Outlook of September 2012 sea ice extent based on operational NCEP CFSv2

June Report based on May Data

Wanqiu Wang, Robert Grumbine, and Xingren Wu

(NOAA/NWS/NCEP)

1 Arctic sea ice extent projection for September 2012

$(4.9\pm0.4)\times10^6$ km^2

2 Methods/Techniques

The outlook is based on a CFSv2 ensemble of 40 members initialized from May 21-30, 2012. The model's systematic bias, forecast RMS errors, and anomaly correlation kill are estimated based on its historical forecasts for 1982-2011.

3. Rationale

The CFSv2 has shown long-term decrease of sea ice extent during the past 3 decades, as in the observation. The CFSv2 was also found to have some skill in predicting year to year variability at seasonal time scales.

4. Executive Summary

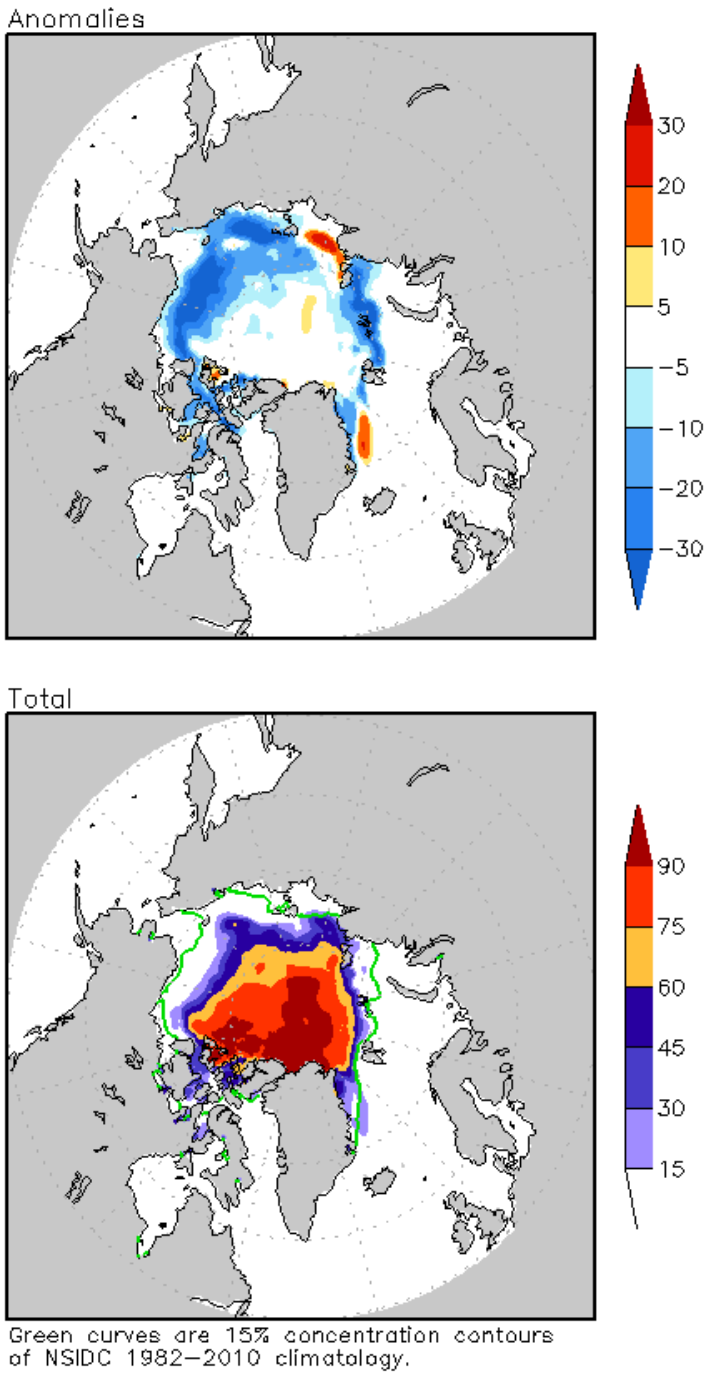
The projected Arctic sea ice extent from CPC based on NCEP ensemble mean CFSv2 forecast is 4.9×10^6 km^2 with an estimated error of $\pm0.4\times10^6$ km^2.

5. Estimate of Forecast Skill

The skill estimated as the forecast correlation with observation based on retrospective forecasts for 1982-2011 is 0.78. Forecast uncertainty taken as the RMS error based on 1982-2011 retrospective forecasts is 0.4×10^6 km^2.

6. Spatial maps of sea ice concentration

The attached maps are CFSv2 forecast sea ice concentration anomalies (upper panel) and total (lower panel).



CFSv2 forecast sea ice concentration anomalies (upper panel) and total (lower panel). The forecast is computed as an ensemble average of 40 forecast runs initialized from May 21-30, 2012.