

SEA ICE PREDICTION NETWORK (SIPN)

July Report (Using May+June Data)

1. CPOM (David Schroeder, Danny Feltham, Daniela Flocco, Michael Tsamados)
2. Type: statistical
3. Predicted mean September ice extent 2015: 5.27 million km²

4. 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.

5. Uncertainty: 0.44 million km²

6. 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). In the hindcast mode the prediction error amounts to 0.36 million km².

7. "Executive summary":

We predict the September ice extent 2015 to be very close to 2013 and 2014, but considerably larger than in 2012. Although the air temperature was generally higher in June 2015 than in 2014, the melt-pond area in May and June is very similar to 2014 and below the 1979 to 2015 trend line. This is mainly due to a lower fraction of thin-ice in our model simulation in comparison to previous years.