

## **Enhanced Monitoring of Snow Cover Extent Across Northern Hemisphere Lands**

DAVID A. ROBINSON<sup>1</sup> AND THOMAS W. ESTILOW<sup>1</sup>

### **ABSTRACT**

A satellite climate data record of Northern Hemisphere snow cover extent (SCE) has been generated using 20 years of Interactive Multisensor Snow and Ice Mapping System maps (September 1998- present). This daily 24-km resolution dataset is produced at the US National Ice Center. IMS mapping succeeded a 190-km resolution weekly product that NOAA generated from 1966-1999. Throughout the 50+ years of weekly and IMS mapping, trained analysts have primarily employed visible satellite imagery and interactive means of SCE mapping.

The new 24-km climatology provides a more detailed local and regional assessment of intra-seasonal and inter-annual SCE variability. Thus far, the period of record is too short to gain a strong perspective on change at these spatial scales. However, it can be used to gain an understanding of locations driving long-term changes that have been identified at the coarser scale for much longer (a downscaled weekly product continues to be generated based on IMS Monday maps). Presently, 1981-1999 weekly maps are being re-digitized at 24-km resolution. When this project concludes in 2020, there will be a 40-year weekly 24-km product available for longer term, albeit not daily, assessments.

These SCE products serve user communities interested in assessing climate variability and change, understanding the role of snow in the climate system, verifying snow as depicted in climate models, and for applied studies in water resources, energy, engineering and other fields.

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<sup>1</sup> Rutgers University, Piscataway, NJ, USA