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Impacts of the 2018 severe drought and heatwave in Europe: from site to continental scale

A theme issue compiled and edited by Wouter Peters, Ana Bastos, Philippe Ciais, Alex Vermeulen and Werner Kutsch

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About this issue

The summer drought that hit central and northern Europe in 2018 had severe impacts on crops, forests and grasslands. This theme issue brings together researchers working on different scales to report on the impacts found, and what can be learnt from this. The research presented shows that plants first profited from warm and sunny conditions in spring, but then had insufficient water available to their roots when the summer heat wave hit. Where grasslands simply “browned-down” during the drought, many crops produced the lowest yields in decades. Forests protected themselves by strongly reducing their evaporation, and uptake of carbon dioxide, for several weeks. Such effects were simultaneously recorded from Switzerland into the Benelux and Germany, and from the Czech Republic into Sweden and Finland. This data can be used to create better computer models of drought impacts on vegetation in northwestern Europe’s forests.

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Front image Spruce trees at the Swedish Hyltemossa site cannot sustain their needles amidst the severe heat and drought. Photo credit Tobias Biermann.

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