

HEAT TRAPPED BELOW ARCTIC SURFACE COULD MELT ENTIRE REGION'S ICE: STUDY

Relevant for: Environment & Disaster Management | Topic: Environmental Degradation - GHGs, Ozone Depletion & Climate Change

Heating up: A file photo of melt ponds on the Arctic sea ice. | Photo Credit: [STEFAN HENDRICKS](#)

'Archived' heat trapped below the surface of the Arctic has the potential to melt the entire region's sea ice, scientists warn.

The study, published in the journal *Science Advances*, shows that Arctic sea ice is not just threatened by the melting of ice around its edges.

Warmer water that originated hundreds of miles away has penetrated deep into the interior of the Arctic, researchers found.

"We document a striking ocean warming in one of the main basins of the interior Arctic Ocean, the Canadian Basin," said Mary-Louise Timmermans, a Professor at Yale University in the U.S. The upper ocean in the Canadian Basin has seen a two-fold increase in heat content over the past 30 years, the researchers said.

They traced the source to waters hundreds of miles to the south, where reduced sea ice has left the surface ocean more exposed to summer solar warming. In turn, Arctic winds are driving the warmer water north, but below the surface waters.

"This means the effects of sea-ice loss are not limited to the ice-free regions themselves, but also lead to increased heat accumulation in the interior of the Arctic Ocean that can have climate effects well beyond the summer season," Ms. Timmermans said.

"Presently this heat is trapped below the surface layer. Should it be mixed up to the surface, there is enough heat to entirely melt the sea-ice pack that covers this region for most of the year," she said.

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