Name of Contributor of Name of Contributing Organization:

Walt Meier, NASA Goddard

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.

Walt Meier, NASA Goddard, 1 contributor

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

No do not use my prediction this month in later months

What is the type of you 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.

4.82

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 the 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 (June 1) through the end of

September. Projected September daily extents are averaged to calculate the projected September average extent. Individual years from 2005 to 2016 are used, as well as averages over 1981-2010 and 2005-2016. The 2005-2016 average daily rates are used to estimate the official submitted estimate.
The predicted September average extent for 2016 is 4.82 (±0.70) million square kilometers. The minimum daily extent is predicted to be 4.70 (±0.71) million square kilometers and occur on 17 September. The large range of estimates reflects the large variability in ice loss rates over the final 3+ months of the melt season. Based on the last 12 years, there is an 8% chance that 2017 will be lower than the current record low extent of 2012.

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

This method is a simple statistical method that uses previous years' daily rates of extent change to project the 2017 daily extent through the end of September. The monthly average is then calculated from the September daily extents. This year, the last twelve years (2005 – 2016) are used for the projection because these years are more representative of recent conditions than using all years in the 38-year time series.
There isn't much expected skill at this point because of the large range of extent loss rates that may still occur. However, it provides a reasonable envelop of physically realistic September extents. As September approaches, the "window" of possible extents narrows and hones in on the final observed extent. An updated projection will plan to be submitted in July, using 2017 extent data through 30 June.

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.

NASA Team algorithm from NSIDC Sea Ice Index (http://nsidc.org/data/seaice_index/)

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

NA

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:

NA

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).

The standard deviation of the range of estimates is 0.70 million square kilometers. There isn't much expected skill at this point because of the large range of extent loss rates that may still occur. However, it provides a reasonable envelop of physically realistic September extents. As September approaches, the "window" of possible extents narrows and hones in on the final observed extent.

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

The uncertainty comes from the range of possible ice loss rates through the remaining part of summer, which are in turn a function of the initial state of the ice (e.g., thickness) and the summer weather conditions.

c) same as in (b) but for the Alaskan region. Please also tell us the maximum possible extent if every ocean cell in your region were ice covered. See https://www.arcus.org/sipn/sea-ice-outlook/2017/june/call **in the section on "Instructions for Submitting an Alaskan Regional Outlook" for detailed instructions.**

NA

d) Raw (and/or post processed) forecasts for this year and retrospective forecasts in an excel spreadsheet with one year on each row and ensemble member number on columns (specifying whether raw or post processed).

NA