Sea Ice Outlook

2022 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

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.)

[Do you want your contribution for this month to automatically be included in subsequent reports?]

What is the type of your Outlook projection?

Statistical/ML

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.

4.06

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.

This year's Outlook of 4.06 MK^2 is nearly the same as last year's estimate of 4.00 MK^2, and nearly the same as the outlook for the previous two years. This year, there is less northern hemisphere snow cover (5.51 MK^2 vs 6.17) and slightly more CO^2 (as usual), but June ice area is slightly higher than last year (8.6 vs 8.4).

This year's Outlook is just slightly below a linear regression of September sea ice extents.

Last year the Outlook missed the actual September extent of 4.92 MK^2 extent by a large margin. We hope this year the weather is more favorable to our Outlook.

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

This Outlook uses a linear regression of October Moana Loa CO2 concentration, June average arctic ice area (NSIDC), and June average northern hemisphere snow area (Rutgers Climate Lab) to predict September average sea ice extent. Looking at snow and ice areas is intended to estimate insolation that is being received in the arctic. Looking at CO2 concentrations is intended to estimate other heat in the system.

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).

The uncertainty estimate is the error reported by the linear regression.

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