Sea Ice Outlook
2018 August Report
Individual Outlook

Name of contributor or name of contributing organization:

Walt Meier, NSIDC

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

false

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.

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

false

What is the type of your Outlook projection?

Statistical

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.

4.57

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.

18.24

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.

This method applies daily ice loss rates to extrapolate from the start date (August 1) through the end of September. Projected September daily extents are averaged to calculate the projected September average extent. Individual years from 2005 to 2017 are used, as well as averages over 1981-2010 and 2005-2017. The 2005-2017 average daily rates are used to estimate the official submitted estimate.

The predicted September average extent for 2018 is 4.57 (±0.36) million square kilometers. The minimum daily extent is predicted to be 4.46 (±0.38) million square kilometers and occurs on 14 September. This is a substantial decrease from the July submission of 4.98 and 4.86 million square kilometers for the monthly average and daily minimum respectively. This reflects the accelerated retreat during the month of July. The range of the estimates dropped from 0.55 to 0.36 million square kilometers, which reflects the one-month shorter time period of variability in ice loss rates over the rest of the melt season. None of the rates based on the last 13 years indicate that this year will be lower than the record-low extent of 2012; using 2012 rates yields a monthly (daily minimum) extent of 3.82 (3.66) million square kilometers, which would be second lowest. Despite the July speed up in ice loss, there is little chance that 2018 will be lower than the current record low extent of 2012.

Using the same method, the predicted Antarctic average extent for September 2018 is 18.11 (±0.30) million square kilometers. The maximum daily extent is predicted to be 18.24 (±0.35) million square kilometers and occurs on 29 September. These are nearly the same as was projected in July.

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

This method applies daily ice loss rates to extrapolate from the start date (August 1) through the end of September. Projected September daily extents are averaged to calculate the projected

September average extent. Individual years from 2005 to 2017 are used, as well as averages over 1981-2010 and 2005-2017. The 2005-2017 average daily rates are used to estimate the official submitted estimate. The method essentially provides the range of September extents that can be expected based on how the ice has declined in past years, though it is possible that record fast or slow daily loss rates may yield a value outside the projected range. It also can provide a probability of a new record by comparing how many years of loss rates yield a record relative to all years. It has the benefit that it can easily and frequently (daily if desired) be updated to provide updated estimates and probabilities and as the minimum approaches the "window" of possible outcomes narrows.

Tell us the dataset used for your initial Sea Ice Concentration (SIC).

Maslanik, J. and J. Stroeve. 1999, updated daily. Near-Real-Time DMSP SSMIS Daily Polar Gridded Sea Ice Concentrations, Version 1. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. doi: https://doi.org/10.5067/U8C09DWVX9LM.

Fetterer, F., K. Knowles, W. Meier, M. Savoie, and A. K. Windnagel. 2017, updated daily. Sea Ice Index, Version 3. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. doi: https://doi.org/10.7265/N5K072F8.

Tell us the dataset used for your 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:

Not specified

If available from your method.
a) Uncertainty/probability estimates:

Median

Ranges

Standard Deviations

0.36 million square kilometers

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

Standard deviation of the estimates using ice loss rates from the years 2005 to 2017.

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

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:

Not specified

If available from your method.
a) Uncertainty/probability estimates:

Median

4.24

Ranges

Standard Deviations

0.33

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

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