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University of Bayreuth „Moorminuten“ interview podcast

Peatlands are the focus of a podcast series by the Bayreuth Centre of Ecology & Environmental Research (BayCEER) at the University of Bayreuth. For four years, as part of the Bavarian Climate Research Network, the "AquaKlif - Effects of multiple stressors on stream ecosystems during climate change" project has been asking the question of what we can do to mitigate the effects of climate change on streams? An important step here is the protection of the moors in the headwaters of low mountain ranges. Two young scientists who are researching lowland moors at the Hydrology research group in BayCEER talked to experts about this. The outcome was the "Moorminuten" podcast.

Seven interviews with experts from the University of Bayreuth and beyond open up different perspectives on the importance, condition, and conservation of peatlands. What makes peatlands special? What role can they play in climate protection, water balance, and biodiversity? And how do you renaturalise a peatland?
Peatlands are considered an important water reservoir and a sink for the critical climate gas CO_2. The idea for the podcast came to Lisa Kaule, who is doing her doctorate at the Hydrology research group in BayCEER, during the resurvey of the Lehstenbach fen. In the surveyed area, measures have been undertaken on behalf of the Bavarian State Forests to renaturalise individual moor areas. On the other hand, the areas are affected by both climate change and timber harvesting. What is actually possible and necessary if one wants to preserve peatlands as water and carbon reservoirs in the long term, or even just make them functional again? This question was in the air and the plan matured to interview various experts in and outside the University on this, and to prepare the conversations as a series of podcasts. "The interview podcast is ideal for capturing different perspectives on a topic in just a few minutes - and it's also a great project in terms of science communication," says Dr Birgit Thies, who is responsible for public relations in the AquaKlif project.
Background:
The majority of all kilometres of flowing water worldwide, including in Bavaria, are not the large rivers, but rather small headwaters of streams in which the water flows finely branched from thousands of headwaters in the direction of the Main, Danube, and Elbe. The AquaKlif research project focuses on these smaller watercourses. In a recently published study, Lisa Kaule and PD Dr. Sven Frei from the Hydrology research group at BayCEER/University of Bayreuth are investigating how the future climate will affect the water balance of small stream catchments in low mountain regions. Lisa Kaule warns: "The higher evaporation associated with rising temperatures and the seasonal shift in precipitation could cause massive damage to the ecosystems in forests, moors, and streams - and thus to the people who use their services". In order to further improve the hydrological model of the stream catchment, the researchers have re-mapped the fen area surrounding the Lehstenbach stream, and have already noticed a drastic decline in the fen body over the last 30 years.
For her doctoral thesis, Katharina Blaurock investigated how summer drought affects the chemical quality of the stream water on a tributary of the Große Ohe in the Bavarian Forest. As part of a joint project of the University of Bayreuth, TU Dresden, the Helmholtz Centre for Environmental Research, the Senckenberg Society for Nature Research, and the Bavarian Forest National Park, she found that flat, boggy and steep areas differ with regard to the leaching of dissolved organic carbon (DOC) from the soils into the streams. DOC is an important nutrient for many organisms living in the stream, can be converted into greenhouse gases, and complicates drinking water treatment. For several decades, a steady increase in the concentration of DOC has been observed in many catchments in the northern hemisphere. This

could mean that carbon reservoirs in bog bodies or forest soils are being degraded.
Continue reading and listening on the „Moorminuten“ podcast (in German language):

www.bayceer.uni-bayreuth.de/moorminuten/
Mit Interviews mit:
- Prof. Dr. Giselher Kaule, former Head of the Institute for Landscape Planning and Ecology at the University of Stuttgart:
Moors yesterday and today
- Prof. Dr. Stefan Peiffer, Chair of Hydrology, BayCEER / University of Bayreuth:
Moors hydrological
- PD Dr. Sven Frei, Lehrstuhl für Hydrologie, BayCEER / Universität Bayreuth:
Moors and modelling
- Prof. Dr. Klaus-Holger Knorr, AG Ökohydrologie und Stoffkreisläufe at Institute for Landscapeecology of the University of Münster:
Moors around the world
- Dr. Linda Seifert, Waters Ecologist at Nationalpark Bayerischer Wald:
Moors in Bayerischer Wald
- Prof. Dr. Carl Beierkuhnlein, Biogeography, BayCEER / University of Bayreuth:
Moors and species diversity
- Dr. Stephanie Thomas, Biogeography, BayCEER / University of Bayreuth:
Moors and mosquitos

More on the AquaKlif project in the Bavarian Climate Research Network (bayklif):
www.bayceer.uni-bayreuth.de/aquaklif/

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Originalpublikation:

Kaule, L., Frei, S.: Analysis of drought conditions and their impacts in a headwater stream in the Central European lower mountain ranges. Reg Environ Change 22, 82 (2022)
Blaurock, K., Beudert, B., Gilfedder, B., Fleckenstein, J., Peiffer, S., Hopp, L.: Low hydrological connectivity after summer drought inhibits DOC export in a forested headwater catchment. Hydrology and Earth System Sciences, 25(9), 5133-5151 (2021).