

Pressemitteilung

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Current Sea Ice Situation: Ongoing Retreat in the Arctic, New Maximum in the Antarctic

Bremerhaven/Hamburg, September 16, 2014. The area of sea ice in the Arctic fell to a summer minimum of around 5.0 million square kilometers this year, which is about 1.6 million square kilometers more than the record low in 2012. However, according to sea ice physicists Marcel Nicolaus from the Alfred Wegener Institute (AWI) and Lars Kaleschke from the Hamburg Cluster of Excellence for climate research (CliSAP) this confirms the long-term downward trend in the Arctic. On the other hand, the winter ice sheet in the South Polar Ocean has expanded to an area of 20.0 million square kilometers, as the researchers report, which exceeds the 30-year-maximum from the previous year. This Thursday, September 18, Marcel Nicolaus, Lars Kaleschke and other leading sea ice experts will be available for discussions and interviews at an international sea ice symposium in Hamburg.

“The current minimum sea ice in the Arctic illustrates the continuation of a long-term downward trend. With an area of 5.0 million square kilometers, the 2014 minimum approximately equals last year's minimum. This by no means represents a trend reversal in Arctic sea ice developments – despite the fact that the remaining sea ice area is larger than in the two ‘extreme years’ 2007 and 2012,” says sea ice physicist Marcel Nicolaus from the Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research.

In the negative-record years, weather phenomena led to a particularly large reduction in sea ice. “In 2007, a stable high pressure area in early summer resulted in numerous melt pools forming on the ice. They absorbed energy from the sun, which further intensified the melting. In summer 2012, there was exceptional melting on the underside of the ice, and in August that year there was a severe storm, which stirred up the ice. Such extreme weather was largely absent in 2014,” explains Lars Kaleschke from the Hamburg Cluster of Excellence for climate research CliSAP.

Large Regional Differences

In the last few weeks, there have been unusually marked regional differences in ice development. For example: In the last two weeks of August, on its way to the region of the undersea mountain chain Alpha Ridge, the German research ice breaker Polarstern was unable to break the ice north of the Canadian Archipelago, while the ice in the Russian Laptev Sea retreated further north than ever before observed by satellites. “In the first days of September, the ice edge in the Laptev Sea was north of the 85th parallel, only about 500 km from the North Pole. In 2006, the distance from the North Pole to open sea was more than twice that,” says Lars Kaleschke.

Expanding Ice Sheets in the Antarctic

There are currently exceptionally large areas of sea ice in the Antarctic, where the ice sheet generally reaches its spring maximum in September or October. “At the moment, ice covers a sea area of around 20 million square kilometers and therewith exceeds the 30-year-maximum of 19.65 million square kilometers from the previous year. This data backs up our observation that sea ice coverage in the Antarctic has increased in recent years. This is especially true for the Weddell Sea, where we do most of our research,” says Marcel Nicolaus.

However, the researchers do not feel the sea ice situation in the Antarctic can be compared with the conditions in the Arctic, given the differences in their geographical and meteorological circumstances. “Whereas the Arctic Ocean represents a Mediterranean of sorts surrounded by land masses, what we see in the Antarctic is an icecovered continent surrounded by the Southern Ocean. Here the Antarctic Circumpolar Current limits the maximum sea ice expansion. Wind and waves greatly influence the ice edge - and the amounts of precipitation and glacial meltwater determine the percentage of fresh water, which in turn helps to determine how much sea ice forms in winter,” explains Lars Kaleschke.

The international scientific community is currently discussing a variety of factors as possible explanations for the major expansion of Antarctic sea ice. For example, the growth in area could have been set off by changed wind currents and rising meltwater. (For more on this discussion, visit our sea ice portal [here](#))

Invitation to the Symposium in Hamburg

Lars Kaleschke, Marcel Nicolaus and other international sea ice experts will meet this Thursday and Friday (Sept. 18-19, 2014) at a sea ice symposium in Hamburg, which will primarily focus on satellite-assisted ice measurement. The researchers hope to develop methods that will allow them to combine a variety of different satellite datasets to generate reliable and mutually comparable long-term data series on sea ice expansion, concentration and thickness. (For details on the workshop, please see [this link](#)).

Interested journalists are warmly invited to use the workshop as an opportunity to talk with the researchers, who will be available for interviews on sea ice from 2:00 p.m. to 4:30 p.m. on Thursday, September 18, 2014.

For more information, please contact Markus Dressel at the Outreach Office for the Cluster of Excellence CliSAP (contact details below). The workshop will be held at the Center for Earth System Research and Sustainability (CEN), Universität Hamburg, Bundesstraße 53, 20146 Hamburg (formerly the ZMAW building).

Note for Members of the Press:

We will be pleased to provide contact information for the participating researchers on request.

Our multimedia resources:

[The latest sea ice maps and time series from the Arctic and Antarctic](#)

[Sea ice photographs from the Arctic and Antarctic](#)

[Animation: Sea ice development in the course of 2013 – the Arctic and Antarctic in comparison](#)

[AWI Fact Sheet on sea ice \(released September 2013\)](#)

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