

2010 Sea Ice Outlook August Report

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Summary:

Method is based on numerical and visual comparison of the PIPS2 model thickness distributions in the Arctic Basin for the last ten years vs. the current year. May 2010 had less ice than May 2006, but similar distribution ratios of ice thickness - so the prediction was that the 2010 minimum would be lower than 2006 and higher than 2009. This hindcast method was effective for all years except 2007 - when wind appears to have piled the ice up at higher latitudes at the expense of extent loss. Similar winds developed in mid-August, requiring the forecast to drop by 8%. It is now expected that the season will end with ice extent slightly below 2009.

Complete Text:

Extent Projection

5.1 million km² based on JAXA. Reduced from initial June projection of 5.5 million

Methods / Techniques - Statistical.

Rationale

In late May, I performed a numerical and visual comparison of the PIPS2 thickness distributions in the Arctic Basin for the last ten years vs. the current year - and found a closest match with 2006. I also calculated the ice volume by integrating the thickness across all pixels. It showed that 2010 should come in below 2006 and above 2009. Verification of previous years showed that this is a highly accurate forecasting technique, with the exception of 2007 - which was dominated by unusual winds which compacted and melted vulnerable areas of ice. Until mid-August this approach appeared to be working very accurately. Since then, strong southerly winds have developed and extent has dropped below predicted values. Thus the 8% reduction from the initial forecast.

Executive Summary

Our projection is based on comparing short term PIPS2 thickness forecasts with those of previous years. It was found that May 2006/ May 2010 made a close match of ice thickness distribution inside the Arctic Basin, though absolute 2010 extent/volume was lower. We now expect 2010 to finish the summer slightly below 2009.