

Additional information

Ecosystem services:

Bjørnøya is important for scientific research, especially that of seabirds and environmental contaminants/ecotoxicology. It has been a monitoring site for seabirds since 1986.

Bjørnøya is included in The National Monitoring Programme for Seabirds. Bjørnøya also is included as one of the key-sites within SEAPOP (SEAbird POPulations), which is a long-term monitoring and mapping programme for Norwegian seabirds.

Weather observations have been carried out from the Meteorological Institute's weather station since 1932.

Bjørnøya is visited by approximately 300 coastal expedition cruise tourists every summer. Small groups of guests led by guides land by zodiacs on the shore and do short walks in the area to study geology, vegetation, animal- and birdlife. In addition there are about 30 small private sailing boats sailing from mainland Norway to Svalbard every summer, and some of these also land at Bjørnøya. Recreational activities among the station Crew (Meteorological station) commonly include both hiking and use of recreational cabins. There are two areas on Bjørnøya that have a ban on visits parts of the year due to the birds breeding season. Oversea Cruiseliners often sail close to the island on their way up to or down from Spitsbergen.

Physical features of the catchment area:

Bjørnøya is the southernmost part of the Svalbard archipelago. It is surrounded by a shallow shelf sea, which is a continuation of the continental shelf of mainland Norway. The average depth in the Barents Sea is 230 m, and the shallowest areas are between Bjørnøya and Edgeøya (the Svalbard Bank). Some kilometers west of Bjørnøya, the depths of the Norwegian Sea plunge to more than 2000 m. The island measures about 20 km from north to south, is about 15 km at its widest and covers an area of 178 km². Bjørnøya is strongly influenced by waves, which has formed high cliffs around most of the coast.

Despite its relatively cold climate, the Barents Sea south of the polar front is considered to be one of the most productive ecosystems in the world.

The polar front, where Atlantic and Arctic waters meet, runs through the area Novaja Zemlja – Bjørnøya – and north along the west side of Svalbard..

A combination of vertical mixing of sea masses during autumn and winter, which bring nutrition up from the deep sea, and a layering in spring and summer has a boosting effect on primary production. Influx and outflux of water also has a positive effect on vertical mixing and supply of nutrients. A thermocline develops in spring and during the summer as the surface water is heated by the atmosphere and by radiation from the sun. Together with warm Atlantic water the increasing heat also rapidly melts the ice, which covers the sea in the colder period of the year. The melted ice forms a layer of surface water with low salinity which adds to the layering effect of the thermocline. This stable layer of water may reach depths of up to 50-60 meters in the south-western part of the Barents Sea.

The ice edge moves from Bjørnøya in the winter up to the north and east of Spitsbergen in the summer. However, some winters, the ice edge does not go as far south as Bjørnøya. When the ice is melting during spring and summer, there is a relatively short but intense period of primary production within a distance of 20-50 km from the ice edge as it moves north. This makes the ice edge an important foraging area for large numbers and groups of animals.