Project Database of ICP Forests

PROJECT DESCRIPTION

PROJECT INFORMATION

Project title:	**Climate resilient forests - Recognising the potential in the natural spectrum and using it for forestry purposes (WaldSpektrum)**
Project ID:	267
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PROJECT DESCRIPTION

The project "WaldSpectrum" uses a novel research approach to systematically identify the range of tree species, associations, and forest management options under changing environmental conditions aiming to maximise the resistance and resilience of forests, as well as facilitating ecosystem services and timber yield, while respecting and enabling nature conservation and biodiversity objectives. The results obtained are to be a) offered in a comprehensible and publicly accessible form as forestry decision-making aid and b) processed and communicated for further forestry applications.

For modelling growth under climate change we are using a dynamic global vegetation model – called LPJmL-FIT. We want to run the model for central European sites. The model is designed to simulate potential natural vegetation distribution and composition by simulating patches of competing individual trees with functional traits (for example specific leaf area, leaf nitrogen content). Further models we want to use and combine in our study are 4C, ForstGales and Brook90.

Based on information of natural vegetation under current environmental conditions, we want to use a trait-based simulation. Because of this, we request comprehensive data from your Level I and Level II database:

- soil conditions
- meteorological measurements
- foliage
- crown condition
- lai

WaldSpektrum is divided into 5 work packages building on each other. While WP1 takes over the general organisation and creates, archives and provides the necessary basic data, the other four work packages form the core of a novel research approach to systematically identify forestry options for action systematically. As a basic prerequisite, WP2 will identify traits and their associations, WP3 will filter those traits most suitable, meeting requirements for storm-worm risks and groundwater recharge. WP3 will also will record various target variables. WP4 will transform the selected trait composition into actually existing tree species and analyse phenotypic plasticity and potential best provenances. WP5 will obtain these tree species, and all the associated recorded information (such as association, forest management, functional diversity, phenotypic plasticity) and target variables and synthesises them into forest management options according to a defined scheme. Those forestry options aim to be economically, ecologically and nature conservation justifiable from the point of view of nature conservation. These options for action are then summarised and offered in a public forestry decision-making aid.