Cold Facts

The CryoSCOPE Newsletter

Welcome to Cold Facts!

The Arctic has already lost over 75% of its sea ice volume, with regional warming projected to exceed +4 °C. Across the Arctic, Alps, and Himalayas, accelerating glacier retreat and permafrost thaw indicate increasing cryospheric instability. In response, CryoSCOPE integrates high-resolution observations with advanced modeling to enhance climate projections and inform science-based adaptation and mitigation, in collaboration with stakeholders and affected communities. The project officially launched at its kickoff meeting in Helsinki on 2–3 April 2025 and is advancing cutting-edge research on the coupled cryosphere–atmosphere–hydrosphere (CAH) system to better understand cascading impacts. CryoSCOPE has since initiated its observation campaigns and participated in the EGU General Assembly 2025. Join CryoSCOPE on LinkedIn and learn more about project clustering, field sites, events, and media coverage below.

– Rakesh Hooda, CryoSCOPE Coordinator and Senior Principal Scientist at the Finnish Meteorological Institute (FMI).

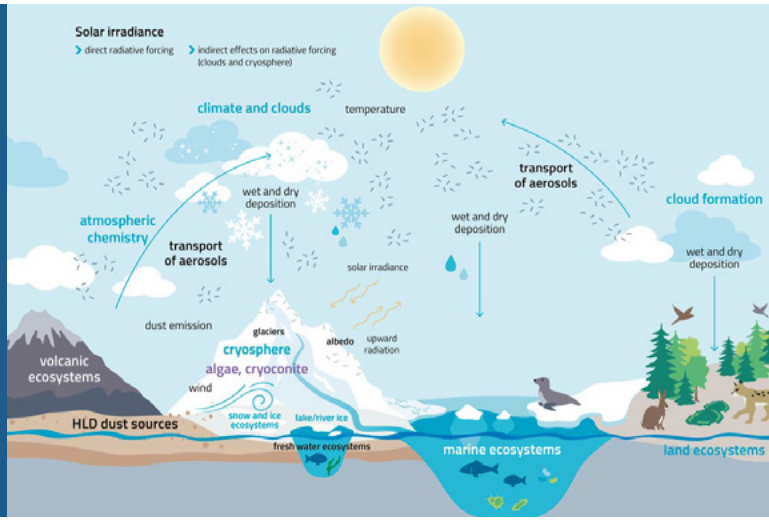
Spotlight

CryoSCOPE Research Project Kicks Off in Helsinki (2-3 April 2025)

CryoSCOPE started officially in February 2025 and kicked-off at the Finnish Meteorological Institute (FMI) in Helsinki in April. This marks the beginning of a 4-year effort to better understand the impacts of cryospheric change on downstream processes in varied landscapes ranging from the Himalayas to the Arctic with a focus on enhancing cooperation between Europe and India.

Scientific Review in Frontiers: "Dust in the Arctic" (5 March 2025)

Learn more about how climatic feedbacks and ecosystem impacts related to dust in the Arctic include direct radiative forcing (absorption and scattering), indirect radiative forcing (via clouds and cryosphere), semi-direct effects of dust on meteorological parameters, effects on atmospheric chemistry, as well as impacts on terrestrial, marine, freshwater, and cryospheric ecosystems.



Field Sites

CryoSCOPE Research is underway with in-situ sensors being installed in different field sites in Europe and India for measuring and monitoring cryospheric changes.

Hardangerjøkulen ice cap, Rembesdalskåka Glacier, Norway (22-24 April 2025)

Fieldwork at Rembesdalskåka, Hardangerjøkulen in Norway. Photos: Fredrique Oliver.

CryoSCOPE Partners from NTNU joined by the World Glacier Monitoring Service, carried out key fieldwork activities, including:

- Reinstalling water level loggers and timelapse cameras
- Setting up an automatic weather station
- Recording snow depth at 1.75 metres
- Installing acoustic loggers to detect potential GLOFs this summer

These efforts contribute to CryoSCOPE's mission to advance understanding of cryosphere–atmosphere–hydrosphere (CAH) interactions and enhance climate and water risk modelling.

Pallas research site, Lapland, Finland (April-May 2025)

CryoSCOPE Partners at UOULU conducted a spring snowmelt survey, including the following key activities:

- Manual snow surveys to measure snow depth and SWE at the landscape scale.
- Snow pit analysis to document snow stratigraphy.
- Comprehensive sampling of stable water isotopes in snowpack and snowmelt water.

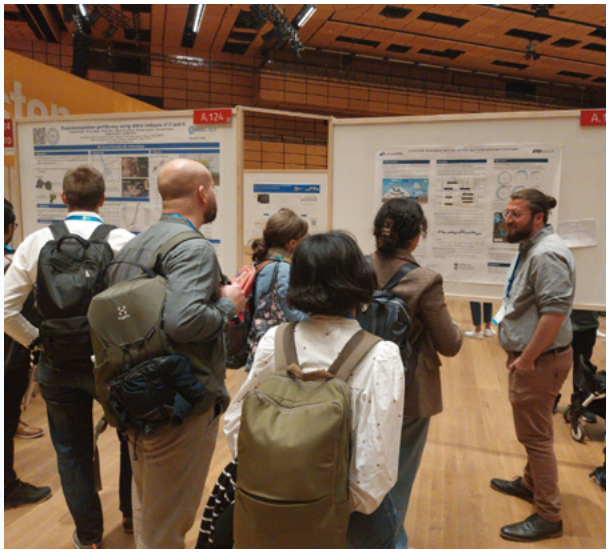
These efforts contribute to CryoSCOPE's mission to understand snowmelt partitioning in boreal and arctic environments. The field campaign produces data for isotope-aided hydrological modeling in the project.

Top: Transiting the 2km snow survey in the subartic spruce forest. Photo: Pertti Ala-aho
Bottom: Snow pit analysis: density measurements and water isotope sampling. Photo: Pertti Ala-aho

Events

EGU General Assembly 2025, Vienna (27 April - 3 May)

CryoSCOPE researchers took part in the 2025 European Geosciences Union (EGU) General Assembly in Vienna, presenting new insights including case studies from Waldlabor and Dischmabach, Switzerland, using stable water isotopes, snow, and hydrometeorological data to improve understanding of hydrologic partitioning; as well as identifying potential glacier-lake sites to support future GLOF modelling.



CryoSCOPE was also featured in the session "Atmosphere–Cryosphere Interactions in Mountain and High-Latitude Environments", co-convened by Outi Meinander (FMI). The session focused on closing critical knowledge gaps in how snow and ice systems respond to a warming climate, especially in remote, data-scarce mountain regions.

Splinter Meeting 2025

The Horizon Europe sister projects – CryoSCOPE, ICELINK, and LIQUIDICE – launched joint coordination at the European Geosciences Union General Assembly (EGU 2025) in Vienna. The first Splinter Meeting brought together over 30 participants to explore synergies and plan collaborative research on glacier systems, hydrology, and modelling. Outcomes included a proposal for a joint session at European Geosciences Union 2026 and shared protocols on isotope sampling, glacier monitoring, and climate-ice interaction models. This marks the beginning of an ambitious four-year collaboration to advance inland ice research across regions like Iceland, Svalbard, the Himalayas, and Greenland.

In the Press

Metsäteho — Harvester Seasons – puunkorjuun suunnittelun tueksi (9 March 2025)

REVOLVE — Beyond the Basics: What is the Cryosphere? (28 March 2025)

REVOLVE — Dossier: Machoi and the Sound of Meltwater (25 June 2025)

Global News

The UN's International Year of Glaciers' Preservation 2025 highlights the urgent need to protect glaciers, which are rapidly melting due to climate change. As vital sources of freshwater and climate stability, their loss threatens ecosystems, communities, and global water security.

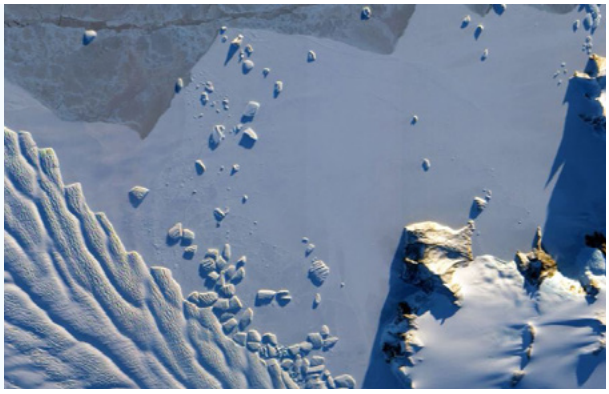
Photo: Jeremy Bishop / Unsplash2025 UN International Year of Glaciers' Preservation

The Birch Glacier above Blatten, Switzerland released a massive mix of ice, rock, and mud, burying most of the village. Triggered by melting permafrost, the glacier collapse shows how warming temperatures are increasing the risk of disasters.

Photo: The GuardianSwiss Village Almost Destroyed After Collapse of Glacier

UN scientific experts warn that a significant number of glaciers may vanish by the end of this century that will threaten water security and accelerate sea-level rise. They call for global cooperation and climate action to preserve these critical natural reserves.

Photo: NASA Earth ObservatoryEnd of Eternal Ice: Many Glaciers Will Not Survive This Century



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