



## **Holocene Vegetation Dynamics in Sweden and Finland as Simulated by the Generalised Vegetation Model LPJ-GUESS**

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A stated aim of Dynamic European Climate-Vegetation Impacts and Interactions (DECVEG), an ESF EuroCLIMATE project, is to use and improve both dynamic vegetation models and palaeovegetation data in order to study climate-vegetation interactions in Europe. To this end, the generalised vegetation model LPJ-GUESS is used to simulate the historical tree species composition at the location of three Scandinavian pollen sites along a north-south transect, two in Sweden and one in Finland. The sites are among the few in Europe that appear to have experienced minimal human impact during the Holocene. The model is run from 10,000 years ago to present and forced with climate output from an atmospheric general circulation model. Output is compared to high-resolution paleoecological data gathered at the three sites.

We show that the model successfully simulates the main trends in Holocene vegetation composition at the three sites, including the north to south movement of nemoral trees and the limits of *Pinus* at the tree-line. Sensitivity studies indicate that the observed changes are due to a combination of Holocene climate change and modeled vegetation dynamics, thereby highlighting the importance of inclusion of the latter in model studies of climate change impacts generally.