Supplementary Material

Fig. S1 - Daniels competition index calculated for trees in each plot from repeated surveys data. Lines represent values of the distance-independent competition index calculated considering the ratio of a tree's basal area to the basal area of a tree with mean diameter on a given plot. Black lines for cored trees, green ones for all other trees. Selected trees retain higher index values (less competition) in respect to all other trees, thus maintaining dominant status over time. Abrupt changes are consequence of thinnings, which affect the mean diameter of the plot. No survey data are available for Plot 1.
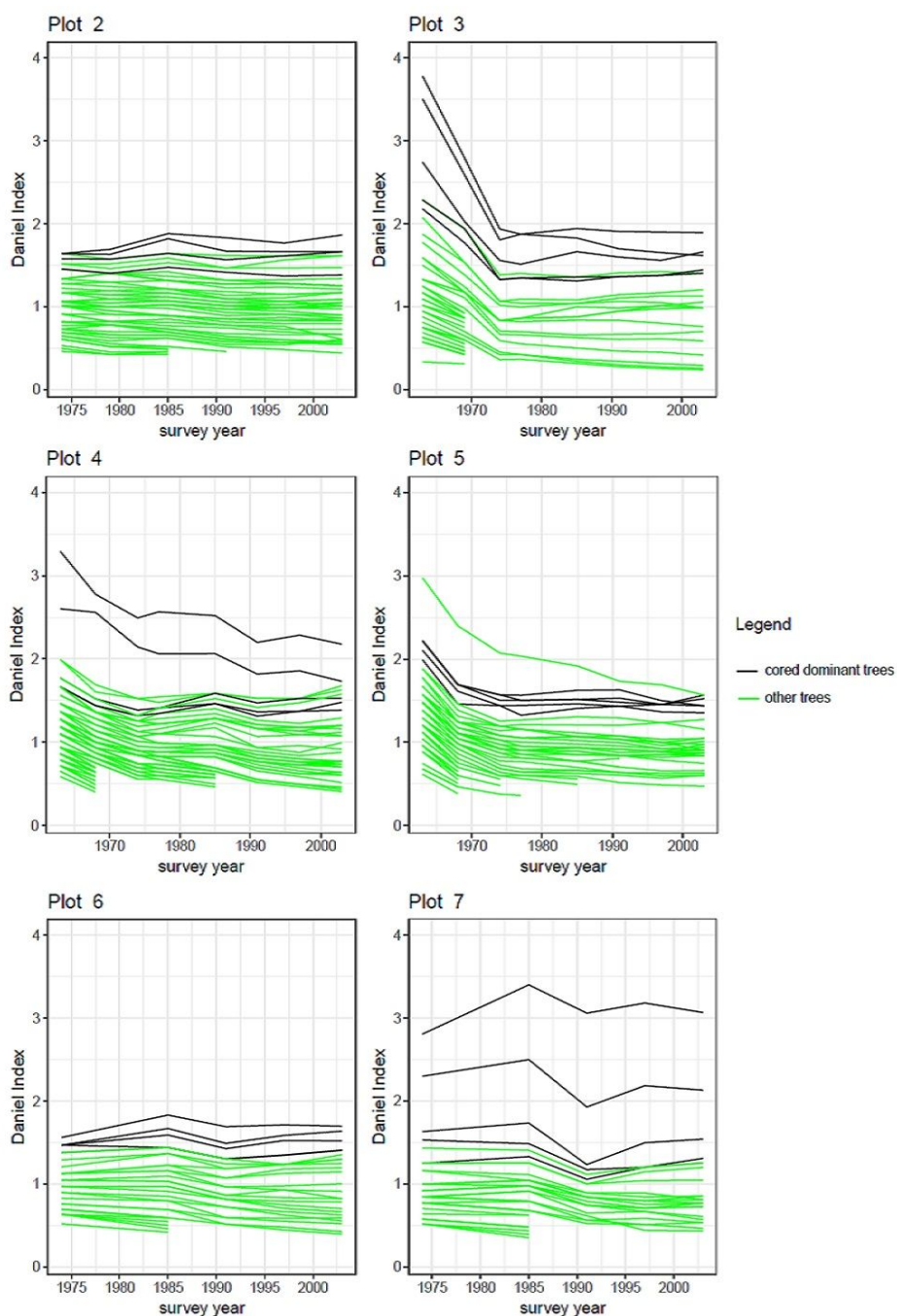
Fig. S2 - Long-term variation in stand density in study plots, as derived from successive surveys. Sharp changes in stand density are the result of thinnings; following thinnings, the number of trees removed was subtracted to the successive year of the thinning event. No data are available for the oldest plot (Plot 1).
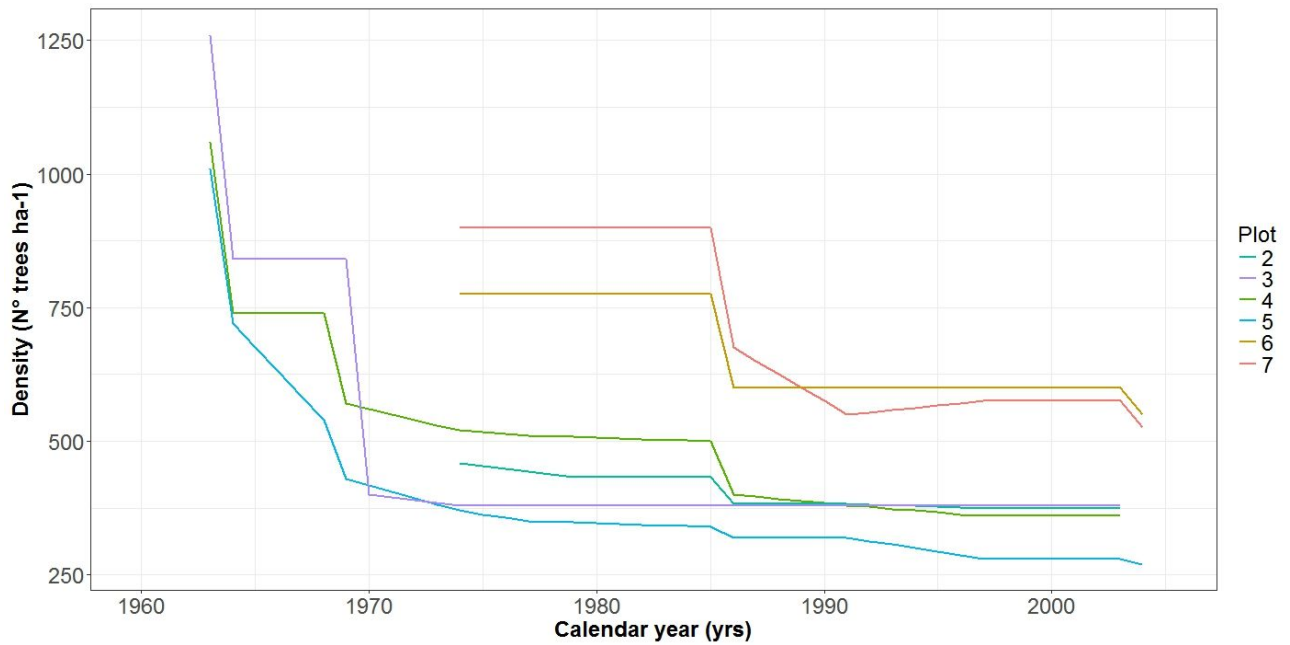
Fig. S3 - Selection of monthly climatic variables to be included in the analysis. Pearson correlation coefficient of the relationship between ring width index (RWI) and monthly temperature (in red) and monthly precipitation (in blue). Significant correlations are represented with continuous bars while non significant ones are dashed. Mean ± standard deviation, as calculated by a bootstrapping procedure.
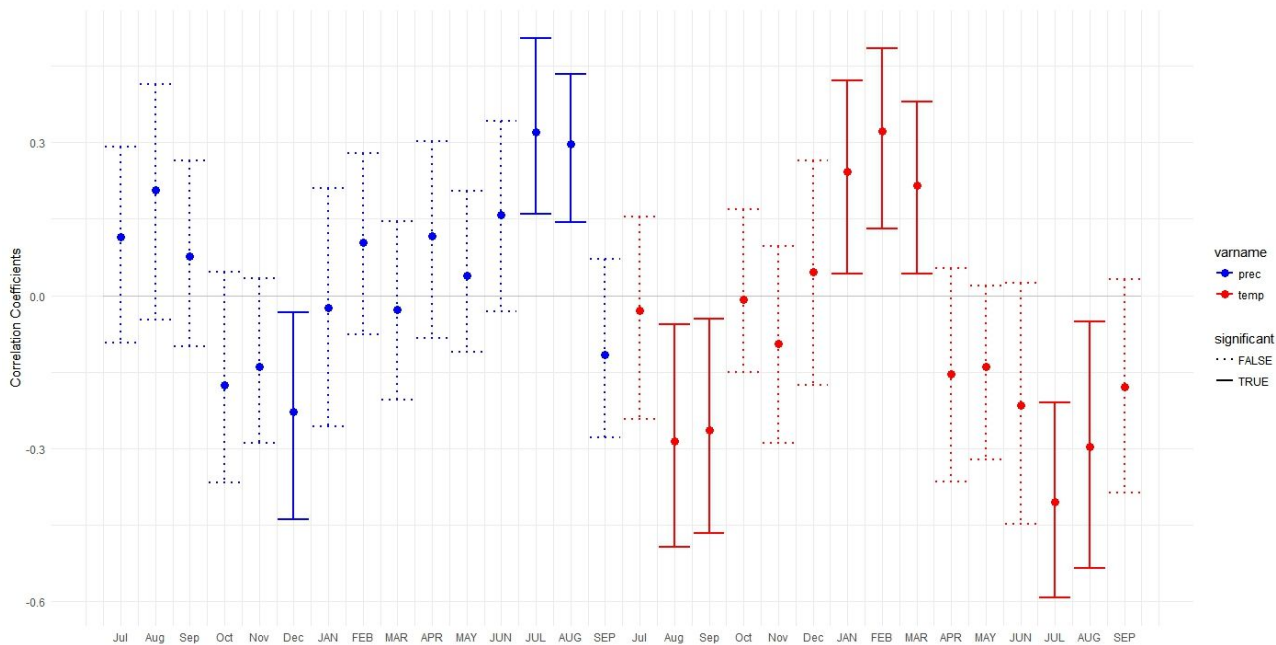
Fig. S4 - Concurvity (collinearity for non-linear regression techniques) between smooth functions of selected GAMM covariates: age, Standardized Precipitation Evapotranspiration Index (SPEI) for the current and previous year, temperature. Values equal to 1 represent complete concurvity among covariates. Values under the threshold of 0.5 are deemed acceptable.
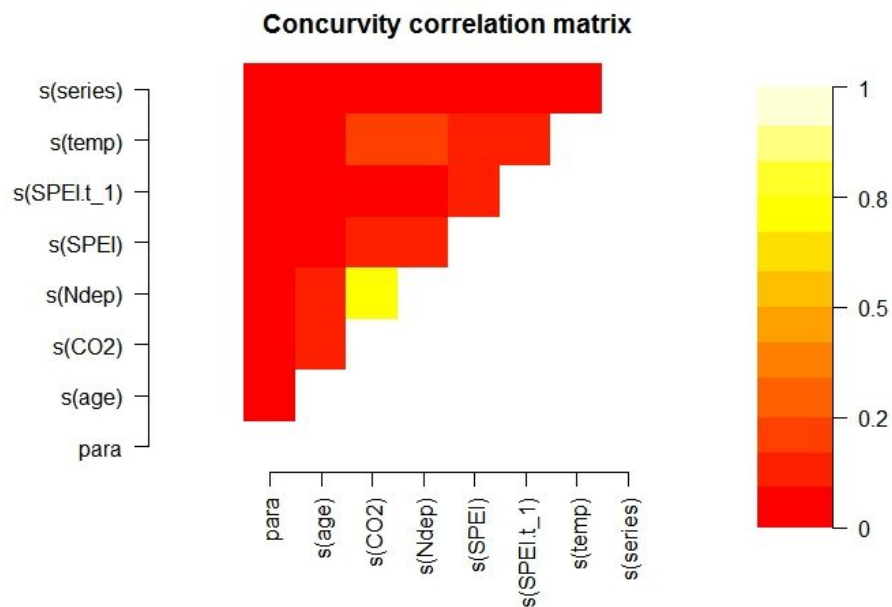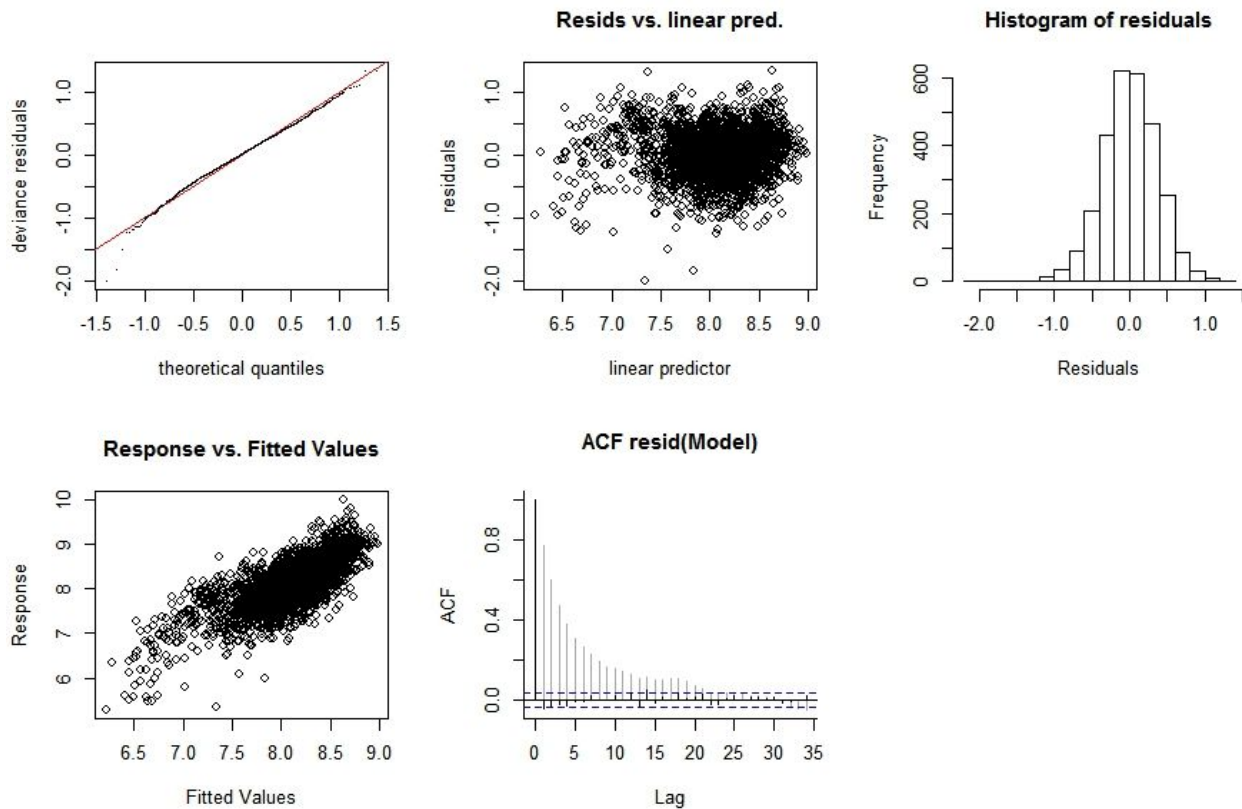
Fig. S5 - Test of GAMM results for log(BAI) as a function of age and environmental variables. Residual distribution of the whole model and against linear predictor. Response against fitted values for the whole model. Autocorrelation of residuals before (grey bars) and after (black bars) introduction of AR(1) structure for autocorrelation.

Tab. S1 - Attributes of each core sampled. The distance to the pith, as well as the number of missing rings are estimated with the curvature method (Applequist et al. 1958).

Plant	Plot	Estimated distance to the pith (mm)	Estimated missing rings to the pith (n°)	Observed rings (n°)
1	7	3.47	6	55
2	7	2.45	3	59
3	7	0.4	1	63
4	7	0.5	1	62
5	7	1.79	3	58
6	6	1.49	2	63
7	6	2.77	4	59
8	6	0.9	1	63
9	6	4.67	5	58
10	6	0.86	2	65
11	5	1.05	2	81
12	5	3.22	4	78
13	5	2.12	2	79
14	5	2.06	3	79
15	5	0.22	2	81
16	4	0.69	1	79
17	4	0.81	2	79
18	4	1.83	3	79
19	4	2.07	2	77
20	4	0.45	1	83
21	3	5.88	7	90
22	3	1.04	2	91
23	3	1.76	4	92
24	3	1.76	2	92
25	3	1.77	3	91
26	2	6.69	8	89
27	2	0.87	1	92
28	2	5.72	8	90
29	2	6.03	8	86
30	2	0.8	4	85
31	1	1.17	2	113
32	1	3.3	4	112
33	1	4.35	8	111
34	1	0.4	1	115
35	1	0.47	2	116