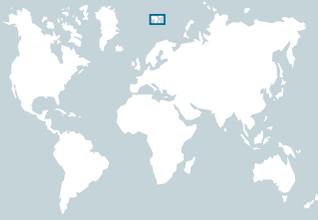


Bjørn P. Kaltenborn

Arctic–Alpine Environments and Tourism: Can Sustainability be Planned?

Lessons Learned on Svalbard

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The Arctic is a region of spectacular and diverse mountain environments. One example is the Svalbard Archipelago in the Norwegian high arctic. Despite its remote location in the Arctic Ocean, Svalbard has an astonishingly diverse economy based on coal mining, arctic research, and the island's geostrategic importance. In recent years, tourism has become increasingly important, with more than a fourfold

increase in tourists from the 1970s to the 1990s. This development poses serious threats to the island's highly vulnerable arctic–alpine environment. A management plan for tourism and outdoor recreation has been prepared in recent years, with a view to safeguarding the unique environment and keeping tourism development within environmentally sustainable and commercially acceptable boundaries.



FIGURE 1 Spitsbergen (northwest coast), one of the world's last wilderness areas. Svalbard has a total area of 63,000 km², of which approximately 56% is covered by glaciers. The environment is arctic–alpine. The major islands contain rugged peaks, the highest of which rise to just above 1700 m, as well as fjords, broad valleys, and mountainous plains. Average temperatures are higher than at comparable latitudes in the Canadian or Siberian Arctic, and the west coast is free of ice during most of the year. Favorable climatic conditions foster a relatively diverse terrestrial and marine life. Some of the largest seabird colonies in the North Atlantic are found here. Seals and walrus are abundant, as are polar bears, arctic reindeer, and the arctic fox. The vegetation cover varies from polar desert to lush tundra, and 160 species of higher plants have been identified. (Photo by author)

The challenge of change

Until recently, the polar regions have been relatively inaccessible to tourism compared to many other mountain areas throughout the world. The vast Arctic and Antarctic expanses are often rightly referred to as the last wilderness. In terms of pristine nature, tourist experience, sheer geographic size, remoteness from urban areas and human population centers, and, not least of all, lack of infrastructure, the lands “up north” are unique, even in a global context.

Increasing numbers of leisure seekers have discovered the lure of the High North. For the tourism industry, arctic tourism represents great potential for growth and earnings, although it is still in the early stages of development. However, most mountain environments are fragile ecological, socioeconomic, and cultural systems. The Arctic is no exception. The natural environment and human ecology in the North have developed over a long period under conditions that impose severe constraints on resource systems and the bases of production. Natural change comes slowly and gradually. It takes a long time to neutralize the effects of negative impacts, which are often irreversible. Although resource exploitation has a long history, recent decades have been characterized by exploitation and commercial utilization of resources on an unprecedented scale. Oil and gas exploration, mining, fisheries, tourism, waste dumping, transpolar shipping, scientific research, and military activities have all taken a toll on the environment and the cultures of the Arctic.

In Svalbard, conscious efforts have been made to reconcile the goals of environmental management with those of economic development. Coal mining, which was the economic backbone of the islands, was state controlled and heavily subsidized for a century. Now, however, resources are becoming exhausted, markets are declining, and the traditional local economy has begun to collapse. For geopolitical strategic purposes, the Norwegian state has supported coal mining as a sign of its presence in a sensitive area and has continued to subsidize it by more than US\$ 60,000 per capita annually in the 1990s. During

the 1980s and 1990s, tourism began to develop. At first, public officials concerned with environmental standards viewed this as a form of intrusion and a problem to be controlled. At the same time, nonlocal commercial entrepreneurs saw an opportunity, while the local community was apprehensive, showing only modest interest, at most.

The problem of Svalbard, in both environmental and economic terms, was largely one of coping with unforeseen and unwanted changes. Over time, the collective response of state agencies, the tourism industry, and the community has been characterized by a focus on development of relatively sound commercial activity that offers significant support to the community, largely according to environmental guidelines. This includes both market and management challenges, reflected in a cooperative effort by the private and public sectors to promote sustainable use of tourism resources.

A management plan for tourism and outdoor recreation is a particularly relevant tool in this process (see Figure 5). The concept developed and the means of implementing it are examples of an attempt to plan sustainable tourism in a mountain environment. But there are lessons to be learned.

Tourism on Svalbard: Growth and diversification

Tourists have come to Svalbard for more than 100 years. Svalbard presently accounts for about one-fourth of all tourism in the Circumpolar High Arctic. Cruise traffic began in the 1870s. Today 20,000–25,000 tourists come to Svalbard on overseas cruises. This is about 80% of the annual total of visitors to the islands. The volume of cruise tourism increased more than fourfold from 1975 to the mid-1990s. Tourism activities have diversified considerably during the last 10–15 years. Svalbard now receives everything from business people attending conferences to large wilderness expeditions.

Many people come on commercially arranged adventure tours, but a great number also arrange their own trips. The duration of a visit to Svalbard ranges from



FIGURE 2 Walrus populations, once threatened, have now stabilized after 40 years of protection. Walrus frequent the waters north of Spitsbergen. (Photo by author)



FIGURE 3 Tourists enjoying a beach party in Krossfjorden in northwest Spitsbergen. (Photo by author)

“Here, then, is an opportunity for competent men to enjoy leisure of the active, healthy, and new type, while still carrying out good and fruitful service for science” (William Martin Conway, 1897)



FIGURE 4 Geomorphologists conducting field research on Svalbard. (Photo by author)

less than a day to several weeks. Field tourism, ie, trips outside settlements and away from the cruise ship base, is growing. Snowmobile rental increased from approximately 1300 days in 1992 to more than 3500 days in 1995. Accommodation of tourists in the main settlement of Longyearbyen doubled between 1990 and 1994. This has a significant impact on local revenue and employment. More than 100 local man-labor years are now generated directly or indirectly by tourism in Svalbard (Table 1). Tourism is an important source of jobs, especially since employment has declined dramatically in coal mining, Svalbard’s main industry. The number of jobs in coal mining plummeted from 1000 in the 1970s to a mere 264 by 1996 and to 216 as of 1998 (Table 1).

A management plan for tourism and outdoor recreation

By the early 1990s, rapid development of tourism and increasing concern about the vulnerability of the environment made it obvious that a management plan was needed. Officials concerned with environmental management were responsible for controlling the use of the natural environment, while the tourism industry had to meet certain requirements in order to operate successfully. In addition to a good product that offered a diversity of opportunities and a reliable market, the greatest needs from the perspective of the tourism industry were centered around a set of clear rules and regulations as well as good dialogue with managers.

The main objective of the macrolevel plan is to facilitate tourism and outdoor recreation within limits set by natural, cultural, and historical resources in such a way that the wilderness character of the environment is preserved. The plan covers the entire Svalbard archipelago and the surrounding sea, extending 4 nautical miles out from the coast. It includes all motorized and nonmotorized traffic outside settlements that is not related to management, research logistics, or commercial extraction of natural resources. The plan operates according to a zoning system that divides the group of islands into management areas. For each area or zone, specific goals,

resource conditions, management actions, and acceptable activities are described.

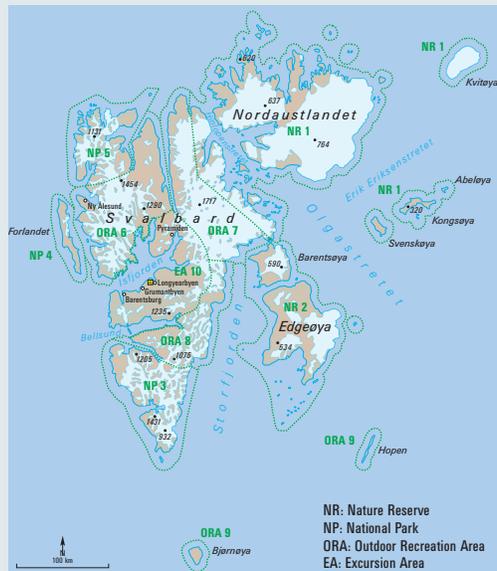
Thus, the plan becomes a management tool for identifying the amount and type of facilities in each zone as well as access to and restrictions on use. Recreational values are integrated into land management planning through explicit management objectives related to environmental and social conditions in the different areas. The basic planning concept is to provide a diversity of recreational opportunities, which can be described in terms of combinations of the physical, social, and managerial characteristics of the settings as follows:

1. Nature reserves and national parks constitute a management category consisting of areas characterized by great size, difficult accessibility, and minimal human impacts. Technical interventions and construction, including new buildings and roads, are prohibited in nature reserves. Hunting, trapping, and fishing are not permitted nor is the introduction of exotic species, the removal of fossils, or the use of motorized vehicles or aircraft landings.
2. In national parks, regulations are not quite as strict. The governor’s office can grant dispensation for research activities, local use of snowmobiles along certain routes, and ptarmigan hunting. All outside visitors to protected areas must report their plans to the governor before their visit and provide insurance in the case of longer expeditions. In certain cases, the governor can require that travel plans be modified if this is necessary to protect fragile sites. The purpose is to allow opportunities for dispersed, largely nonmotorized recreation in national parks. Guided commercial trips are permitted by concession and are carefully monitored by the authorities.
3. Regulations are more liberal in outdoor recreation and excursion areas. These areas are not protected, and tourists need not report their travel agenda to the authorities. Independent travelers and commercial companies use these areas extensively and fairly freely, but commercial companies need annual

	1996	1998
Tourism	126	126
Mining	264	216
Research and education	51	58
Public administration and services	189	190
Total	630	590

TABLE 1 Employment figures for Longyearbyen, Svalbard, in 1996 and 1998 (direct employment in man-years, excluding spin-off effects on other services/employment categories).

FIGURE 5 Management areas in Svalbard according to the management plan implemented in 1995. (Map by Andreas Brodbeck)



permits to establish permanent camps. Snowmobiling is the dominant winter recreational activity and takes place here largely without special restrictions. The snowmobile is a particularly important form of local recreation. However, there is currently talk of permitting nonlocal and rental use only along certain routes in the future. If implemented, this form of management would be justified for environmental and safety reasons.

Lessons learned

Has this management plan worked? The author was doubtful during a first public meeting in Longyearbyen in 1992, where the purpose was to explain the concepts and goals of the process. The meeting was heavily attended, and most of the audience had even read the first draft of the plan. The atmosphere was extremely tense. After 2 hours of heated exchange, the worst tensions and misunderstandings were ironed out, and a tentative relationship was established between the designers of the plan and public authorities on one side and the community on the other side. The management plan has been in operation since this time as a legitimate but somewhat contested phenomenon.

The plan was formally implemented in 1995 after several drafts of the plan

had been revised and input obtained from stakeholders. Following initial protests against regulation by state agencies, a decision to keep a few areas close to settlements free of snowmobiles in winter to allow undisturbed skiing, and some other restrictions on access, there has been tacit consent to the need for a framework to regulate tourism. The tourism industry is largely supportive and recognizes the need to protect resources and control patterns of use. Local residents are increasingly embracing tourism as a legitimate and desirable form of employment and a source of income to the community. However, there is no doubt that greater local ownership of the concept of planning could have been achieved had a more collaborative approach been used in development and implementation of the management plan. There is still significant skepticism in the local community as well as a need for better integration of community interests.

The tasks ahead

From a planning and management perspective, there is still much to be achieved. The general concept of the plan seems appropriate to the situation. However, the biological and social carrying capacities of the different zones have not been sufficiently determined or understood. There is increasing concern about the growth of tourism and the ability to control the use of particularly fragile sites. Recreational use is being monitored at the macrolevel through a registration system for all visitors to the islands, and monitoring of environmental change in key sites has begun. Yet there is a long way to go before the actual impacts of tourism on the environment can be identified and described. Another key task is to update the database of the plan, which is now 10 years old. In the postmodern world of nature tourism, the only certain thing is change. Svalbard may be the last European wilderness. And it may be a place where sustainable development can actually be planned. But this will require a concerted long-term effort.

“The plan shall be a tool to realize the political goals of protecting wilderness and managing today’s tourism, as well as provide guidelines for the future”
(Ministry of Environment, 1995)



FIGURE 6 “Sustainable tourism should be a part of the future economic development of Svalbard. However, tourism must be controlled, and not expand to the extent that it threatens the wilderness character of the area” (Parliamentary report, 1991). (Photo by author)

AUTHOR

Bjørn P. Kaltenborn

Norwegian Institute for Nature Research, Division for Man–Environment Studies, Pressesenteret, Storhove, NO–2624 Lillehammer, Norway.

bjorn.kaltenborn@ninalil.ninaniku.no

Bjørn Kaltenborn is a research scientist at the Norwegian Institute for Nature Research, in the Division for Man–Environment Studies. He works primarily on the human dimensions of natural resource issues, especially in arctic and alpine regions. Most of his work has been related to recreation and tourism, land use planning, conflicts and protected areas.