Scientific approaches to defining the territorial boundaries of the Arctic

V P Federov¹, V P Zhuravel¹, S N Grinyaev² and D A Medvedev ²

¹Institute of Europe Russian Academy of Science, Moscow, Russia
²Gubkin State university of oil and gas (national research institute), Moscow, Russia

zhvalery@mail.ru

Abstract. The article deals with the problem of determining the boundaries of the Arctic territories belonging to the Arctic. The authors identified political, economic and other factors affecting the definition of territories belonging to the Arctic. Documents of subarctic countries, in particular, Canada, USA, Norway, etc., are considered. It is noted that in the Arctic countries there is no universal understanding of the territories belonging to the Arctic and the Arctic zone. It is especially difficult to determine the southern borders of the Arctic. Also there is no international agreement or treaty that unambiguously and unequivocally define the legal status of the Arctic. In USSR main criteria for identifying the southern boundary of the Arctic were the Arctic Circle, the mean multiyear 10ºС isotherm of July, and the permafrost zone. However, the use of variables leads to the "mobility" of the Arctic boundaries, especially in the face of climate change on the planet. On the basis of Russian domestic documents, the boundaries of the territories that are included in the Arctic zone of the Russian Federation are determined. The authors draw attention to the need for Russia to protect its sovereignty in the Arctic, the elimination and correction of errors in this direction.

1. Introduction

The concept of the Arctic as a physiographic area, its size and boundaries was repeatedly refined over almost the entire twentieth century and still remains the subject of many-sided studies and discussions [1].

Initially, the concept of “the Arctic” was used for the part of the territory that includes only the deep-water Arctic basin, seas and islands of the Arctic Ocean, limited from the south by the 5ºС isotherm of July. Some experts attributed to the Arctic as the northern part of the tundra zone (arctic tundra) and the zone of arctic deserts. In this case, the territory of the Arctic included not only islands with landscapes of arctic deserts and arctic tundras, but also margins of continents with arctic tundra landscapes. Later, it was begun to be understood the Arctic as the space occupied by different circumpolar landscapes located to the north of the forest boundary and, therefore, including the Arctic deserts and all the varieties of tundra.

In territorial terms, the Arctic is limited to 8 countries of the Arctic Council (USA, Canada, Norway, Sweden, Finland, Denmark, Iceland, Russia) and occupies 40.3 million sq. km., which is home to 532 million people. 4.6 million people live in the Arctic.

Arctic deep-sea basin in the central part of the ocean directly around the North Pole; 10 seas - Greenland, Norwegian, Barents, White, Kara, Laptev, East Siberian, Chukchi, Beaufort, Baffin, Fox
Beysin Bay, numerous straits and bays of the Canadian Arctic archipelago; the northern parts of the Pacific and Atlantic oceans. Arctic islands and archipelagoes: Vaygach, Wrangel, Greenland, Dikson, Franz Josef Land, Canadian Arctic Archipelago, Queen Elizabeth, Novaya Zemlya, Novosibirsk, Nordenshield, Severnaya Zemlya, Svalbardgen and others.

The significance of the Arctic space does not decrease with time, but increases, acquiring even a predominantly not an economically pragmatic entity, but some completely different metaphysical, sacral value. The Arctic region is perceived in public opinion and as a reserve ecological space of the whole world. In the Arctic, people see a global reservoir of clean air, fresh water (a third of all the world's freshwater resources are located here), and it also appears as the cleanest area.

In the last decade of the 20th century the concept of “the Arctic” expands and is defined as the northern polar region of the Earth, including the margins of North America and Eurasia and almost the entire Arctic Ocean with islands (except for the coastal islands of Norway), as well as the adjacent parts of the Pacific and Atlantic Oceans. The southern boundary of the Arctic coincides with the southern boundary of the tundra zone and its area is about 27 million sq. km.

Sometimes the Arctic is limited from the south to the Arctic Circle (66° 33’ N), in this case its area is 21 million sq. km. In this definition, the southern boundary of the Arctic is not clearly established.

In the Arctic countries, there is also no unambiguous definition of the boundaries of the Arctic.

Canada defines its Arctic region as an area that includes the drainage basin of the Yukon territory, all lands north of 60° N and coastal areas of the Hudson Bay and James Bay. The area of the polar possessions of Canada is 1.43 million sq. km.

The present-day Arctic region of the United States comprises the United States north of the Arctic Circle and south of it, including the Aleutian islands, territories north and west of the border formed by the Porcupine, Yukon and Kuskovim rivers, as well as all adjacent seas, including the Beaufort Sea, the Bering Sea and the Chukchi Sea seas. The area of the polar possessions of the United States is 0.126 million sq. km.

Norway does not define its Arctic territories in national regulatory acts. But upon signing the Guidelines for offshore oil and gas operations in the Arctic on June 13, 1997, the Arctic Ministers of the Environment of the Arctic States have determined that for the purposes of the Guide, Norway’s Arctic territories are formed by areas of the Norwegian Sea north of 65° N. The area of the polar possessions of Norway is 0.746 million sq. km.

Denmark has included Greenland and the Faroe Islands in its Arctic region. The extension of Denmark’s sovereignty to Greenland was secured by a decision in 1933 of the International Justice’s Permanent Chamber. The area of the polar possessions of Denmark is 0.372 million sq. km.

It should be noted that uncertainty in defining the criteria for the “arctiquity” of the territory and borders of the Arctic arises regularly, both in the scientific community and in public administration organizations, when it comes to developing strategic solutions aimed at solving the problems of this region.

In 1989, the State Commission at the Council of Ministers of the USSR on the Arctic Affairs established the concept of the “Arctic” as a single physiographic region, which includes (within polar zones and distribution of average annual 5°C isotherm of July) sea water areas, covered in summer drift ice, creating unfavorable conditions for navigation, and the land areas where there is ice cover or treeless tundra on the continuous permafrost. The main criteria for identifying the southern boundary of the Arctic were the Arctic Circle, the mean multiyear 10°C isotherm of July, and the permafrost zone. Due to the fact that these criteria included variable characteristics and did not fully reflect the material-structural properties of natural objects, these criteria were not widely used to identify the Arctic territory.

However, the geographical boundaries of the natural objects of the Arctic should have sustainable contact and barrier functions. The use of political, socio-economic and other subjective criteria for the identification of the territory of the Arctic should also be excluded.

The Arctic as a natural-economic system is three-dimensional, with the dimensions being the legal, economic-political and geographical.
2. Legal criteria
First of all, there is currently no single international treaty defining the legal status of the Arctic. The legal status of the Arctic territories is governed by the norms of international law, the national legislation of the Arctic coastal states and bilateral negotiations.

It should noted that by types of legal regime in the Arctic, the following territories are distinguished: state territory; territory with international regime; territory with a mixed regime [2]. A state is a territory that is under the sovereignty of a particular state, that is, it belongs to a certain state exercising its territorial superiority within it.

Territories of the international regime include terrestrial spaces outside state territory that do not belong to anyone individually, but are in common use of all states in accordance with international law (the open sea, the air space above it and the deep seabed outside the continental shelf). The international legal regime of the open seas is determined by the many norms of international treaties and international legal practices that regulate the relations of states regarding the high seas and establish the rules for its use for shipping, fishing, etc.

The territories with mixed regime include the continental shelf and the economic zone. They are not under the sovereignty of Arctic states and are not part of their territories, but each coastal state has legitimate sovereign rights to explore and develop the natural resources of the adjacent continental shelf and economic maritime zone, as well as to protect the natural environment of these areas. The scope of these rights is determined by international law, in particular, the Continental Shelf Convention (1958) and the United Nations Convention on the Law of the Sea (1982). Within the limits of these rights, each state issues its own laws and rules governing the said activities. For the rest, the principles and norms of international maritime law apply on the continental shelf and in the economic zone.

It should be noted that some Arctic countries, in particular the United States, have not ratified the UN Convention on the Law of the Sea, which creates practical difficulties in the implementation of these principles. Some experts may argue that the US de-facto stick to the norms and rules of the Convention but nevertheless for some reasons the document is far from being ratified by the Congress of the United States.

Russia applied for the expansion of its Arctic shelf in 2001 and 2015, having conducted research. The study of the application began in August 2016, and the decision is expected to be made within two to four years [3]. In 2013, Canada submitted an application for the extension of the shelf in the Atlantic Ocean, at the same time announcing that it would later declare claims for a part of the seabed outside the 200-mile exclusive economic zone in the Arctic Ocean. Denmark also filed a number of applications, the last - in 2014. In our opinion, in the conditions of a sharp exacerbation of the modern international situation, a positive decision on this issue will hardly be possible. And if such a decision is made, it will significantly reduce our intentions in expanding the Arctic shelf. It is also necessary to prepare for such a development of events.

Under these conditions, the primary task for Russia in the matter of preserving and expanding its sovereignty over a part of the Arctic region for further study, exploration, extraction and use of the wealth of the Arctic is to prevent the aggravation of the dormant conflict in the region. To protect its national interests, Russia should make every effort to develop the Arctic infrastructure to expand its influence in the Arctic. This will allow us to strengthen the position of our country and to contain the "struggle for the Arctic" in the framework of diplomatic cooperation in UN and various forums, which is in the interests of all mankind.

3. Political and economic criteria
The political and economic criteria to determine the state boundaries of the Arctic are applied in order to manage and define economic zones.

The motivation for isolating the Arctic zone was the opening in the north of the country in the 1980s of unique offshore oil and gas fields, which required the creation of large production centers with developed infrastructure for the transportation and processing of raw materials. The Arctic
transport and logistics infrastructure should simultaneously serve as a factor for the economic development of coastal areas. The further development of the Arctic transport facilities, primarily the Northern Sea Route, the creation of large territorial-industrial complexes in the Arctic zone is focused on obtaining economic benefits and solving social and economic problems [4].

The Fundamentals of the Russian State Policy in the Arctic for the period up to 2020 and beyond, the Arctic zone of the Russian Federation (AZRF or the Russian Arctic) is understood as part of the Arctic (the northern part of the Earth, including the deep-sea Arctic basin, shallow marginal seas with islands and adjacent parts of the continental land of Asia, North America and Europe. In the Arctic there are five Arctic states - Russia, the United States of America, Norway, Denmark (by the Greenland) and Canada, which have an legitimate exclusive economic zone and continental shelf in the Arctic Ocean), which includes all or part of the territory of the Murmansk and Arkhangelsk regions, Sakha Republic (Yakutia), Nenets, Yamal-Nenets and Chukotka Autonomous districts, Krasnoyarsk Krai as well as the lands and islands specified in the Decree of the Central Executive Committee of the USSR Presidium of April 15, 1926 "On declaring lands and islands located in the Arctic Ocean as the territory of the USSR", and adjacent to the territories, lands and islands of internal marine waters, territorial sea, exclusive economic zone and continental shelf of the Russia, within which Russian Federation has sovereign rights and jurisdiction in accordance with international law in force.

The Russian northern border within the maritime spaces is determined by the outer borders of the continental shelf of the Russian Federation and the exclusive economic zone of the Russian Federation, and its southern border is located on land and coincides with the administrative boundary of the respective autonomous districts and municipalities. Clarification and regulatory fixing of the borders of the Russian Arctic is of vital importance to protect the strategic national interests of the Russian Federation in the Arctic, to implement strategic planning for the development of the Arctic territories, as well as to solve current problems of socio-economic development, including those associated with life support within the Russian Arctic, taking into account the specific aspects of that region.

The Russian Arctic is positioned as an economic macro-region, as well as a territory of special national interests [5]. The macroregion includes the territories of several subarctic subjects of the Russian Federation, the socio-economic conditions within which they require the identification of certain areas, priorities, goals and objectives of socio-economic development in the development of strategic planning documents.

In 2014, the composition of administrative-territorial entities in the land territory of the Russian Arctic was clarified (Presidential Decree on May 2, 2014 No. 296).

The land territories of the Russian Arctic include the territories of the Murmansk Region, the Nenets, Yamal-Nenets and Chukotka Autonomous districts, the Vorkuta municipal formations (the Komi Republic), the City of Arkhangelsk, the Novaya Zemlya, Novodvinsk, the Mezensky and the Onega Municipal Districts, the Primorsky Municipal District, Severodvinsk (Arkhangelsk Region), Allaikho Ulus (District), Anabarsky National (Dolgano-Evenki) Ulus (District), Bulunsky Ulus (District), Nizhnekolymsky District, Úst-Yansky Ulus (Sakha Republic (Yakutia)), Norilsk, the Taimyr Dolgan-Nenets Municipal District, the Turukhansk District (Krasnoyarsk Territory), and the lands and islands located in the Arctic Ocean, specified in Resolution of the Central Executive Committee of the USSR Presidium of April 15, 1926 "On declaring lands and islands located in the Arctic Ocean as the territory of the USSR" and other acts and laws of the USSR.

The composition of the land territories of the Russian Arctic was determined according to the following criteria: the integrity of the natural-economic and management systems, as well as the ethno-economic areas of the small indigenous peoples of the High North; infrastructure development of coastal areas and facilities in the interests of the formation of sea potential and the socio-economic development of administrative entities bordering the sea coast; transport to the Northern Sea Route.

The composition and boundaries of the administrative-territorial entities on the land in certain periods of socio-economic development undergo a partial change. In 2017, another three municipal
districts of the Republic of Karelia (Belomorsky, Loukhsky and Kemsky) were included in the structure of the Russian Arctic.

In accordance with the decisions of the State Commission for the Development of the Arctic, the Federal Law “On the Development of the Arctic Zone of the Russian Federation” is being drafted, for the purposes of which the Russian Arctic is defined as part of the Arctic, within which the Russian Federation has sovereignty, sovereign rights and jurisdiction and includes: a) the territory (part of the territory) of the constituent entities of the Russian Federation, defined by Decree of the President of the Russian Federation of May 2, 2014 No. 296; b) all open and that can be opened further land and islands located in the Arctic Ocean north of the coast of the Russian Federation to the North Pole and within the spaces defined by lines defined by international treaties of the Russian Federation and the legislation of the Russian Federation, c) inland waters and the territorial sea of the Russian Federation adjacent to the territories indicated in subparagraphs "a" and "b"; d) the exclusive economic zone and the Russian continental shelf within the limits of sovereign rights and jurisdiction of the Russia; e) the airspace above the territories and water areas listed in aforementioned subparagraphs.

It is of great importance to note that at present there is an incomplete process of delimiting the maritime spaces of the Arctic Ocean. First of all, this concerns the continental shelf, where considerable potential hydrocarbon reserves are concentrated.

In accordance with current regulatory legal acts, the maritime and land borders of the Russian Arctic may be adjusted depending on the status of the territory, the legal regime, the socio-economic feasibility and the powers of the authorities at various levels.

4. Conclusion

The question of defining the boundaries of the Arctic as a polar physiographic region remains controversial. The geographical boundaries of the Arctic (the concept of which has changed several times over the course of the twentieth century) do not coincide with the administrative-territorial boundaries of the northern territories of the Arctic coastal states. This circumstance creates difficulties in the Arctic identification of natural territories. Accordingly, when preparing strategic planning documents related primarily to the protection of the Arctic environment, this issue becomes relevant [6].

The Russian Arctic in strategic planning documents is positioned as part of the Arctic. In fact, the Russian Arctic includes territories that extend beyond the natural zones of the Arctic. The land territories of the Russian Arctic are located not only within the arctic climatic zone, the zone of arctic deserts and polar tundra that traditionally belong to the Arctic, but also within the territory with a subarctic climate and landscapes of the northern taiga, which are identified with the Subarctic.

After a decision has been taken on the composition of the land territories of the Russian Arctic, paragraph 2 of the Fundamentals of the State Policy of the Russian Federation in the Arctic for the period up to 2020 and beyond is to be specified. At this point, it is necessary to clarify that the Russian Arctic is not only part of the Arctic, but also covers the Subarctic zone. The southern administrative-territorial border of the Russian Arctic should be defined as the boundary of the historically established Arctic natural-economic complex, combining sea and land activities and management. While Russian Federation territory plan is progress special attention should be paid to territory planning of Northern regions.

Strategic planning documents must take into account the presence of arctic and subarctic natural areas and comfort/discomfort zones within the Russian Arctic. The status of the Russian Arctic as a macroregion and a mechanism for coordinating activities (management) in this macroregion are also subject to clarification.

Within the Russian Arctic, zones can be distinguished, including the coastal territory and the coastal water area, with regulatory legal consolidation of the respective powers of the constituent entities of the Russian Federation in terms of strategic planning for the development of the coastal territory and the coastal water area. All this is expedient for a balanced and targeted solution of the
economic, social and environmental problems of the Russian Arctic and a more effective state regional policy.

In the opinion of professor N.D. Yeletsky an obvious need at the present time is to overcome the negative attitudes that have appeared in recent decades to abandon the defense of Russian sovereignty over the significant waters of the northern seas — installations that are inevitably associated with the attendant weakening of geopolitical positions of international authority, as well as with tangible economic losses [7].

Russia's recognition of the fundamental provisions of the 1982 Convention on the Law of the Sea meant a fundamental change in the legal status of the territories previously defined as “polar ownership”, and the ratification of this convention in 1997 led to the official loss of sovereignty over 1.7 million sq. km before the Russian Arctic (it is significant that the United States has not signed this Convention to date).

Speaking today about Russia's ratification of the 1982 Convention on the Law of the Sea, we see that relying on this Convention, many states, primarily the United States, want to "internationalize" the Arctic region, which is not in Russia's interests. And, therefore, the statement of Artur Chilingarov, Special Representative of the President of the Russian Federation for International Cooperation in the Arctic and Antarctic is understandable: "I would like to say that there are different opinions regarding the convention (UN Convention on the Law of the Sea of 1982), but the general opinion is that we may have been quick to ratify it" [8]. Senior researcher of the Institute of World Economy and International Relations of the Russian Academy of Sciences, E.Labetskaya, states that the "ratification of the Convention by Russia in 1997 and its subsequent submission in 2001 to the relevant UN Commission to determine the outer limits of its continental shelf de facto undermined the “sectoral regime” [9].

Under these conditions, it is necessary, in our opinion, to admit the mistakes made. The legislative and executive authorities begin to correct them and minimize negative consequences. According to a member of the Council of the Federation, Chairman of the Council for the Arctic and Antarctic at the Council of the Federation V.A. Shtyrov "the best option for Russia would be an agreement on returning to the sectorial division of the Arctic and securing the Laptev, Kara, East Siberian seas and part of the Chukotka (from Wrangel Island to the Bering Strait) to the status of our historic waters" [10].

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