Project Database of ICP Forests

PROJECT DESCRIPTION

PROJECT INFORMATION

Project title: **NORdic tree growth SIMulator (NORSIM)**

Project ID: 271

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Introduction

• Nordic countries have a rich history of establishing long-term forest experiments & carrying out repeated forest inventories. The data generated have been used to prepare national forest growth simulators. For example, there is Motti in Finland, Heureka in Sweden, and Geoskog in Norway.

• However, a model is only as good as the data used to prepare it. There is therefore one main challenge in applying the existing forest growth simulators in the changing forestry conditions.

• The ongoing global climate crisis is predicted to strongly affect boreal regions. For Fennoscandia, there are predictions of increasing temperatures and changing precipitation patterns. This will result in applying models fitted on past climatic conditions in newly drastically different ones.

• Aim: to fit an individual tree growth at a wider scale that has been done so far in the region by merging data across Nordic countries (Finland, Sweden, and Norway) and beyond (especially Southern latitudes).

• Hypothesis: a tree growth model built with a larger range of climatic conditions will have more robust predictions in the future climatic scenarios than the existing simulators.

Methods

• We will collect available long-term experiments & repeated inventories data in Finland, Sweden, Norway, and beyond.

• We will merge all datasets in a common database, harmonizing the likely differences that will occur.

• We will retrieve from online GIS repository data on climate, soil, and topography, to have common & harmonized additional site info.

• We will fit species-specific models for individual tree growth, comparing different approaches. Models will be selected after checking several diagnostics.

• We will apply the selected models to predicted future climatic conditions, comparing them with existing simulators.