

Sea Ice Outlook
2019 June Report
Individual Outlook

Name of contributor or name of contributing organization:

Simmons

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

X

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.

Charles Simmons

**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.)**

This is a new submission.

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.

4.026

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.

We loosely model the contributions of ocean heat and insolation to sea ice melting. To model insolation, we use measurements of northern hemisphere snow area and sea ice area. To model ocean heat, we use measurements of CO2 concentrations.

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

This is a variant of Rob Dekker's prediction. Dekker performs a linear regression on northern hemisphere snow area, sea ice area, and sea ice extent. Predictions of more or less similar quality can be obtained by substituting Extent with another series that tends to increase or decrease over time, including the year. We choose to use the CO2 concentration as measured at Mauna Loa as being a particularly provocative measure. Additionally, Dekker performs the regression on a subset of available data, we use all the available data.

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

We do not use SIC nor SIT. We use the following data sources:

Average monthly northern hemisphere snow area:

https://climate.rutgers.edu/snowcover/table_area.php?ui_set=1

Average monthly northern hemisphere sea ice area:

ftp://sidads.colorado.edu/DATASETS/NOAA/G02135/seaice_analysis/Sea_Ice_Index_Monthly_Data_with_Statistics_G02135_v3.0.xlsx

Average monthly CO2 concentration at Moana Loa:
ftp://aftp.cmdl.noaa.gov/products/trends/co2/co2_mm_mlo.txt

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

0.5 million square kilometers

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

Standard Error of Linear Regression

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