## Dangers of the decrease in water vapour in the atmosphere

Researchers of Siberian Federal University, Institute of Forest Health of the SB RAS, University of Geneva (UniGE) and Swiss Research Institute for Forest, Snow and Landscape (WSL) have reconstructed the changes in the deficit of water vapour in the atmosphere for the northeast of Yakutia over the past 1500 years. The research is in the framework of international research projects supported by the Marie Curie International Incoming Fellowship, The European Science Foundation (ESF, individual fellowship), and



scientific foundations of Switzerland (SNF) and Russia (RFBR). The results of the research <u>are published</u> in Scientific Reports.

In the course of the work, led by Olga Churakova, Doctor of Biological Sciences, leading researcher of the Laboratory of Ecosystem Biogeochemistry of the School of Ecology and Geography (SibFU), the researchers for the first time reconstructed a centuries-old chronology based on the ratio of stable carbon isotopes (13C/12C) in the annual rings of the Cajander larch (Larix cajanderi Mayr.)

"This chronology helped find that the growing deficit of water vapour in the atmosphere currently does not exceed the maximum of the medieval anomalies. We proved that the most humid climatic conditions for the entire reconstruction period were in the Middle Ages and during the Little Ice Age of the XIV-XIX centuries. In comparison with these periods, we are now experiencing "dry" times, and this will certainly affect the forests of Siberia and the whole world," **Olga Churakova** said.



The authors note that a further increase in the deficit of water vapour in the atmosphere under the influence of climatic changes will have a significant impact on Siberian forests: it will lead to a decrease in the growth and possible death of forest stands.

In general, climate reconstruction provides a unique basis for compiling and verifying future forecasts of adaptation of the forest ecosystems to current and expected climate changes.

Photo: M. M. Naurzbaev

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