

SEA ICE PREDICTION NETWORK (SIPN)

July Report (Using May/June Data)

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2. Research organization
3. Yes, use this contribution for all of the 2016 SIO reports (this contribution will be superseded if you submit a later one).
4. "Executive summary":
We predict the September ice extent 2016 to be larger than last year. In spite of the mild Arctic winter resulting in thinner ice and an exceptional low May ice extent, the atmospheric conditions during June did not allow much melting. Therefore, our simulated June melt pond fraction is clearly below average, lower than in any other year since 2001. Taking into account our prediction based on May and June pond fraction, we expect the September ice extent 2016 to be between 4.5 and 5.2 million km².
5. Type: statistical
6. not relevant
7. not relevant
8. not relevant
9. 5.2 million km²
10. not predicted
11. Short explanation:
This is a statistical prediction based on the correlation between the ice area covered by melt-ponds in May and ice extent in September. The melt pond area is derived from a simulation with the sea ice model CICE in which we incorporated a physically based melt-pond model¹. See our publication in Nature Climate Change <http://www.nature.com/nclimate/journal/v4/n5/full/nclimate2203.html> for details².

References:

1. Flocco, D., Schröder, D., Feltham, D. L. & Hunke, E. C., 2012: Impact of melt ponds on Arctic sea ice simulations from 1990 to 2007. *J. Geophys. Res.* **117**, C09032.
2. Schröder D., D. L. Feltham, D. Flocco, M. Tsamados, 2014: September Arctic sea-ice minimum predicted by spring melt-pond fraction. *Nature Clim. Change* **4**, 353-357, DOI: 10.1038/NCLIMATE2203.

12. Uncertainty: 0.44 million km²

The given uncertainty is the mean forecast error based on forecasts for the years 1984 to 2013. For all these forecasts only data from previous years were used (forecast mode).