

PROJECT INFORMATION

Project title: **Leaf nutrients and leaf morphological traits in European beech stands across a water availability gradient**

Project ID: 142

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PROJECT DESCRIPTION

The global climate change can have various regional effects by creating significant changes in water availability and temperature. The goal of this study is to assess the response of foliage properties (nutrient concentrations, leaf morphological traits) of beech trees to water availability and soil properties in beech forest stands distributed across Europe. In this study, we hypothesize that lower water availability has a negative effect on the mineral nutrition of beech stands, and that the specific leaf area (SLA) varies across the water availability gradient. In a preliminary study, we analysed the data from 12 beech sites in Switzerland. Because the Swiss sites were located on different soil types, however, with a covariation of the soil acidity and water availability gradient (all dry sites were on calcareous parent material), the interpretation of the results became difficult. The ICP Forests data offer the opportunity to expand the data set and thus to better discriminate between the respective influence of water availability (approximated, in a first step, by annual precipitation) and soil chemistry. Furthermore, using the long-term series of foliar analyses at the ICP Forests sites, the influence of particularly dry or wet years can be investigated.