

The urgency of Arctic change

The Arctic is changing rapidly as a result of global climate change. Over the past five years, warm Arctic temperatures and large sea-ice deficits (75% loss of sea-ice volume) show contemporary climate states outside of previous experience.

Future changes of the Arctic are projected to occur twice as fast as those further south, leaving the Arctic a much different environment by mid-century, with less snow and sea ice, thawing permafrost and melting glacial ice, and altered ecosystems, all driven by an annual mean Arctic temperature increase of +4°C. Future Arctic changes may in turn impact lower latitudes through tundra greenhouse gas release and shifts in atmospheric jet stream patterns.

These are the conclusions reached in a new science paper published in the journal, *Polar Science*. This article provides a synthesis of the latest observational trends and projections for the future. The article was authored by a team of ten international scientists as part of the Arctic Monitoring and Assessment Programme's (AMAP) climate group.

Furthermore, owing to time lags between rising temperatures and melting ice on Greenland, accelerating global sea-level rise will continue throughout the century, even under ambitious greenhouse gas emission reduction scenarios.

Arctic-specific radiative and heat storage feedbacks may become an obstacle to achieving a stabilized global climate under the Paris Accord global limit of a less than +2°C increase. In light of these trends, Arctic changes call for early and ongoing adaptation and mitigation actions. Greenhouse gas emission reductions will delay rates of Arctic change, making adaptation more tractable.

The full pre-print article 'The Urgency of Arctic Change' is available at:

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