the strategic priorities of sustainable development and security in the Arctic. Our main profile are, of course, the Earth sciences. It is no exaggeration to say that almost the entire mining, mining and chemical industry of the Russian, and before that the Soviet Arctic was built, if not entirely on the developments of scientists of the Kola branch of the Academy of Sciences, but at least with their significant use. We continue to bear this responsibility today. The Kola Science Center has a large number of contracts with industrial enterprises. In addition to the traditional geology and mining, a whole layer of modern research areas is developing and gaining relevance. In particular, these are ecology, information technology, economics, history and culture.

Now I will briefly tell you about each of the institutes of the Kola Science Center.

The Geological Institute is the oldest institute of the Kola Science Center. On October 28, together with the 90th anniversary of the Kola Science Center, we will celebrate the 70th anniversary of the Geological Institute. To date, research is our scientific "mainstream", with a good level of scientometrics, with serious scientific

achievements, both literally scientific, in particular, in the field of mineralogy (more than 250 minerals were first described here), and practical, primarily related to the development of our minerals.

For obvious reasons, the Mining Institute plays a huge role in the current development of the Kola Science Center. Our colleagues are developing a wide range of research areas, first of all, technologies for extraction, enrichment, processing of minerals, both ore and non-ore, located on the territory of the Kola Peninsula, but also in Russia and abroad. The developments are actively used by our main holdings, which now form the basis of the economy of the Murmansk region: PhosAgro, EuroChem, Acron, Severstal, Norilsk Nickel. The Mining Institute has business relations with all these enterprises, their developments are in demand in production. In addition to the already actively used, already implemented developments, there are also promising, interesting, in some way exotic developments that may be used in the near future. In particular, developments on the creation of low-power underground stations. I would like to pay special attention to the work of the Mining Institute in the field of geodynamic safety. All our mining companies use these developments.

I.V. Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials is probably the main scientific institution that specializes in the processing of the raw materials extracted here. The Institute has a whole set of serious developments, which were initiated back in Soviet times and are still

relevant now. These include the study of pigments based on mineral raw materials of the Kola Peninsula, new extraction technologies, the cultivation of niobate and lithium crystals for use as raw materials for high-tech laser optics.

The Nanomaterials Research Center is a fairly young, but progressive and promising division in our structure. It was created not so long ago, a few years ago. This division was created at the intersection of sciences, mineralogy and materials science. The main task is to identify natural materials, first of all, natural minerals with useful properties, and then reproduce them in laboratories. One of their most significant developments is the use of materials that are a natural sorbent of radionuclides for the safe handling of liquid radioactive waste in the Arctic zone of the Russian Federation.

The Institute of North Industrial Ecology Problems also has a whole range of developments aimed at minimizing environmental damage from industrial enterprises. Our colleagues have something to be proud of. The developments of the Institute are widely used by all enterprises of the mining sector of the Kola Peninsula.

The Center of Humanitarian Problems of the Barents Region is a unique research center and museum at the same time. It has collected cultural and historical evidence of the development of our region. The Center has a unique collection. I think it has a huge development potential. One of the stages is the development of the museum, which is a part of the center, and, of course, the significance of its

collection is not limited to the Russian audience, most of its exhibits will be of interest to the widest public.

Luzin Institute for Economic Studies is also a fairly young division of the Kola Science Center. The research is carried out in two main areas: economic calculations regarding the enrichment, extraction and processing of minerals, as well as a whole block of socio-economic research for a variety of fields of use.

Institute for Informatics and Mathematical Modelling of Technological Processes is also quite young. Very serious and interesting topics are being developed there: modeling of socio-economic systems, effective modeling, development of decision support systems for various levels of management. Now a new stage of development has begun – we are trying to actively interact with large manufacturing enterprises in the field of logistics and supply of basic types of cargo.

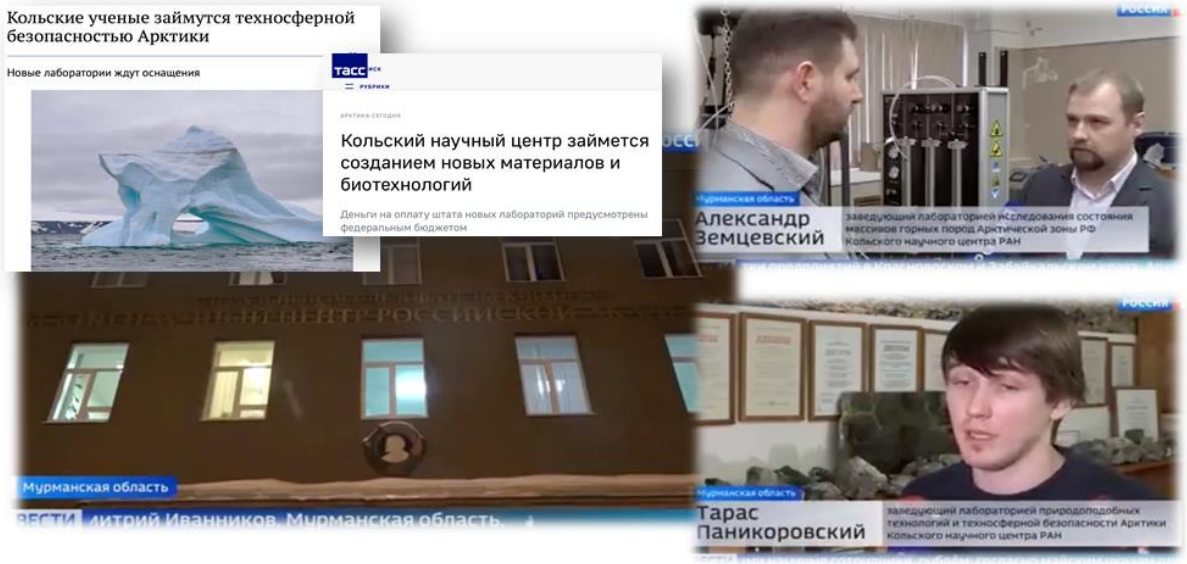
Institute for Physical and Technological Problems of Energy in the North focuses on the problems of industrial safety and the protection of large energy centers. Its research in this area is unique. With climate change, threats are moving to the North, to where they did not exist before, and farms and manufacturing enterprises are growing. The problems are becoming very acute, the precedents that arise cause great damage. The institute works with these problems.

Research Center for Biomedical Problems of Human Adaptation in the Arctic is mainly engaged in the study of human adaptation in the Arctic, the development of new technologies focused on the peculiarities of human habitation in extreme Arctic conditions.

I have tried to briefly describe the main directions of our activities today and the main developments that we have in each of these areas. Once again, I want to draw attention to the fact that we are trying not to lose the potential that we have, and to increase it.

КОЛЬСКИЙ НАУЧНЫЙ ЦЕНТР РАН

НОВЫЕ ЛАБОРАТОРИИ: НАЦ. ПРОЕКТ «НАУКА»



Our main driving force, along with many years of experience, is the youth, we are actively engaged in programs to create new youth laboratories. We believe that these wonderful young people are our future.

Expert comment

Manager for Russia & Eastern Europe at Akvaplan-niva Alexey Bambulyak

Many thanks for the very interesting reports. It was as if I got acquainted anew with the history of the Kola Science Center, with the history of the development of this territory, in particular, the development of Apatity. It is difficult to add anything here, because the reports were very detailed. For my part, I can add on behalf of the Akvalpan-niva company that we are a much younger research organization compared to the Kola Science Center, but from the first days we have been interested in developing cooperation and, of course, we are very glad that both the institutes of the Kola Science Center and the Russian Academy of Sciences treat us as equals in this cooperation, allow us to learn from them and even share our experience. Despite the times, that can be both easy and quite difficult, it is very important to stay in touch and develop the scientific components of the agenda that exists today and is aimed precisely at ensuring the security of the Arctic borders, no matter how they are drawn on the map.

Questions of peace, stability and sustainable international development in the Arctic

Report. Conflicts and ways to resolve them, the search for consensus in the name of future peace and stability

Head of Arctic Development AS Arild Vollan

I would like to congratulate and thank the Murmansk Regional Branch of the Russian Geographical Society that took the initiative to hold a conference dedicated to the development of cooperation in the Arctic and related challenges. This conference is important for everyone who knows that the peoples of the North have a lot in common. We have common climate problems and common potential in our rich natural resources. Since the dawn of time, we have learned to cooperate, to trust each other in order to survive in the Arctic. It should stay like that in the future. We have to stick together.

This week, the new Norwegian Foreign Minister Anniken Witfeldt and Russian Foreign Minister Sergey Lavrov met for the first time at a meeting in the Barents Regional Council.

According to the website of the Russian Foreign Ministry, the Russian Foreign Minister arrived in Tromsø with the best intentions: "The Barents Council is perhaps the most successful instrument of multilateral cooperation in Northern Europe, as it demonstrates its immunity to the constant change of political conditions."

In addition, Norway and Russia have for many years agreed on the need to manage marine resources in the Far North together, and that such joint management should be long-term and sustainable. It is necessary to preserve the world's largest population of cod, as well as other species in the Barents Sea. The Norwegian-Russian agreement on fishing is the most important and largest bilateral fishing agreement concluded by Norway.

Foreign Minister Sergey Lavrov made a statement while in Tromsø: "We have no relations with NATO, but we have relations with Norway, including the field of security." Thus, cooperation in the Barents region continues to develop, although most of the relations between Russia and the West are now "frozen", primarily because of the United States. A country that seems to always have enemies.

During the Cold War, the main enemy of the United States was Russia. Now China has also become an enemy of the United States. I am talking about this because the geopolitical situation inevitably affects what is happening in the Far North.

During the Arctic Circle 2021 conference, which was recently held in Reykjavik, delegates from fifty countries gathered to talk about the people living here. They talked about peaceful projects in the Arctic. The fact that military activity is increasing in the this area was practically not discussed at the conference attended by more than 1,300 delegates.

It should be noted that the EU, with its new Arctic Strategy, is turning from a relatively insignificant participant, respecting businesses and people in the North, into an important player in the field of climate policy. But we, the inhabitants of the North, cannot take responsibility for the EU's climate policy. In the past, the EU has stressed that it cares about the people of the North, that job opportunities should be created, that the Arctic is not a museum. It is obvious that the EU has changed its point of view. In accordance with the new EU strategy, all industries related to oil and gas in the Far North will eventually cease to function.

Simultaneously with the desire to stop oil and gas production in the Arctic, the EU is now trying to push Russia to increase gas production - to meet the needs of Europe. The reason for this is the lack of an EU energy policy. The current crisis with excessively high electricity prices in Europe has come as a shock to the EU. What does this indicate? Does one of us know what the other is doing? Maybe not.

But now there is already a background affecting the situation not only in the EU, but also in the Barents region. These are the efforts of the United States to unleash a new Cold War. As I said at the beginning: during the Cold War, the main enemy of the United States was Russia. Now China has also become an enemy of the United States. Over the past 5 years, the United States has spent $1.5 billion to implement its new Cold War program against China. The money was transferred by the US Congress and used to discredit China in all areas.

I refer to open American sources: new American anti-Chinese laws: the Strategic Competition Act of 2021, the US Innovation and Competition Act of 2021, as well as the "Ensuring American Global Leadership and Engagement" Act.

In recent years, there have been noticeable changes in the way Western states, scientific researchers and the media view China. In the last couple of years, we have especially often observed the propaganda of a systematic negative attitude bordering on demonization. And, according to reliable polls, this has caused a significant deterioration in the attitude towards China among residents of many countries, which has reached "historical heights".

As stated by peace researcher Johan Galtung, "If truth is the first victim of war, complexity is the second." This is a good description of the American strategy for the deployment of a new Cold War. We are witnessing an attempt to discredit the fact that the world is complex. What the United States is working on is a typical American division of the world into two parts: "bad guys" against "good guys", "them" against "us". The West is against the rest of the world - without any desire to understand the problems or accept the challenges that the modern world is facing. We are losing both scientific and social perspective.

Moreover, the reduction in the number of evidence-based reports and media analysis has opened the door to a flood of false information reports, with short statements without content or explanation. There will be more and more such content, including in relation to the Arctic.

I am deeply concerned about the long-term consequences of what we are seeing now. The media no longer seems to be asking critical questions to those in power. Few sources are used, the facts are not always verified. Politicians, the media and regular people will be manipulated to make them believe in the need for a new Cold War against China. The United States is also involving Russia in its new Cold War. From an American's point of view, China and Russia are enemies of the rest of the world.

At the moment, NATO has expanded the scope of its activities. The organization now considers not only Russia to be the main enemy. China is now also included in the new NATO strategy.

The term "military-industrial complex" (MIC) describes the relationship between the military and defense industries of the country that influence public policy. In the United States, the military-industrial complex has acquired an excessively strong political influence. The United States is building more and more military bases. Evenes Airport and the Ramsund Naval Base in northern Norway have become new US military bases. At the same time, Tromsø became a supply base for American nuclear submarines. Thus, we are again experiencing the militarization of the Barents region, and no one in the North is asked for consent.

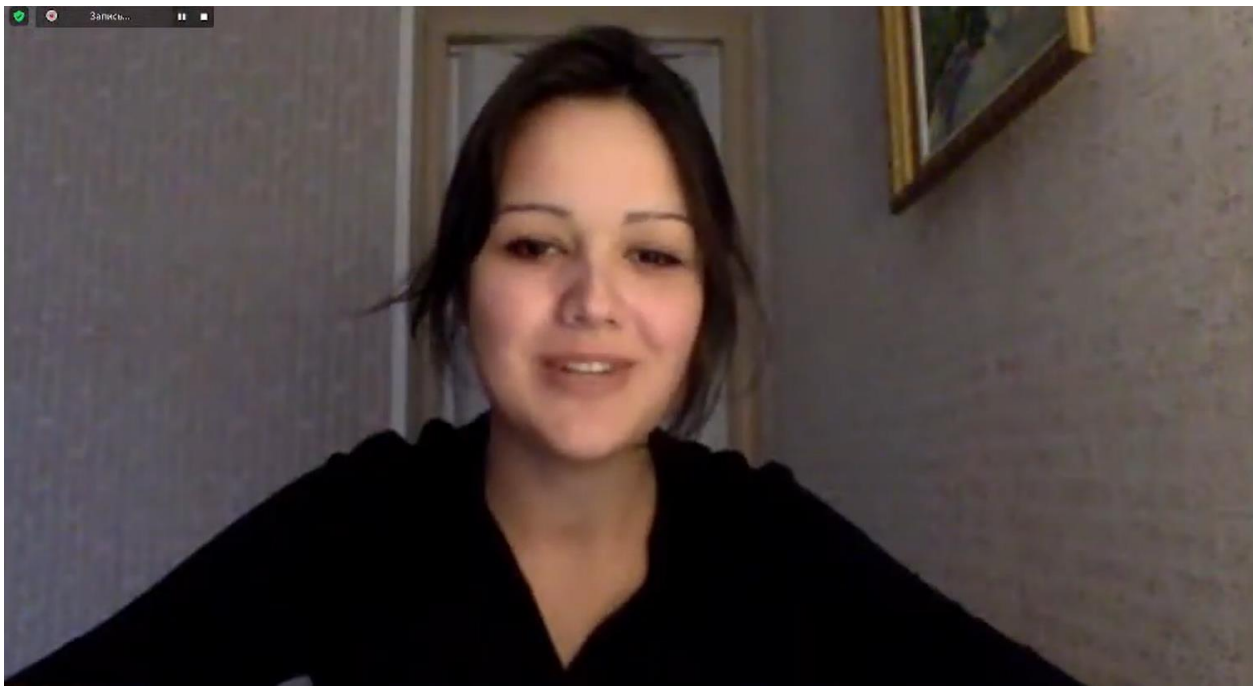
For all of us, the common goal is to preserve the Barents cooperation. There are many dangers. That is why we must protect our partnerships. Since its beginning in 1993 (by the Kirkenes Declaration on Cooperation), our cooperation has contributed to the strengthening of trust and constructive joint work of the Northern countries aimed at achieving common goals and solving common problems. Barents cooperation has two supporting elements - state cooperation (Barents Euro-Arctic Council) and regional cooperation (Regional Council). This is a unique structure.

I agree with Foreign Minister Sergey Lavrov: the Barents Council is a very successful format of multinational cooperation.

Our task will be to prevent anyone from destroying our cooperation. The geopolitical situation in the world is unpredictable, and, as I think, in the future it will be largely characterized by the "Make America great again" motto.

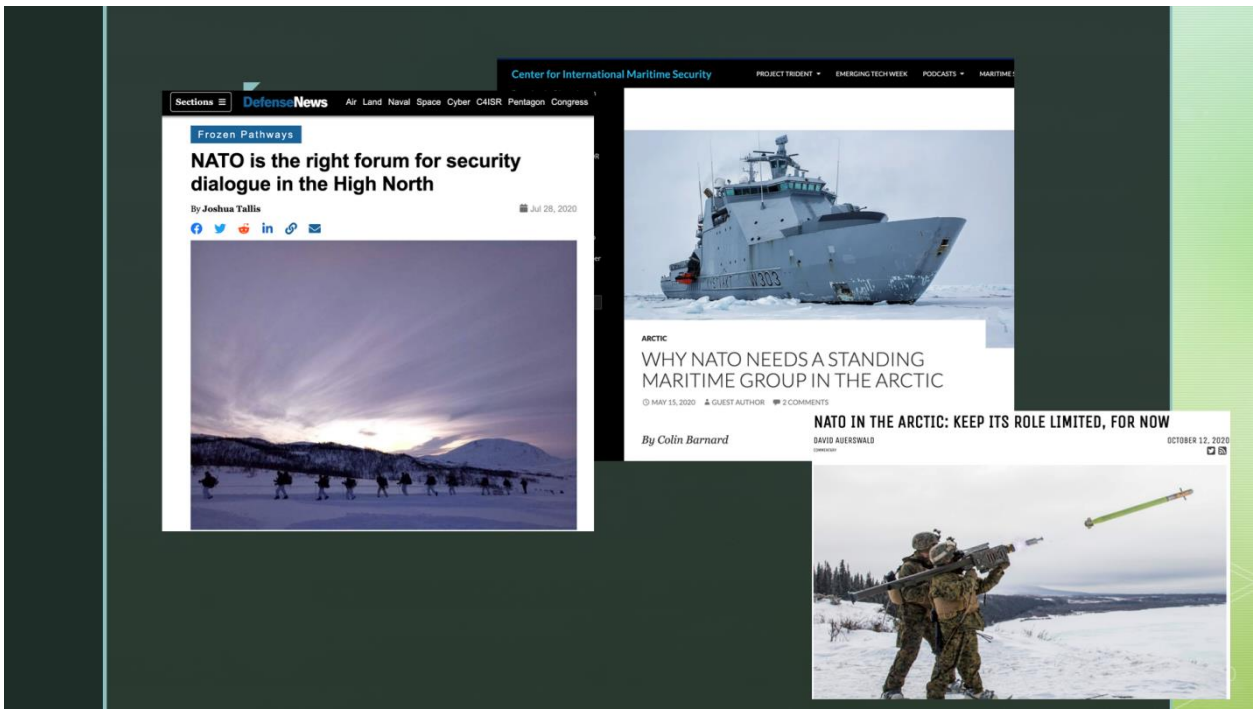
Expert comment

St. Petersburg State University postgraduate student (International Relations and World Politics) Ekaterina Serova



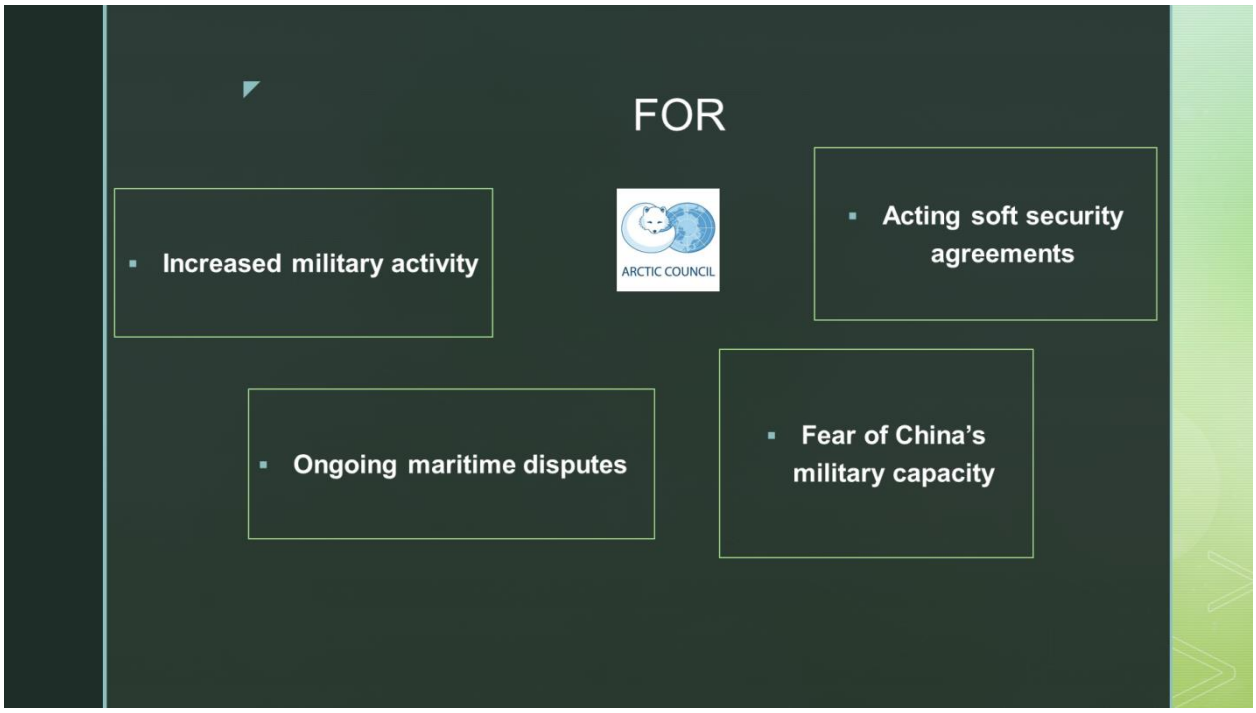
Thank you very much for inviting me, I'm really glad to join the meeting and proceed with discussion of security matters. Thank you, Arild for your insightful presentation regarding the peace situation in the Arctic and why security matters, and how the American policy divides us rather than unites. It's a very strong argument.

Some people argue for including hard security in the Arctic Council agenda, others say that the hard security issues should stay out of the Council. This is an extremely important topic for discussion. We have the opinion presented by the academia and the media. There is an idea in the media that there is going to be a war or a conflict in the Arctic, while in the academia it is still being discussed whether or not hard security is a relevant topic for the Arctic Council. I took some examples from the media regarding the uneasy relations between Moscow and Washington which are going to lead to a dangerous path. Arild also mentioned in his speech that media is biased, that is extremely true. One of the examples I found is that, for instance, is an article saying that NATO should take the lead in Northern security affairs. Another one is that NATO needs a standing maritime group in the Arctic.



I do believe that NATO is not an appropriate place to discuss Arctic issues. I would rather stand for analyzing national endeavors of the states for Arctic security.

Let us discuss the arguments for the inclusion of hard security in the agenda of the Arctic Council.



Firstly, the scale of military activity is now significantly increasing, it is reaching an unprecedented level. Since the Cold War, we are now witnessing almost the strongest increase in the level of military activity. For example, last year, when the United States and Great Britain sent their ships to the Barents Sea and operated

almost on the territory of the Russian Federation. We can see that in the northern regions, including off the coast of Alaska, the military presence is increasing. In addition, it is necessary to pay attention to the maritime problems and conflicts. For example, current disputes over territories. The United States does not have the same rights as other players in the northern regions, they do not have a say in some issues. For example, they cannot extend their Arctic shelf up to 150 miles. Then we have the disputes over the Bering sea Today Russia and the US have overlapping areas of the extended continental shelf. We don't only have disputes between Russia and the US, we also have disputes between Russia and Norway, between Canada and US.

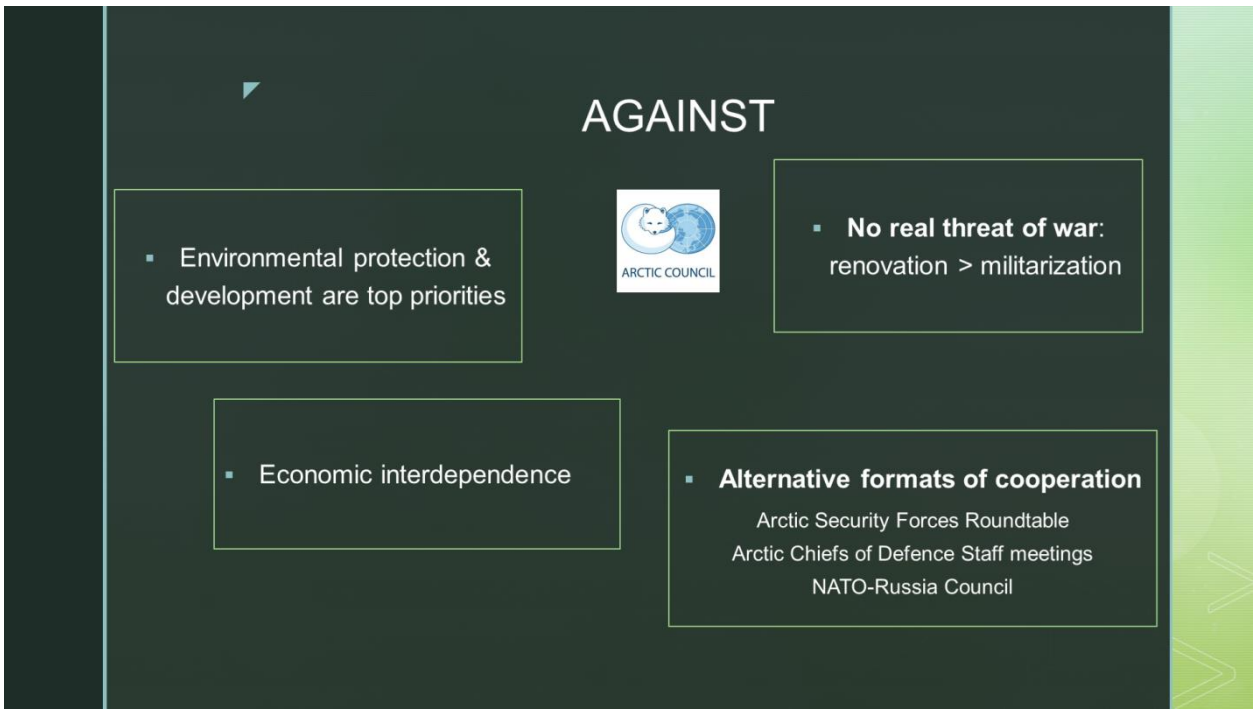
The third point I would like to draw your attention to is the fear of Chinese military incursion into the Arctic. So far I would say that there is no clear China's military interest in the Arctic, rather economic interest, but not deliberate military interest. Today China finds the Arctic as a global region where the access should be opened for all. However, the Arctic eight resembles a club with limited access, this is a contrast to China's policy in the Arctic.

Then I'd like to make some notes about China's Arctic investment policy. The largest acquisitions in some of the countries of the Northern Europe are by China, mainly these are the acquisitions in the automated industry.

Maybe it's high time for the Arctic eight to come together and discuss what we can do to make the situation in the Arctic more peaceful and stable.

The point I'd like to draw attention to is soft security. Another reason why hard security may be included in the Arctic Council is because soft security has been successfully negotiated in the Arctic Council. There are agreements on search and rescue operations, on environmental cooperation and pollution management. And perhaps in the spirit of the Arctic cooperation we could also discuss hard security concerns. I hope I've managed to provide a consistent viewpoint on why hard security issues may be included in the Arctic Council.

There are also arguments against inclusion of the hard security in the Arctic Council.



First of all, we have to pay attention to the environmental problems. It is because the Arctic Council has always been about environment. The Arctic environmental protection strategy was adopted in 1991. Apparently, environmental protection was Finland's first priority during its Chairmanship. Also, environmental protection is one of the priorities of the Arctic Council Strategic Plan that has been adopted recently. And it is also one of the most important aspects of the Russian Chairmanship for 2021-2023. Still, the Arctic Council has never discussed hard security, defense policy, military operations. Then let us talk about the economic interdependence. We have links and relations between the Arctic states, trade, environmental cooperation, research. It's an economic boom that should not be undermined by the hard security concerns. Let us discuss the alternative formats of cooperation. The Arctic Security Forces Roundtable, Arctic Chiefs Of Defense Staff Meetings, NATO-Russia Council. However, Russia is not always included in the discussion. Actually, I do not always agree with the decisions of the Russian political elite, but I do agree with the Russian government that Russia should be included in the discussions of the hard security issues, simply because it possesses the greatest amount of territory in the Arctic. And the last point is that there is no real threat of war. Of course, some military facilities in the Arctic are being renovated. States don't want to lose their capacities, that is why they continue to renovate the existing military facilities. However, we don't deal with new facilities beings built right now, just the renovation of the existing ones.

Expert comment

Russian Chairmanship in the Arctic Council in 2021-2023 Youth Envoy for International Cooperation in the Arctic Mikhail Uksusov

Thank you for inviting me to participate in this conference. I will try to be as brief as possible and present the general picture on the role of the Arctic Council and, in particular, the youth dimension within this organization in terms of ensuring stability and sustainable international development in the Arctic. Youth is an integral part of such concepts as sustainable development and human capital. Western academic literature spoke about these concepts in the middle and end of the last century. That is why large organizations as the University of the Arctic, the Sami Youth Council, the Youth Council of the Barents Region, the Association of Young Scientists of the Arctic, PP youth network, Arctic Youth Council, etc. have been working for a long time to actively involve young people in the Arctic agenda around the world. Of course, this topic is also discussed in the Arctic Council and, in particular, it is in the agenda of Russia's Chairmanship.

It probably makes no sense to talk about what the Arctic Council is, I will just say a few words. It is a leading Intergovernmental forum promoting cooperation in the Arctic in various fields, and various expert and working groups of the Arctic Council are responsible for this cooperation.

For example, speaking directly about the youth agenda, the working group on the Conservation of Arctic flora and fauna this year created a whole strategy to maintain the youth agenda in the North. As an employee of an university, I am particularly pleased with the fact that this purely scientific working group has begun to work so closely with young people. This once again demonstrates the fact

that youth cooperation and scientific diplomacy in the Arctic are inseparable and should develop simultaneously.

Another working group, a working group on sustainable development, also actively promotes youth issues through various events: thematic panel discussions, projects, the Arctic Youth Summit, etc. It is worth noting that until now, the topic of Arctic youth has been considered in the context of Indigenous and Small-numbered peoples of the north. However, the program of the Russian presidency puts the Youth agenda in a separate thematic cluster, which seems to me to be an exceptionally correct decision. The Arctic is populated not only by indigenous youth, and the topics of the indigenous people and youth in general can have their own more specific initiatives, and not only be at the intersection of these topics.

This cluster of the Chairmanship program focuses on maintaining a free youth dialogue across borders, on access to education, entrepreneurship, involvement in the infrastructure and environmental agenda, etc. The fact that such an initiative exists is due, firstly, to an unstable demographic situation (in relation to young people) in almost the entire Arctic region, with the exception of Kamchatka, I believe. It negatively affects both the sustainable development of the Arctic as a whole and human capital in individual territories. Secondly, the Arctic is in dire need of diversification of economic activity on its territory, as well as the development of new technologies. Technologies are what many of us perceive as some kind of hardware or software, and in the context of the Arctic technologies are often primarily associated with the economic development of the territory, with economic processes for the extraction of resources, with environmental protection, pollution elimination, with the transport and logistics complex, etc. All this is undoubtedly extremely important for the sustainable development of the territory and creates employment potential for young people in the region, because due to the climate conditions, the Arctic has always needed high-tech and knowledge-intensive development.

However, from the point of view of young people (and this is not just my subjective opinion, I'm talking from personal experience as well), such innovations do not always attract young people to the region, nor are they always the main factor in the migration processes taking place in the Arctic. In other words, young people often leave the Arctic, regardless of the presence or absence of high-tech industries and employment opportunities. Moreover, as the pandemic has shown, modern technologies make it possible to scale business processes and transfer them online, which can further aggravate the situation with the outflow of youth energy. The reasons for the outflow, in addition to dissatisfaction with the climate, may be dissatisfaction with the cultural and social agenda, urban infrastructure, and for young entrepreneurs – the lack of a target audience for their business.

And it is where such concepts as innovative economy, creative economy, startups become as relevant as possible, determining the need for the presence of youth

creative potential and energy in the region. Without creative youth, the territory will lose a huge part of human capital, which will negatively affect not only the creative economy, but eventually also the resource economy and the environment.

The Russian Arctic Council Chairmanship team, understanding these challenges, decided to organize a special event that will help to create a program of youth events and initiatives within the framework of the work of the Arctic Council. This event is the Forum of Young Leaders of the Arctic Council "ICE", which will be held this year in Salekhard on December 6-9. The main principle of this event is shared leadership, allowing young people to brainstorm to find interesting solutions for the development of the Arctic in 4 sectors: Creative economy, Volunteering, business acceleration and the development of youth media. Taking this opportunity, I would like to invite all participants of the event to participate in this forum.

The moderator's question: According to official statements, in 2022 Norway plans to hold the largest NATO exercises in the Arctic with the participation of 40,000 Alliance military. The main goal is to work out military actions against Russia. Moreover, the European Union has unveiled its new strategy in the Arctic. According to this strategy the EU, not being a party to the Arctic Council, considers itself a full-fledged player in the Arctic and has the right to develop rules for this region. I ask you to comment on this news.

Arild Vollan: The fact is that many parties are interested in the Arctic territories. The European Union wants us to stop producing oil and gas in the North. But on the other hand, it wants to participate in the extraction of our rich natural resources, it wants to get access to fish resources in the North. There are a lot of risks, and a lot of those who do not like the Barents cooperation. For example, the United States is concentrating on the Arctic Council, where the United States and Canada are the largest players. For the US, and partly for the European Union, the Barents cooperation is something they would like to minimize as much as possible. We have to remember this. Now there is an increase in the military presence in Norway, especially the American one. The question is what Americans want. On the one hand, the USA can be compared to Ancient Rome. Now they are afraid that other parts of the world will overtake them and take on their role. There is a lot to talk about, but I won't go into details right now.

Ekaterina Serova: Thank you for the question, I have been working with this problem for a long time. Since 2016, today we have seen a really powerful breakthrough in conducting exercises involving a large number of participants, including partners. Now we see a great interest on the part of partner countries in participating in military exercises, improving their own capabilities to respond to threats. Now there are risks that receive absolutely different assessments in the Northern countries, depending on the historical context of relations with Russia and the United States and depending on domestic economic development. But in

general, now there is indeed an increase in military capacity on the part of the allies in close cooperation with NATO, and of course Russia reacts to that. There is nothing wrong with that. The buildup of military potential of the main opponents causes a reaction from Russia that is also interested in ensuring the defense capability of its borders.

Mikhail Uksusov: I am sure that everything that happens has certain economic processes. Accordingly, if such statements are present, it means that it is beneficial to someone. But it is important to understand whether it is beneficial in the long term or in the short term. It is necessary, of course, to sit down and discuss some points related to direct actions, because statements can remain statements. The question is, what actions will follow. Being present at the meetings of senior officials on the Arctic Council, I have not yet heard a single comment on these processes, so we will see how the situation develops further. Once again,we have to look at what is being done, and not at what is being declared.

Remi Strand: I am a representative in the regional parliament of Tromsø and Finnmark. We are located close to the Russian border. I am in Vardø, in Finnmark, I can literally see Russia from the window. And, of course, it is very important for us to maintain the good relations and dialogue that we have always had with our neighbors and friends in Russia. Norway northeast of Lakselv should be free of NATO soldiers. There was such an understanding between Russia and Norway, and between the Soviet Union and Norway. We don't want NATO soldiers in our region, and I think there is a good reason for that. I live in an area that was liberated by Soviet Army soldiers almost six months before the rest of Norway was liberated. We want there to be no NATO soldiers in our region. My party, the Social Democratic Party, promised in our election program that our policy would support these restrictions, that we would not have NATO soldiers in the region. As far as I understand, the new Norwegian Government also supports this principle. We want to maintain a good dialogue with people in the north-west of Russia, in Murmansk, in Arkhangelsk – with all those with whom we have been cooperating for many years.

Environmental protection in the Arctic

Report. The importance of whale protection for the Arctic marine ecosystems

Scientific Director of the Whale Protection Foundation Vladimir Latka

Thank you for the opportunity to speak at the conference. Of course, the topic is very big, but I will try to briefly talk about the main points. The protection of whales is of great ecological, economic and political importance for humanity. Restoring the number of whales in the world's oceans is not only our duty to these creatures, to nature in general, but perhaps the most effective technology for increasing ocean productivity that we can imagine. The realization of this comes to us only now, in recent decades.

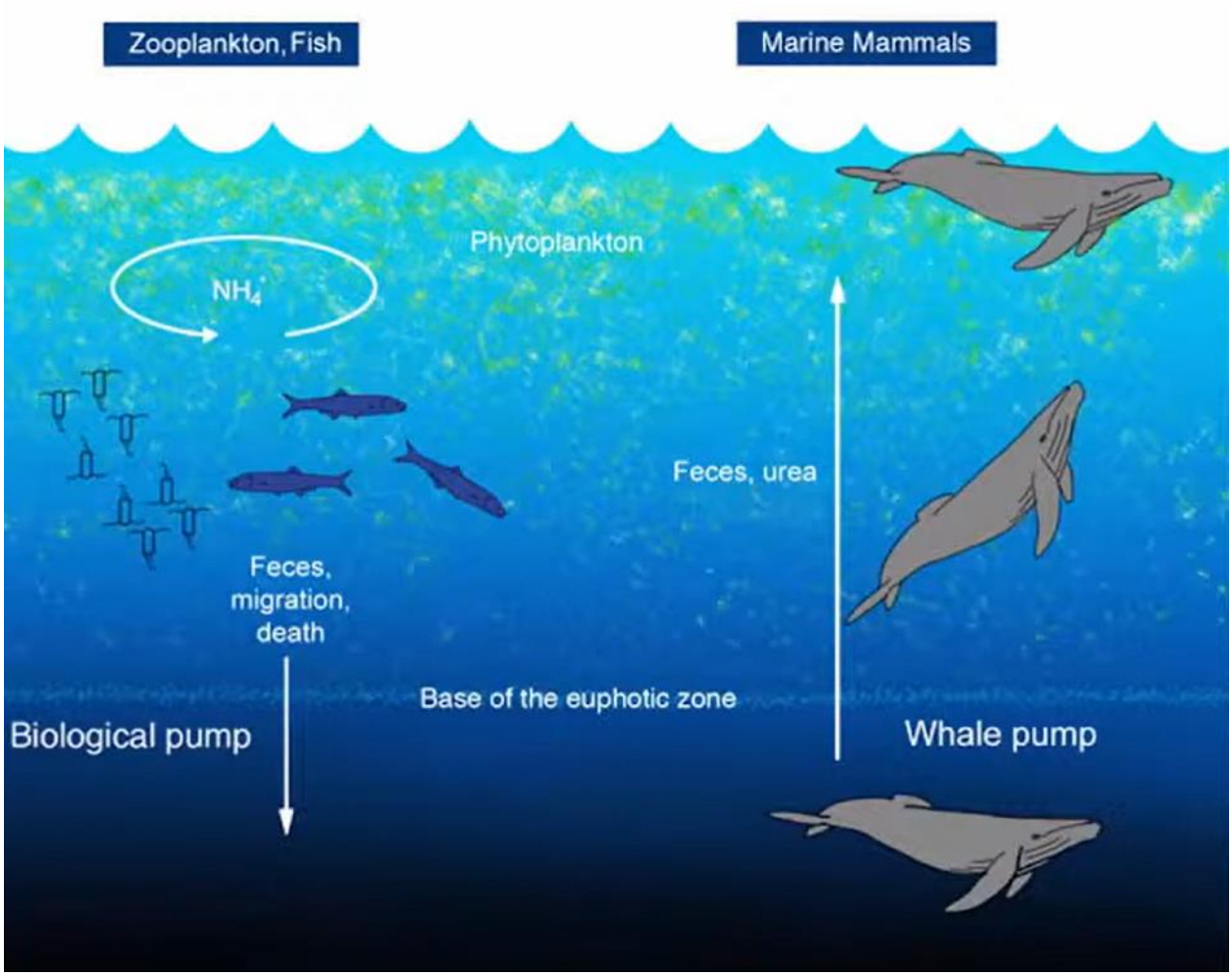
First, a little bit of history. The history of human relations with whales began many millennia ago. Some scientists agree that it began about seven thousand years ago, but there is evidence, including recently discovered evidence on the Kola Peninsula, that 11 thousand years ago people already managed to kill whales, they found ways and technologies for this. It all developed gradually, to the point that starting from the XII century, some species of whales began to occur less frequently off the coast. All these millennia have been filled with cruelty, greed, insatiability and thoughtlessness of one species towards others. This fishery has been developing exponentially. It peaked around the 1930s and 1940s. And only 58 years ago, in 1963, the first global international restriction was introduced, a complete ban on the hunting of humpbacks. In 1966, three years after that, a ban on hunting of blue whales followed. In 1972, the United States completely banned commercial whaling in its territorial waters. In 1982, an international moratorium on whaling was adopted, it was put into effect in the 1985-1986 season, 34 years

ago. This is a landmark event that had significant positive consequences for whales. But it's not worth deluding yourself that people have changed, common sense and honest science have prevailed. In fact, these events had very little to do with science. The reasons for the introduction of the last two bans were political and economic considerations. Whaling fleets around the world simply went bankrupt, because by that time the whales had been wiped out almost completely, all over the world's oceans, even in the farthest corners. At the same time, public protest against their extermination increased. In order to reduce tension and show themselves in the best light, the politicians took up the topic of whales. At the same time, it is significant that those countries with coastal waters washed by the main currents of the Northern Hemisphere – the Gulf Stream, the East Greenland Current and the Kuroshio – did not even think of abandoning whaling. Whales use these currents for migration, concentrate in fairly narrow corridors, and people uses it. Norway, Iceland, Denmark, including the Faroe Islands and Greenland, and Japan continued whaling, sometimes hiding behind scientific goals, sometimes completely ignoring the moratorium and public opinion. Only the continuing rapid decline in the sale of whale meat forced Iceland to stop production two years ago. The departmental science of Japan until recent years has often been used to cover up overtly commercial whaling. It was not only Japan, it was also in Denmark, Iceland and other countries. Today, commercial whaling continues in Norway and Japan. Aboriginal whaling continues in Greenland, the Faroe Islands, Canada, the USA and Russia. In total, from five to six and a half thousand cetaceans die annually as a result of these types of whaling. What part of this loot is really necessary for people? This is a serious question. I believe that no more than a quarter of this amount is really necessary. Everything else is a tribute to the greed of some people and the political ambitions of others. Even now we have a unique example of the extinction of one of the cetacean species, this is the Vaquita, it is dying out right now in the Gulf of Mexico. There are only a few individuals of this species left on Earth. Technically, they could be saved, even this year. But the entire world community, all international organizations, governmental and non-governmental, are giving in to a bunch of underground traders who generously sponsor local poachers who set up nets all over the Gulf of California. This indicates that people have not become smarter, it's just that circumstances have developed so that whales, except for one species, miraculously survived, despite centuries and millennia of whaling. Some species – for example, humpback and sperm whale - have now recovered well, it is impossible not to rejoice. The growth of the seiwal has been noted, at least in the North Atlantic, its number is increasing. There are also very bright local successes in the world. For example, the population of the blue whale has recovered off the Pacific coast of the United States, oddly enough. Despite the fact that the world population remains at the same level. It's amazing, it's not even completely clear how it all worked out, so the technology of population recovery is worth studying and replicating. Today we state that the international ban on commercial whaling, despite the opposition of several countries, has given a positive result. However, our interaction with whales

should go beyond hunting and direct pursuit. Human activity at sea and on land has generated numerous new threats to whales. The main one is entanglement in fishing gear, active and ghost nets. The second most important one is collision with ships. On the third place is noise pollution, on the fourth – plastic pollution, on the fifth – chemical and bacterial pollution. That's how I arranged them. In fact, no one has done a general analysis of relative importance yet, and different threats may come first for different localities. For example, in the Port River (Adelaide, Australia), collisions with ships have been the main cause of death of the local dolphin population for many years in a row. In the Black Sea, for many years in a row, the mass death of dolphins occurs for two reasons: entanglement in nets, as well as chemical and bacterial contamination with concomitant decreased immunity and pneumonia. Such a classical distribution, which I have cited, is typical for the Northeast coast of the United States. For fin whales of the Atlantic coast of Spain, the most important danger is plastic pollution. They often feed close to the surface, and they often have to eat in polluted waters, so the blockage of the intestines occurs with large pieces of polyethylene that they swallow during the feeding process. The saddest thing is that all these and less important threats could be very significantly reduced, but almost no action has been taken at the international level for many years, work is being carried out only in some countries. As a scientist and as an activist, this upsets me very much. I think this comes from a misunderstanding by politicians and economists of the role of whales in marine ecosystems. This role, meanwhile, is huge. Is it possible to assess the systemic role of cetaceans using numbers? Theoretically, yes. But even approximate calculations of many effects are still impossible today. There is too much we don't know, too many elements of communication in marine ecosystems are understudied. The mosaic is only now beginning to take shape. Despite the more than 70-year history of studying cetaceans, the first fragments for future calculations appeared only in the last 15 years. I will tell you about them a little later.

There are nine ways (mechanisms) whales influence the ecosystem.

The first and most significant is the rise of nutrients from the bottom or from the depth to the surface of the ocean. Most scientists call it the "whale pump".



Capturing prey at depth, whales digest it and then empty the intestines at the surface, ensuring a constant influx of nutrients, primarily nitrogen and phosphorus, into the subsurface layer. Thus, they provide nutrients to producers, phytoplankton. This is actually a very important topic. Whale feces actually return nitrogen, phosphorus and other nutrients to the surface. Otherwise, these biogenic elements would simply sink to depths where phytoplankton can no longer use them, and would be lost for many years. During his experiments, Joe Roman from the Gund Institute for Environment at the University of Vermont took samples in areas where there were no whales, and where whales regularly appeared, including fecal plume samples.

He found that the content of nitrogen, phosphorus and other elements is different by literally hundreds of times. Cetaceans could even be called "bison of the sea" for their role in the formation of the soil for phytoplankton. The difference is that on land, the soil remains on the surface even when the bison have been gone for a long time. In the ocean, if you kill a whale, you also deprive the ocean of soil, because it is quickly consumed by microscopic plants, or sinks to the depths. In those areas of the ocean where the current or wind do not provide constant water exchange, whales are the main source of nutrients. There are a lot of such areas, this is the overwhelming part of the waters of the world ocean. Normally, there is a so-called biological pump, which leads to the deposition of nutrients. That is, carbon dioxide is converted into organic matter due to photosynthesis, and the first-order consults feeding on phytoplankton and zooplankton remove a significant part, it gets down together with feces and thus carbon binds and ends up on the ocean floor.

The second mechanism deals with the remote areas of the World Ocean, where the role of cetaceans acquires a new dimension. They fertilize and involve dead zones, water areas where natural air circulation is almost negligible. Deep-diving whales, sperm whales, raise their prey from a depth of several kilometers, and ɜilot whales and Risso's dolphins – from a depth of 400 meters to a kilometer. By the way, their main prey is deep-sea squid, a resource that is practically not used by mankind.

The third mechanism is horizontal transfer. It is not enough to lift substances to the surface, they need to be spread along the surface. Whales spread them for tens of

kilometers from the places of consumption, this is also a colossal job that a human could not do even if they wanted to. Every day, the world population of cetaceans raises 7-10 million tons of organic matter to the surface of the ocean from an average depth of about 80 meters. That is 2.5-3.5 billion tons per year. In terms of the total biogenic impact on marine systems, this may be as significant for the marine systems of the World Ocean as the influence of the Gulf Stream current on the marine systems of the North Atlantic, including the Barents Sea. The Gulf Stream affects ecosystems primarily due to heat transfer, while the rise of nutrients is provided by the Gulf Stream only in a few local zones. Its impact on the productivity of marine systems due to heat transfer is, of course, global. But the impact of whales on the ecosystems of the world's oceans is no less global. It is extremely difficult to calculate the effects of each of these phenomena, but it is quite appropriate to compare them, these are phenomena of the same kind. The fourth mechanism is oxygen enrichment of deep waters. Each whale makes dozens of dives per day, and small cetaceans make hundreds of dives. Each time it carries oxygen with it, including to medium and large depths.

The fifth mechanism is the binding and accumulation of carbon from atmospheric CO2. Each whale accumulates tens of tons of live weight during its lifetime. It is organic, it is something that is connected for a long time, throughout the life of a whale and even for a certain period after its death. Thus, whales really take a significant part of carbon dioxide out of circulation. It is compared that one whale outputs as much carbon as one and a half thousand large trees.

The sixth mechanism is the feeding of bottom communities, the associated organics, that is, the whale's body, after its death sinks to a great depth and thereby feeds the bottom community. This nutrition supports the high productivity of the surrounding areas for a long time.

The seventh mechanism is the maintenance of the biodiversity of zooplankton communities due to the predominant thinning of clusters of dominants, resulting in an increase in their viability and productivity. As you can see, there is also a positive effect on zooplankton.

The eighth mechanism is the prevention of local depressions of phytoplankton in the near-surface layer of the ocean by preventing complete depletion of phytoplankton by zooplankton and mixing. In fact, whales increase the heterogeneity of the environment and do not allow the devastation of vast territories.

The ninth mechanism is maintaining the health of the fish population through classical predation. Any predator, including whales and dolphins, eats first of all the sick and weak, and healthy ones easily escape from the chase. In any community, there is a certain balance of speeds and opportunities that always put

the main population in a winning position, and animals, if they are healthy and young, always have a very high chance of leaving.

All these nine mechanisms in a complex provide high diversity, high stability and maximum possible biological productivity. At the moment, only three have been studied – the first, fifth and sixth. You have heard the evaluation of the effectiveness of the first one – these are the figures for raising nutrients to the surface. What is the overall effect of all the mechanisms? Probably no one will be able to estimate this today, I do not dare to name even the most approximate figures. But it is quite obvious that by exterminating whales, we have doomed a significant part of marine ecosystems to impoverishment, and some to poverty. Today we have to state that our fathers, grandfathers and great-grandfathers saw the Barents Sea only like this: desolated, depleted, outwardly resembling a desert. Russian, Soviet, and then again Russian fisheries science all the years of its development only dealt with such a poor sea. The first well-documented catches of the beginning of the XX century are actually also a reflection of poverty, since in previous centuries and millennia this was preceded by wiping out first gray whales, then North Atlantic right whales, then walruses, then bowhead whales, then sperm whales, bluewales, seiwals, Minke whales, then harp seals along the entire Atlantic coast of Europe. In the mid-thirties of the XX century, the Barents Sea was completely freed from whales and walruses, largely cleared of seals. The situation was the same in the Norwegian Sea. We were just starting to assess the fish productivity in these reservoirs, and the sea was already depleted.

A sea without an abundance of whales, dolphins, seals, seabirds is a poor sea. We have not seen any other sea and are unlikely to see it. Nevertheless, it is necessary to try to revive the former productivity. Whales are probably the best tool for the revival of the sea and the coast. Why is this tool the most effective? Simply because it was created by nature itself, polished by millions of years of joint evolution with all other marine organisms and is, moreover, the cheapest for humans. By spending negligible amounts on habitat protection and the most modest amounts on technologies and regulations that protect whales, we can increase the productivity of ecosystems, perhaps even exponentially. First of all, fishermen, transport workers, geologists and politicians need to understand this. Whales are not consumers of ocean resources, but creators, they are our hope for the future. The task of science is to help all of the above to understand this, providing us with reliable facts. However, this is also the task of the public, because today, thanks to new boats, gadgets, photo lenses, marine clothing, a huge number of people around the world have joined the research of whales. The public and the volunteers partially finance many expeditions, even the maintenance of scientific hospitals, but the public influences the dissemination of information even more. People are not indifferent to whales and dolphins, to the issues of humane treatment of them, so scientific publications devoted to these animals, thanks to the public and the media, are very popular.

Everyone is trying to do something to the best of their abilities, and, as we know, the public succeeds. First of all, those who continue to kill whales today and support killing in their economic or political interests should think. It is possible to abstract from moral issues, but is it possible to kill whales today if there is a high probability that the conservation and restoration of whales can significantly increase the productivity of the seas and oceans, increase fish production?

The last aspect I would like discuss is whale watching. People want to see the whales, want to touch them. Today, the whale watching industry is developing on the coasts of all continents and many islands. This industry is changing the reality for many formerly abandoned villages and localities. It happens in Mexico, the Philippines, and the Tonga Islands. All over the world, it is now one of the most important tourism sectors on the coast. The revenues of this industry are quite high, according to various estimates 2-4 billion dollars, but the most important thing is that whales have become the main tourist magnet for many localities, and this affects the economy as a whole. Abandoned, dying villages are turning into prosperous ones today, and completely remote places are flourishing. Tourists who come there are focused on communicating with nature, observing, these are eco-tourists who relate to nature in a new way. Local people, accepting them as guests, are also developing at the same time, they themselves begin to invest in nature conservation. There is a comprehensive development of the areas going on. We can say that in many corners of the globe, a kind of prototype of the future has appeared as a result of this activity. This gives hope that we will still be able to restore the whales population and restore the former productivity of our seas. This is also relevant for the Arctic, especially for the Barents Sea region and, probably, partly for the Chukchi Sea and the Sea of Okhotsk.

Expert comment

Head of the Norwegian Pomor Academy Remi Strand

Thank you so much for a very interesting report. As a Pomor, I believe that we, on the one hand, lack nuances between the large whales that are under threat and the small whales that we hunt in Norway. Because in Norway we are engaged in whaling, we take about 2-3 percent of the total number of small whales. And we believe that this is a steady percentage of whaling and that we need to continue. There are a lot of whales near Vardø in spring, autumn and summer. But I agree with Vladimir's opinion about big whales – their population needs to be protected and they cannot be hunted.

Expert comment

Chairman of the Murmansk Regional Branch of the Russian Geographical Society, Deputy Director for Science of the MMBI RAS Denis Moiseev

Thank you for the interesting report. I would like to comment that once, thanks to whaling, civilization developed, and now civilization must pay its debt to the whales. Now we have such an opportunity.

It should be mentioned that this year is the Year of Science and Technology in Russia, so a lot of attention is now directed to science. Our conference is also in a certain way timed to the Year of Science and Technology of the Russian Federation.

Continuing the theme of yesterday's event in Tromsø, I would like to speak about our joint Russian-Norwegian projects. Our cooperation is developing very actively, a meeting of the working group on biodiversity will be held tomorrow. We also have a lot of projects dedicated to marine debris and radioecology.

Expert comment

Manager for Russia & Eastern Europe at Akvaplan-niva Alexey Bambulyak

It is very good that Remi Strand made such a comment. Here we are talking not so much about killing very beautiful animals, but about managing resources, preserving traditions – on the one hand. And also about the economic component and the environmental component. And just by the example of marine resource management, by the example of whales, you can discuss all the others. From whales, you can go to cod, Atlantic salmon, and oil and gas, to absolutely any area that concerns the economy, traditional nature management and environmental conservation of all ecosystems, which we somehow influence. I believe that there is no positive industrial influence on nature from humans, so when we talk about influence on the environment, we should immediately say that this influence is by definition negative. It can't be good for what surrounds us. But we are still consumers, and an adequate and pragmatic approach is needed here. Therefore, when talking about management, we weigh all the pros and cons and try to adequately approach the concept of "sustainable development". This was very well discussed in the first part of the conference – should the Arctic become a nature reserve, because the whole world is asking for it, or do people also live in the Arctic and want to feel good, eat well, be content, and be able to get in touch via the Internet during a pandemic. This is our position in our cooperation. We believe that it is extremely important to discuss the problems that arise, and it is good that they arise, it is good that we really have an opportunity for dialogue. And no matter which way the political situation is moving, no matter what we are told, the cooperation is still there, scientific research that we have been engaged in together is still going on. It is necessary to build on those old works that and try to bring something new all the time. There were several points in our bilateral relations that raised cooperation to a new level or, conversely, created certain difficulties. After 2014, we were experiencing the next stage of these difficulties, then the pandemic came with its difficulties of direct communication and collaboration. Nevertheless, under these conditions, we have created a mechanism of interaction, in particular

with our partner, the Murmansk Marine Biological Institute, we have been cooperating with them for more than 20 years. We continue to work together, despite the fact that work is going on on different sides of the border.

A network of Russian and Norwegian institutions

- Common language, same understanding
- Harmonization
- Joint data base
- Joint field survey
- Joint recommendations

Returning to the main report, one of the rather large projects that we have under the aegis of Norwegian-Russian cooperation and the agreement between Russia and Norway on financing scientific cooperation is the MALINOR project for the study and assessment of marine debris in the Arctic seas.

Mapping marine litter in the Norwegian and Russian Arctic Seas -MALINOR-

Akvaplan niva

The Research Council of Norway (NORRUSS) funded project

2019-2021

This is a Russian-Norwegian project with observers from France and Japan dedicated to finding migration routes and observing the behavior of marine debris in the Barents Sea and other Arctic seas.

Of course, the Barents Sea is our priority. MMBI is one of the main performers of this project from the Russian side, Akvaplan-niva manages the project from the Norwegian side. In this project, we are trying to study the impact of marine debris on the ecosystems of the Barents Sea using traditional methods, and we are also trying new monitoring methods, in particular remote monitoring using drones and satellite images.These methods can provide opportunities to assess large areas and provide new data to study the ways of waste migration, its origin and its impact on the environment.

Use of robotics

Pictures of shoreline taken from satellites and boats

Analyses of pictures using machine learning

Offshore data collection using cruises of opportunity

In addition to marine debris, we also have a long-term cooperation in radioecology. This year, together with MMBI, we will publish a booklet on the results of our cooperation in radioecology and the latest research that was conducted in Andreev Bay. The booklet will show the level of our cooperation and interaction, as well as provide quite important new data on the state of ecosystems and the impact of radionuclides on these ecosystems. We try to provide a scientifically based assessment of the situation.

Work continues in other areas as well. One of the interesting areas for marine debris research is working together with travel companies, operators who carry out cruises to Franz Josef Land and Svalbard. We plan to expand the range of interactions.

Also, I think Denis Moiseev will have things to add and expand the topic, we are working under the aegis of the Russian-Norwegian Commission for Environmental Protection with issues related to the Barents Sea in general.

One of the main, key projects is a project to create a plan for the integrated management of natural resources of the Barents Sea. For the Norwegian part of the Barents Sea, such a plan already exists, it is integrated into the management plans of other Norwegian seas. There have been several initiatives in Russia to create such a plan too. It has not yet been approved and implemented, but we hope that the dialogue between Russia and Norway will help create common principles for the management and conservation of the Barents Sea resources. Therefore, despite the pandemic, cooperation continues, and it is good that this conference allows us to say this. We hope that our position and our intentions will be brought to such platforms as the Barents Euro-Arctic Council. So that issues of environmental

safety and support for scientific cooperation, which is the basis for continuing dialogue and preserving peace, are also raised there.

Expert comment

Chairman of the Murmansk Regional Branch of the Russian Geographical Society, Deputy Director for Science of the MMBI RAS Denis Moiseev

I would like to add a little bit about the work of the Russian-Norwegian Marine Environment group. There is really a lot of work going on there. These projects are called Ocean-1, Ocean-2, Ocean-3, Ocean-4, Ocean-5. Ocean-5 is dedicated to marine debris. For a year and a half, together with our Norwegian colleagues, we have made a joint report on marine debris. The final stages are now underway, and the report will be published soon. In addition, work is underway to prepare a new report on the state of the environment in the Barents Sea, we already have a whole group of experts from both the Russian and Norwegian sides. Work is underway to designate valuable areas in the Barents Sea, research is on the impact of the oil and gas sector is also going on, as well as work on joint ecosystem monitoring, this is what Ocean-3 project deals with. There was a meeting on these issues not so long ago. We presented how much we have done and created plans for the next few years. I hope that the work will continue not only in the remote mode. Reports and plans for joint work on the preservation of the Barents Sea will be presented when the work is finished.

SECTION II: TOPICAL ISSUES OF THE HISTORY OF THE ARCTIC

The role of the indigenous peoples of the Far North in the history of the Arctic

Report. Topical issues of the history and culture of the Kola Sami in the research of the Center for Humanitarian Problems of the Barents Region of the KSC RAS

Candidate of Historical Sciences, Senior Researcher at the Center for Humanitarian Problems of the KSC RAS Olga Bodrova

Before proceeding to the report about the main Sami studies at the Center for Humanitarian Problems of the Barents Region of the Russian Academy of Sciences, I would like to briefly highlight some basic terms, concepts, problems related to the indigenous peoples of the North, Siberia and the Far East.

One can talk endlessly about the culture of the indigenous population of the Arctic, their worldview and culture, their harmonious relations with nature. I will focus on some of the main problems and areas related to the study of the culture of the indigenous Arctic population.

82.5 thousand representatives of indigenous small-numbered peoples out of 2.5 million people inhabiting the Russian Arctic live in the Russian Arctic. I use the statistics given by scientists Valery Tishkov and a group of his co-authors in a

report at the general meeting of the Russian Academy of Sciences in December 2014.

In the humanities and social sciences, there are different approaches to the study of the history of the indigenous peoples of the North, and these approaches are reflected in a number of program scientific, international and Russian legal documents.

If we turn to the Report on Human Development in the Arctic, approved at the meeting of the Arctic Council in Iceland in 2004, the indigenous Arctic peoples are considered as "colonizers of the first wave", whose stay in the Arctic has been counted for thousands of years – indigenous peoples (in international law) and indigenous small peoples (in Russian law). However, there is still no consensus in science as to who should be considered the progenitors of the Arctic, and how exactly its settlement took place.

The so-called indigenous peoples of the North, Siberia and the Far East of the Russian Federation have long been firmly rooted in the Russian state and in Russian history.

At the same time, the historical specificity of the indigenous peoples of the Russian Arctic is that they have already mastered the unique natural environment of this

region several thousand years ago, created a kind of "Arctic civilization" with its characteristic identity and originality of the way of life of the population and the life support system.

Some of these peoples still lead a nomadic or semi-nomadic lifestyle associated with traditional types of nature management – reindeer herding, fishing, marine hunting, hunting, gathering. Part of the year or year-round, about 20 thousand people roam in the Arctic, that is, about a quarter of the aboriginal population. The majority of the population of the Arctic is still sedentary residents living in towns and cities.

In modern Russian legislation, the concepts of "indigenous peoples" and "indigenous small peoples" are also somewhat divided. Thus, in the Concept of the State National Policy of the Russian Federation, approved by Presidential Decree No. 909 of June 15, 1996, the overwhelming majority of the peoples living on the territory of the country at the time of the formation of Russian statehood were classified as indigenous. And indigenous small-numbered peoples are singled out separately. According to a number of federal laws, the indigenous peoples of the Russian Federation include the peoples living in the territories of the traditional settlement of their ancestors, preserving the traditional way of life, farming and crafts, numbering less than 50 thousand people in the Russian Federation and realizing themselves as independent ethnic communities. At the same time, there are indigenous peoples living in the territories of the traditional settlement of their ancestors, preserving the traditional way of life, farming and crafts, realizing themselves as independent ethnic communities, but outnumbering 50 thousand people.

The Constitution of the Russian Federation and various normative acts not only define the modern legal and socio-cultural status of the indigenous peoples of the North, Siberia and the Far East, but are also aimed at preserving historical and cultural heritage, supporting the languages and cultures of indigenous peoples, which provides for the development of cultural centers, creative teams, the organization of television broadcasts, the creation of documentaries, the publication of educational, scientific and fiction literature, the deployment of Internet projects in the languages of indigenous peoples of the North, thematic festivals, holidays of reindeer herders, hunters and fishermen, traditional sports competitions. The same goals are largely served by scientific study.

Now I would like to turn to the Sami of the Kola Peninsula. As you know, the Sami live on the territories of four states, not only in the Russian Federation, but also in Norway, Sweden and Finland. Currently, less than 2 thousand Sami live on the territory of the Russian Federation (according to the All–Russian Census of 2010 – 1771 people, 1599 of them living in the Murmansk region). This is 0.2% of the total population of the region. In accordance with the Decree of the President of the Russian Federation No. 296 “On the land territories of the Arctic zone of the

Russian Federation" (2014), the Murmansk Region is fully located in the Russian Arctic.

According to the Decree of the Government of the Russian Federation dated 08.05.2009 No. 631-r, which approved the list of places of traditional residence and traditional economic activity of the indigenous peoples of the North, those on the territory of the Kola Peninsula are:

- city district Kovdorsky;
- Kola Municipal District;
- Lovozersky municipal district;
- Tersk municipal district.

So, we turn to the topical issues of the history of the Kola Sami.

As before, one of the topical and not fully resolved issues of the many thousands of years of Sami history is the question of their ethnogenesis. Despite the almost century-old history of archaeological research on the Kola Peninsula and the efforts of 4 generations of Russian archaeologists (the most famous: A.V. Schmidt, N.N. Gurina, V.Ya. Shumkin, E.M. Kolpakov, A.I. Murashkin), there are still many contradictions in solving the issue of their resettlement to Russian Lapland,

although data have been obtained on the main stages of the development of the ancient population in this region over the past 10 thousand years.

In the complex, the data of modern archaeology, anthropology and linguistics have significantly "rejuvenated" the age of the Sami ethnic group and the era of its formation is now considered to be the Iron Age. It is believed that in the middle of the first millennium BC, the territory of the Sami settlement was extremely wide. At that time, their habitat included the northern regions of Scandinavia, the Kola Peninsula, a significant part of Finland and Karelia, including the shores of Lake Ladoga and Lake Onega. In the east, the Sami presumably occupied the basins of the Onega, Northern Dvina and Mezen, as well as Kanin tundra.

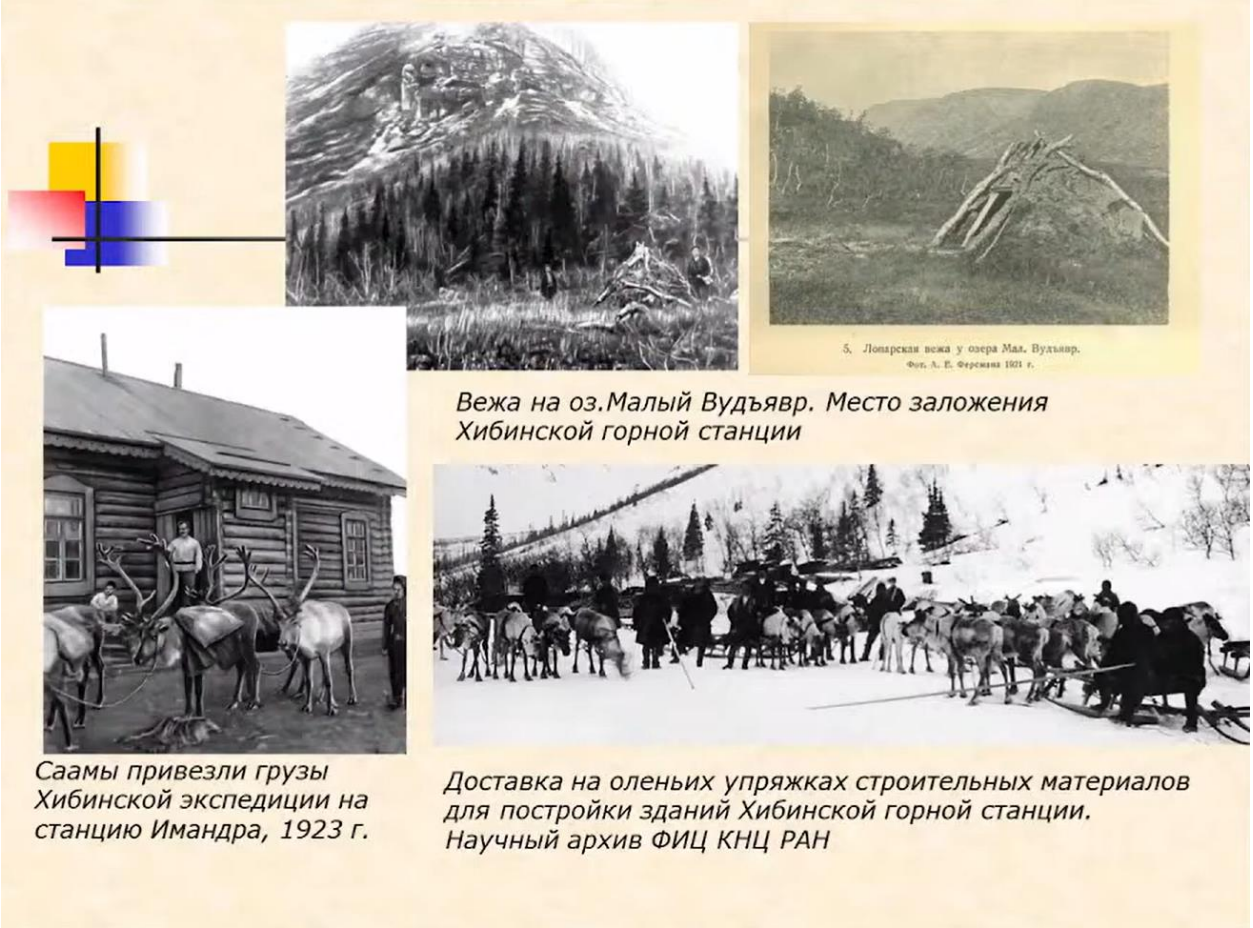
Previously, the Sami were considered as descendants of the ancient European population or as migrated Ural tribes, and the ethnic identity was explained by the assimilation of unrelated groups of local Europeans and newcomers Finno-Ugrians. Not so long ago, a mestizo hypothesis arose, according to which the Sami ethnos arose as a result of genetic mixing of the ancient Northern European autochthonous population with Volga Mongoloid-Caucasoid tribes, who, going into the European North, were in close contact with the aborigines. As a result, a certain Baltic-Finnish-Sami linguistic and cultural community emerged. From the European aborigines - hunters of wild deer, well adapted to northern conditions, this community inherited a mobile lifestyle with an appropriating type of economy, geographical and economic vocabulary, a significant layer of toponymy. This explains why about 30% of the vocabulary of the Sami language is a substrate, has a non-Finno-Ugric origin and does not find analogies in any of the modern languages.

Subsequently, this large community split into the Baltic-Finnish and Sami groups. The settlement of the Kola Peninsula took place starting from the territory of Karelia. Signs of the Sami culture, as Russian archaeologists state, that can already be associated with ethnic Sami as an ethnos, appear on the Kola Peninsula no earlier than the 8th century BC. Thus, it is unlikely that the Sami were ethnically related to the first inhabitants of this part of the Russian Arctic, including the "Oleneostrov culture", as it was once believed. Most of the Sami religious and economic objects on the Kola Peninsula are now dated to the period of 1 thousand AD - 17th century.

Looking ahead, I will say that the humanitarian research of the Kola Sami group, which is being conducted at the Kola Science Center, will also include the archaeological direction from this year. Thus, it is planned to study in detail the medieval history of the Kola Sami, including through the archaeological research.

As it was already mentioned in the report from the first section, the history of the Kola Science Center begins with the Khibiny Mountain Station of the USSR Academy of Sciences, founded in 1930. The station was literally built on the spot

where the Sami vezha stood. The Kobelevs are the first Sami encountered in Khibiny by A. Fersman. His first guides and assistants. Without the help of the Sami population, the study of the Kola Region wouldn't have been possible, especially given the impassability of these places and the transport problem before the appearance of the Murmansk railway and highways.



Back in 1940, academician Fersman made a decision about the need to organize a department on the history of culture and literature of the peoples of the North as part of the Kola base of the USSR Academy of Sciences. The war pushed these plans back. They were implemented in 1995, when a new scientific support unit was created in the structure of the Kola Science Center of the Russian Academy of Sciences – the International Center for the Development of Science, Culture and Education in the Barents Euro-Arctic region. In its structure it included the Museum of the Study and Development of the European North. Ethnological studies of the indigenous inhabitants of the Kola Peninsula began to be carried out at the Center in 2004. In accordance with the restructuring program of the Russian Academy of Sciences, the Center was reorganized into a scientific division of the Kola Science Center - the Center for Humanitarian Problems of the Barents Region. Since that time, systematic anthropologically oriented social and historical studies of the urbanized population, mainly in the central and southern parts of the Murmansk Region, have begun.

Directions of Sami studies (both micro-studies and complex studies of individual issues of the history and culture of the Kola Sami are carried out):

- Socio-economic situation during the transformation period of the 1990s.
- History of the resettled Sami groups
- Expedition research and preservation of historical, cultural and natural heritage
- Material culture
- Folklore
- Family culture
- Ethnological research, both historical-anthropological and cultural-anthropological: problems of acculturation and cultural distance of the indigenous and urban population of the Kola North
- Individual issues of religious views
- History of education
- Economic Anthropology
- Publications of books by Sami authors

Speaking about the indigenous peoples of the North in the context of the history of the Russian state, we sould note a number of historical periods relevant to all indigenous peoples of the Russian Arctic:

- periods of allied (based on trade) relations of the aboriginal population with the authorities of the Russian Empire,
- involvement of the indigenous population several centuries ago in the Russian tributary system,
- the period of full or partial Christianization,
- the period of Soviet modernization, which included forced forms of collectivization, the transition to settlement, and other processes that led to the destruction of the traditional way of life of the Sami.

The foundations of the family reindeer herding were undermined: women remained in the village, mastering social professions, children were forced to study in boarding schools. The traditional settlement system was negatively affected by the policy of enlarging settlements, as well as the construction of the Serebryanskaya Hydroelectric Power Plant on the Voronya River, when the village went under water, and local residents were forcibly relocated to the village of Lovozero.

One of the dramatic events in the history of the Kola Sami of the Soviet period was the forced relocation of certain local groups, which led to transformations of the traditional economy and culture of the Sami. In the monograph "Resettled groups of Kola Sami" , 2007, the issue of resettlement of Chudzyavr (Kildinsky), Voronensky and Varzinsky (Semiostrovsky) Sami from their traditional places of residence to the village of Lovozero is revealed.

In 1997-2000, a large comprehensive historical, ethnographic and archaeological study of the Skolt Sami, who traditionally lived in the north-west of the Kola Peninsula, as well as in the territories of Northern Finland and Norway adjacent to the Russian border, was carried out in the KSC RAS together with Norwegian colleagues. In total, 65 objects were described, photographed and mapped, namely winter permanent settlements, spring-summer and autumn fishing grounds, cemeteries and individual burials, as well as various objects of religious, economic and household purposes

If we talk about socio-cultural studies, the consequences of the socio-economic transformations of the 1990s for the Sami population, in particular, the issue of Sami employment in the regional labor market, high unemployment, were actively studied at the Center of Humanitarian Problems of the Russian Academy of Sciences. It is characteristic that the spheres of economic interests of the indigenous population of the Murmansk region retain their traditional orientation: sectoral reindeer herding, local infrastructure and traditional economic practices, that in modern conditions have taken the forms of tribal communities, supportive economy and illegal economic activity (poaching, "black" tourism, unaccounted reindeer herding, sale of meat, fish without licenses, etc.).

The most successful form of realization of the ethnoeconomical interests of the Kola Sami is the tribal community. There are currently 42 communities of the indigenous small-numbered people of the North, 7 public associations and 1 non-profit foundation in the Murmansk region. The main activities of the tribal and territorial-neighboring communities of the Sami people are: fishing and extraction of aquatic biological resources in the Barents Sea and in the inland waters of the region; reindeer herding; fishing of marine animals; hunting; collection of wild plants; processing of products of these types of management; manufacture of household items and culture of the Sami people. The communities also receive tourists and organize ethnic tours. Therefore, tourism is increasingly being considered as a new type of traditional nature management for the indigenous people of the North. The development of ecological and ethnographic tourism, the production of souvenirs is one of the opportunities to involve the indigenous small-numbered peoples of the North, Siberia and the Far East in modern areas of employment, while simultaneously presenting their ethno-cultural traditions.

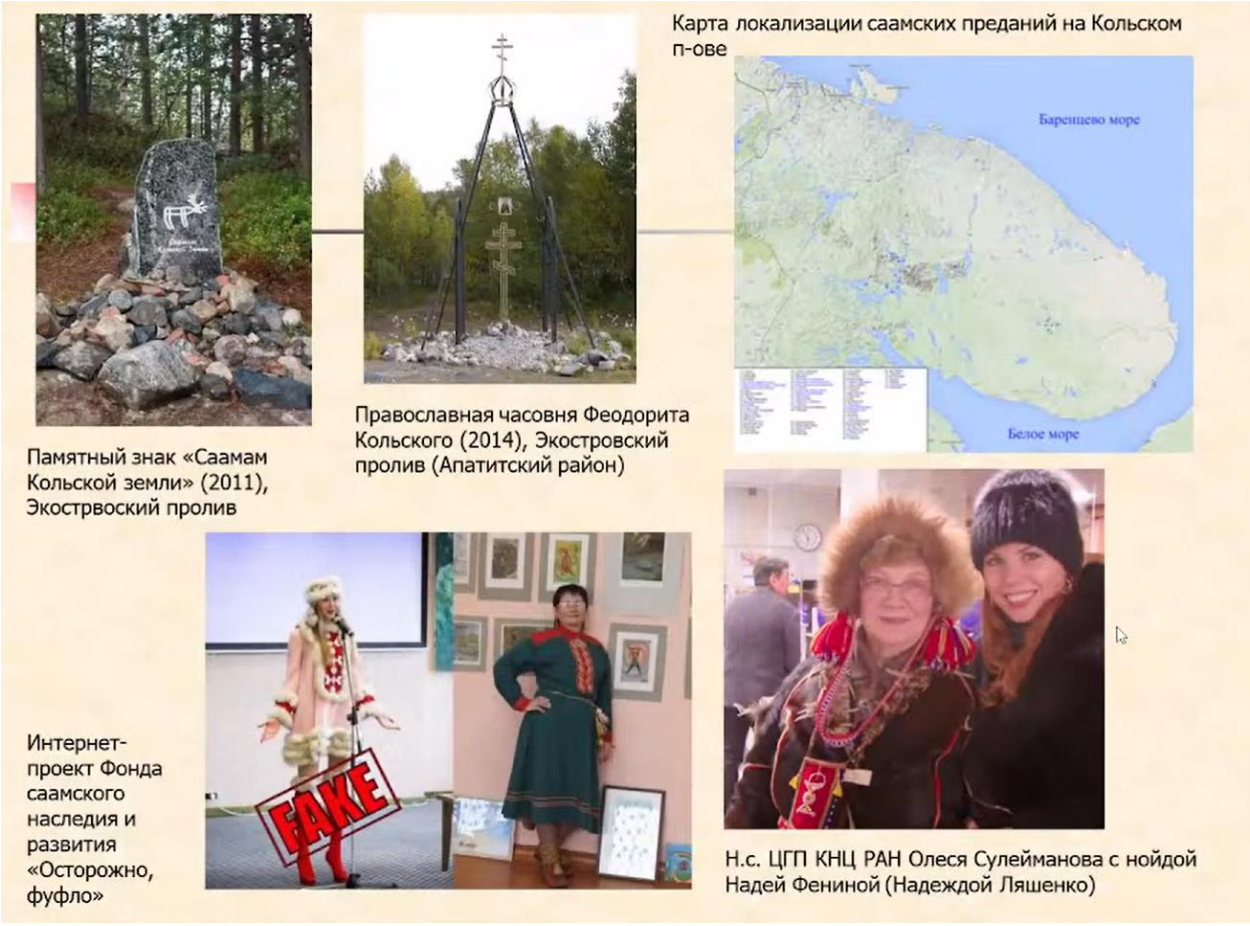
The demographic situation among the Sami population of the Kola Peninsula remains quite stable, as in the case of most of the indigenous peoples of the Russian Arctic. In fact, the number of the largest groups by Arctic standards (Nenets, Chukchi, Khanty, Evens) is even increasing, and very small groups manage to maintain a more or less stable demographic dynamics. At least in the medium term, dramatic demographic changes are not expected among this part of the Russian population.

On the contrary, the problem of preserving the national language is acute. From the point of view of ethno-cultural development in the Arctic zone of the Russian Federation, there is a tendency of reducing of the number of local ethnic groups representatives who speak their native languages, due to centuries-old contacts with neighboring peoples and the integration policy carried out since the 1930s. In relation to the small-numbered peoples of the North, this trend is particularly acute, since in their environment ethnic languages, primarily due to vocabulary specificity, represent one of the mechanisms of adaptation to survival in harsh natural conditions.

Of the 1,599 Sami living in the Murmansk region, according to the All–Russian Census of 2010, 1,598 people (almost 100%) showed proficiency in Russian, 353 people in Sami. We are talking only about the Kildin dialect of the Sami language, the written language of the Kola Sami. It is in this dialect that all the literature of Sami authors is published now (Murmansk Regional Center for Indigenous Peoples of the North and Interethnic Cooperation). Unfortunately, now it is the only East Sami dialect that is preserved in oral form. Even 10 years ago, there were literally 2-3 representatives of the Kola Sami - speakers of the Yokang (Ter-Sami) dialect, now they are gone. But the language has been preserved in the editions of poems by the first Sami poetess Octobrina Voronova, who wrote in Ter-Sami. The situation with the preservation of the Sami language is aggravated by the fact that the Kola Sami still do not have a standardized, officially accepted alphabet. The international scientific and practical conference "Preservation of the Sami language in modern conditions", which was held in September this year in Murmansk, was devoted to this issue and other pressing issues of the preservation of the Sami language.

Despite the acute problem of preserving the national language, the cultural heritage of the Kola Sami is also manifested in other spheres of life: in the methods of economic activity, in arts and crafts, in folklore. All this contributes to the preservation of the ethnic identity of the group.

Ethnocultural studies of the Center of Humanitarian Problems of the KSC RAS, associated with the Kola Sami group, generally speaking, are aimed at studying the interaction of traditional ethnic Sami culture, on the one hand, and its modernized forms. Fake cultural forms and their negative consequences for the ethnic identity of the Sami population are observed.



Virtual network communities of the Kola Sami, which form a specific segment of the "ethnic Internet", various forms of Sami cyberethnicity are studied.

The theoretical issues of the Sami oral tradition and some applied aspects are investigated: genre classification, the study of folklore plots, localization of Sami legends, which may be promising for the organization of excursion activities in the regional tourism industry.

The reflection of the Sami history in the formation of the cultural landscape in the region is studied. We are talking about the correlation of Sami ethnic symbols and a number of religious buildings or modern tourist sites.

In addition, regional conferences dedicated to Sami culture are held on the basis of the Center of Humanitarian Problems and the Museum, temporary exhibitions are organized. There is a permanent exhibition of Sami household items.

The 80th anniversary of the first Arctic Convoy “Dervish” arrival in Russia

Report. Little-known evidence of active participation of Norwegian Civil Navy sailors in the Arctic convoys

Historian, representative of the Partisan Museum in Kiberg Steinar Borch Jensen

After the end of the German campaign in Norway in June 1940, the strategic situation changed dramatically in favor of Germany. A large number of military vessels were transferred to Norway, and a number of air and naval bases were established on the Norwegian coast. That way, German submarines and surface vessels could quickly reach important Allied convoy routes, including the convoy route between the United States and the United Kingdom. The Germans could also use nearby bases on the coast of Northern Norway to attack Arctic convoys.

The German attack on the Soviet Union on June 22, 1941 was the impetus for the organization of Allied convoys in northwestern Russia. Adolf Hitler launched the largest military invasion of all time: Operation Barbarossa.

The German occupation of Norway and the attack on the Soviet Union meant that the only transport route from Great Britain to the Soviet Union was the northern route of the convoy through the Norwegian and Barents Seas to the northwest of Russia. Climatic and geographical conditions imposed serious restrictions on the use of this route. Drifting ice forced convoys to approach the northern Norwegian coast and expose merchant ships to the danger of attacks by aircraft and ships from German bases. In winter, the crews faced severe weather conditions and cold, in the spring and summer months it was easier for the enemy to notice the convoys

because of the long daylight hours. A number of Norwegian merchant ships eventually joined the convoy movement in northwest Russia, but most of the Norwegian merchant fleet remained in Atlantic convoys.

Several Norwegian tankers also played a key role in the Arctic convoys. The motor tanker Noreg was used several times as a bunkering vessel with Murmansk convoys and supplied fuel to Allied vessels. Bunkering took place in the open sea. A tanker with an engine displacement of 12,000 tons, of course, became a key target for German bombers and submarines.

Several Norwegian tankers were transporting fuel along the risky convoy route to the north-west of Russia. The steam tankers Mirlo, Marathon and Norfjell, as well as the motor tankers Herbrand and Eger, defied the attacks of aircraft and submarines. They were supposed to deliver an important cargo to Murmansk, Arkhangelsk or Molotovsk. The steam tanker Norfjell was torpedoed in February 1945 in the White Sea, two crew members were killed.

Norwegian naval vessels joined the convoys early on their way to the northwest of Russia. Destroyer St. Albans and submarine Uredd participated in escorting a large Allied convoy to Murmansk in April 1941. Later, Stord escorted nine Arctic convoys and took an active part in the dramatic naval battle off Cape North Cape, which led to the sinking of the German battlecruiser Scharnhorst. The corvettes Acanthus, Tunsberg Castle and Eglantine, minesweepers Oksøy, Karmøy, Tromøy and Jeløy participated in escorting the Arctic convoy of the Allies at the end of the war.

The so-called Norwegian "boat convoy", originally consisting of four fishing vessels, sailed from Scotland via the Shetland Islands in December 1944 and headed for Murmansk. They had to carry out the delivery of basic necessities to the residents of Western Finnmark, who in the autumn of 1944 did not obey the German evacuation order. Three vessels made a long and difficult journey to the Murmansk region and went to Kirkenes, which was recently liberated by Soviet troops.

The contribution of the navy during the Second World War is considered the most important contribution of Norway to the Allied victory over the Nazi invaders. Under extremely difficult conditions, Norwegian merchant ships transported fuel, military supplies and other goods, mainly across the Atlantic, but also to the Mediterranean Sea, the Indian Ocean and the western Pacific.

The main supply lines subsequently became convoy routes in the Atlantic Ocean. The routes were from New York and Halifax to Liverpool, from Sierra Leone to Port of Spain or Liverpool, from Gibraltar to New York or Liverpool and from Liverpool to Murmansk (Murmansk convoys).

Murmansk convoys are described as one of the most difficult operations of the Second World War. Ships, mostly American, but also from other Allied countries and from Norway, left English ports, often via Iceland, and headed to Murmansk and Arkhangelsk. These ports were the only ones in the Soviet Union that could accommodate so many large vessels. The German occupation of Norway meant that the only transport route from the UK was the northern route of the convoy through the Barents Sea.

In summer, the convoy's route passed north of Iceland, Jan Mayen Island and Medvezhy Island. In the winter months, due to drifting ice, the route had to be laid south, closer to the coast of Finnmark. Thus, the ships were subjected to German air and submarine attacks from Norwegian bases. This led to heavy losses. Crew members who survived torpedoing and airstrikes quickly died in the icy polar waters.

The importance of the convoys was great, they contributed to the supply of the Soviet Union with much-needed military materials. From June 1941 to May 1945, more than four million tons of military cargo were sent with Murmansk convoys. 104 merchant ships were sunk, and from 1,000 to 1,500 sailors were killed. Of the twelve Norwegian vessels included in the convoys, two were torpedoed, but brought to safety.

In addition to the military sailors who were on board ships outside Norway (international fleet), there were also many who went to sea in Norwegian and northern waters (internal fleet). The ships of the international fleet entered the ports of the Allies when Norway was occupied in April 1940. The Norwegian authorities in London in 1940 created the organization Nortraship.

Vessels located in Norwegian and northern occupied waters, as well as passenger vessels, for example, Hurtigruten, were under German control.

During the war, sailors who went to sea abroad were especially vulnerable. The sailors were subjected to significant psychological shocks; they were in constant danger of violent death, felt helpless and defenseless before attacks by enemy aircraft and submarines, and also suffered from lack of communication with family and friends at home in Norway.

Until the victory in 1945, about 3,700 sailors died, and 473 ships of the international fleet were lost. The losses of the internal fleet amounted to 199 ships and 1,133 people, of which 441 were passengers.

The attitude of the Norwegian authorities towards the sailors after the war was sharply criticized, and it took more than 25 years before their contribution was recognized.

I will tell you a little about my uncle, who took part in these convoys. His name was Johan Bernhard Jensen. He was born in 1920 and died in Kiberg in 1991. His parents were Andrea and Ole Jensen. He was 20 years old when he went to participate in military operations. He signed up for the ship, worked as a boatswain, sailor, cabin boy on cargo ships. After the end of the war, he received medals for participation in military operations. He received the Norwegian War Medal on February 8, 1980, 35 years after the end of the war.

He also received the King Haakon Medal of Freedom on April 22, 1988.

He served as a navy sailor on 12 different ships during World War II and was present on board 3 ships that were torpedoed and sunk. During the torpedoing of the Idefjord vessel on the route to Murmansk, it was damaged and towed to Murmansk for repairs. After unloading, the ship was able to continue its journey and return to Kirkenes after the Germans left Finnmark during the Soviet offensive on East Finnmark.

He took part in the Murmansk convoys, but most of the convoys in which he participated were convoys in the Atlantic, as well as in the Mediterranean Sea, the Indian Ocean and the western Pacific. Johan has shared his memories of the convoys with me many times. He often had nightmares.

The worst memories were associated with the moments when their ship was torpedoed, and the sailors were at sea, many of his comrades were in burning fuel, he heard their cries for help, but could not help anything. The convoys could not stop, they had to keep moving. They could only hope that the ships following them would be able to save people. But there was little hope, especially in the northern convoys, because the water temperature left little chance of survival for those who fell overboard.

The moderator's question: A lot of Norwegian sailors who fought did not live to see the time when they could have received recognition of their merits and respect. What do people in Norway think about that period and how is the situation now?

Steinar Borch Jensen: You know, there were a lot of discussions in the media, and a lot of people had a positive attitude to the actions that were taken by the sailors. But the fact that the Norwegian authorities did not do what they promised, that the amount of money that was withheld from their wages, that is, of course, a very unpleasant issue and Norwegian sailors will not forget about it.

Most people share the opinion that an invaluable contribution was made, but the issues that I have already mentioned have not found any solution. Still, most people have a positive attitude to the contribution that was made by the sailors.

Report. Records concerning the activities of the Norwegian partisans of Finnmark during the Second World War

Historian, representative of the Partisan Museum in Kiberg Arnt Bjarne Aronsen

The history of the partisan movement is the military history of the people of Finnmark, Vardø and Kiberg. For the residents of this area of Norway, this part of history, along with the burning of Finnmark, is one of the key elements of the collective memory of the war. This is a very important part of the war, and Norwegians still remember the struggle of the Norwegian resistance during the Second World War. The history of partisan resistance is the story of how the people of Norway, using the resources available to them, fought the invaders. Now the exploits of the partisans have been recognized by the Norwegian special structures, a monument to the partisans has been erected.

The German occupation in 1940-1945 affected almost all layers of Norwegian society and affected all spheres of life in the country - from the political and administrative spheres to the daily life of the civilian population. However, the history of Norwegian resistance during World War II should also be considered as part of the history of European and even world resistance.

The concept of the northern perspective is very important for understanding. Throughout the occupation, a substantial German military presence remained in Northern Norway. Tens of thousands of prisoners of war were sent to this part of the country to build fortifications, as well as conventional and railways. Several major European powers had special strategic interests in the north. In 1942, Hitler named Northern Norway an area of crucial importance. The history of Norway during the Second World War continues to attract historians, new facts are being discovered in the course of research.

The first German soldiers arrived in Vardø and Kiberg in August 1940. Few people had any idea about the plans of the fascists after the victory in Narvik on June 8, 1940. Soldiers continued to arrive throughout the autumn. Fortifications were built for a large army.

The population of Northern Norway did not accept the invasion and rose up to fight the occupier. During the unveiling of the monument to the partisans in Kiberg in 1948, Richard Bodin noted the bravery of those who were ready to sacrifice everything, even their own lives, if necessary, in the struggle for freedom and independence.

During the war, there was a need for intelligence activities. The Soviet military assessed the situation and decided to follow the intentions of the occupiers. A

network of informants was created in Kirkenes, Vardø, Berlevåg, Neiden, Persfjord and some other places, involving patriotic Norwegians.

75 years ago, the history of Arctic convoys in the USSR began. The first convoy of the USSR was codenamed "Dervish" (also known as PQ-0). He left Liverpool on August 12, 1941 and arrived in Arkhangelsk on August 31, 1941 without losses: the German aviation did not find him. This was the beginning of convoy transportation.

In January-February 1942, the fascists began to increase their military potential in order to prevent the movement of convoys by:

- Construction of a submarine base in Kirkenes
- Transfer of battleships "Tirpitz", "Scharnhorst", etc. to Norwegian ports
- Construction of airports in Vardø and Berlevåg
- Placement of long-range bombers

From then on, there were more reports about capacity building in order to prevent the movement of convoys.

Expert comment

Head of the Norwegian Pomor Academy Remi Strand

First of all, I would like to thank the organizers, the Murmansk Regional Branch of the Russian Geographical Society, for the initiative to organize this conference. It is important for everyone living in the Barents region. The conference is dedicated to community and development issues in the Arctic. The conference is important for all of us, because the peoples of the North have a lot in common. We grew up under the Polar Star, we have common climate problems and common potential in the rich natural resources of our region. Since the dawn of times, common challenges have taught us to cooperate and rely on each other to survive in the Arctic. It should stay like that in the future.

Thank you for giving the Partisan Museum in Kiberg and the Norwegian Pomor Academy the opportunity to participate in the conference. Both institutions, from a cultural and historical point of view, are aimed at maintaining ties and preserving Norwegian-Russian history.

Steinar Borch Jensen and Arnt Bjarne Aronsen said that the partisan movement in the North is perhaps Norway's most important contribution to the defeat of the Fascist occupation of Norway and the Soviet Union. Apart from the Finnmark partisans, hardly anyone was so closely involved in hostilities throughout the war as the sailors. Before World War II, Norway was a poor small country. Many young people joined the Norwegian ships to be able to work. Norway's international fleet was the most important export industry for Norway until the 1970s, when we found oil. I think every family in Norway had one or more sailors. So it was in Steinar's family, and in mine. In addition to Steinar's speech, I will

mention three points related to Norwegian sailors who served during the Second World War, and which were actively discussed in Norway in the post-war period.

A few days after the Nazi attack on Norway, when the Norwegian government was forced to flee from the invaders, they decided that all Norwegian private merchant ships should be requisitioned by the state. The ships were ordered to sail to the ports of the Allies. The government established the organization Northraship, which became the shipowner of all Norwegian vessels. About 1,000 Norwegian merchant ships were transferred to this company and thrown into the fight against the Nazis. It was these Norwegian ships that delivered military equipment to Murmansk and Arkhangelsk during the Second World War. On April 12, 1940, the government, which at that time still had not left Norway, decided that all sailors were required to work on Norwegian ships. Thus, the sailors could not leave the ships, despite the fact that the voyages became very dangerous as a result of German aircraft and submarine attacks. Norwegian sailors were given the opportunity to spend time on land only when the ship was being prepared for the next voyage, or when they were in the hospital after the German attacks. After the war, we had a lot of crippled sailors in Norway. Perhaps the Norwegian sailors, as well as the Finnmark partisans, were also somewhat forgotten.

The Norwegian government has introduced a special provision, which is often referred to as the "Bigamist Law". The government, having fled to London, decided on April 15, 1942 that Norwegians abroad could divorce their spouses in Norway without notifying them of the divorce. This decision was made because the war prevented Norwegians abroad and their families at home in Norway from communicating. After the end of the war, this situation was actively discussed in Norway. The reason for the discussions was that the sailors and others who were outside Norway during the war returned home with new foreign wives. Their wives in Norway were of course surprised when they found out that they were divorced from their beloved husbands. This law was called the Bigamist Law and was widely discussed in the post-war period in Norway.

Steinar Borch Jensen told about his uncle, who was torpedoed three times during the movement of convoys in the course of the Second World War. This story illustrates the enormous risk that sailors were exposed to during the Second World War. The sailors, as we know, had no choice, because they were obliged to work on Norwegian ships throughout the war. An agreement was reached between Northraship and the Norwegian Seafarers' union that Norwegian seafarers should receive war risk allowances. The war risk allowance could be up to 300% of the regular salary of sailors. English sailors, for example, did not have such a system. Therefore, during the war, our allies were very unhappy because of such a different attitude towards the sailors, since they all risked equally. The compromise was that the war risk allowance for Norwegian sailors was put into a secret fund and not paid to sailors during the war. When the war ended, disputes arose between the sailors and the Norwegian government about how the money should be used. The

sailors wanted to get their hard-earned money. The government needed funds to rebuild the country. This discussion continued for thirty years after the war. In the 1970s, when many sailors had already died, the Norwegian Parliament made a concession. Funds in the amount of three State budgets were paid to the sailors or their surviving families. It is worth noting that the situation with the Norwegian navy, as well as the situation with the Finnmark partisans, belongs to the part of Norwegian military history that we regret.

Arnt Bjarne Aronsen spoke about the contribution of the partisans in escorting convoys with weapons and other military equipment to Murmansk and Arkhangelsk. He also spoke about the participation of partisans in the sinking of German ships that were carrying military equipment to Kirkenes for use at the front in the area of the Zapadnaja Litsa River. According to a Norwegian source, 85 German ships were sunk between Cape Nordkin and Kirkenes thanks to reports from Finnmark partisans.

We need more sources confirming this information. Probably, there are many interesting materials in the Russian archives to clarify such issues. Me, Steinar Borch Jensen and Arnt Bjarne Aronsen run the Partisan Museum in Kiberg. The Partisan Museum needs the help of the Russian side to gain access to Russian sources that could provide answers to many questions. The Partisan Museum is very interested in discussing this issue in more detail with our Russian friends.

Thank you for your attention. Special thanks to Sergey Goncharov because of whom we can keep in touch with Murmansk at any time of the day.

Report. Historical memory, reflected in the monuments of the Murmansk region, perpetuating the feat of the sailors of the polar Allied convoys

Head of the K-21 Museum Yuri Voloshchenko

On August 31, 1941, as a result of Operation Dervish, the first Allied convoy reached Arkhangelsk. On December 20, 1941, the first vessels from the Allied convoy PQ-6 – the steamship Decembrist and the tanker El Mirlo arrived in Murmansk. And since January 11, the Murmansk port has been regularly handling ships of Allied convoys.

In August 1991, on the 50th anniversary of the first Allied polar convoy, a stele "... In honor of the memory of those who gave their lives in the struggle for freedom during the Arctic campaign in the course of the World War II" was erected in Murmansk. The company that initiated the installation of the memorial from the UK gave the impression that the residents of the former Soviet Union had the opportunity to learn the true history, which was hidden from them for some reason.

The 90s became a time of active international contacts. Veterans of the polar convoys had the opportunity to visit memorable places. Ships of foreign naval forces also began to come to the northern ports of the "new" Russia frequently. The history of Allied convoys in the Arctic during the Second World War became popular, it attracted the attention of more people, not only military historians.

Meanwhile, allied convoys for Murmansk residents have never been one of the closed topics that are now commonly called "blind spots" of history.

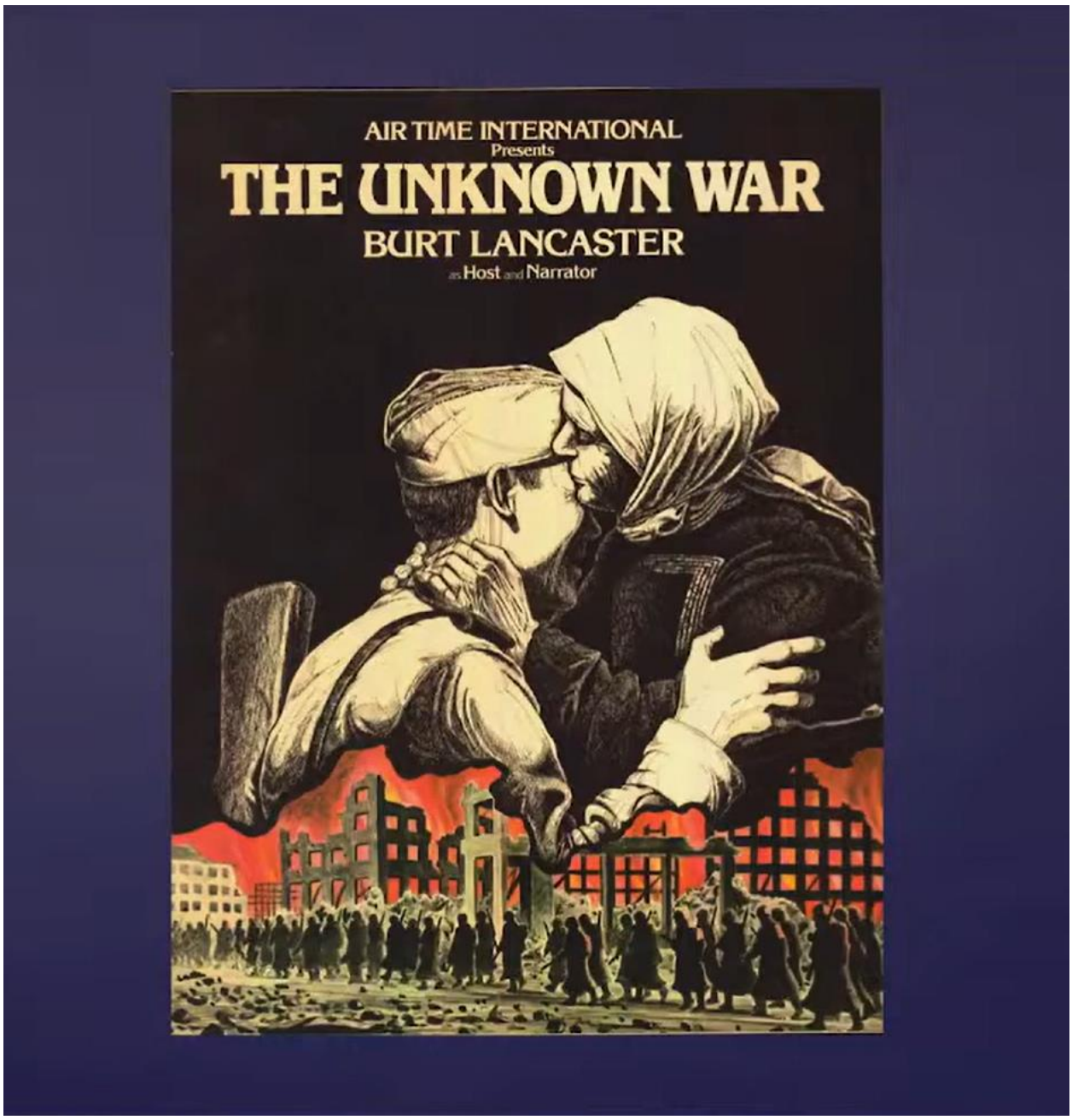
In memory of the joint struggle of the countries of the anti-Hitler coalition against fascism during the Second World War, a monument in the form of a palm holding the Globe was erected in Murmansk. The symbolism of the monument, unusual for war memorials, expressed the idea of joint efforts in the struggle for peace.

It seems unusual that this monument was erected back in 1975. The appearance of such a monument contradicts the stereotype that has developed in everyday consciousness – that it was the time of the "Cold War" and the "Iron Curtain". Meanwhile, the 70s of the XX century became a period of the so-called "Detente" of international relations, when our states were looking for ways to prevent the threat of a new world war.

An example of such attempts was not only the Soyuz-Apollo space flight and joint cultural exchange projects, but also an appeal to the history of the joint struggle against fascism.

In May 1975, during the celebration of the 30th anniversary of the Victory, the first post-war exchange of official visits of warships of the USSR and the USA took place. American ships visited Leningrad, and with a return visit to Boston came the large anti-submarine ships of the Northern Fleet "Boykiy" and "Zhguchy". It is important that the ships of the Northern Fleet were chosen for this campaign – the heir to the military glory of the defenders of the Arctic that not only provided the escort of allied convoys during the war, but also participated in joint combat operations.

During the war, Murmansk and Arkhangelsk residents had an experience of communicating with the allies. This experience has never been forgotten by the Northerners. These events were reflected in a unique Soviet-American project - the documentary series "The Great Patriotic War", which was released in 1978. Despite the fact that the series was broadcast in the United States under the name "Unknown War", which reflected the views of a significant part of Americans about the events in Russia and the fact that the Arctic was not among the areas where the fate of the war was decided, even in the preliminary plan prepared by the American side, one of the themes of the film was to be "Fighting in the Murmansk area". In the final version of the series, two out of 20 films were devoted to this topic: "The War in the Arctic" and "The Battle at Sea".



The importance of the Murmansk port during the war largely determined the particular ferocity of the fighting on the right flank of the Soviet-German front. The escort of convoys from England and Iceland was provided by the British naval forces with the involvement of ships of the allied countries. The extremely limited ship composition of the Northern Fleet did not allow it to participate in guarding the caravans of Allied ships along the entire convoy route. However, during the periods of convoys, all the forces of the Northern Fleet deployed to support these operations.

The area of responsibility of the Northern Fleet was the water area to the east of Medvezhy Island. In this area, by the time the next convoys were passing, the available forces of the ship's composition were deployed, submarines occupied positions off the coast of Northern Norway, the air cover was carried out by the forces of the Air Force of the Northern Fleet, reinforced for this period by land and long-range aviation units transferred to operational subordination to the naval command.

Thus, memorials can be considered to perpetuate the exploits of the Severomorsk residents associated with work of the Allied convoys. The monument to the heroes of the Severomorsk, defenders of the Arctic during the Great Patriotic War, established in 1973 in Severomorsk, can be considered the main one.

In the garrisons of the Northern Fleet there are monuments (often with military graves) dedicated to the crews of the squadron of surface ships that directly participated in the convoys. But the protection of the allied ships was also provided by submariners, aviators, military personnel of the technical services of the fleet.

Among the monuments dedicated to the Severomorsk aviators, it is worth highlighting several monuments to the famous pilot, twice Hero of the Soviet Union Boris Safonov, who died on May 30, 1942 while protecting the Allied convoy PQ-16.

A particularly unique monument is the K-21 submarine put on a static display. This is one of the six cruisers that survived by the end of the Great Patriotic War. And by such a fateful coincidence, five cruising submarines did not just die at sea, but went missing. The coordinates of the death are unknown to date. The crew of each cruiser is 65-67 people.

The K-21 submarine has completed 12 combat campaigns, 17 combat victories have been credited to it. On October 23, 1942, she was awarded the Order of the Red Banner for six combat victories. In general, the brigade of submarines of the Northern Fleet made 424 combat trips during the Great Patriotic War, destroyed or damaged more than 200 ships.

In the most difficult conditions, our submariners laid more than 800 mines that helped destroying both fascist means of transport and warships. Of the 48 boats in the Northern Fleet's submarine brigade, 23 did not return from combat campaigns. 11 were missing, a terrible number, 1124 people, died. 7 submariners were awarded the title of Hero of the Soviet Union. I will list them, with your permission.

Ivan Kolyshkin, the first Hero of the Soviet Union in the Navy and in the Northern Fleet;

Captain of the 3rd rank Nikolai Lunin;

Lieutenant captain Israel Fisanovich;

Lieutenant captain Valentin Starikov;

Captain of the 3rd rank Grigory Shchedrin, commander of the S-56;

Ivan Kucherenko, commander of the S-51;

Magomet Gadzhiev – died on May 12, 1942 on the submarine K-23 in an unequal battle on the surface, performing an artillery battle with two Fascist patrol ships. But when the aircraft was called, the boat was destroyed, the crew was killed. Magomet Gadzhiev was awarded the title of Hero of the Soviet Union on October 23, 1942.

Many monuments dedicated to the events of the Great Patriotic War in the North perpetuated the feat of the international of sailors, pilots, port workers, all those who provided transportation under the Lend-Lease program.

This is evidence that the heroism and courage shown by our ancestors in the struggle for common goals are above the momentary political conjuncture. The problem of today is the demand for this memory. Let's not forget history.

ADDITIONAL MATERIALS

More information about the conference on the Murmansk Regional Branch of the Russian Geographical Society website:

Recordings of the conference in English: