

## GENERAL INFORMATION

<b>author(s)</b>	Wollaert E
<b>year</b>	1999
<b>English title</b>	Simulation of the water balance in a mixed deciduous forest (Aelmoeseneie)
<b>original title</b>	Simulatie van de waterbalans in een gemengd loofbos (proefbos Aelmoeseneie)
<b>reference</b>	Msc thesis, Ghent University, Ghent
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<b>ecosystem service</b>	regulating – water cycle
<b>keywords</b>	WAVE model
<b>taxa</b>	
<b>project</b>	
<b>supervisor</b>	Lemur R
<b>institution</b>	Faculty of Agricultural and Applied Biological Sciences, Laboratory of Plant Ecology
<b>document</b>	hardcopy
<b>data</b>	

## MATERIALS & METHODS

<b>study area</b>	5 n (scientific zone)
<b>time period</b>	10 August – 16 October 1998
<b>goal</b>	Calibration and validation of the water balance module of the WAVE model, which was developed for crop land, for a mixed oak-beech stand in the Aelmoeseneie forest.
<b>set-up</b>	oak-beech part of the scientific zone <ul style="list-style-type: none"><li>- 9 sample points for determining the root biomass, rooting depth, root density, and physical soil properties (Fig. 3.2 p 49)</li></ul>
<b>data collection</b>	root sampling <ul style="list-style-type: none"><li>- 6 samples per point: 0–15, 15–30, 30–45, 45–60, 60–75, 75–90 cm, litter layer</li><li>- samples: wet mass, dry mass subsample, roots with <math>d &lt; 1</math> mm, <math>d 1-2</math> mm, <math>d 2-5</math> mm</li></ul> soil moisture characteristic see Willems_1998_th climate data <ul style="list-style-type: none"><li>- precipitation (/hour), throughfall (/hour), stemflow (/14 days)</li><li>- potential evapotranspiration from DeSchrijver_1997_rep</li></ul>
<b>remarks</b>	Fig. 2.5 p 83: scheme soil sampling

## RESULTS

The model was calibrated for the soil between 0–60 cm and 90–200 cm; the measured and simulated values for the soil layer between 60–90 cm did not correspond, which might be because of soil water movements that are not included in the model. A second drawback of the model is that water extraction via the roots in the litter layer is not included.

A description of the soil moisture characteristics in the top 50 cm and the physical soil parameters of a forest stand are required to describe the water balance with the WAVE model.