

GENERAL INFORMATION

author(s)	Gruwez R
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English title	Changes in forest structure and herb layer between 1982–2005 along two transects in the Aelmoeseneie forest
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MATERIALS & METHODS

study area	5b, 5e, 5l, 5n
time period	August 2005, May 2006
goal	Study of the changes in herb/shrub/tree layer during a 23-year period
set-up	transect A (10 m x 80 m): lowest part of the forest transect B (10 m x 100 m)
data collection	method of Koop <ul style="list-style-type: none">- width 10 m: all trees > 10 m- width 5 m: 0.5 m < all shrubs and trees < 10 m- width 2 m: vegetation tree coordinates: 4 points of crown projection (x,y), stem base (x,y,z), first branch (z), bottom crown (z), widest part crown (z), top tree (z) tree measures: dbh (if $\varnothing > 5$ cm), dbh = 2.5 cm (if $\varnothing < 5$ cm) vegetation (+ seedlings < 0.5 m): species, cover (Londo) cover tree/shrub layer
remarks	map with transects (p 21) re-inventory of the transects in Dhondt (1982)

RESULTS

The changes between 1982 and 2005 are shown for the tree and shrub layer based on stem density, basal area, volume, drawings of crown projections and the vertical profile, stem density and basal area of the different species and the different height classes. For the vegetation layer, the species composition, seedling abundance, and the root-mean-square for the comparison 1982-2005 are discussed.

The changes in the tree layer were not correlated with the changes in the shrub layer. Gaps were filled if regeneration was present when they were formed.

Oak was able to grow into created gaps by expanding its crown. Poplars in the understory died back whereas tall poplars showed high growth. Ash showed successful regeneration in the transect with a low density of adult ash. Red oak showed a strong crown expansion and grew from the shrub layer into the tree

layer. Sycamore was omnipresent. The crowns of hazel showed a large increase in volume. Red oak, beech, and pedunculate oak can suppress other species by expanding their crown. Birch and willow are replaced by other species. Ash and sycamore could not be clearly identified as a suppressing or a suppressed species.

Thinning in the lower layers does not affect the overstory pedunculate oaks and decreases the vertical structure of the forest. Thinning in the overstory stimulates the crown expansion of neighbouring pedunculate oaks and the structure of the forest stand. The present regeneration affects the further development in newly created gaps. Sycamore has a high dynamic in its regeneration stages, and red oak aggressively expands. The increase/decrease in *Rubus* cover could not be explained, and *Vinca minor* had expanded largely in the poplar stand.