

Article

Development of Ecotourism in Svalbard as Part of Norway's Arctic Policy

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Abstract: Global warming is increasing interest in the Arctic on surrounding countries. In the processes taking place, they see developmental opportunities and risks, especially for the environment overburdened by increased human activity. The need to balance socioeconomic development and environmental concerns affects their arctic strategies. An example of a place that undergoes an adaptation process is the Norwegian Svalbard. The article examines changes taking place in the archipelago using both: quantitative and qualitative analyses. Results show that Norway's arctic strategy underlines the need to balance social, economic and environmental aspects, and the situation in Svalbard corresponds to these demands. Polar tourism and research and education play a key role in the transformation processes taking place in the archipelago. Climate and environmental considerations at the same time increase tourists' interest in the region and limit tourist traffic. An analysis of its current state indicates that the dominant part of the existing tourist traffic on Svalbard can be considered as ecotourism.

Keywords: Norway's High North; Svalbard development; arctic development; arctic environment protection; polar tourism; ecotourism



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1. Introduction

The current climate changes and the parallel technological development mean that the areas of the Earth, which have been sidelined so far play an increasingly important role in political, economic and social plans and processes. Modern climate research indicates that since the industrial revolution, the global temperature increase has been around 1 °C [1]. However, this is an averaged value and increases in different regions of the globe are different, and for the polar regions, significantly higher, reaching twice the global average [2] (p. 205). Global warming is accompanied by melting ice and diminishing sea ice cover in the Arctic and Antarctic. In the Arctic, the ice cover in September decreases at a rate of 13% per decade [3]. This makes the far north more open to human activity and changing the scope and forms of interest in the Arctic on the part of the international community and, in particular, the Arctic states, namely Canada, the United States, Denmark, Norway and Russia. This concerns, in particular, the possibility of exploiting natural resources in territories previously inaccessible for climatic reasons, and increasing shipping activity in the High North, including the creation of northern passages. The possibility of establishing northern passages open to navigation for ships with low ice class would significantly shorten the transportation route and reduce the costs of international trade [4]. However, the most exciting are the deposits of oil and gas potentially hidden under the bottom of the Arctic Ocean and coastal seas. The retreating ice sheet allows for the start of exploration and exploitation of the northernmost areas, and the beginning of the 21st century resulted in the first attempts to estimate these resources. Special interest was aroused by the report of the geological services of the United States of America in 2008 [5], which indicated that the area might contain up to 90 trillion barrels of oil and huge deposits of natural gas reaching 22% of global resources. In a similar tone, the 2012 report was maintained, which mentioned the Barents Sea, the Beaufort Sea, the Baffin Sea and the Greenland Sea as the most probable

locations of deposits [6]. In order to take advantage of these opportunities, the Arctic states are seeking to guarantee access and consolidate their sovereignty over the largest possible part of the Arctic, which led to a kind of “race to the pole” at the turn of the century [7–9].

On the other hand, what attracts states and investors the most, i.e., the possibility of using the fossil fuel deposits hidden under the Arctic Ocean, is at the same time the greatest threat to the environment. Serious breakdowns (like the Deepwater Horizons incident in 2010) can occur particularly often in the harsh climate conditions of the far north. The risk of serious contamination can be seen, for example, in Western Siberia. Equipment and pipelines built using technologies from the 1970s had to cope with extreme climatic conditions [10]. The number of pipeline failures in the nineties reached thousands a year, with the often used method of liquidating spilled oil being burned. Fires moved to taiga, completely destroying life. As a result, large areas of land are contaminated, fishing is impossible in a significant part of the rivers, and as a result of evaporation, rains containing oil are also frequent [11] (pp. 265–308). Similarly catastrophic effects may be caused by the increase in maritime traffic, as exemplified by the Exxon Vadez accident in 1989 off the coast of Alaska [12]. It is pointed out that it is necessary to regulate maritime traffic in detail [13] and to introduce restrictive requirements for the safety of economic activity in the north [14]. An additional problem is the thawing of permafrost resulting from global warming. Damage to buildings and infrastructure without proper foundations is multiplying [15] (pp. 38–39).

It is therefore necessary to seek forms of social and economic development that will place as little burden as possible on the Arctic environment and enable the most harmonious possible coexistence of man and the surrounding nature. Undoubtedly, such a form can be sustainable tourism that provides unforgettable experiences related to the specific climatic and natural characteristics of the Arctic and, at the same time, does not impose an excessive burden on the natural environment. However, the understanding of sustainable tourism cannot be limited to its impact on socioeconomic development and the environment. It is also inseparable to support living conditions of the local community, its culture and traditions [16]. As far as the far north is concerned, this aspect is particularly important because Arctic is inhabited by a number of indigenous peoples who often cultivate traditional lifestyles. This understanding of sustainable tourism is connected with the concept of ecotourism. According to The International Ecotourism Society (TIES), ecotourism is “responsible travel to natural areas that conserves the environment, sustains the well-being of local people, and involves interpretation and education” emphasizing that education is meant to be inclusive of both staff and guests [17]. Therefore, in addition to sustainability, it is also necessary to meet the condition of travel to environmentally specific places, often with special forms of protection. Due to its climatic specificity, the Arctic meets this requirement perfectly. Hence, the growing trend of polar tourism since 2007–2008, i.e., since the Fourth International Polar Year [18,19] seems to be part of the concept of sustainable ecological tourism.

Due to its geographical location, Norway’s relations with the Arctic have been extremely strong for centuries. Expeditions to the north-east along the coast, through the North Atlantic to the west, to the British Isles, Greenland and modern Canada, and to the north towards the Arctic Ocean are inherent in its history, both at a time of Viking expansion [20] and of great geographical discoveries [21]. Hence the natural interest in the High North, the desire to get to know and master it, and at the same time the humility towards the climate challenges and other adversities. In this spirit, the concern to consolidate the presence and development of the North is a particularly important element of Norwegian policy. In parallel to extending Norwegian sovereignty towards the pole, it was necessary to strengthen it initially through a political act and military presence, over time through use and development. It does not matter whether the distant northern areas of mainland Norway (e.g., Finnmark), the island of Jan Mayen or the Svalbard archipelago are concerned. In all these areas, it is necessary to balance political, socioeconomic and environmental objectives to ensure stable and sustainable development. The need to move away from

mining-based development resulted in plans to strengthen other industries. An important element of these changes is to support tourism. The further north the greater the share of ecotourism and ethnotourism focused on learning about the culture of the indigenous Sami Peoples [22]. Due to the long coastline, a popular form of tourism in Norway is also the coastal and ocean tourism, with the growing popularity of cruise tourism to Svalbard being perceived as its particularly exclusive variety [22] (p. 162). The cruise prices alone are a barrier to mass tourism. However, neither the high price nor the rejection of the 3 S rule yet decides that the tourists coming to the archipelago can be described as ecotourists.

2. Materials and Methods

When I began my research, I took two assumptions from previous experience. Firstly, I knew that Norway has a strategy for the Arctic, which addresses internal and international issues and, at the same time, emphasizes the need to develop and protect nature. Secondly, I knew that Svalbard has been going through a process of socioeconomic change over the last few decades, from mining settlements managed by mine owners to a democratic local community with diversified sources of income. As part of this process, the involvement of the researchers and scientists who have been present on the islands for decades was obvious to me, but the importance of tourism was less obvious, including its scale and dominant models. I have therefore posed two main research questions for this research:

1. Does the situation in Svalbard fit in with the principles of the Norwegian Arctic strategy?
2. Can the tourist products on offer in Svalbard be considered as belonging to the category of ecotourism?

The first question required two actions. Firstly, an analysis of the Norwegian strategy towards the Arctic and in fact its changes, as four documents were analyzed: the 2006 strategy [23], its 2009 extension and detail [24], the 2014 summary report [25] and the new 2017 strategy [26]. Their internal qualitative analysis was necessary to indicate what are the state's priorities in relation to the area in question and what is particularly emphasized. Their comparison was also essential in order to indicate differences and determine the directions of change. All documents are official state documents available on the Norwegian Government website. Secondly, an analysis of the processes that have taken place in recent decades in Svalbard is also required. The aim was to examine how the social, political and economic situation of the archipelago has changed, and what is the state of the natural environment and the scope of its protection. With regard to Svalbard's social and economic situation, official quantitative data provided by Statistisk sentralbyrå (Statistics Norway) were used. These mainly concerned the size of the population [27], employment in various industries including mining, tourism, research and education [28,29] and coal mining [30]. In addition, the information used concerned employment and coal mining in Svalbard and further plans presented by mine operators [31,32] and also statistical data on students and researchers presented by the University Centre in Svalbard [33]. With regard to the state of the natural environment and the scope of its protection, I consulted primarily the information provided by the governmental Department for Nature Management (Koronasituasjonen) [34] and MOSJ Environmental Monitoring of Svalbard and Jan Mayen (Miljøovervåking Svalbard og Jan Mayen), an organization monitoring the state of the natural environment in the archipelago [35]. After these activities, it became possible to determine whether the processes taking place on the islands correspond to those emphasized in the state strategy.

To answer the second question, three points had to be identified. Firstly, the scale of tourist traffic in Svalbard. Secondly, the range of tourist products offered by island-based suppliers and external tour operators. Thirdly, the compatibility of the individual products with the concept of ecotourism. During the course of the research, it proved necessary to differentiate tourists between those who enter the areas subject to the obligation to report all activities and those who remain in or near the settlements. Precise determination of the size of both of these categories turned out to be impossible to establish for some other reasons. As far as the former is concerned, although the reporting obligation applies to land

expeditions and ship movements, unfortunately, the figures published by the Governor of Svalbard concern both tourists and scientists in total [36]. As for other tourists, detailed reporting is not obligatory, hence indirect statistical data were used. They concerned the annual number of nights spent by tourists in existing accommodation places published by Statistics Norway [37], the number of tourists going ashore from tourist ships arriving in Svalbard published by MOSJ [38] and the volume of passenger traffic at the airport published by its operator, Avinor [39]. This helped to understand the scale of current tourist flow in Svalbard. The fact that all entrepreneurs in the tourist industry in Svalbard are affiliated in the Visit Svalbard organization, made it easy to determine their number and the range of services they provide [40]. This made it possible to analyze the offer of tourist products, which a person visiting the archipelago can take advantage of. In order to establish its compatibility with the concept of ecotourism, I took a working definition adopted by TIES. Using the criteria proposed by this organization and after taking into account the comments indicated by M. Honey [41], I wanted to check if the products meet the following criteria:

- Plays the role of conservation and the promotion of the natural and cultural environment,
- Deals with the sustainable management of the environment,
- Involve local community,
- Satisfying tourists' ecological needs [42].

A certain facilitation in interpreting the results was the adoption of the division into hard and soft ecotourism [43]. The biggest problem was, among other things, to determine the motives for tourists arriving in Svalbard. Not every stay in an environmentally specific area should be considered as being based on ecological motives [44].

3. Results

3.1. Historical Background of Svalbard

It is possible that the first people on Svalbard were Vikings, but over the centuries the memory of the islands has disappeared. According to some Old Norse annals from Iceland, Svalbard was discovered after a 4 day voyage east of Iceland in 1194 [45]. Since the rediscovery of the archipelago at the end of the 16th century, man-made economic activity there was based on the exploitation of its natural resources. Originally the islands were used as a base for whaling and as a place for intensive hunting for arctic foxes, reindeer and polar bears. Over time, fishing and seal hunting also developed. As a result, regular visitors to the archipelago were mainly sailors and hunters of different nationalities [46]. The situation did not change until the turn of the 19th and 20th centuries, when two major changes took place simultaneously. Firstly, the industrial exploitation of the island's coal deposits began. Secondly, a series of international conferences recognized Norwegian sovereignty over the archipelago, which was confirmed in the Spitsbergen Treaty concluded in Paris in 1920 [47] and in a more detailed form in the agreement of 1925 [48]. Norway's sovereignty over the islands, however, did not mean full sovereignty. The contracting parties agreed that Svalbard will remain an area open for free conduct of economic and scientific activities, regardless of the nationality of the people and companies undertaking them. At the same time, they had to comply with Norwegian law and the State was entitled to tax them. Additionally, apart from the need to create an administration on the islands, Norway committed itself to giving special protection to the archipelago's natural environment. Since after the Second World War, only the Soviet Union, and now the Russian Federation, has claimed the right to do business freely in Svalbard, its coastal waters and the exclusive economic zone [49]. The other countries only enjoy the freedom to carry out scientific research.

Until the collapse of the Soviet Union, the archipelago remained aloof from political and economic processes. Norway was a NATO front-line state bordering the Soviet Union, which also translated into Norwegian-Russian relations in Svalbard. Admittedly, there were no open conflicts, but there were Soviet and Norwegian mining settlements next to each other, with Soviet Union citizens making up the majority of the archipelago's

population. Hence, despite the formal Norwegian sovereignty and the authority of the Norwegian governor of Svalbard, Russian settlements were de facto outside of his jurisdiction. In fact, however, until the 1980s, it did not matter much, because under the aforementioned treaties, Svalbard was a demilitarized zone, and the existing settlements were company estates managed by companies owning mines [50].

In the last decades of the 20th century, the situation started to change slowly. This was due to two parallel but independent processes. The first was the accelerating transformation of Longyearbyen, the Norwegian capital city of the archipelago, from a mining settlement managed by a mining company to a more diverse local community, gradually taking over the right to decide on an increasing range of local issues. This process gained particular prominence in the 1990s, leading to the democratization of the social and political life of the islands [51]. The second was a change in the existing balance of power. Political changes in Russia meant that from 1991 the country withdrew from the policy of settling in Siberia and the North, and stopped subsidizing jobs created there. Due to the lack of state support and the decreasing profitability of coal mining, the Russian mine in Pyramiden was closed in 1998, which meant that the settlement, which had even a thousand inhabitants during its heyday, was abandoned by all residents. In the second Russian settlement—Barentsburg—mining was still carried out, although since the underground fire in 2007, it has been relatively small in scale, and no more than 500 inhabitants have remained in the settlement [52] (p. 9). According to the information currently provided by the owner of the mine, the Russian company Arktikugol, mining is planned to be stopped in 2024, when the deposits will run out [31]. As a result, since the 1990s, the Norwegian population has become larger and more active, and due to the disappearance of the Cold War confrontation, the governor has begun to have a growing influence on the functioning of Russian settlements (Table 1). The internationalization of the Svalbard community is also progressing. In this case, it concerns both scientists and students and other residents who came from 44 different countries of the world in recent years.

Table 1. Settlements at Svalbard.

| | Persons/Year | | | | | | |
|--|--------------|------|------|------|------|------|------|
| | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
| Longyearbyen and Ny-Ålesund. Resident on the mainland | 1125 | 1218 | 1475 | 1645 | 1744 | 1692 | 1697 |
| Longyearbyen and Ny-Ålesund. From abroad, not resident on the mainland | 0 | 0 | 0 | 0 | 308 | 493 | 731 |
| Barentsburg and Pyramiden | 2407 | 1679 | 893 | 747 | 420 | 471 | 501 |
| Hornsund | 12 | 9 | 8 | 8 | 9 | 10 | 10 |

Longyearbyen is a Norwegian settlement, Ny-Ålesund is a Norwegian research settlement, Barentsburg and Pyramiden are Russian settlements, Hornsund is a Polish research station. Source: [27].

3.2. Development Strategies for Arctic Areas in Norway

Climate change processes are reflected in Norway's policy towards the Arctic. The 2006 policy paper [23] identifies two priority objectives: strengthening Norwegian sovereignty over existing territories and shifting jurisdiction over Arctic marine areas as far as possible towards the pole; and protecting the Arctic environment and research to understand existing dependencies and processes, with particular emphasis on international research in the Barents Sea. Considerable attention was also paid to the protection of the Arctic natural environment and the problems of Arctic indigenous peoples. The next strategy of 2009 [24], which complements and extends the previous one, highlights scientific research into the Arctic environment and its protection, followed by economic development, paying attention to the sustainable development of marine areas through the use of natural resources, including fossil fuels, land-based development based on tourism and mining industry and also infrastructure development. In this document, the previous political objective is losing its priority and changing the direction towards strengthening sovereignty and developing

cooperation with the countries of the region. The first summaries can be found in the report adopted by the government in 2014 [25]. It shows that actions aimed at the development of the North did not bring about identical results at individual levels. While we can speak of accelerated economic development, whose indicators for the northern provinces were higher than those achieved in other parts of the country, social development indicators and demographic indicators lagged behind. However, there is no doubt that Norway managed to maintain its leading position in promoting regional cooperation, research and economic development in the High North. The report indicated the need to focus on five priorities for the Arctic, which became the basis for the development of the last strategy of 2017 [26]. It pointed to the need to focus the state's actions on:

1. International cooperation, including search and rescue at sea and the development of an appropriate system in Svalbard.
2. Economic development, including support for innovation and creation of products other than those based on the direct use of mineral and natural resources.
3. Carrying out scientific research, paying attention to the problem of open access to reliable scientific knowledge.
4. Development and maintenance of infrastructure.
5. Environmental protection and emergency response system in the case of contamination.

It was also particularly emphasized that an overriding objective is a stable and sustainable growth in parallel on three levels: society, economy and environment. This is only possible if Arctic policy is integrated. A new element that emerged in this strategy was the question of the need for a green transformation, that is to say, the switch to renewable energy sources in the economy of the High North (Table 2)

Table 2. Main elements directly related to Svalbard's socioeconomic situation in Norwegian strategies for the Arctic.

| | |
|-------------------|--|
| The 2006 strategy | emphasizing the importance of research on the Arctic and the Barents Sea, which resulted in further development of a research center in Svalbard |
| The 2009 strategy | emphasizing the importance of economic development, which resulted in an emphasis on the development of tourism and on the development of mineral extraction |
| The 2017 strategy | extending the Svalbard sea rescue system striving for sustainable development on the social, economic and environmental levels, which resulted in the reduction of coal mining in Svalbard |

Source: produced by author based on [23–26].

3.3. Changes in the Socioeconomic Structure

As indicated, until the late 1980s both Norwegian Longyearbyen and Russian Barentsburg were mining settlements. Apart from them, only research stations resided on the islands. At that time, however, a slow but accelerating process of change began. It led to the local community taking over the management of local affairs and the initiation of a process of moving away from coal mining monoculture towards greater freedom and diversity in economic activity. At the same time, there were transformations in the demographic structure of the population, including a significant increase in the proportion of women. Children also appeared in the previously masculinized mining settlements, which made it necessary to create completely new services and an influx of previously unnecessary professions [52] (p. 10).

The first process related to changes in the employment structure, initiated in the 1990s, was the influx of research and scientific institutions to the islands, which resulted in the establishment of the University Centre in Svalbard in 1993. It does not have the status of a university, but it does provide an opportunity for Arctic research and education in this field. Together with pre-existing research stations, this has made Svalbard an important

research centre attracting students and scientists from all over the world. For example, in 2018, 772 students from 43 countries took part in courses there. As a rule, half of them are Norwegians and half are people of other nationalities. The teaching staff of about 60 permanent and 160 visiting lecturers is composed in similar proportions [33]. It should be remembered that apart from students, there is a large group of scientists on the islands each time, among whom Norwegians, Russians and Poles are the most widely represented [52] (p. 18). Scientists and teachers accounted for around 15% of the total number of employees in recent years [52] (p. 14) (Table 3).

Table 3. Svalbard employees by industry.

| | Employed Persons/Year | | |
|--|-----------------------|------|------|
| | 2009 | 2014 | 2019 |
| B-S Svalbard total | 2201 | 2271 | 2402 |
| B Mining and quarrying | 397 | 353 | 97 |
| C-D-E Manufacturing | 41 | 55 | 73 |
| F Construction | 231 | 273 | 252 |
| G Wholesale and retail trade: repair of motor vehicles and motorcycles | 197 | 164 | 172 |
| H Transportation and storage | 180 | 152 | 159 |
| I Accommodation and food service activities | 238 | 403 | 419 |
| J-K Information and communication | 52 | 60 | 87 |
| L Real estate activities | 4 | 11 | 13 |
| M Professional, scientific and technical activities | 41 | 82 | 95 |
| N Administrative and support service activities | 200 | 165 | 419 |
| O Public administration and defense | 105 | 102 | 134 |
| P Education | 311 | 209 | 215 |
| Q Human health and social work activities | 94 | 82 | 89 |
| R Arts, entertainment and recreation | 90 | 142 | 163 |
| S Other service activities | 20 | 18 | 15 |

Source: produced by author based on [29].

The second process was the continuous reduction in the number of people employed in mining. While still in 1950 there were about 1000 people employed in this industry [52] (p. 7), in subsequent years this number gradually increased especially on the Soviet side. However, with the abandonment of Pyramiden, it fell to about 300. On the Norwegian side, even in the period of the highest annual coal extraction in 2007, it did not exceed 400 people, and now, after the closure of subsequent mines, it does not exceed 100 people [28]. However, this did not mean mass redundancies as part of the jobs were transferred to the decommissioning of pre-existing mines and part to construction and repair services. The latter, in particular, are proving to be more and more necessary now, because climate warming is causing the thawing of permafrost, which is affecting existing buildings and infrastructure. The fact that the reduction in coal extraction [30] was a conscious action plan of the Norwegian authorities is evidenced by the fact that the last mine closed in 2017 still had sufficient coal deposits for further mining for several years, and private offers to buy it also appeared. However, the authorities even refused to consider them [53].

The third process was the increase in the number of people involved in tourist services. The first private hotel and catering facilities appeared on the islands at the beginning of the 1990s, which was matched by a sharp increase in the number of registered businesses. The number of people related to tourist services equaled the employment in the mining industry in 2013 [52] (p. 9), and currently slightly more than 400 people work in the hotel and catering industry and further 400 in supporting services (Table 3). Most jobs are now created by the tourism industry, followed by construction, science and education, public administration and public services.

As a result of historical and contemporary processes, a separate local culture was created. Despite the fact that this part of Norway was not inhabited by the Sami Peoples, and the permanent settlements have a relatively short history, the archipelago has its

distinct specificity. It is based on three basic pillars. The first one is the cultural heritage referring to the fishing and hunting past, and later the mining past. Their material symbols are the currently unexploited mines, administrative and industrial buildings, the mooring mast for airships in Ny-Ålesund (known as Amundsen's mast) [54], and even the entire abandoned settlement of Pyramiden [55]. The second is a very close relationship between the local community and the environment. This is the dependence of the inhabitants' lives on environmental conditions. It is about the fact that in the past and, currently, this environment provides the inhabitants with a livelihood, once as a result of its exploitation and, currently, exploration. It is also about the fact that extreme climatic conditions and wild animals can take the life of any careless or ill-prepared person at any time. The third pillar is the internationalization of the local community. Achieved initially by the growing presence of researchers from various countries conducting research in the Arctic, it has been strengthened in the last decade by the free recruitment of contract workers from around the world. Due to this combination, the rather one-dimensional traditions have been enriched with contemporary diversity. As experience from all over the world shows, the first two pillars can easily be transformed into tourism products, and the third can facilitate their sale and reception by multiethnic tourists.

3.4. Natural Environment Protection

For researchers and tourists, the geography and terrain of the archipelago themselves may be interesting. The highest peak of Newtontoppen rises to an altitude of 1713 m above sea level and the islands are covered by multipeak, ragged mountain ranges crossed by wide glacial valleys. The climate of the perimeter zone and topography influences the low position of the limit of perennial snow, which makes more than 60% of the surface of Svalbard covered by glaciers. The largest glaciers are on the east where the temperature is lower. The largest glacier in Svalbard, Austfonna, is on Nordaustlandet. More than 1000 km of Svalbard's coastlines are comprised of glacier fronts that make contact with the sea [56]. The cracks and caves in them allow for going down under the glaciers and observing them from the inside. Characteristic elements of Spitsbergen sculpture are wide, U-shaped glacial valleys and flat sea terraces. All of this contributes to the complexity of the coastline, which is rich in numerous fjords. There are three climatic zones represented on Svalbard. Middle Arctic tundra is the most species-rich zone but is only found in the inner fjord. Northern arctic tundra is less productive and stretches along the western and northern coasts of Spitsbergen and on Edgeøya and Barentsøy. Polar desert dominates in the northern and highest ice-free areas and is barren, but still enough to support Svalbard reindeer [56].

The forms of using Svalbard's natural resources, since its discovery at the end of the 16th century, we would now call a robbery economy. In fact, only the series of international conferences from the 1920s drew attention to the need to protect its natural environment. Both fishing of marine mammals and the range of hunting for terrestrial animals have been gradually reduced, but it should be remembered that it was coal mining that became the basis for the management in the archipelago. The hunting never stopped completely, but it was no longer carried out on an industrial scale, but supported the maintenance and nutrition of the inhabitants. The first conservation rules and limits were introduced in 1925 and applied to Svalbard reindeer. However, the actual significant changes in the principles and scope of the archipelago's natural environment protection were brought about only in the 1970s. In 1973, the first three national parks were established in its area. On the basis of the new act on the principles of environmental protection, in 2003 another three, and in 2005 the fourth (seventh in total) national park was created [52] (p. 4). They cover a total of 25% of the land territory of Svalbard. In addition to national parks, six nature reserves and fifteen bird sanctuaries have been created since 1973, and in 2003 also one geotope protection area. In total there are 29 nature conservation areas on the islands, which together cover about 40,000 km², i.e., 65% of the land territory of the archipelago and about 80,000 km² of waters, i.e., 86.5% of its territorial waters [34] (Figure 1).

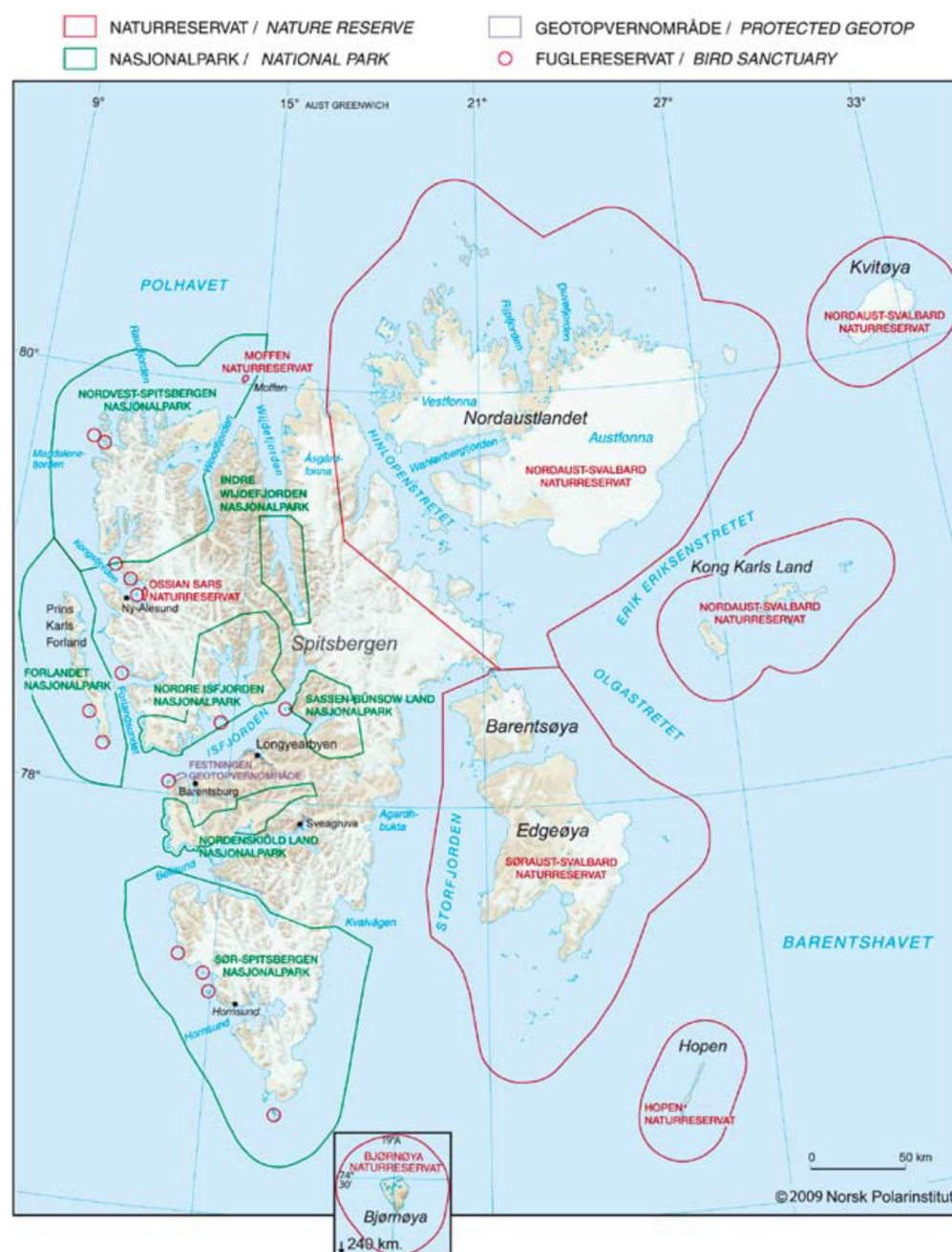


Figure 1. Nature conservation areas in Svalbard [34].

For the sake of the environment, measures have been taken in the archipelago to reduce polluting emissions. Already in 2007, a ban on ships powered by heavy oil was introduced on entering coastal waters. This first reduced the number of incoming cruise ships, while in the long term it made them come in greater numbers but smaller sizes and take fewer tourists on board [38]. However, research on emissions shows that tourist ships, especially those carrying more than 50 people, continue to be a major burden on the environment at least locally [57]. In the same year, the burning and burying of municipal waste was stopped. Currently, it is divided into fractions and biodegradable waste is dumped in the sea, while the rest is exported to the mainland of Norway, where it is recycled or disposed of [52] (p. 5). As part of the Green Transformation, work is currently underway to switch from local energy production to renewable energy sources in order to minimize carbon consumption.

It is worth mentioning that, as part of the concern to preserve biodiversity and protect species throughout the Earth, the Svalbard Global Seed Vault project has been developed since 2006. The vault, launched in 2008, contains the seeds of 4000 plant species from around the globe [58]. By being located in permafrost, at a considerable depth, this deposit is intended to survive any disaster that might occur regardless of its source. In 2016, there was a leak that fortunately did not threaten the collected seeds [59]. It was caused by the rapid melting of the ice and the thawing of permafrost, which is symptomatic, as a result of climate change, particularly strongly manifested in the increase in the average temperature in the Arctic. Due to such extensive protection, the state of the natural environment in the archipelago should be regarded as very good. A particularly well-known specificity of the islands is the large population of polar bears. Usually quoted numbers indicate that there are about three thousand of them. The information that this number refers to all bears living in the Barents Sea, while the Svalbard population is about 300 bears, is usually omitted [60]. Next to them, the icon of the islands are the arctic foxes and the only species of reindeer found here. The waters around Svalbard are inhabited by seals and walruses, and you can also come across Greenland whales. The archipelago is also rich in bird habitats, and the number of species represented is estimated at over 200.

3.5. Tourist Offer and Tourist Traffic

As indicated, the first hotels were built in Longyearbyen in the 1990s and since then there has been a dynamic increase in the available offer. Generally, tourists arriving in Svalbard should be divided according to the method of arrival into those arriving by air and those arriving by sea. In 2019, Svalbard airport handled 185,000 passengers, including arrivals and departures [39]. Thus, there could be over 90,000 people arriving by air, although this number also includes business people, employees and residents of the archipelago. They usually made short stays, ending up in lodging facilities in Longyearbyen and dining there. The number of purchased nights has been growing successively over the years, and in 2005 it amounted to 80,000, in 2015 it reached 130,000 [52] (p. 16) and in 2019 it approached 200,000 [37]. They mainly enjoy short, one-day, organized trips. Their goals are twofold. On the one hand, these are man-made destinations, such as the abandoned village of Pyramiden, the inhabited Russian settlement of Barentsburg, or the closed coal mine near Longyearbyen. On the other hand, they include natural destinations, like descending to an ice cave, but most of all, watching the harsh, arctic landscapes, meeting flora and fauna, and trips to places away from light sources to be able to fully admire the northern lights. These activities are carried out almost exclusively in organized groups because walking away from human settlements is allowed only with a guide with a weapon due to the threat posed by polar bears. The tours offered include all available ways of travelling, from environmentally friendly hiking, through bicycles, horseback riding and dog sledging to the use of snowmobiles, cars and even buses for the largest groups wishing to visit Russian settlements. Svalbard suppliers of tourist products offer tours of various lengths and degrees of difficulty, ranging from one-day coach rides to multiday trips into the interior. The offer of trips using the waterway is similarly diverse. It includes various activities ranging from canoeing, rowing and motorboat trips in coastal waters, to expeditions by yachts and larger tourist boats along the coast, usually combined with going ashore. Recently, air attractions have also been added, as balloon flights are also organized for tourists.

Tourists arriving by sea can organize their stay more independently. Although cruise ships have to call at the only existing port in Longyearbyen, their passengers are not bound by the existing local offer for their excursions. In 2018, a total of 27 large cruise ships arrived in Svalbard, with approximately 46,000 tourists from all over the world [38]. They are not interested in longer, qualified forms of tourism, although it should be mentioned that these ships usually allow their passengers to disembark in one of the two fjords in the north-west of Spitsbergen: Møllerhamna or Magdalenefjorden. However, they only take advantage of the charms of Longyearbyen and return to the ships to rest [61].

Taking into account smaller cruise ships, the number of places used by tourists for landings throughout Svalbard is growing rapidly. In 2018, 59 small expeditionary cruise ships sailed through the archipelago and carried about 18,000 passengers in total. As a result, while in 2001 tourists were going ashore in 120 locations, 224 landings were reported in 2019 alone and the total number of landings ever used for this purpose has increased to 700. The organization Miljøovervåking Svalbard og Jan Mayen, which monitors the state of the environment on the islands, indicates that this was primarily the result of the introduction of the new product “Sail&Ski” to the tourist offer in 2015, where skiing enthusiasts are being set ashore in new places, outside of the pre-existing routes and locations [38]. It should be emphasized that since 2001 all tour operators have been obliged to report all landings.

Additionally, in Longyearbyen itself, you can spend some time in the floating sauna, the northernmost brewery producing local beer since 2014 [62], or have a meal made of reindeer meat. Depending on your arrival time, you can also take part in one of the annual events: The Sun Festival Week, when on March 8th you can see the sun rising over the mountains for the first time since polar night; Svalbard Ski Marathon (April), Spitsbergen Marathon (June) or The Beer Festival and Dark Season Blues festival organized in November with the arrival of polar night [63].

The range of products offered to tourists is wide and tailored to individual preferences and possibilities. It can satisfy both a fan of good food who is not used to physical activity and a person interested in qualified forms of tourism with a high degree of advancement. However, this does not change the fact that the overwhelming majority of tourist activity is estimated to be carried out near Longyearbyen and Barentsburg, not further than the possibility of a one-day trip. Therefore, the dominant forms of tourism are those that could be called polar tourism, but in fact move towards mass tourism, in unusual circumstances of nature. Somewhere on the distant antipodes of such entertainment lie multiday expeditions deep into the interior undertaken lonely or in small groups. All such trips must be reported to the authorities, so it is easy to obtain accurate statistics (Figure 2). Analyzing the graph it should be taken into account that significant number of these expeditions are undertaken by scientists conducting scientific research. This was particularly true in 2007–2008, when the Fourth International Polar Year took place. At present, most of the recorded expeditions are touristic, which is also related to the growing number of private yachts sailing in the archipelago.

The suppliers of all these tourist products belong to the organization Visit Svalbard and are certified by it in terms of offer safety and knowledge of local conditions. Additionally, every year until 2019 the organization underwent the certification process in terms of the compliance of the offer with the principles of sustainable development as part of the Norwegian program and obtained the Innovation Norway’s label as a sustainable destination. However, due to the lack of adequate financial resources, Visit Svalbard did not join the program in 2020, although it intends to return to it in the following years [64]. Apart from enterprises offering hotel and catering services, it currently gathers 31 entities providing and organizing various forms of activity for tourists.

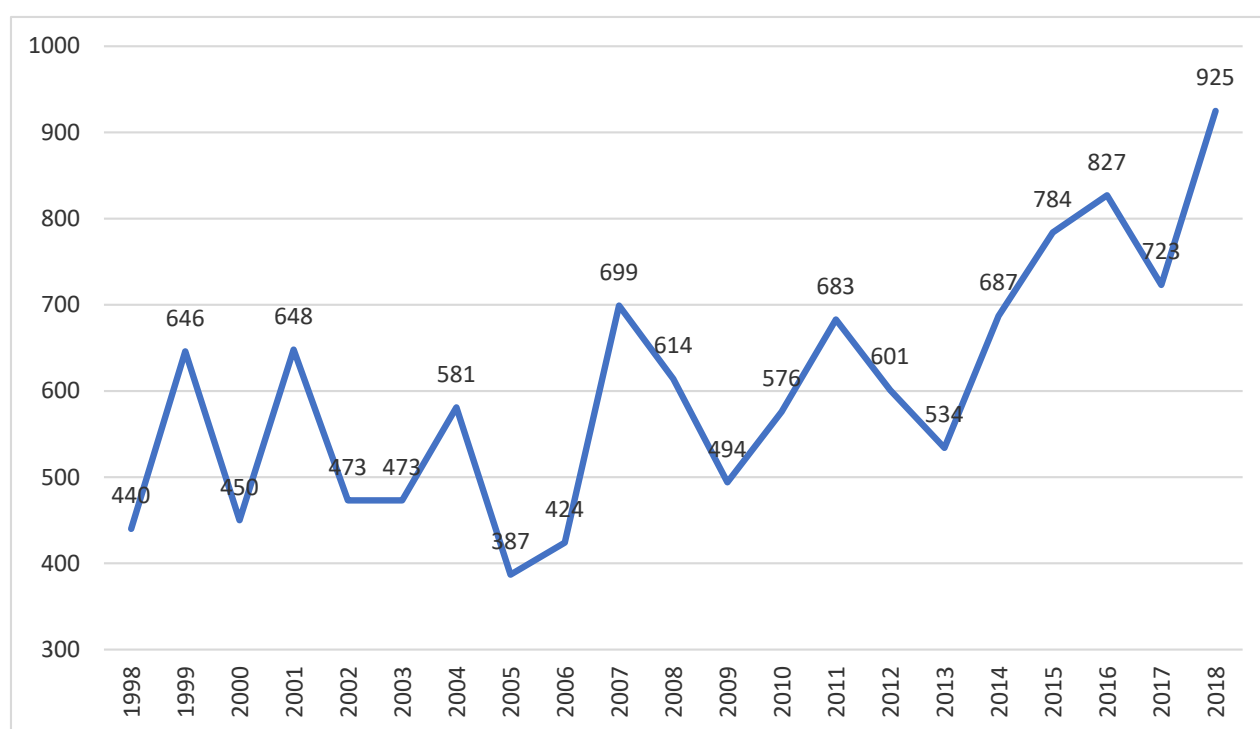


Figure 2. Number of people in areas where prior notification is mandatory [36].

4. Discussion

Norway has effectively extended sovereignty towards the pole and normalized relations with the other Arctic states, especially with Russia [8,9]. Norway's priorities for the High North have become the following: socioeconomic development, research and environmental protection. In addition, the country is developing search and rescue services on Svalbard, which at the same time increases maritime and political security [15]. The results presented clearly confirm Svalbard's socioeconomic development. Undoubtedly, the dynamic development of tourism plays an important role in this process [19] and fits perfectly with the state's strategy. The same conclusion should be applied to scientific research. The direction and intensity of this research are in line with the state's strategy [65]. Svalbard is now undoubtedly the leading scientific centre for Arctic research and climate change processes. The strong internationalization of the scientific centre, which is also in line with the political guidelines, should also be emphasized. This element can be applied to the entire population of Svalbard. It seems that today's diversity of inhabitants in terms of origin, skills and the work they do favor creativity and innovation. This makes the dynamics of social and economic life significantly higher than in other centers of comparable size.

It is slightly more difficult to make a clear assessment of the situation with regard to the environment. The standards of its protection are extremely high in Svalbard, and the percentage of territory under special surveillance may even be surprising. Therefore, once again, it must be considered to be in line with state policy. Nevertheless, these standards also affect social and economic development. On the one hand, they can support it because of the power of unspoiled Arctic nature that attracts travellers. On the other hand, by their scope, they hamper the industry's ability to expand into new areas and further expand its offer [14]. Let us note, however, that this restriction is also in line with the proposal expressed in the 2017 strategy to balance social, economic and environmental development. These problems are also noticed by local authorities and entrepreneurs, who in recent studies pointed to their negative impact on social development of the region [66]. However, an interesting doubt arises related to the directions of Svalbard's development. They correspond so closely to the directions of the state strategy that it may be worth

examining whether and to what extent the development of Svalbard was a model in the construction of the Arctic strategy.

Global trends indicate that polar tourism is becoming increasingly popular. This is due to the process of enrichment of societies and the search for new, little-known destinations, and the growing possibility of reaching the polar regions due to the progressing climate change [18]. At the beginning, it should be remembered that all suppliers of tourist products in the archipelago are associated in the Visit Svalbard organization, and external entities do not operate there. We can therefore initially assume that the offered tourism products fall into the category of sustainable tourism. At the same time, taking into account the specifics of the destination, it should be considered that every tourist in Svalbard is an ecotourist. However, it is complicated when we take into account the criteria presented in Section 2.

The least controversial is the question of sustainable environmental management. As shown, the archipelago is subject to strict environmental protection regulations. Most of its land and sea territory is subject to special protection, and any further exits from human settlements are registered, subject to special requirements and held in groups with a local guide. The percentage of people entering the interior is negligible, and such exits take place only in small groups, accepting accommodation in tents and respecting environmental requirements. The activity of larger groups, including bus excursions, is limited to the surroundings of human settlements and their intensity is low. Therefore, it seems that in the long run, the state of Svalbard's environment is not threatened despite the growing number of tourists.

More controversial is the problem of engaging the local community. Without a doubt, tourism and related services are an increasingly important part of Svalbard's economy [22,67]. What is more, it is the local service providers who provide the tourist products. Thus, guests arriving to Svalbard by air and using the local services have an unquestionable contribution in the local community maintenance. Even if their stay is limited to hotel accommodation and the use of attractions available in Longyearbyen itself, they create jobs for the local community. The situation is complicated for people arriving on large cruise ships. A lack of interest in the offer of accommodation and qualified forms of tourism makes their contribution to the local community much smaller. In particular, no one can force such a tourist to leave the ship in the port of Longyearbyen and take advantage of local attractions. Of course, ships mooring in the port have to pay an appropriate fee and the desire to blow up passengers in one of the fjords involves hiring local pilots and guides, but it is easy to imagine a situation where the revenue of the local community from the arrival of such a tourist is marginal and incomparable to the revenue of the ship operator.

Similar remarks can be made about participation in the conservation and the promotion of the natural and cultural environment. Again, any tourist arriving to the archipelago by air can be considered to meet this requirement even if they do not leave Longyearbyen. It also seems that by the very contact with the local environment and community they are increasing their environmental awareness and knowledge of cultural heritage. At the same time, which may sound funny, they minimize their negative impact on the environment by staying in an already inhabited and changed area. As mentioned before, no tourist has to leave the ship in Longyearbyen and does not have to be interested in the surrounding environment. In such a situation, however, it seems reasonable to ask the question about the motives that made him come on a cruise ship to Svalbard. However, as already mentioned, because of the price, this offer is considered to be exclusive. Therefore, the search for prestige may be dominant. Generally, it is easy to imagine that a tourist coming to the Arctic does not want to learn about the local specifics, but only to experience something unusual in unknown natural conditions [42,44]. So, the most controversial criterion will be the last one, i.e., the issue of the needs realized by the tourist. With a high probability we can assume that the vast majority of tourists coming to Svalbard realize ecological needs, however, this undoubtedly does not apply to everyone [68]. The types of products they use can be a guideline. The awareness and ecological needs of those who use products belonging to the hard ecotourism category are undoubtedly greater than those who limit

themselves to products belonging to soft ecotourism. However, without on-site research among tourists coming to Svalbard, it is impossible to give a clear picture of their needs.

Taking into account all the tourist traffic in Svalbard and evaluating it according to the indicated criteria, it must be stated that the overwhelming majority of tourists arriving in the archipelago can be considered to be involved in ecotourism. It can be safely assumed that people coming from other than ecological motives or not fulfilling any of the other criteria are marginal. Nevertheless, people realize these criteria to a different extent, although it seems that, to some extent, they can be ranked from those who undertake multiday tours in the interior to those who on board and prefer not to leave the ship. At the same time, it indicates that the problem of the environmental performance of tourism is not zeros and ones. It is more appropriate to recognize that as a certain continuum in which different people and tourist products are located in different places depending on their knowledge and preferred forms of activity. Although some researchers try to indicate “real ecotourism” [69] (pp. 3–5) is such unambiguity to be rejected in favor of a continuum.

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