Arctic Sea Ice Predictability & the Sea Ice Prediction Network (SIPN)

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www.arcus.org/sipn

Project Background

- Decline in the extent and thickness of Arctic sea ice is an active area of scientific effort and one with significant implications for ecosystems and communities.
- Forecasting for seasonal timescales (i.e., the summer and into fall) is of particular interest to many stakeholders.
- However, seasonal forecasting is challenging due to the variable nature of weather and ocean behavior over that timescale as well as current limits to data and modeling capabilities.
- The Sea Ice Prediction Network (SIPN), funded in 2013, is developing a collaborative network of scientists and stakeholders to advance research on sea ice prediction and communicate sea ice knowledge and tools.

Project Objectives

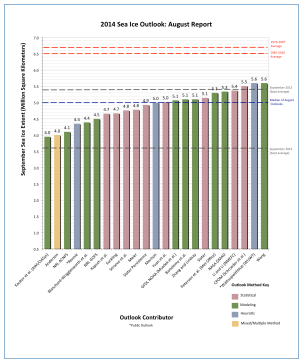
1. Coordinate and evaluate activities to predict sea ice
2. Integrate, assess and guide observations
3. Synthesize predictions and observations
4. Disseminate predictions and engage key stakeholders

Join the Network!

We are inviting project collaborators and network participants of all disciplines and interests! Ways to participate range from simply signing up for the mailing list to joining an Action Team, which are small groups convened to develop a specific product or task.

Sign up for the SIPN mailing list or send in an interest form for joining the network through the website: http://www.arcus.org/sipn

Project Activities Highlight: The Arctic Sea Ice Outlook



Overview: The Sea Ice Outlook (SIO) provides online monthly reports during the summer that synthesize different projections of the arctic sea ice minimum, at both pan-arctic and regional scales.

2014 Season:

- New content in this year's SIO reports include an analysis of the relative skill of various arctic sea ice prediction models and methods, and an expanded focus on the spatial pattern, probability, and ice-free dates for specific regions—this information is often of more use to stakeholders and decision-makers than a single mean sea ice extent number.
- We had 28 groups contribute pan-arctic Outlooks and 5 groups contribute regional outlooks.
- Observed Arctic September average ice extent in 2014 was 5.3 million square kilometers according to National Snow and ice Data Center (NSIDC) estimates
- The median Outlook estimates were 4.7 million square kilometers (msqkm) for the June report, 4.8 (msqkm) for the July report, and 5.0 (msqkm) for the August report.
- Contributions are based on a range of methods: statistical, numerical models, estimates based on trends, and subjective information (or "heuristic").
- The observed extent for September 2014 suggests that in the absence of an anomalous patterns of weather and wind that results in large ice loss (such as occurred in 2012), sea ice extent will tend to stay near the downward linear trend line.
- For the modeling contributions specifically, the later the prediction date, the more confident the predictions. In addition, the inter-model spread is also reduced as the prediction start dates get closer to the month of September. The median value of all the models combined was remarkably close to the observed extent.
- A full post-season report is available through the SIPN website.

Other project activities include workshops and meetings, webinars, development of papers and publications, and ongoing development of an online portal to sea ice prediction datasets.

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