

Sea Ice Outlook
2021 July Report
Individual Outlook

Name of contributor or name of contributing organization:

Simmons, Charles

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

Yes, this contribution is from a "Citizen Scientist."

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.

Simmons, Charles

**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.)**

Include this submission in this month's report ONLY

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.

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.

Our June outlook has increased slightly from 3.92 to 4.00 M km². The Standard Deviation has decreased slightly from 0.49 to 0.37. The Anomaly increased from -0.29 to -0.23. Snow Area is slightly higher this June than last June (6.17 vs 5.96) and Ice Area is slightly lower (8.38 vs 8.41)

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

We use a simple linear regression that loosely models how much heat (insolation) will be absorbed (not reflected by snow or ice) near the Arctic, and how much heat is being trapped by CO₂. We perform a linear regression on NSIDC June sea ice area, Rutgers June northern hemisphere snow area, and October Moana Loa CO₂ levels. This is a minor variant of a model proposed by Rob Dekker.

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

NA

Tell us the dataset used for your 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:

If available from your method.

a) Uncertainty/probability estimates:

Median

Lower error bound

Lower error bound

Standard Deviation

0.37

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

Standard error as computed by linest.

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