

Links between Arctic amplification and extreme weather events in mid-latitudes

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Recent studies have suggested there may be a connection between Arctic Amplification - i.e., the enhanced warming in high northern latitudes -- and the frequency and intensity of extreme weather events in mid-latitudes. Observational analyses and model experiments indicate that sea-ice loss during summer and earlier spring snow-melt on high-latitude land cause weaker poleward temperature gradients, which in turn contribute to weaker jetstreams during months following the surface changes. Weaker upper-level winds may favor higher-amplitude patterns that typically change slowly and contribute to persistent weather conditions such as droughts, floods, heat waves, and cold spells. In this presentation, we will discuss clues and gaps in the sequence of linkages between enhanced Arctic warming and the likelihood of extreme weather in the northern hemisphere.