

PROJECT INFORMATION

Project title: ICP Forests and ICP Integrated Monitoring provide detailed information enabling analyses of environmental and ecosystem changes in time and aggregations in space

Project ID: 117

Contact person: Walter Seidling (walter.seidling@thuenen.de)

PROJECT DESCRIPTION

Under the UNECE Convention on Long-range Transboundary Air Pollution (CLRTAP) two International Co-operative Programmes – ‘Air Pollution Effects on Forests’ (ICP Forests) and ‘Integrated Monitoring of Air Pollution Effects on Ecosystems’ (ICP IM) – have performed largely standardized measurements and observations of environmental drivers and responses for more than 20 years. Continuously updated databases allow us to conduct univariate analyses and inferential statistics on a temporal and spatial basis.

Data sets related to key processes in forest ecosystems like nitrogen deposition, meteorology, foliar, litterfall and soil solution chemistry, tree growth, biodiversity aspects, and tree crown condition permit to analyse changes over time at plot level (time series analysis), to perform comparisons between plots (ordination, classification), and to establish hypothesis-driven relationships between time series of driver and response factors (structured regression modelling). Additional information, such as geographic location, elevation, tree species, and soil features, enables interpretations of patterns found.

Combined analyses of plot data from both ICP Forests and ICP IM networks deliver comparative analyses of relevant factors and approaches for bottom-up aggregations of plot-based time series. Also cross-correlations between time series of drivers and response factors can achieve a differentiated and spatially more explicit understanding of e.g. effects of air pollutants and climate change on forest ecosystems across Europe as a source of information for improved environmental policies and forestry.