

Sea Ice Outlook
2017 July Report
Individual Outlook

Name of contributor or name of contributing organization:

Morison

Is this contribution from a person or group not affiliated with a research organization?

Name and organization for all contributors. Indicate primary contact and total number of people who may have contributed to your Outlook, even if not included on the author list.

James Morison

**Do you want your June contribution to automatically be included in subsequent reports?
(If yes, you may still update your contribution via the Google form.)**

Yes automatically include my contributions in July and August 2017

What is the type of your Outlook projection?

Heuristic

Starting in 2017 we are accepting both pan-Arctic and pan-Antarctic sea ice extent (either one or both) of the September monthly mean. As in 2016, we are also collecting Alaskan regional sea ice extent. To be consistent with the validating sea ice extent index from NSIDC, if possible, please first compute the average sea ice concentration for the month and then compute the extent as the sum of cell areas > 15%.

a) Pan-Arctic September extent prediction in million square kilometers.

3.4

b) same as in (a) but for pan-Antarctic. If your method differs substantially from that for the Arctic, please enter it as a separate submission.

c) same as in (b) but for the Alaskan region. Please also tell us maximum possible extent if every ocean cell in your region were ice covered.

"Executive summary" of your Outlook contribution (using 300 words or less) describe how and why your contribution was formulated. To the extent possible, use non-technical language.

My June 2017 projection is for a new record low average September, 2017 Arctic sea ice extent of 3.4 million square kilometers. This heuristic estimate is based on what must be the worst pack ice conditions entering the summer season, namely:

A) Analysis from Ron Kwok had most of the multiyear ice off Ellesmere Island being swept out of Fram Strait by a persistent low over the central Arctic, and the January 1 multiyear fraction for 2017 was an all time low. The total ice volume must be at a record low for this time of year.

B) Temperatures over the Atlantic side of the Arctic Ocean up to the Pole were reportedly warm in late 2016 into early 2017.

C) High winter AO should negatively correlate with following September ice extent [Rigor et al., 2002]. Winter (NDJFMA) 2016-17 AO was 9th highest since 1950 and 1.1 above the 1950-88 average. This should influence to ice extent negatively.

As always, everything ultimately depends in the summer's weather, but the ice initial conditions starting the summer melt must be the worst ever so I'm predicting a new record minimum September average of 3.4 million square kilometers.

Brief explanation of Outlook method (using 300 words or less).

My method is heuristic based on experience, analysis of multiyear ice over the winter 2016-17 by Ron Kwok, NSIDC ice extent record, and NOAA AO record

Tell us the dataset used for your initial Sea Ice Concentration (SIC). Include name and date (e.g., "NASA Team, May 2017"). We also encourage you to submit initial fields to the

dropbox, see <https://www.arcus.org/sipn/sea-ice-outlook/2017/june/call> in the section on "Submitting Figures and Gridded Data of Full Spatial Fields (Optional) of Forecasts and Initial Conditions" for detailed instructions. Required if sea Ice concentration is used.

analysis of multiyear ice over the winter 2016-17 by Ron Kwok, NSIDC ice extent record, and NOAA AO record

Dataset of initial Sea Ice Thickness (SIT) used (include name and date):

If you use a dynamic model, please specify the name of the model as a whole and each component including version numbers and how the component is initialized:

If available from your method for pan-Arctic extent prediction, please provide

a) Uncertainty/probability estimate such as median, ranges, and/or standard deviations (specify what you are providing).

1

b) Brief explanation/assessment of basis for the uncertainty estimate (1-2 sentences).

Experience

c) Brief description of any post processing you have done (1-2 sentences).