

Sea Ice Outlook  
2017 July Report  
Individual Outlook

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

Xingren Wu and Robert Grumbine

**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.**

Xingren Wu and Robert Grumbine  
MOAA/NCEP/EMC  
Primary contact: Xingren Wu

**Do you want your June contribution to automatically be included in subsequent reports? (If yes, you may still update your contribution via the Google form.)**

Yes automatically include my contributions in July and August 2017

**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.**

4.21

**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.**

19.64

**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 CFSv2 model with revised CFSv2 May and June initial conditions (ICs) using 61-member ensemble forecast is 4.21 million square kilometers with a standard deviation (SD) of 0.53 million square kilometers.

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

We ran the NCEP CFSv2 model with 61-case of May and June 2017 revised ICs. The IC was modified from real time CFSv2 of each day at 00Z by thinning the Arctic ice pack (based on test from previous years' sea ice outlook). If this thinning would have eliminated ice from areas observed to have sea ice, a minimum thickness of 10 cm was left in place for the ice IC. Bias correction was applied to the Antarctic sea ice extent.

**Tell us the dataset used for your initial Sea Ice Concentration (SIC). Include name and date (e.g., "NASA Team, May 2017"). We also encourage you to submit initial fields to the dropbox, see <https://www.arcus.org/sipn/sea-ice-outlook/2017/june/call> in the section on "Submitting Figures and Gridded Data of Full Spatial Fields (Optional) of Forecasts and Initial Conditions" for detailed instructions. Required if sea Ice concentration is used.**

NCEP Analysis for May and June 2017

**Dataset of initial Sea Ice Thickness (SIT) used (include name and date):**

CFSv2 model guess w/ bias correction

**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:**

Model Name: NCEP CFSv2

Component	Name	Initialization
Atmosphere	NCEP GFS	NCEP CDAS
Ocean	GFDL MOM4	NCEP GODAS
ICE	Modified GFDL SIS	SIC nudging

61 ensemble members (May 1-June 30 2017, each day at 00Z cycle)

**If available from your method for pan-Arctic extent prediction, please provide**

**a) Uncertainty/probability estimate such as median, ranges, and/or standard deviations (specify what you are providing).**

For Pan-Arctic: The range is 3.06-5.22 million square kilometers with a standard deviation of 0.53

For Pan-Antarctic: The range is 19.00-20.19 million square kilometers with a standard deviation of 0.23

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

We ran the NCEP CFSv2 model with 61-case of May and June 2017 revised ICs. The IC was modified from real time CFSv2 of each day at 00Z by thinning the Arctic ice pack (based on test from previous years' sea ice outlook). If this thinning would have eliminated ice from areas observed to have sea ice, a minimum thickness of 10 cm was left in place for the ice IC. Bias correction was applied to the Antarctic sea ice extent.

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