Name of contributor or name of contributing organization:

Alek Petty, NASA-GSFC

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.

Alek Petty, NASA-GSFC, alek.a.petty@nasa.gov

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.

4.99

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.

18.4

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.

0.6

"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.

Based on an analysis of May sea ice concentration data provided by the NSIDC (NASA Team, NRT), I forecast a 2018 September Arctic sea ice extent of 4.98 +/- 0.40 M km2. The forecast does not suggest a new record low September extent will be reached in 2018 (lower than the 3.62 M km2 observed in 2012).

Due to the historical weighting scheme, the record low sea ice conditions in Bering Strait and around Svalbard are not being included, so the forecast should be treated with caution!

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

In this statistical forecast system we use sea ice concentration (SIC) data (1979-present day), derived from passive microwave brightness temperature using the NASA Team algorithm. The SIC data are detrended spatially using linear trend persistence (from the given forecast year) then averaged using a simple weighting scheme by correlating with historical SIE, to generate a detrended SIC dataset. A least-squares linear regression model is fit from the mean detrended SIC/SIE data. To produce the SIE forecast, the relevant monthly mean/detrended SIC data are applied to the linear regression model. See the original paper (http://alekpetty.com/papers/petty2017.html) for more details.

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

NSIDC NRT NASA Team SIC data, https://nsidc.org/data/nsidc-0081

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:

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

Median

Ranges

Standard Deviations

0.4

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

The uncertainty represents one standard deviation of the 2018 prediction interval.

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