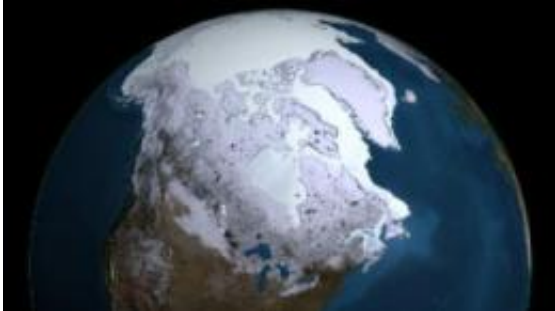


# The least sea ice in 800 years

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There has never been so little sea ice in the area between Svalbard and Greenland in the last 800 years. Credit: NASA/GSFC.

New research, which reconstructs the extent of ice in the sea between Greenland and Svalbard from the 13th century to the present indicates that there has never been so little sea ice as there is now. The research results from the Niels Bohr Institute, among others, are published in the scientific journal, *Climate Dynamics*.

There are of course neither [satellite images](#) nor instrumental records of the climate all the way back to the 13th century, but nature has its own 'archive' of the climate in both ice cores and the annual growth rings of trees and we humans have made records of a great many things over the years - such as observations in the log books of ships and in harbour records. Piece all of the information together and you get a picture of how much [sea ice](#) there has been throughout time.

## Modern research and historic records

"We have combined information about the climate found in ice cores from an ice cap on Svalbard and from the annual growth rings of trees in Finland and this gave us a curve of the past climate" explains Aslak Grinsted, geophysicist with the Centre for Ice and Climate at the Niels Bohr Institute at the University of Copenhagen.

In order to determine how much sea ice there has been, the researchers needed to turn to data from the logbooks of ships, which whalers and fisherman kept of their expeditions to the boundary of the sea ice. The ship logbooks are very precise and go all the way back to the 16th century. They relate at which geographical position the ice was found. Another source of information about the ice are records from harbours in Iceland, where the severity of the winters have been recorded since the end of the 18th century.

By combining the curve of the [climate](#) with the actual historical records of the distribution of the ice, researchers have been able to reconstruct the extent of the sea ice all the way back to the 13th century. Even though the 13th century was a warm period, the calculations show that there has never been so little sea ice as in the 20th century.

In the middle of the 17th century there was also a sharp decline in sea ice, but it lasted only a very brief period. The greatest cover of sea ice was in a period around 1700-1800, which is also called the 'Little Ice Age'.

"There was a sharp change in the ice cover at the start of the 20th century," explains Aslak Grinsted. He explains, that the ice shrank by 300.000 km<sup>2</sup> in the space of ten years from 1910-1920. So you can see that there have been sudden changes throughout time, but here during the last few years we have had some record years with very little ice

extent.

"We see that the sea ice is shrinking to a level which has not been seen in more than 800 years", concludes Aslak Grinsted.

More information: [dx.doi.org/10.1007/s00382-009-0610-z](https://doi.org/10.1007/s00382-009-0610-z)

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