

**Sea Ice Outlook**  
2021 August Report  
Individual Outlook

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**Name of contributor or name of contributing organization:**

NASA GSFC

**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.**

NASA GSFC

**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.**

4.78

**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.**

NA

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

In this forecast we use NASA Team CDR/NSIUDC sea ice concentration (SIC) data (1980-present day), derived from passive microwave brightness temperature. The SIC data are detrended spatially using linear trend persistence (from the given forecast year) then averaged, to generate a detrended SIC dataset. A least-squares linear regression model is fit from the mean detrended SIC/SIE data to the v3 Sea Ice Index September sea ice extent data. To produce the SIE forecast, the relevant monthly mean/detrended SIC data are applied to the linear regression model. See my website (<http://alekpetty.com/blog/2017ArcticForecasts>) for more details.

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

CDR NSIDC NT sea ice concentration (final G02202 and NRT g10016)

**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**

4.39

**Lower error bound**

5.15

**Standard Deviation**

0.39

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

The uncertainty represents one standard deviation of the prediction interval.

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