

## Research on high-latitude Eurasian-global linkages at the International Arctic Research Center

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Research at the International Arctic Research Center/University of Alaska is addressing Eurasian-global connections through several avenues of research. First, the impact of increasingly warm pulses of Atlantic water on the Eurasian sector of the Arctic Ocean, including its sea ice, has been documented with data obtained during a series of cruises in the Siberian seas. The loss of sea ice in these seas has implications for the atmospheric heat budget and teleconnections to lower latitudes. Second, surface fluxes of trace gases, particularly methane, from the shelf seas north of Siberia has been found to be surprisingly large and possibly linked to degradation of subsea permafrost. The stores of methane in the Siberian shelf have the potential to be significant additions to the global atmospheric methane budget. Finally, changes in the subsurface temperatures of the major northern Eurasian river basins have been tied to changes in precipitation, particularly winter snow cover, which is driven by interannual and decadal variations of the atmospheric circulation.

Keywords: northern Eurasia, sea ice, methane, permafrost, snow cover