



Influence of a clear cutting on microclimate and water budget of forest ecosystems.

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Anthropogenic impact on forest ecosystems can have different effects on their biophysical, meteorological and hydrologic conditions. Development of the methods that allow to predict the consequences of such impacts can make the management of forest resources more rational.

In our study the effect of clear cutting on microclimate and hydrological regime of spruce forest ecosystem in Solling (Germany) was investigated using field measurements and 3D-modelling approach. Microclimatic conditions (air temperature and humidity, wind speed and direction, global radiation, precipitation rate, soil temperatures) at experimental site were described using 7 mobile meteorological stations installed in the different parts of clearing area. The first version of 3D high-resolution (2m × 2m) model for simulation of spatial patterns and temporal variability of global and net radiation, air and soil temperatures, soil moisture, was developed and tested against experimental data. This study was supported by the DFG.