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Sea Ice Cover

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Monthly Sea Ice Outlook from SEARCH/Arcus

Highlights:

- September minimum sea ice extent is third lowest recorded
- Loss of thick multiyear ice in Beaufort Sea during summer

Sea ice extent

Sea ice extent is the primary parameter for summarizing the state of the Arctic sea ice cover. Microwave satellites have routinely and accurately monitored the extent since 1979. There are two periods that define the annual cycle and thus are of particular interest: March, at the end of winter when the ice is at its maximum extent, and September, when it reaches its annual minimum. Maps of ice coverage in March 2010 and September 2010 are presented in Figure 11, with the magenta line denoting the median ice extent for the period 1979–2000.

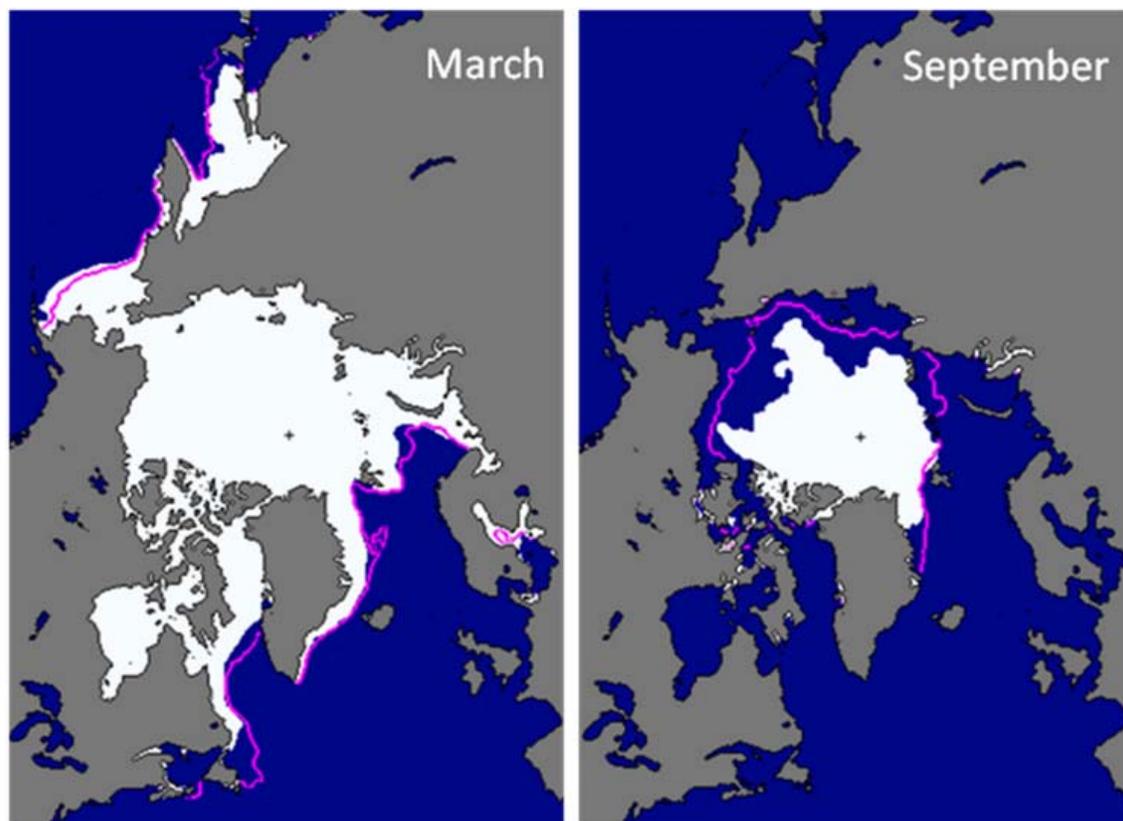


Figure 11. Sea ice extent in March 2010 (left) and September 2010 (right), illustrating the respective monthly winter maximum and summer minimum extents. The magenta line indicates the median maximum and minimum extent of the ice cover in the given month for the period 1979–2000. (Figures from the National Snow and Ice Data Center Sea Ice Index: nsidc.org/data/seaiice_index.)

On September 19, 2010 sea ice extent reached a minimum for the year of 4.6 million km². The 2010 minimum is the third-lowest recorded since 1979, surpassed only by 2008 and the record low in 2007. Overall, the 2010 minimum was 31% (2.1 million km²) lower than the 1979–2000 average. The last four summers have experienced the four lowest minimums in the satellite record, and eight of the ten lowest minimums have occurred during the last decade. Surface air temperatures through the 2010 summer were warmer than normal throughout the Arctic, though less extreme than in 2007. A strong atmospheric circulation pattern set up during June helped push the ice edge away from the coast. However, the pattern did not persist through the summer as it did in 2007 (see the Atmosphere Section for more details).