Sheldon Drobot, James Maslanik, Chuck Fowler
July 2008 Sea Ice Outlook: Report Based on July Data

Names of Scientist(s) making the Outlook.
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Estimate of sea ice extent for the month of September 2008 (the value for September 2007 was 4.3 million square kilometers).
Based on data available in early June, our *most likely* solution using the probabilistic model described below is **4.86** million square kilometers. Our best guess using empirical analysis of overall conditions and short-range weather forecasts suggests a minimum of 4.4 million square kilometers.

Principal Method (numerical model, statistical model, comparison to 2007 weather and satellite data, etc.) Keep this short as it will go into a table.
Probabilistic statistical model and subjective analyses of weather data

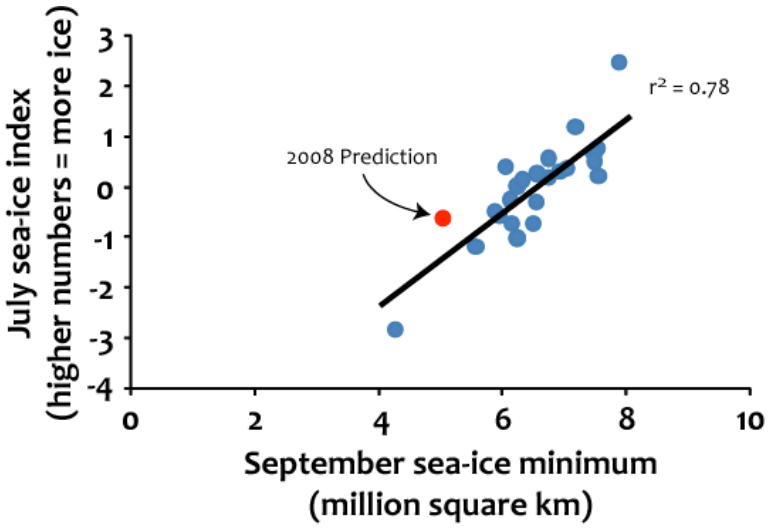
A short several sentence summary of your primary physical reasoning behind the estimate provided in #2. Last time I extracted most of this information from your essays, but it is better if you provide this up front.
Our probabilistic model follows the methods outlined in [Drobot, S.D., 2007: Using remote sensing data to develop seasonal outlooks for Arctic regional sea-ice minimum extent. Remote Sensing of Environment, 111, 136-147, doi:10.1016/j.rse.2007.03.024]. For this forecast, we are relying mainly on the spatial pattern of early June sea-ice concentration and an ice-age index [which is based on Figure 2 in Maslanik, J. A., C. Fowler, J. Stroeve, S. Drobot, J. Zwally, D. Yi, and W. Emery, 2007: A younger, thinner Arctic ice cover: Increased potential for rapid, extensive sea-ice loss. *Geophysical Research Letters*, 34, L24501, doi:10.1029/2007GL032043.] Compared to last year at this time, the sea-ice extent is now much greater, but the ice age data indicates that the ice pack is more vulnerable to loss this year. Air temperatures over the last couple of months have been cooler this year than last year, which also helps to explain why our current forecast is slightly higher than the preceding one, which was 4.40 million square kilometers. More details will be online at http://ccar.colorado.edu/arifs

The empirical estimate given above (of 4.4 million sq. km.) subjectively factors together the observed ice concentration patterns, locations of the remaining ice, and short-range weather forecasts. Since reduced concentrations extend well into the central pack this summer and occur in areas that are predominantly first-year ice, those portions of the pack may be susceptible to melt out by September. While atmospheric conditions through July have tended to favor retention of ice in the Arctic Basin, circulation patterns over the past several days and forecasted for the next week are likely to add an additional, transport-related, component to the retreat in ice

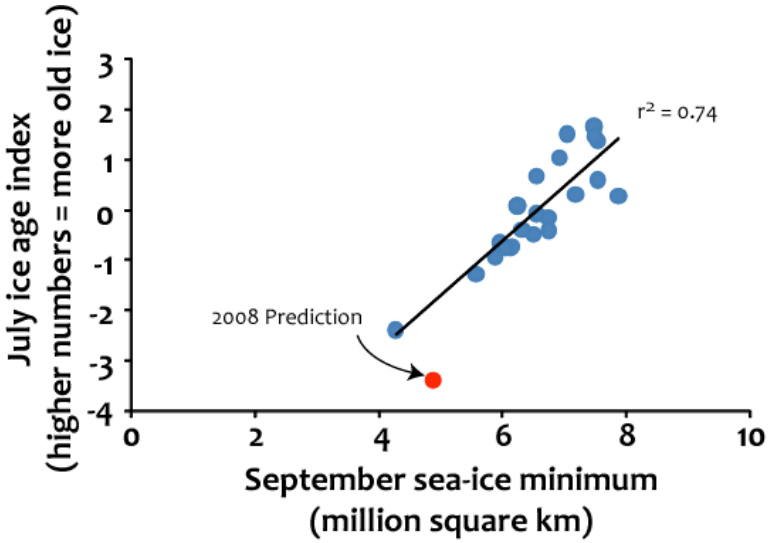
extent, particularly in the Siberian Arctic. The rate of ice extent loss should accelerate over the next week to two weeks, given these conditions.

Any expanded information with figures which backs up #4.
We can provide these in better formats if requested:

The first image is a scatterplot of the September sea ice extent and the July sea ice index. The red dot is the July 2008 sea ice index and the predicted September sea ice extent.



Next, we have a scatterplot of the September sea ice extent and the July ice age index. The red dot is the July 2008 sea ice index and the predicted September sea ice extent.



Lastly, since our model is probabilistic, we can provide a probability of setting a new record. We are forecasting a 5% chance of setting a new record this year (down from 40% in the last forecast). Based on our subjective analysis however, we place the chance of another record minimum still at about 40%.

Any information on regional sea ice conditions or outlooks.
We still have not done any probabilistic regional forecasts this year.