

THE ARCTIC REGION OF SPITSBERGEN IS SEVERELY AFFECTED BY CLIMATE CHANGE



Located 1300 kilometers south of the North Pole is Longyearbyen, a small international airfield that used to be a mining site for lignite and hard coal. One can enjoy stunning views of the surrounding area from the airfield. Everywhere you look, you will see small mountains with flat peaks. The impact of climate change can be seen here.

The Arctic Sea area, where Norway's Svalbard archipelago is located, covers an area of 63,000 square kilometers, slightly larger than Croatia. In the distance, snow-capped glaciers spread out. **These glaciers make up 60 percent of the archipelago's total area.** Its capital, Longyearbyen, is located on the largest of the approximately 400 islands and skerries, also known as Spitsbergen.

Spitsbergen is a popular destination for wealthy tourists for several reasons. The archipelago is a demilitarized zone, the northernmost point on Earth that scheduled flights can reach. Moreover, Norway has an excellent reputation worldwide as it does not wage wars or operate nuclear power plants. However, global warming poses a challenge to the Spitsbergen seed bank. In the autumn and winter of 2017, the permafrost melted due to unexpectedly high temperatures, causing water to enter the plant entrance area.

Arctic and climate research experts say Spitsbergen is already feeling climate change. Experts repeatedly explained that the fjord off Longyearbyen is no longer freezing over, the glaciers on Spitsbergen are receding, and the Arctic region may become ice-free in the summer before the end of this century.

Scientists have determined that the Arctic region warms up twice as fast as the worldwide average - with the result that Spitsbergen's 350 glaciers have already receded considerably.

While some animals may adapt, others will not. The arctic fox is well-equipped to handle the changes, but the narwhal will have little chance of survival. Additionally, the number of remote fish and bird species has increased due to climate change.

Longyearbyen, with only 2400 inhabitants, is busy with colorful wooden houses and streets. Workers, students, families with children, and hotel employees can be seen walking around or driving in pick-ups and off-road vehicles. There are no unemployed, welfare recipients, refugees, or pensioners in the village, as everyone moves away before the end of their working hours. Longyearbyen heavily relies on tourism as it provides employment opportunities and ensures a good local income.

During the early 1990s, the Norwegian government promoted tourism, which increased the number of cruise ships visiting the waters of Spitsbergen. In the past two decades, the number of overnight stays on Spitsbergen has surged from around 20,000 to more than 160,000 in 2019. However, this rapid tourism growth has brought along a few problems, one of them being the issue of garbage. While the biodegradable waste is disposed of in the fjord, the non-biodegradable waste has to be transported to the mainland. Environmentalists are highly critical of the increasing shipping traffic in the Arctic region and warn about potential accidents in this sensitive ecosystem.

Spitsbergen is a place closely associated with polar bears. About 250 of these animals live in and around the archipelago, and around 3,000 in the Barents Sea region, which extends to Russia. In Longyearbyen, everything is advertised in the likeness of the "King of the Arctic," from local beer to supermarkets. So far, the polar bear population here has not declined despite climate change. However, polar bears in other parts of the Arctic are in worse shape because of decreasing sea ice, for instance, in Hudson Bay, Canada.

Despite this, polar bears in Spitsbergen and the Arctic face new threats, as researchers have detected environmental toxins in polar bear fatty tissues. The amount of perfluorinated compounds used for waterproof textiles is rising rapidly, posing a particular threat. **Moreover, more and more microplastics are found in birds' stomachs.**

The Arctic region, including Spitsbergen, was once considered too frozen and remote to be of economic interest. However, as the ice melts, the area becomes increasingly accessible for raw material extraction. This has caught the attention of major economic powers such as the U.S., Canada, Russia, and China, who are eyeing the region's oil and natural gas reserves. It is concerning that these countries may exploit these resources without consideration of the environmental impact. Measures should be taken to prevent this from happening.

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