



Universität  
Basel

## Research Project

Assessing the drought response strategies of ten temperate tree species and their drought acclimation potential in a throughfall exclusion experiment in a mature forest

### Third-party funded project

**Project title** Assessing the drought response strategies of ten temperate tree species and their drought acclimation potential in a throughfall exclusion experiment in a mature forest

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**Project Website** <https://ppe.duw.unibas.ch/en/research/fordrought/>

**Project start** 01.04.2022

**Probable end** 31.03.2026

**Status** Active

Global climate change and in particular changes in the hydroclimate towards dryer and warmer summers will impact the structure and composition of central European and other forests on the planet. The extremely hot and dry summers that Europe has experienced in 2003 and in 2018 have already demonstrated the severe impacts that a changing climate will have on tree and forest function and composition for these ecosystems. Critical mechanisms that determine how drought will impact the functioning of trees and forests are, however, poorly understood. This makes it difficult to anticipate the consequences of a future and dryer climate for key ecosystem functions and prevents the development of silvicultural management plans for more resistant and resilient forest ecosystems.

Here we propose to close this gap and to address the effects of drought on mature trees from ten different temperate European species in a large-scale ecosystem manipulation experiment.

From our work, we expect the following outcome:

- we will provide the first comprehensive empirical characterization of the drought response strategies of key temperate European tree species,
- we will identify the trait syndromes that govern the different drought response strategies in these species and will identify important tradeoffs between traits and function,
- we will provide one of the first large scale across-species assessments of the acclimation potential of mature temperate European tree species to reduced water availability and
- we will identify the key traits that are responsible for these acclimations.

**Financed by**

Swiss National Science Foundation (SNSF)

**Add publication**

**Add documents**

**Specify cooperation partners**