Project Database of ICP Forests
PROJECT DESCRIPTION

PROJECT INFORMATION

Project title: **Extending trait-based dynamic global vegetation model (LPJmL-FIT) to temperate forests**

Project ID: 125

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PROJECT DESCRIPTION

The European-funded H2020 project ECOPOTENTIAL aims to improve and sustain ecosystem benefits combining earth observations, data analysis and modeling with a focus on a set of internationally recognized protected areas across Europe. One part of the project is to assess the impact of climate change on ecosystem state and functioning on a pan-European scale using process-based models. One of those models will be LPJmL-FIT, which is a subversion of the global dynamic vegetation model LPJmL and simulates individual trees with unique plant functional traits including e.g. specific leaf area (SLA), leaf longevity (LL) and wood density, within their natural ranges and trade-offs. Via enhanced functional trait diversity the model overcomes the established PFT-approach of most vegetation models and allows a better representation of forest response diversity to disturbances. Therefore, we will assess the role of functional tree trait diversity for the European forests under climate change.
Since LPJmL-FIT was originally developed for tropical forests we need calibrate, test and validate it for European forest sites. First simulation tests included several old-growth forests sites across Europe and validation so far is based on available Eddy Flux data and tree trait data within the global plant-trait database TRY. To extent our model calibration and validation we seek to use ICP Forests data in our project.
Important model outputs, which need to be validated include: carbon pools and fluxes (biomass, litter fall), tree allometry, leaf traits (leaf nitrogen, leaf longevity), phenology (LAI), soil moisture and tree vitality.