June Report: Outlook Based on May Data
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Our Outlook forecast of the September mean total ice extent in the Arctic calls for conditions nearly the same as seen in 2008. It is based on model estimates of the mean ice conditions for the month of May and a linear regression model fit to the years 1987 through 2008.

Predicted extent: 4.90 million sq km
RMS error of the fit: 0.40 million sq km

Best predictor variable: G1.0, the fractional area of water and ice less than 1.0 m thick
R^2 for the fit: 0.78

The region most influential in making the prediction is in the Beaufort Sea, which shows substantially thinner ice than normal in the model simulation.
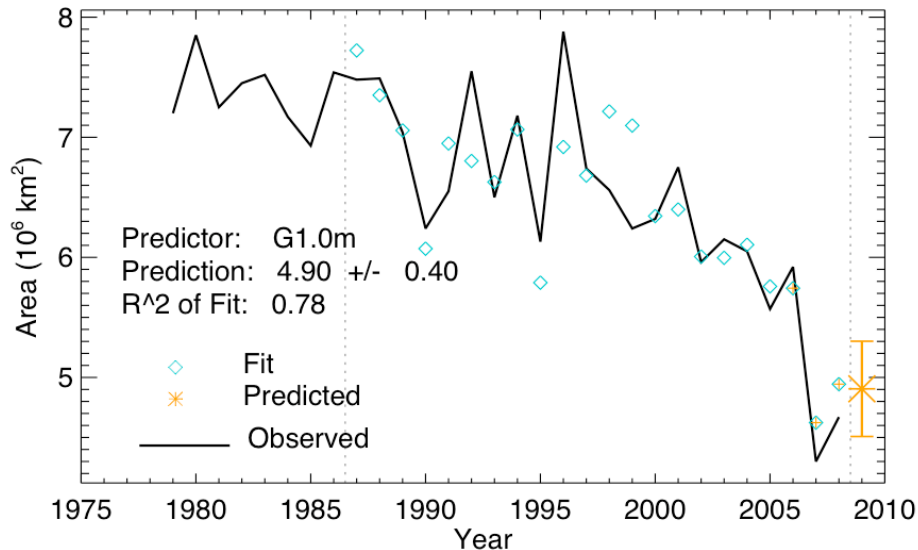

Figure 1: Time series of the September mean total ice extent from the Sea Ice Index (black), the extent predicted by the fit in past years (blue), and the predicted ice extent for 2009 with error bars (orange).
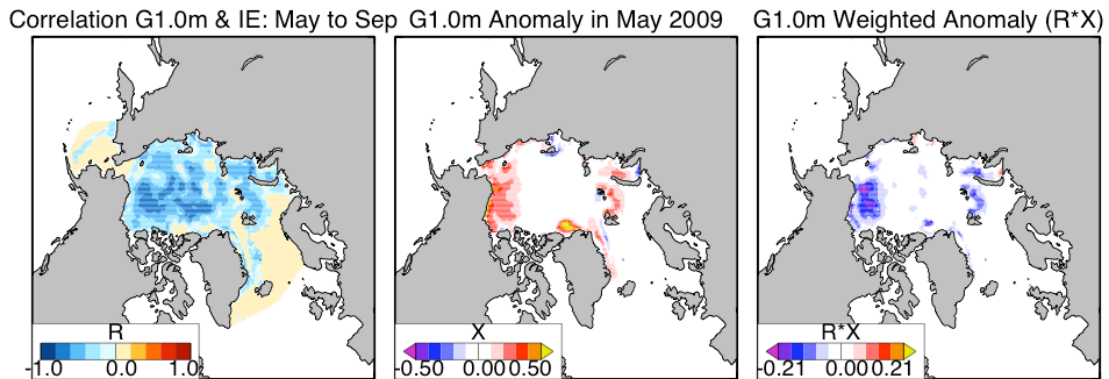
Figure 2: The maps show 1) the correlation of the G1.0 variable in May with the September ice extent for 1987-2008; 2) the anomaly of G1.0 in May 2009; and 3) the product of the anomaly and the correlation. The integral of the last map gives the predictor value for 2009 and it shows where the anomaly and the correlation most strongly align... in this case in the Beaufort Sea, but also a little in the Barents Sea.