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Accelerated Sea Ice Loss in the Wandel Sea Points to a Change in the Arctic's Last Ice Area

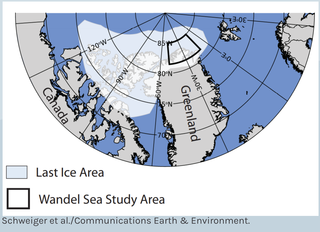
Key Points

1.

The Wandel Sea, north of Greenland in the Arctic Ocean, is the easternmost part of what is known as the "Last Ice Area" where thick multi-year sea-ice has been expected to last the longest.

2.

An unexpected record-low concentration of sea-ice in the Wandel Sea was seen in August 2020.



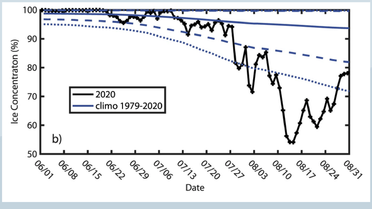
Schweiger et al./Communications Earth & Environment.

3.

In the whole Arctic Ocean, sea-ice (extent, thickness, and age) has decreased over the past couple decades.

4.

Study of long-term satellite data and sea ice modeling experiments point to climate change as a cause of long-term thinning of Arctic sea-ice.



Black line shows percent of sea-ice concentration for the Wandel Sea from 1 June through 31 August 2020. Solid blue line shows the climatological trend from 1979–2020 with 10/90th and 5/95th percentiles shown in dashed and dotted blue lines. Image courtesy of Schweiger et al.

5.

Natural changes in winds and temperatures cause more loss of sea ice in the area:
a. Winds move the sea-ice out of the area
b. Warm air and ocean temperatures melt the ice

6.

At the beginning of the 2020 sea-ice melt season (spring) the Wandel Sea had unusually high amounts of thick ice—but it was not enough to prevent the record-low concentration in August.

7.

Sea-ice in the Last Ice area may not last as long as previously expected.

Witness Community Highlights

Schweiger, A.J., Steele, M., Zhang, J. et al. 2021. Accelerated sea ice loss in the Wandel Sea points to a change in the Arctic's Last Ice Area. Commun Earth Environ 2:122.