

Outlook of 9/2009 sea ice in the Northwest Passage region from 7/1/2009

Jinlun Zhang

Polar Science Center, Applied Physics Lab, University of Washington

This outlook from July 1, 2009 shows that more of the Northwest Passage (NWP) is ice free in September 2009 (Figure 1) than the outlook from June 1 (Figure 2). The ensemble predictions are made by the Pan-arctic Ice-Ocean Modeling and Assimilation System (PIOMAS), which is forced by NCEP/NCAR reanalysis data and assimilates satellite ice concentration data. The ensemble consists of seven members each of which uses a unique set of NCEP/NCAR atmospheric forcing fields from recent years, representing recent climate, such that ensemble member 1 uses 2002 NCEP/NCAR forcing, member 2 uses 2003 forcing, ..., and member 7 uses 2008 forcing. Each ensemble prediction starts with the same initial ice-ocean conditions on 6/1/2009. The initial ice-ocean conditions are obtained by a retrospective simulation that assimilates satellite ice concentration. Ensemble median is considered to have a 50% probability of occurrence and taken as the outlook product. More details about the prediction procedure can be found in Zhang et al. (2008)

http://psc.apl.washington.edu/zhang/Pubs/Zhang_etal2008GL033244.pdf.

Figures 1 and 2 are compared below:

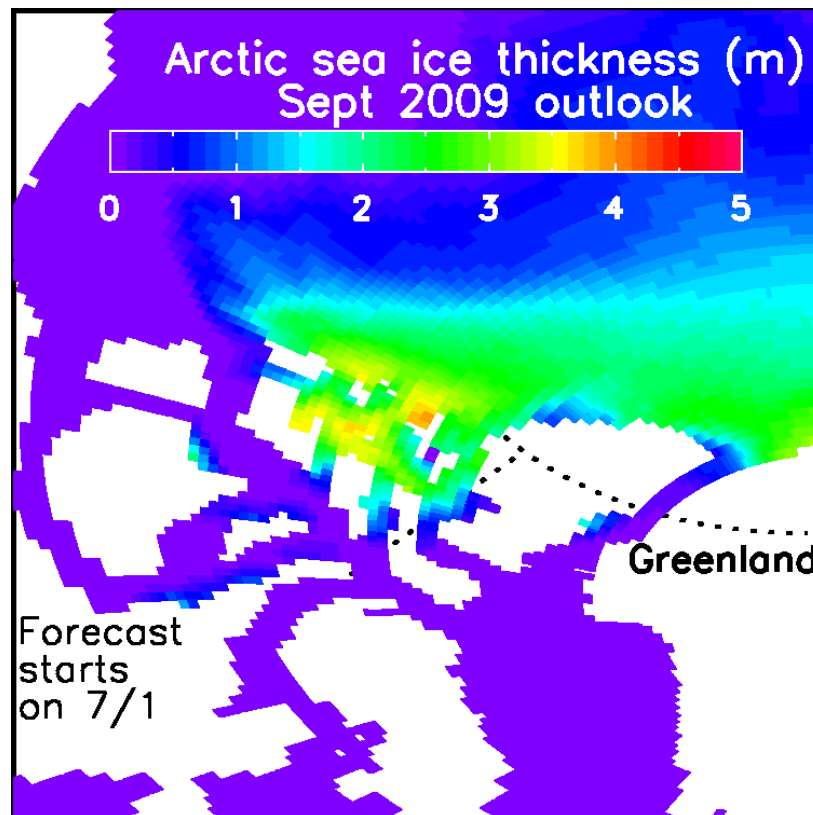


Figure 1. Ensemble prediction of September 2009 sea ice thickness in the NWP region. Prediction starts on 7/1/2009.

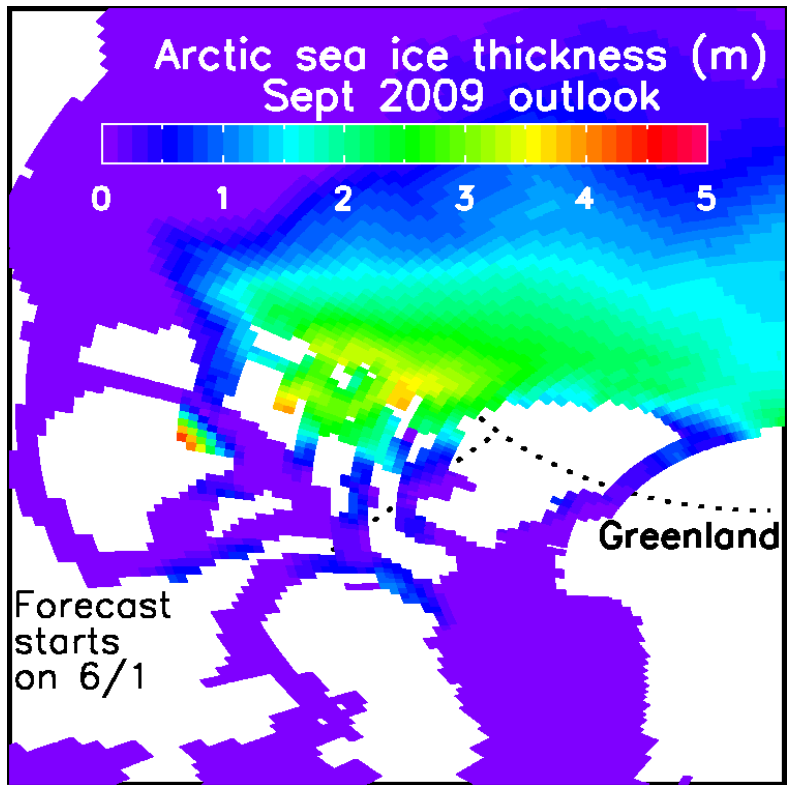


Figure 2. Ensemble prediction of September 2009 sea ice thickness in the NWP region. Prediction starts on 6/1/2009.