

Update to Regional Sea Ice Outlook for Greenland Sea and Barents Sea - Based on Data Until the End of July 2009

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Sea ice extent, based on satellite data (passive microwave)

Monthly mean sea ice extent (30% concentration threshold) is compared with the corresponding monthly mean for July (Fig. 1) for the record minimum year 2007, and with 30, 20, and 10 year averages for monthly means for the periods 79-08, 80-99 and 99-08. For reference, see also the Arctic Sea Ice June Outlook that came out in July 2009, where June and May data were discussed (Gerland and Goodwin 2009).

In the northern **Greenland Sea** ice extent appears roughly similar for all calculated means (Fig. 1). In the central Greenland Sea, the ice edge for July 2009 is located together with the last 10-year average, slightly further north than ice extent for 2007 and for the 20-year (80-99) and 30-year (79-08) averages calculated and plotted. The situation is similar in the southern Greenland Sea close to Greenland, but here ice edge from July 2009 shows is less straight as the edges for the means calculated over 10-30 years (the smoother nature of the edges of the means can be explained by the averaging).

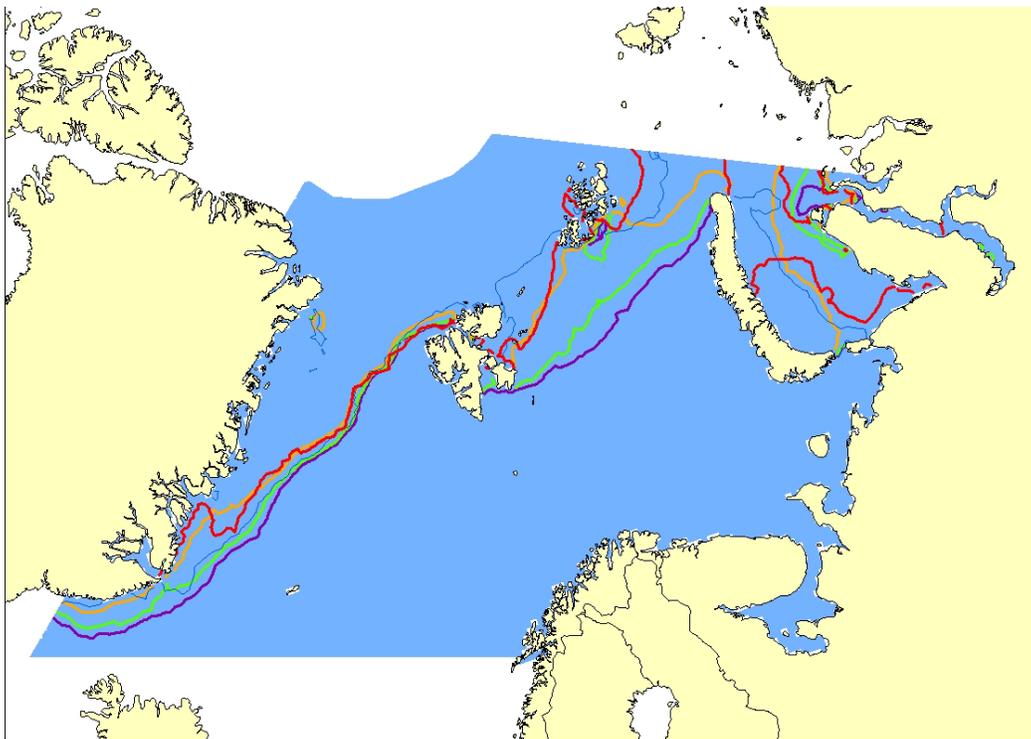


Fig. 1: Ice extent (monthly means, July) southern border of 30% ice concentration, in the Greenland Sea / Fram Strait and Barents Sea, based on passive microwave satellite data (red = July 2009, orange = mean July 1999-2008, green = mean July 1979-2008, purple = mean July 1980-1999). The thin blue line indicates the ice extent for June 2007.

As for the June means (Gerland and Goodwin 2009), in July the sea ice extent in the **Barents Sea** shows more variability between individual years and also between 10, 20 and 30 year averages.

In July 2009, ice extent was substantially less than the 10, 20 and 30 year averages in the northeastern Barents Sea (area between Franz Josef Land and Novaya Zemlya). There, the July 2009 ice edge is even north of the July ice edge from the minimum record year 2007.

Further west, between Svalbard and Franz Josef Land, the July 2007 ice edge marks the minimum of the edges displayed, followed by the July 2009 edge and the past 10-years average. The older averages lay substantially further south. This picture shows that the general ice situation of the northern Barents Sea in July has changed significantly over the last decades, with a larger area, earlier ice covered, now with open water.

Acknowledgements

Passive microwave satellite data are from SSM/I satellites and accessed from the National Snow and Ice Data Center (NSIDC) in Boulder, Colorado, USA.

References

- Gerland, S., and Goodwin, H., 2009: Regional sea ice outlook for Greenland Sea and Barents Sea - based on data until the end of June 2009.
http://www.arcus.org/search/seaiceoutlook/2009_outlook/july_report/downloads/pdf/regional/8_Gerland_Goodwin_GreenlandBarentsSea_%20JulyReport_JuneData.pdf