

Radioactive contamination

Innholdsfortegnelse

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There are various sources of radioactive contamination in the Norwegian environment, but levels of radioactive substances are generally low.



The Chernobyl accident in 1986, resulted in large amounts of radioactive fallout in parts of Norway. Photo: Wikimedia Commons



Norway's seas receive inputs of low levels of radioactive substances. Photo: The Norwegian Radiation and Nuclear Safety Authority



Oil and gas production results in discharges of water containing low levels of radium isotopes. Photo: iStockphoto.com



Some parts of the populations are more vulnerable to radioactive contamination resulting from the Chernobyl accident than others. These include reindeer herders. Photo: Runhild Gjelsvik, the Norwegian Radiation Protection Authority

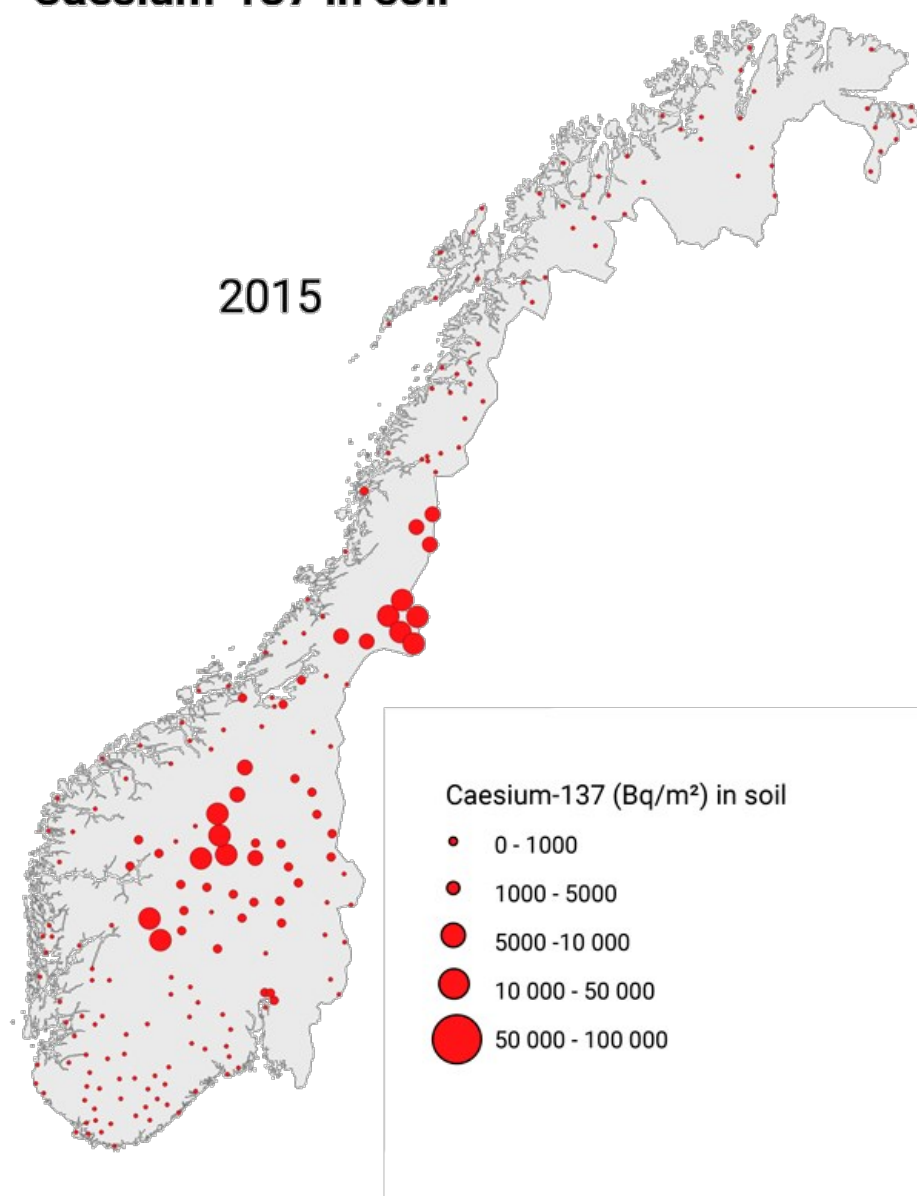
STATE

Low levels of radioactive contamination

Norway has received inputs of radioactive substances since the 1950s. In the 1950s and 1960s, fallout following the tests of nuclear weapons in the atmosphere was the main source of radioactive contamination in Norway.

The Chernobyl accident in 1986 resulted in substantial radioactive fallout in parts of Norway. Today, the levels of radioactive contamination are generally low. The highest levels are found in parts of Central Norway.

Caesium-137 in soil



Source: The Norwegian Radiation Protection Authority, NTNU / environment.no

The Norwegian marine areas receive inputs of radioactive substances from the Baltic Sea, from the Sellafield nuclear reprocessing plant in the UK and from oil and gas production on the Norwegian continental shelf.

IMPACT

Little significance for human health

More than 30 years after the Chernobyl accident, radioactivity is still being transferred from the soil to plants and animals. The concentrations of caesium-137 are still measured in meat and milk to ensure that food is safe.

Radioactivity in seawater is absorbed by seaweed, fish and shellfish, and people can also receive radiation doses when they eat fish and other seafood. However, people who eat normal amounts of Norwegian seafood only receive low doses of radiation.

All in all, the Norwegian Radiation Protection Authority considers radioactive contamination to be of little significance for human health in Norway.

PRESSURE

Oil and gas activities an important source

Oil and gas production is an important source of radioactive substances in Norwegian marine waters. Produced water contains naturally occurring radioactive substances from the bedrock and is discharged to the sea or may precipitate out to form scale on pipelines and other production equipment.

Technetium-99 discharged from Sellafield has affected Norwegian waters. Technetium-99 has a very long half-life and accumulates in marine organisms, particularly in seaweed and shellfish. Discharges have been greatly reduced the last years, and technetium-99 levels in seaweed, fish and shellfish are therefore decreasing.

RESPONSE

Monitoring, clean feeding and consumption advisories

The Norwegian Radiation Protection Authority works to ensure that the harmful effects of radiation on humans and the environment should be as small as possible. In order to chart the concentrations of radioactivity and follow trends over time, annual monitoring of nature, food and radiation doses received by the population is carried out.

Since the Chernobyl accident, extensive monitoring of radioactive contamination in foodstuffs such as dairy products, sheep, reindeer, game, wild mushrooms and freshwater fish has been performed. Countermeasures like clean feeding, early slaughter time and caesium binders are used to reduce contamination of sheep, cattle and semi-domesticated reindeer.

The Norwegian Radiation Protection Authority also carries out a marine monitoring programme to chart the trends of radioactive contamination in water, sediments, fish and other important marine species.

When it comes to the oil and gas industry, Norway's goal is to reduce the emissions of naturally occurring radioactive substances. The levels of these substances should be close to the natural background levels by 2020.