ICP Forests | LRTAP Long-range Transboundary Air Pollution

PROJECT INFORMATION

Project title:	**Resilience mechanisms for risk adapted forest management under climate change (REFORCE)**
Project ID:	118
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PROJECT DESCRIPTION

Climate change will increase risks for the provision of forest products and services. Enhancing forest resilience thus becomes a key objective for adapting forests to climate change. To achieve this objective, researchers, policy-makers and managers must UNDERSTAND the mechanisms underlying forest resilience to climate change, and how they are influenced by forest management; ASSESS management options and their implications for ecosystem services in different European regions and under different environmental conditions; and ENHANCE the science-policy- practice interface to ensure that research results are informative for management and policy decisions.

Building on prior and on-going EU projects, REFORCE addresses these problems by:

- developing recommendations for operational forest resilience measures in multifunctional forestry
- mapping the resilience of forest productivity to climatic events across Europe and North-East Canada with remote sensing at a variety of scales, and identifying gradients of resilience within and between regions
- analysing ecological mechanisms of forest resilience that can be influenced by management on short- (e.g. thinning and drought resistance) and long (demographic processes) time scales, with mechanistic and empirical models informed by monitoring data
- evaluating approaches to managing resilience, including the risk reduction potential of coordinated risk management in multi-owner landscapes using mechanistic forest models and economic analyses
- fostering the implementation of resilience management by co-developing management alternatives with local stakeholders in different regions and by developing strategies for efficient communication between scientists and decision makers.

As a result, REFORCE will develop and evaluate regionally-adapted, climate-resilient and risk-aware management regimes for multifunctional forestry.
Within the project, we intend to use European ICP data for two main purposes:

First, calibration and validation of multi-scale remote sensing indicators of forest resilience by comparing the derived stability/resilience metrics with in-situ data from ICP Level I plots and Level II plots providing measures of e.g. defoliation (percentage of leaf or needle loss) or discolouration.

Second, in analysing ecological mechanisms of short time scale resilience to droughts.

We intend to use the results of remote-sensing and forest inventory data (European ICP level 2 sites) to do an analysis of environmental and biotic factors that favour resilience to droughts.