

Sea Ice Outlook
2022 September Report
Individual Outlook

Name of contributor or name of contributing organization:

EMC/NCEP (UFS)

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.

EMC/NCEP (UFS)

**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?

Dynamic Model

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.

19.05

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.

The projected Arctic minimum sea ice extent from the NCEP Unified Forecast System (UFS) model May-August initial conditions (ICs) using 28-member ensemble forecast (00Z May 3-9, June 3-9, July 3-9 and August 3-9 with C192) is 4.91 million square kilometers with a standard deviation of 0.29 million square kilometers. The corresponding number for the Antarctic (maximum) is 19.05 million square kilometers with a standard deviation of 0.26 million square kilometers.

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

We used the NCEP UFS model with 28-case of May to August 2022 initial conditions (May 3-9, June 3-9, July 3-9 and August 3-9 with C192) and bias-corrected for the Arctic.

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

NASA Team Analysis from NSIDC (May 3-9, June 3-9, July 3-9 and August 3-9, 2022)

Tell us the dataset used for your initial Sea Ice Thickness (SIT) used. Include name and date.

CPC sea ice initialization system (CSIS) (May 3-9, June 3-9, July 3-9 and August 3-9, 2022)

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:

- a) Model Name: NCEP UFS
- b) Component Name Initialization
- | | | |
|------------|--------------|------------|
| Atmosphere | NCEP GFS/FV3 | NCEP CDAS |
| Ocean | GFDL MOM6 | NCEP GODAS |
| ICE | CICE6 | CPC CSIS |
- c) 28 ensemble members (May 3-9, June 3-9, July 3-9 and August 3-9 2022, each day 00Z with C192)

If available from your method.

a) Uncertainty/probability estimates:

Median

Lower error bound

Lower error bound

Standard Deviation

0.29

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

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