

SEA ICE OUTLOOK
2016 Report

**Template with Core Requirements
for Pan-Arctic Contributions
and
Guidelines for Submitting Optional
Alaskan Regional Outlook, Figures, and Gridded Data**

Submission Guidelines:

The submission deadline is 6:00 pm (AKDT) Monday, 13 June 2016 (firm) and all submissions should be sent to sio2016@arcus.org. Contributions received after the deadline will be posted to the website but not incorporated into the Outlook report or discussion.

Questions may be directed to Betsy Turner-Bogren, ARCUS (betsy@arcus.org)

Core Requirements for Pan-Arctic Contributions:

* REQUIRED

1. *Name of Contributor or name of Contributing Organization and associated contributors as you would like your contribution to be labeled in the report (e.g., Smith, or ARCUS (Wiggins et al.)).

Kay/Bailey/Holland (NCAR/CU)

1b. (Optional but helpful for us): Primary contact if other than lead author; name and organization for all contributors; total number of people who may have contributed to your Outlook, even if not included on the author list.

27 Scientists working at the National Center for Atmospheric Research or the University of Colorado at Boulder

2. * Contributions submitted by a person or group not affiliated with a research organization, please self-identify here:

_____ Yes, this contribution is from "Citizen Scientists."

3. * Do you want your contribution to be included in subsequent reports in the 2016 season?

 x Yes, use this contribution for all of the 2016 SIO reports (this contribution will be superseded if you submit a later one).

_____ No, I/we plan to submit separate contributions for subsequent reports.

_____ No, I only want to participate this time.

4. *"Executive summary" of your Outlook contribution: in a few sentences (using 300 words or less) describe how and why your contribution was formulated. To the extent possible, use non-technical language.

An informal pool of 27 climate scientists in early June 2016 estimates that the September 2016 ice extent will be 3.91 million sq. km. (stddev. 0.45, min. 3.14, max. 4.80). Since its inception in 2008, the NCAR/CU sea ice pool has easily rivaled much more sophisticated efforts based on statistical methods and physical models to predict the September monthly mean Arctic sea ice extent (e.g. see appendix of Stroeve et al. 2014 in GRL doi:10.1002/2014GL059388 ; Witness the Arctic article by Hamilton et al. 2014 <http://www.arcus.org/witness-the-arctic/2014/2/article/21066>). We think our informal pool provides a useful benchmark and reality check for Sea Ice Prediction efforts based on more sophisticated physical models and statistical techniques.

5. *Type of Outlook method:

dynamic model statistical heuristic mixed or other (specify)

6. *Dataset of initial Sea Ice Concentration (SIC) used (include name and date; e.g., "NASA Team, May 2016"):

n/a

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

n/a

8. If you use a dynamical model, please specify:

a) Model name:

b) Information about components, for example:

<u>Component</u>	<u>Name</u>	<u>Initialization (e.g., describe Data Assimilation)</u>
Atmosphere	CAM5	2016 RCP8.5 integration
Ocean	NEMO2	DA - NCODA system
Ice	TED	DA - EnKF SIC only

c) Number of ensemble members and how they are generated:

d) For models lacking an atmosphere or ocean component, please describe the forcing:

9. *Prediction of September pan-Arctic extent as monthly average in million square kilometers. (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%.)

10. Prediction of the week that the minimum daily extent will occur (expressed in date format for the first day of week, taking Sunday as the start of the week (e.g., week of 4 September).

The September 2016 monthly mean ice extent will be 3.91 million sq. km. (stddev. 0.45, min. 3.14, max. 4.80).

11. *Short explanation of Outlook method (using 300 words or less). In addition, we encourage you to submit a more detailed Outlook, including discussions of uncertainties/probabilities, including any relevant figures, imagery, and references.

An informal pool of 27 climate scientists in early June 2016 estimates that the September 2016 ice extent will be 3.91 million sq. km. (stddev. 0.45, min. 3.14, max. 4.80). Guesses were collected by sending an e-mail out to the scientists.

12. 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).

The standard deviation, min, and max of our guesses serve as our uncertainty estimate: stddev. 0.45, min. 3.14, max. 4.80

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

The uncertainty estimate is based on the scatter in entries in our informal pool.

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

n/a

d) Raw (and/or post processed) forecasts for this year and retrospective forecasts in an excel spreadsheet with one year on each row and ensemble member number on columns (specifying whether raw or post processed).

n/a