

The Sea Ice Prediction Network Phase 2: Improving Arctic Sea Ice Forecasts through an Interdisciplinary Research Network

The Sea Ice Prediction Network Phase 2: Improving Arctic Sea Ice Forecasts through an Interdisciplinary Research Network
Helen V. Wiggins and Betsy Turner-Bogren (for the Sea Ice Prediction Network)
Arctic Research Consortium of the U.S. (ARCUS)

Project Overview
The Sea Ice Prediction Network—Phase 2 (SIPN2, 2018–2022) is a collaborative network focused on improving seasonal and sub-seasonal Arctic sea ice forecasts. Major SIPN activities include modeling, community forecasting exercises (the Sea Ice Outlook), development of new products, data analysis, linkages with prediction users and stakeholders, and outreach activities. These activities have resulted in a better understanding of processes that govern seasonal sea ice dynamics and prediction methods, as well as the information needs of the Alaska shipping industry.

The Sea Ice Outlook
Since 2006, the Sea Ice Outlook (SIO) has provided an open process to share predictions and ideas about the September minimum sea ice extent. In recent years, SIPN-2 has added additional variables that are applicable to a variety of users and stakeholders, including regional forecasts, sea ice probability, first ice-free date, and others.

Use and Economic Value of Forecasts
One set of SIPN2 activities involves exploring the sea-ice forecasting needs of a variety of user groups, including the Alaska shipping sector. For example, earlier this year, a survey of members of the Bering Sea fishing industry indicated that one-month forecasts of sea ice location (particular in January) would be most useful to operational planning. Additional results of stakeholder needs will be available in 2021.

Communications and Networking
SIPN2 has a variety of networking activities that are open to anyone interested:

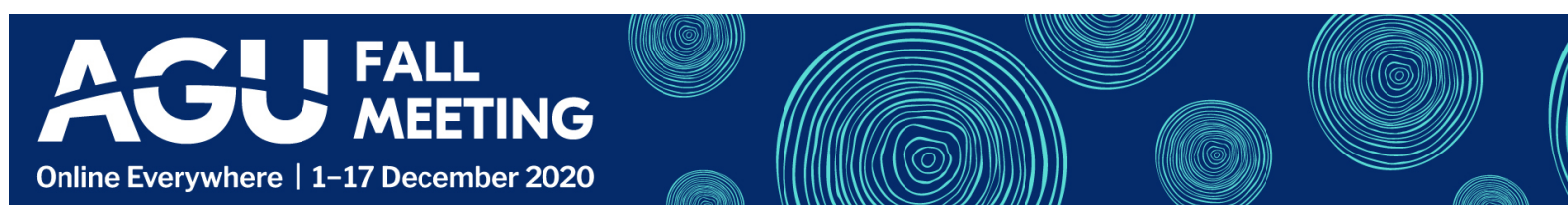
- Contribute to the Sea Ice Outlook
- Join a webinar
- Join or initiate an Action Team
- Join the mailing list
- Connect via social media

Buttons: CHAT INFO, ABSTRACT, CONTACT AUTHOR, PRINT, GET POSTER

Helen V. Wiggins and Betsy Turner-Bogren (for the Sea Ice Prediction Network)

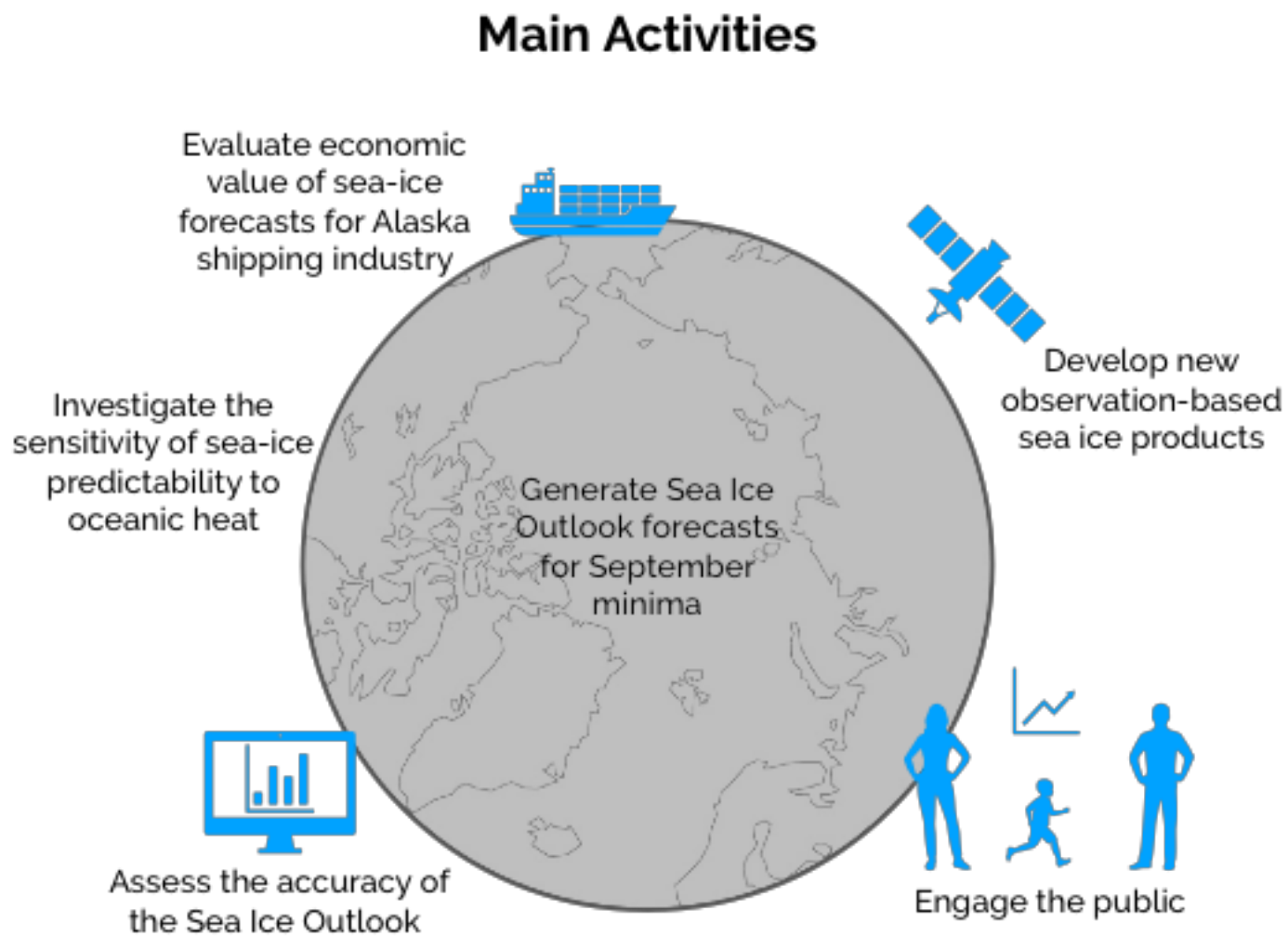
Arctic Research Consortium of the U.S. (ARCUS)

PRESENTED AT:



PROJECT OVERVIEW

The Sea Ice Prediction Network—Phase 2 (SIPN2, 2018–2022) is a collaborative network focused on improving seasonal and sub-seasonal Arctic sea ice forecasts. Major SIPN activities include modeling, community forecasting exercises (the Sea Ice Outlook), development of new products, data analysis, linkages with prediction users and stakeholders, and outreach activities. These activities have resulted in a better understanding of processes that govern seasonal sea ice dynamics and prediction methods, as well as the information needs of the Alaska shipping industry.



The Sea Ice Prediction Network—Phase 2 (SIPN2) is supported in part by the National Science Foundation under Grant No. OPP-1748308. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

USE AND ECONOMIC VALUE OF FORECASTS

One set of SIPN2 activities involves exploring the sea-ice forecasting needs of a variety of user groups, including the Alaska shipping sector. For example, earlier this year, a survey of members of the Bering Sea fishing industry indicated that one-month forecasts of sea ice location (particular in January) would be most useful to operational planning. Additional results of stakeholder needs will be available in 2021.

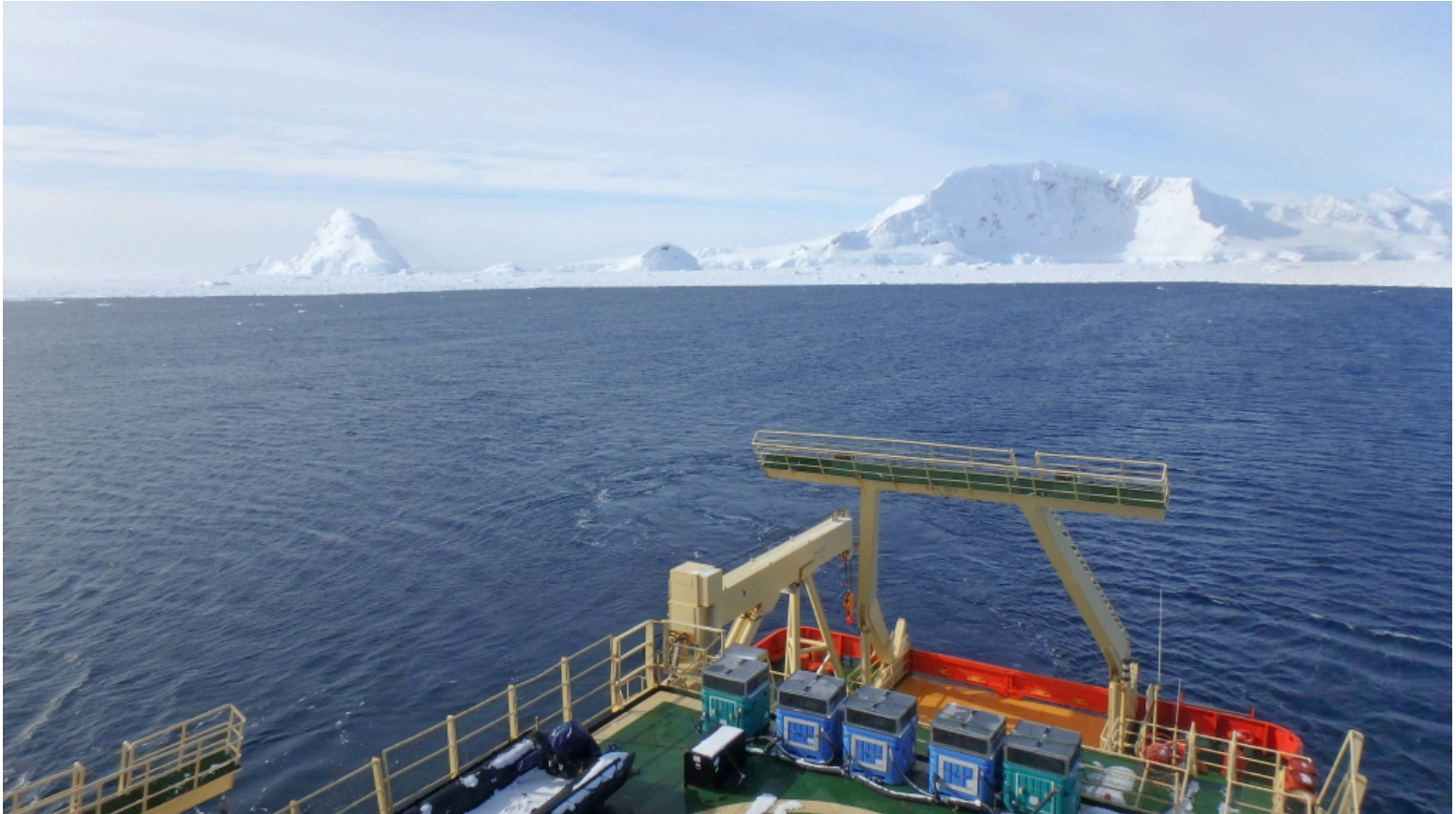
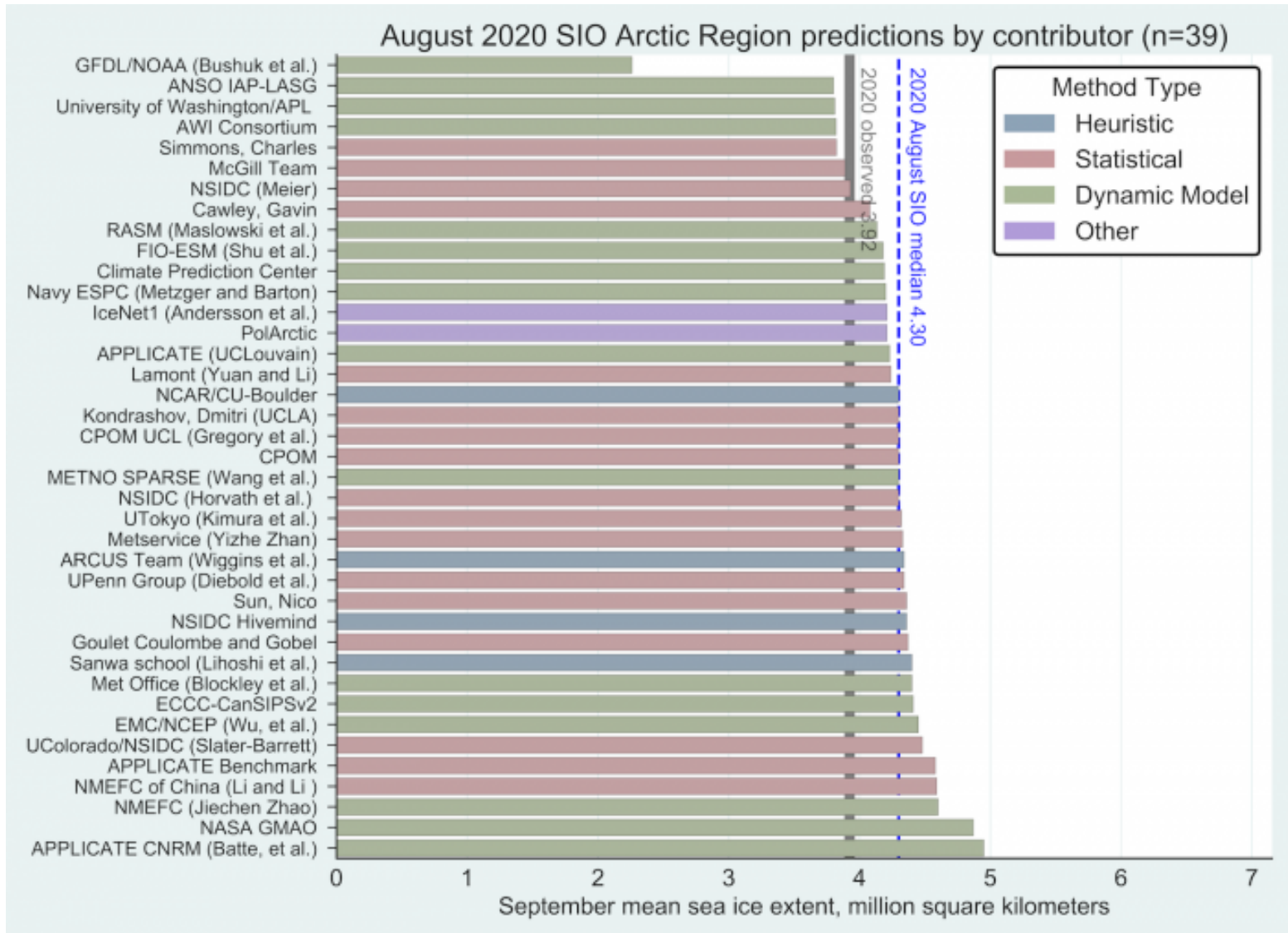


Photo by Cara Pekarcik (PolarTREC 2016), Courtesy of ARCUS

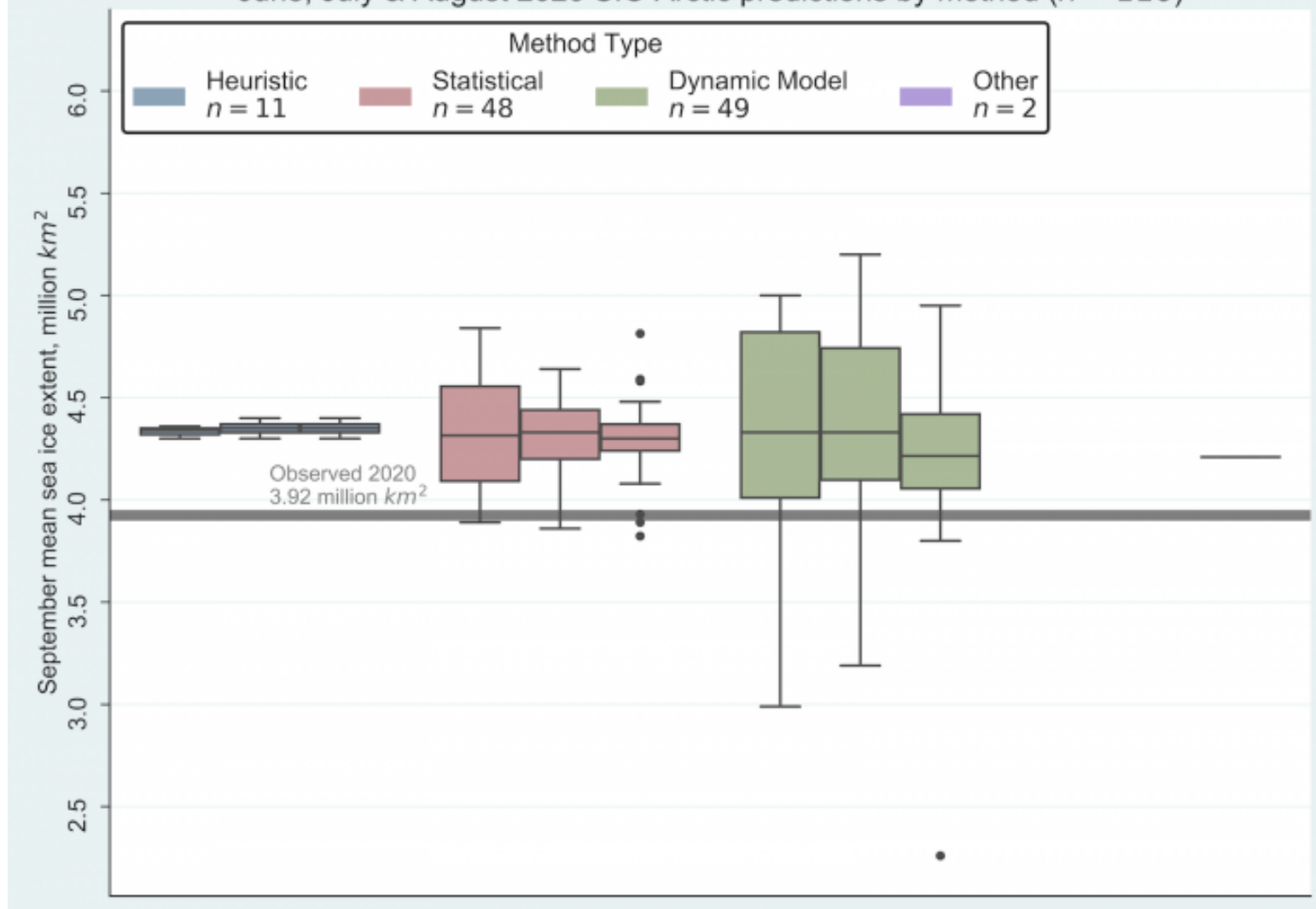
THE SEA ICE OUTLOOK

Since 2008, the Sea Ice Outlook (SIO) has provided an open process to share predictions and ideas about the September minimum sea ice extent. In recent years, SIPN-2 has added additional variables that are applicable to a variety of users and stakeholders, including regional forecasts, sea ice probability, first ice-free date, and others.

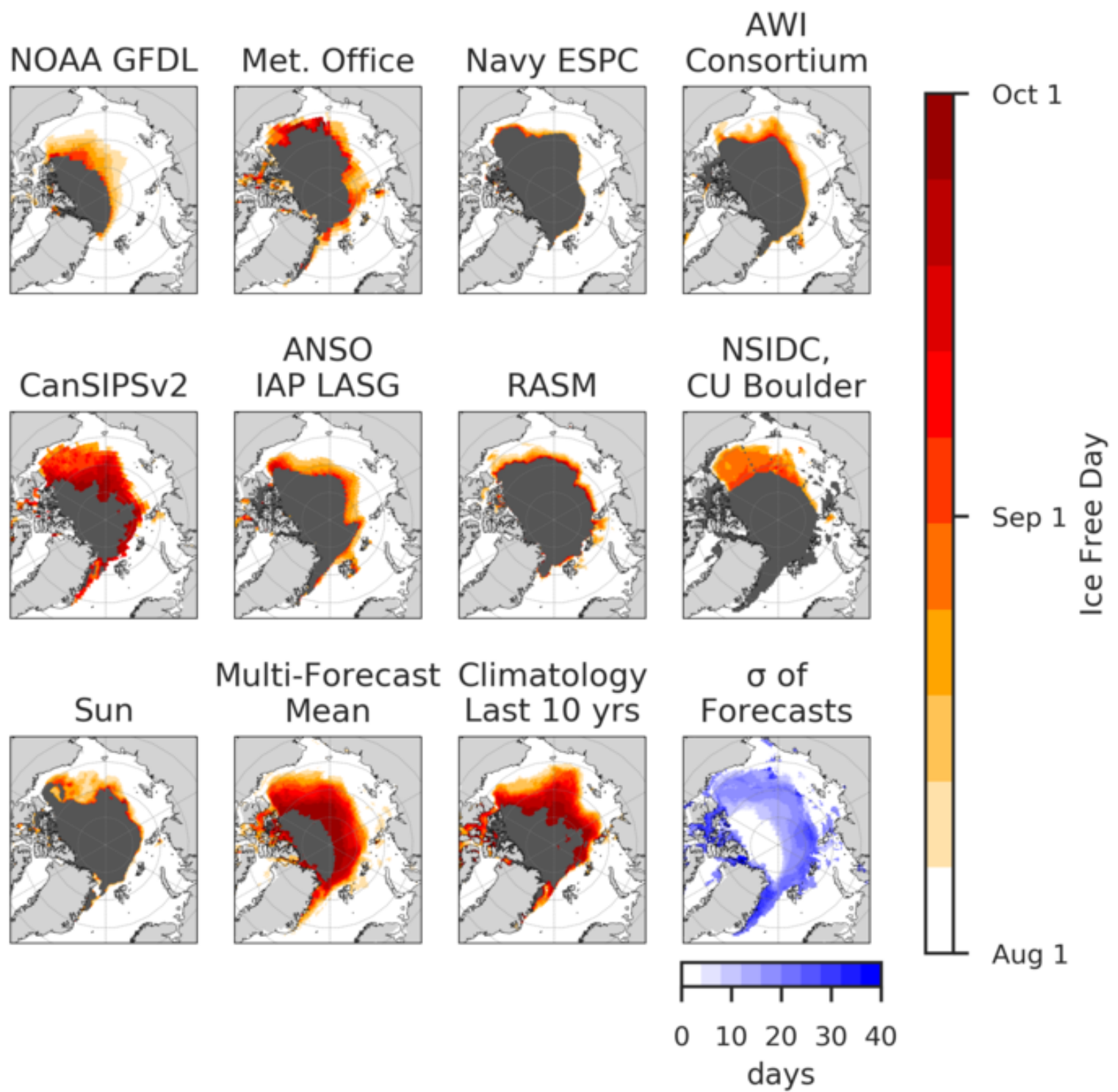


Distribution of SIO contributions for August estimates of September 2020 pan-Arctic sea-ice extent. Figure courtesy of Molly Hardman, NSIDC.

June, July & August 2020 SIO Arctic predictions by method ($n = 110$)



June, July, and August 2020 Pan-Arctic Sea Ice Outlook submissions, sorted by method. The individual boxes for each method represent, from left to right, June, July, and August. Figure courtesy of Molly Hardman, NSIDC.



First ice-free date forecasts for a 15% sea-ice concentration threshold, from the SIO August 2020 report. The black region indicates where a location is forecasted to be above the threshold for all lead times. The standard deviations (last panel) indicate where contributions diverge. Figure courtesy of Bitz and Blanchard-Wrigglesworth.

COMMUNICATIONS AND NETWORKING

SIPN2 has a variety of networking activities that are open to anyone interested:

- Contribute to the Sea Ice Outlook
- Join a webinar
- Join or initiate an Action Team
- Join the mailing list
- Connect via social media

The screenshot displays the SIPN2 website interface. At the top, the logo 'SIPN²' is on the left, and the text 'SEA ICE PREDICTION NETWORK' is centered. A dark blue navigation bar contains the following links: Home, About, Sea Ice Outlook, Meetings/Webinars, Data, Join, Presentations/Publications, and News. Below the navigation bar, the main content area is divided into several sections:

- News**: This section features two news items. The first is titled '2020 Sea Ice Outlook Interim Post-Season Report is Now Available Online', dated 16 October 2020. The text states that the September monthly averaged sea ice extent was 3.92 million square kilometers, the second lowest in the satellite record since 1979. A 'Read the Report' button is provided. The second news item is titled '2020 August Sea Ice Outlook Report is Now Available Online', dated 31 August 2020. It describes the Sea Ice Outlook as an open process for sharing predictions and ideas, and notes that 39 contributions were received for the 2020 August report.
- SIPN Data Portal**: A section with a blue header and a description: 'The SIPN Data Portal, a contribution to SIPN2 and the Sea Ice Outlook, displays analysis of sea ice forecasts and compares them with observations.' A button labeled 'SIPN2 Data Portal' is located below the text.
- Sea Ice Data at NSIDC**: A section with a blue header and a description: 'Through the National Snow and Ice Data Center (NSIDC), SIPN manages a comprehensive list of datasets useful for sea ice prediction.' A button labeled 'SIPN Dataset Website' is located below the text.
- Mailing List**: A section with a blue header and a description: 'Join the SIPN mailing list to receive and send announcements about Arctic sea ice science, data, news, and SIPN activities.' A button labeled 'Subscribe' is located below the text.
- SIPN on LinkedIn**: A section with a blue header and a button for linking to the SIPN2 LinkedIn profile.

ABSTRACT

The Sea Ice Prediction Network—Phase 2 (SIPN2, 2018–2022) is a collaborative network focused on improving seasonal and sub-seasonal Arctic sea ice forecasts. Major SIPN activities include modeling, community forecasting exercises (the Sea Ice Outlook), development of new products, data analysis, linkages with prediction users and stakeholders, and outreach activities. These activities have resulted in a better understanding of processes that govern seasonal sea ice dynamics and prediction methods, as well as the information needs of the Alaska shipping industry.

This poster presentation will provide an update on SIPN2 activities, plans, knowledge gaps, and will solicit input from poster session attendees on priorities for future inter-disciplinary prediction network activities that link sea ice with other components of the Arctic system.