

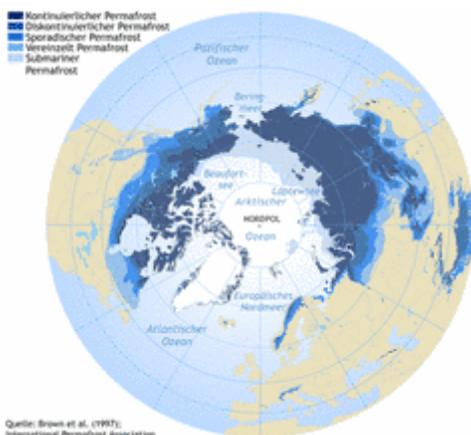
27. November 2012: **First UNEP Permafrost Report relies on expertise of the Alfred Wegener Institute**

Bremerhaven, 27 November 2012. For the first time the United Nations Environment Programme (UNEP) has today published a Report on the status of the global permafrost regions. In it an international team of experts clearly explains how climate change is impacting the permanently frozen soils in the Arctic, Siberia and in the high mountain regions, which potential hazards emanate from the thawing ground and the far-reaching consequences countries with permafrost must consider. The researchers also call upon politicians and climate scientists to include the knowledge about the change in the permafrost regions to a greater extent in the international climate debate. “The Report shows that in future the change in the permafrost will present a very great challenge to society“, says co-author and permafrost expert Dr. Hugues Lantuit from the Alfred Wegener Institute for Polar and Marine Research in the Helmholtz Association.

In the almost 40 page Report presented by the UNEP today on the periphery of the International Climate Conference in Doha, Qatar, the authors give three recommendations on how more precise forecasts about environmentally relevant, social and economic consequences of the permafrost retreat can be made. “Whilst there is an international network of measurement stations, these must be further developed and the methods standardised. Measuring the permafrost temperature and the depth of the active layer should become a fixed component of weather measurement in the countries with permafrost, says Hugues Lantuit. Not only scientists but also governments are called upon here to invest in the development and operation of national stations to enable researchers to obtain informative and comprehensive data about the state of the permafrost soil in future.



Hugues Lantuit and his team at the Alfred Wegener Institute are currently working on a database which in a few months will provide information on the ground temperature and the depth of the “active layer” for permafrost regions around the globe for the first time. At the click of a mouse, scientists will then be able to call up all available permafrost temperature data, use it for climate model calculations or draw up current permafrost maps on the basis of the data.



The second recommendation of the new UNEP Report is geared to climate science. “Many climate models do not yet currently take the so-called permafrost feedback effects into consideration. This is why we recommend to the International Panel on Climate Change IPCC, together with the International Permafrost Association, that a special appraisal be prepared on the influence of the thawing permafrost soils on the global climate “, says Hugues Lantuit. The soils in the Arctic, Siberia and in high mountain regions such as the Zugspitze, which are frozen down up to a depth of 1500 metres, belong to the largest carbon stores on Earth. According to estimates, they contain about twice as much carbon as is currently in the atmosphere. If this permafrost of ice and earth now starts to thaw, a process is set into motion which is also known to gardeners with their own compost heaps. Bacteria and micro-organisms start to

break down a large part of the animal and plant matter contained in the soil, thereby converting their organic-bound carbon into methane and carbon dioxide. Both are greenhouse gases which intensify global warming and further the thawing of the remaining permafrost in this way. Scientists describe this self-sustaining process as the permafrost feedback effect. So far it has only been possible to estimate the extent of this feedback effect. One thing is certain, however, no one should underestimate it: “The significance of the permafrost for the global climate and the life of people in the Arctic and the mountains have been neglected for far too long. The time has now come for the political decision-makers to also address this problem and take it seriously“, says Hugues Lantuit.

The third recommendation of the new UNEP Report is therefore aimed at the development of specific adaptation strategies. “States such as Russia, Canada,



China or the USA with large permafrost areas should start to estimate and record possible risks, damage and costs of a large-scale thawing process“, explains Hugues Lantuit. According to the Report there have so far been only a handful of studies dealing with the resultant costs and it could be seen even now that in future the amount of damage to houses, roads, water pipes and other infrastructure will rise distinctly.



Hugues Lantuit also attaches personal wishes to the new UNEP Report. “Firstly, I hope that this Report will be read by many decision makers in politics, industry and the scientific world. Secondly, it should be the start of regular reporting“, says the scientist at the Alfred Wegener Institute. The subject of permafrost was far too important to inform the broad public only once in such a comprehensive and understandable manner, according to the member of the Executive Committee of the International Permafrost Association (IPA).

The UNEP Report, entitled *Policy Implications of Warming Permafrost*, has been written by Kevin Schaefer, Hugues Lantuit, Vladimir E. Romanovsky and Edward A. G. Schuur and is available [here](#) for download in English after publication on 27 November 2012. .

The Alfred Wegener Institute for Polar and Marine Research in the Helmholtz Association (AWI) is one of the leading permafrost research establishments in the world. Its scientists research the permanently frozen soils in Alaska, North Canada, Spitsbergen and in North Siberia, amongst other areas. The AWI coordinates the EU Permafrost Research Project PAGE21 (www.page21.org) and is also the base for the International Permafrost Association (IPA).

Information for editors:

Authors of the UNEP Report “Policy Implications of Warming Permafrost“ are:

Kevin Schaefer (University of Colorado, Boulder, USA), Hugues Lantuit (Alfred Wegener Institute for Polar and Marine Research in the Helmholtz Association, Research Unit Potsdam), Vladimir E. Romanovsky (University of Alaska Fairbanks, Fairbanks, USA) and Edward A. G. Schuur (University of Florida, Gainesville, USA).

Further printable photos, diagrams and map material are available [here](http://bit.ly/Uewu7o).

Your scientific contact partner at the Alfred Wegener Institute is Dr. Hugues Lantuit (Tel: 0331-288-2216, Email: [Hugues.Lantuit\(at\)awi.de](mailto:Hugues.Lantuit(at)awi.de)). Sina Löschke in the Communication and Media Department (Tel: 0471-4831-2008; Email: [medien\(at\)awi.de](mailto:medien(at)awi.de)) is at your disposal for further questions.

Contact partners at UNEP are:

Shereen Zorba, Head, UNEP News Desk, +254 788 526 000, [shereen.zorba\(at\)unep.org](mailto:shereen.zorba(at)unep.org)

Michael Logan, UNEP Public Information Officer, +254 20 762 5211 / +254 725 939 620, [michael.logan\(at\)unep.org](mailto:michael.logan(at)unep.org)

UNEP Newsdesk (Nairobi), +254 20 762 3088 / +254 207625211, [unepnewsdesk\(at\)unep.org](mailto:unepnewsdesk(at)unep.org)

The Alfred Wegener Institute conducts research in the Arctic and Antarctic and in the high and mid-latitude oceans. The Institute coordinates German polar research and provides important infrastructure such as the research icebreaker Polarstern and stations in the Arctic and Antarctic to the international scientific world. The Alfred Wegener Institute is one of the 18 research centres of the Helmholtz Association, the largest scientific organisation in Germany.

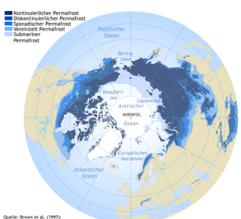
Printable Images



Headwall made of ice and frozen sediments

A ten-meter high headwall made of ice and frozen sediments towers over the scientist. The wall is part of one of the largest thermoerosion features in the Arctic. Photo: Michael Fritz, Alfred Wegener Institute

[web](#) [print](#)



Permafrost regions of the Northern Hemisphere

About 24 per cent of the northern hemisphere land surface contains permafrost, divided into zones of continuous, discontinuous, sporadic and isolated patches of permafrost, depending on how much of the land area contains permafrost. Map: Hugues Lantuit, Alfred Wegener Institute

[web](#) [print](#)



Permafrost landscape

Reticular structures of ice-wedge polygons in the permafrost landscape, Russia. Photo: Konstanze Piel, Alfred Wegener Institute

[web](#) [print](#)



Drilling of a borehole on Samoylov Island

Scientists of the Alfred Wegener Institute are drilling a borehole for a new permafrost monitoring station on Samoylov Island, summer 2012. Photo: Max Heikenfeld, Alfred Wegener Institute

[web](#) [print](#)

[back to list](#)