

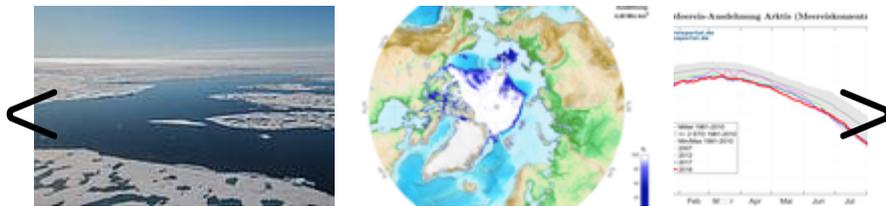


Arctic

Arctic sea ice continues to track far below average

Sea ice-extent shrinks to a yearly minimum of 4.4 million square kilometres, the sixth lowest value since observations began in 1979

[13. September 2018] **When the summer melting of the Arctic sea ice ends in the middle of September, the minimum ice extent is likely to have decreased to an area of 4.4 (+/- 0.1) million square kilometres, according to researchers from the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) and the University of Bremen.**



Joint Press Release from the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) and the University of Bremen

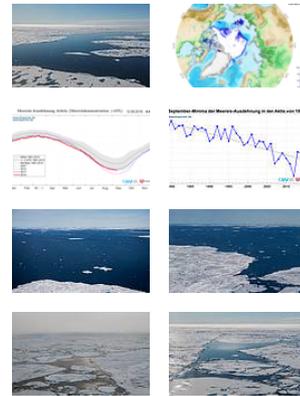
When the summer melting of the Arctic sea ice ends in the middle of September, the minimum ice extent is likely to have decreased to an area of 4.4 (+/- 0.1) million square kilometres, according to researchers from the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research (AWI) and the University of Bremen.

The remaining ice-covered area (ice concentration > 15 percent) will be roughly 300,000 square kilometres smaller than last year, when the ice cover decreased to 4.7 million square kilometres. At the same time, this year's summer minimum is once again well below the average values for the period from 1979 to 2006. "The latest results confirm the worrying declining sea-ice trend in the Arctic, which we have witnessed for more than a decade. Also in the Antarctic, where the sea-ice cover will reach its annual maximum in a few weeks, there is less ice than on average," says Professor Christian Haas, Head of the Sea Ice Physics Section at the Alfred Wegener Institute.

For their analysis, the German researchers rely on satellite ice-concentration data from the University of Bremen's Institute for Environmental Physics, which provides information for the website www.meereisportal.de/en/. The data show that this year's sea-ice minimum is the sixth lowest ice extent since records began in 1979. Other observation centres, such as the National Snow & Ice Data Center in the USA, are reporting slightly higher numbers. "These marginal differences are due to the higher resolution of our data and slightly different methods that the various data centres use to calculate ice concentration. The differences demonstrate that even with modern satellite sea-ice observations there can be uncertainties," explains Gunnar Spreen from the Institute for Environmental Physics at the University of Bremen.

Compared to last year, less ice in the Laptev Sea and more in the Canadian

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Beaufort Sea

The latest ice concentration maps show that this summer the Arctic sea ice retreated further north particularly in the Eastern Atlantic and in the western Russian shelf seas. "The German research icebreaker Polarstern is currently heading to the Laptev Sea. However, in contrast to previous cruises, this time the ship doesn't need to break any ice and is able to sail unhindered along the southern ice edge towards its destination," reports Christian Haas. "We were prepared for a long journey through the ice," adds Gunnar Spreen from onboard RV Polarstern. "There has only been so little ice north of the Northeast Passage in five percent of the summers between 1979 and 2016."

In the Canadian Beaufort Sea and in the Canadian Arctic Archipelago directly to the east there is more ice at the end of this summer than in previous years. This is due to a lasting high air-pressure area driving the surface currents of the Beaufort gyre, which in the last few months have transported thick, multiyear ice from the north to the Beaufort Sea. At the same time, the air over the Canadian Arctic Archipelago in August was up to four degrees colder than the long-term monthly average. As a result, less ice melted in this region.

In August, AWI sea-ice researchers on board the Swedish icebreaker Oden also reported surprisingly compact sea ice, which made their journey to the North Pole difficult. "The sea ice conditions in the Arctic vary significantly from place to place, demonstrating once again that we are unable to make predictions about the local sea-ice status based on Arctic-wide developments. There are still areas that are impassable, even for icebreakers. And places with a small sea ice extent this year could have considerably more next year, even though overall there is significantly less sea ice in the Arctic than there was 20 years ago," sums up Christian Haas.

Heavy ship traffic in the Northeast Passage, ice warnings in the Northwest Passage

Thanks to the low ice concentration off the Siberian Arctic coast, this summer shipping companies were able to transport significantly more cargo through the Northeast Passage than last year. According to media reports, the volume of freight shipped across the Arctic increased by 80 percent, compared to 2017. Now that tankers and freight ships regularly sail through Russian-controlled waters - often accompanied by icebreakers - the first container ship with an ice-class is currently being tested on the route.

The shipping routes in the Northwest Passage, on the other hand, aren't yet free. "Unlike in previous years, thick drift ice is hindering passage through the island world of the Canadian Arctic Archipelago," says sea-ice expert Lars Kaleschke from Bremen. As a result, in late August the Canadian authorities were forced to issue an ice warning for small ships and sailing boats. The danger of being crushed by drifting pack ice was too big.

You can find more background information on this year's sea-ice decline as well as a table with the ten lowest September Arctic sea-ice minima [on the website Meereisportal](#). Here you will also find the scientific analysis in which also this year's special areas of open water off the north coast of Greenland are discussed.

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research in the polar regions and the oceans of mid and high latitudes. As one of the 19 centres of the Helmholtz Association it coordinates polar research in Germany and provides ships like the research icebreaker Polarstern and stations for the international scientific community.



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