Supplementary material

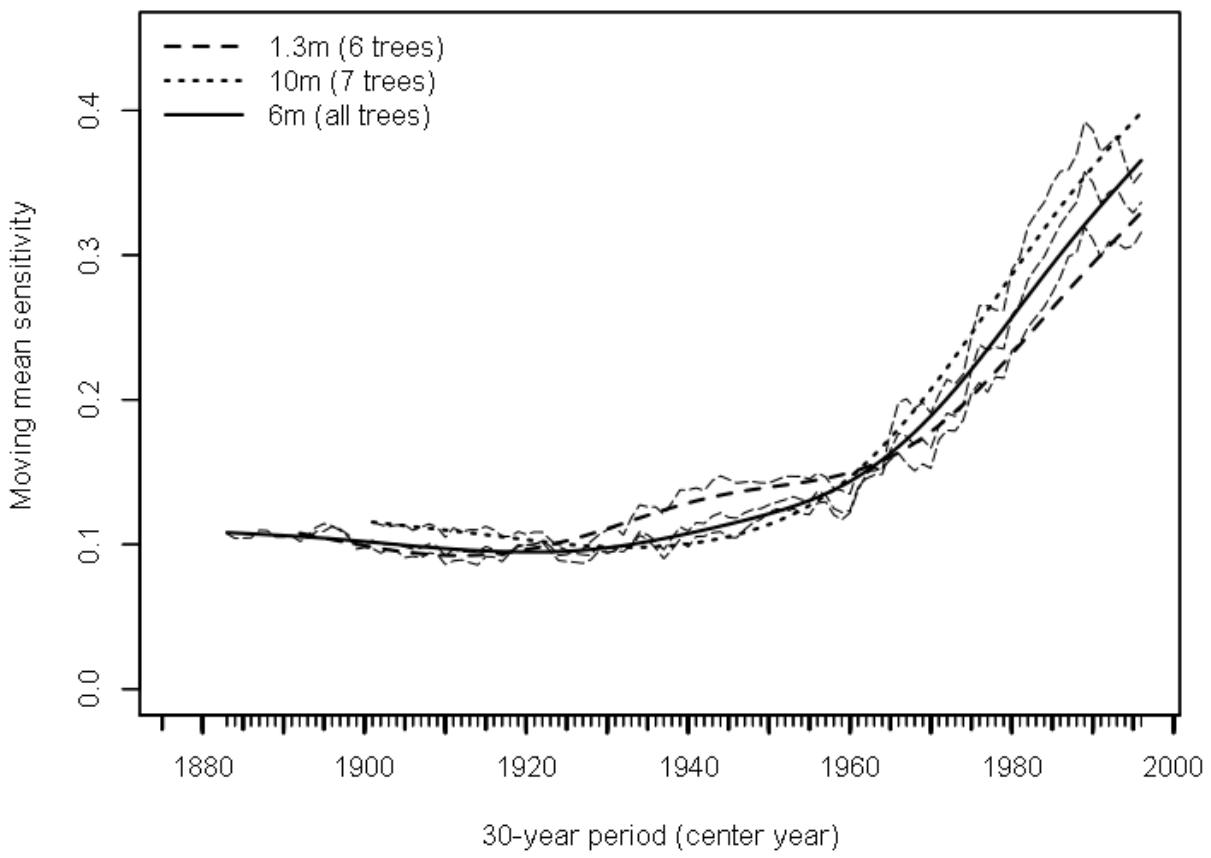

Fig. A Moving mean sensitivities of the basal area increment index chronologies of the TER site corresponding to three sampling height classes (1.3 m, 10 m, and 6 m) performed in a 30-year moving window for the period 1860–2011. The trends correspond to the cubic smoothing splines with a frequency response of 50% at a wavelength of 48 years.

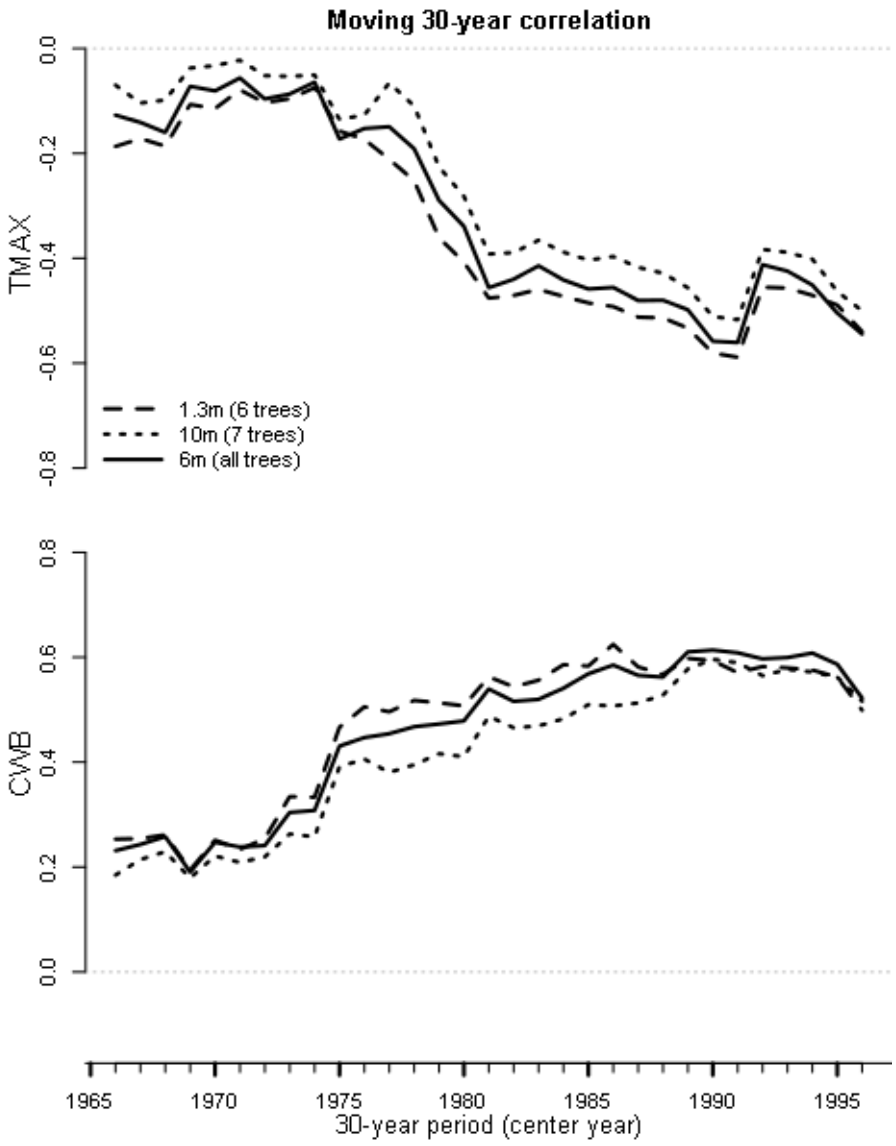

Fig. B Moving bootstrapped correlation coefficients between the basal area increment index chronologies of the TER site corresponding to three sampling height classes (1.3 m, 10 m, and 6 m) and the two best climatic variables performed in a 30-year moving window for the period 1952–2011. TMAX is the mean of the daily maximum temperature from July to October of the previous year. CWB is the sum of the daily climatic water balance from May to November of the previous year.

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20 Comment on Figs A and B

21 The moving mean sensitivities (supplementary material: Fig. A) and moving bootstrapped
22 correlation coefficients (supplementary material: Fig. B) at the three sampling heights of the
23 TER site (six trees at 1.3 m, seven trees at 10 m, and all trees at a mean of 6 m; dominant
24 height = 37.2 m) showed comparable values and similar increasing trends. The bootstrapped
25 correlation coefficients were consistently slightly higher at 1.3 m, in agreement with Bouriaud
26 et al. (2005). Growth appeared to be more limited at breast height than higher up the stem,
27 particularly during dry years. Thus, the temporal trends of the sites for which the sampling
28 height was >1.3 m might be considered as even more pronounced.

29 Bouriaud, O., Bréda, N., Dupouey, J.L., Granier, A., 2005. Is ring width a reliable proxy for
30 stem-biomass increment? A case study in European beech. Canadian Journal of Forest
31 Research 35, 2920-2933.

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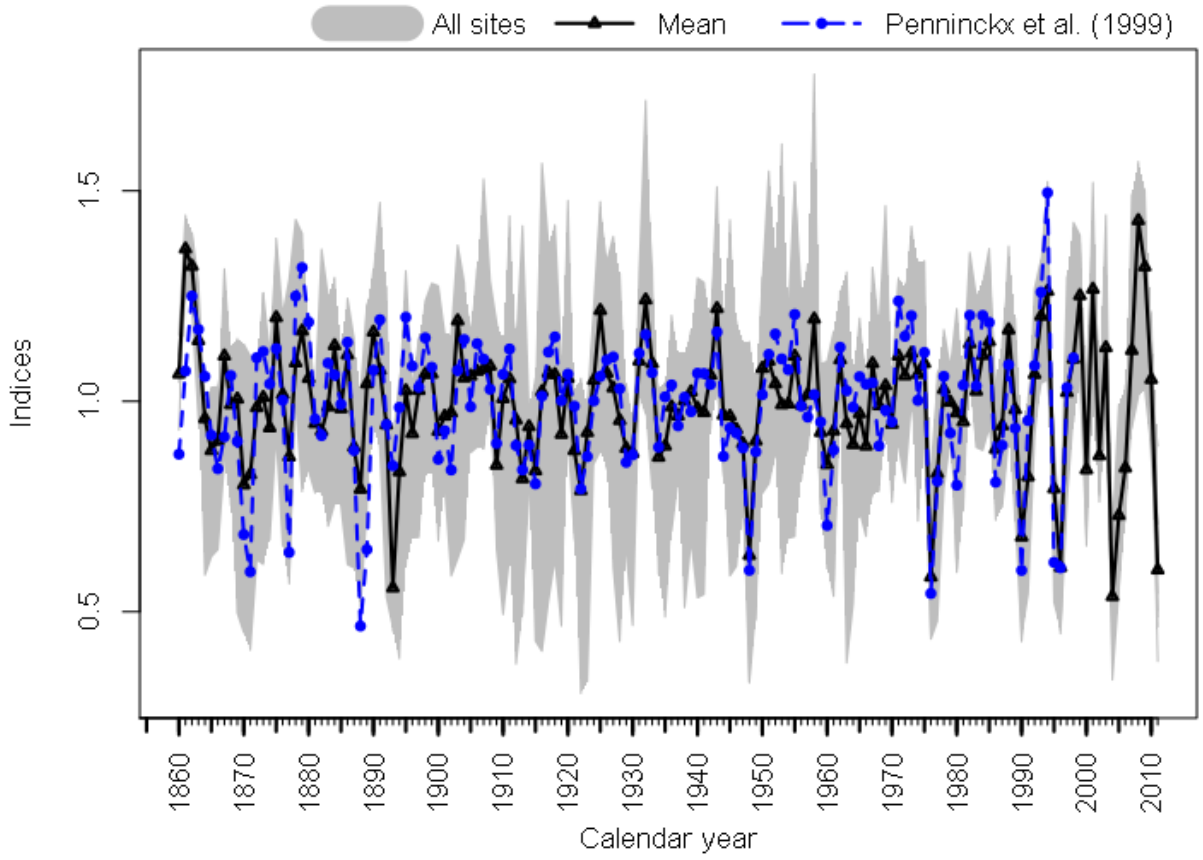

Fig. C Illustration of the cross-dating validation by using the mean reference chronology for Belgium (Penninckx et al., 1999).

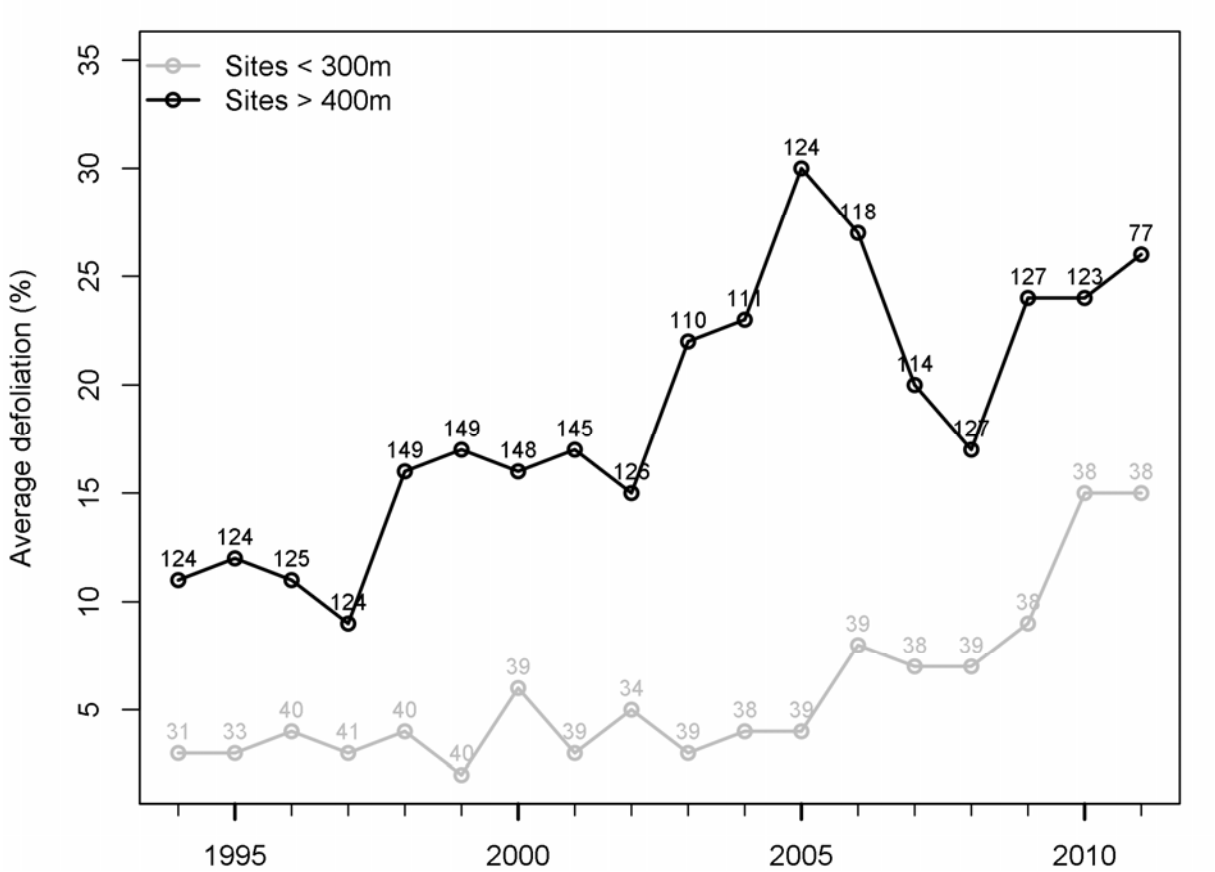

Fig. D Trends of defoliation from 1994 to 2011 for beech located at lower altitudes (<300 m) and higher altitudes (>400 m). The numbers close to the points correspond to the sample depth (number of trees).