

Sea Ice (Pan-arctic) Outlook for 2013

Xingren Wu, Robert Grumbine and Wanqiu Wang

NOAA/NCEP

1. Extent Projection

Our estimate is 4.1 million square kilometers with a standard deviation of 0.3 million square kilometers.

2. Methods/Techniques

We ran the CFSv2 model with 31 May 2013 revised-initial conditions. The initial conditions were modified from real time CFSv2 initial conditions by thinning the ice pack, similar to what we did in making our 2011 and 2012 sea ice outlook (SIO) estimate. If this thinning would have eliminated ice from areas observed to have sea ice, a minimum thickness of 20 cm was left in place for the ice initial condition.

3. Rationale

In our 2010 to 2012 SIO estimates, it was found that the CFSv2 sea ice extent seemed too excessive (due to too thick ice in the initial condition). Based on the estimates from the observations, the initial condition change (thinning the ice pack) did appear to have improved the model's behavior and skill.

4. Executive Summary

The projected Arctic sea ice extent from NCEP CFSv2 model with revised May initial condition using 31-member ensemble forecast is 4.1 million square kilometers with a standard deviation of 0.3 million square kilometers. The maximum and minimum Arctic sea ice extent from the 31-member ensemble prediction is 3.62 and 4.61 million square kilometers, respectively.