

Lessons from the 2007 Arctic Sea-ice Minimum Workshop

The “Lessons from the 2007 Arctic Sea-ice Minimum” workshop, March 19–20, 2008, has been organized as a rapid response to events that happened six months earlier.

September 2007 – On September 14, 2007, the dramatic record arctic sea-ice minimum was observed, exceeding the previous record set in 2005 by almost 25%. Monthly ice extent for September 2007 was $4.28 \times 10^6 \text{ km}^2$, compared to $5.56 \times 10^6 \text{ km}^2$ in 2005.

October 2007 – The reduction of the summer ice was reported in near real-time, with several media and popular-science reports [e.g., *Kerr*, 2007] published already in early October.

An NSF Arctic System Science (ARCSS) synthesis workshop held in Alexandria, USA in October featured the summer of 2007 as the topic of a breakout group formed to discuss the ice reduction and its implications for the arctic system. The working group has two ARCSS Synthesis of Arctic System Science (SASS) investigators Martin Miles and Don Perovich as Co-Leaders to coordinate further synthesis efforts.

December 2007 / January 2008 – The summer of 2007 ice was featured in *Eos* [*Stroeve et al.*, 2008] and the first peer-reviewed scientific papers began to appear [e.g., *Maslanik et al.*, 2007; *Comiso et al.*, 2008]. There are numerous other research papers in progress focused on documenting and understanding the recentmost changes in sea ice and other components of the arctic system. However, in order to comprehensively document and understand the causes, impacts and system linkages associated with the summer of 2007 ice reduction, further integration of research efforts across disciplines – as well as both observational and modelling approaches – and across institutional and national boundaries is clearly needed.

March 2008 – The 1.5-day workshop, March 19–20, 2008, will focus on assessing the efficacy and identifying gaps of current observing and analysis/modeling activities to understand and predict arctic sea ice change in a broader context. For 2008 it will be critical to track the evolution of the ice cover and its interaction with atmosphere, ocean, and land surfaces, and provide analysis and assessment in the context of improving our understanding of and responses to arctic environmental change. Workshop participants will integrate existing observations and model-based projections to address the questions of how this signal will propagate through the arctic system, and whether the minimum is part of a continuous decline. In addition, participants will make recommendations for observing efforts for the coming years. Investigations of sea ice retreat cut across disciplines to encompass *observing*, *understanding* and *responding* to change science and involve a broad array of international efforts, including SEARCH, ARCSS and DAMOCLES, thus providing both scientific motivation and a clear starting point for integrating a range of cross-disciplinary and international science efforts.

References

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