Supplementary material

Table S1. Results from the linear mixed models for Competition Index and trees admixture effects on Basal Area Increment, Wood Density and BAIden. BAI and BAIden were transformed to meet the assumption of normality and homogeneity of variances. The null model is built considering as fixed effect only Competition Index, while the full model was built considering as fixed effects Competition Index and Tree Admixture. The ratio likelihood test performed on the two models informed on the non-significant differences of BAI, wood density and BAIden in the two forest types.

		Null Model BAI	**Full Model BAI**	**Null Model Wood Density**	**Full Model Wood Density**	**Null Model BAIden**	**Full Model BAIden**
(Intercept)	Estimates	29.80	29.01	725.41	728.40	0.80	0.78
	S. d.	3.30	3.49	11.51	12.13	0.09	0.09
	p-value	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Competition Index	Estimates	-0.92	-0.92	1.53	1.55	-0.02	-0.02
	S. d.	0.71	0.70	2.51	2.49	0.02	0.02
	p-value	0.20	0.20	0.50	0.50	0.20	0.20
Admixture: Pure	Estimates		1.54		-6.01		0.03
	S. d.		2.30		8.18		0.06
	p-value		0.51		0.40		0.60
Ratio likelihood Test: Anova	AIC	10931.80	10933.40	15850.40	15851.80	-1159.40	-1157.60
	Chi-Square test		0.44		0.54		0.21
	Degrees of freedom		1.00		1.00		1.00
	p-value		0.50		0.40		0.60

Table S2. Correlation coefficients, statistical significance, and confidence intervals of the correlation analyses between monthly mean Temperature, monthly Precipitation, and monthly Vapor Pressure Deficit of the current year and RWI, BAI.i, BAI, Wood Density, BAIden.i, BAIden series in the two forest types, for the time span 1962-2018. Correlation was considered significant with $p < 0.05$, and indicated by TRUE. These results were obtained with the dcc function from treeclim Rpackage. The function is set on correlation, where the coefficients are univariate estimates of Pearson's product moment correlation.

Forest type		**Pure**											
Series		**RWI**				**BAI**				**BAI.i**			
Climatic Variable	Month	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper
Precipitation	JAN	-0.071	FALSE	-0.353	0.216	0.184	FALSE	-0.026	0.430	0.057	FALSE	-0.217	0.288
	FEB	0.253	TRUE	0.053	0.448	0.180	FALSE	-0.064	0.434	0.187	FALSE	-0.056	0.393
	MAR	-0.013	FALSE	-0.232	0.227	0.232	FALSE	-0.013	0.450	0.011	FALSE	-0.184	0.212
	APR	0.061	FALSE	-0.177	0.271	0.095	FALSE	-0.160	0.331	0.012	FALSE	-0.192	0.221
	MAY	-0.115	FALSE	-0.361	0.156	0.121	FALSE	-0.160	0.385	-0.074	FALSE	-0.319	0.172
	JUN	-0.043	FALSE	-0.327	0.263	-0.005	FALSE	-0.287	0.292	-0.026	FALSE	-0.260	0.230
	JUL	0.255	TRUE	0.049	0.433	0.129	FALSE	-0.135	0.391	0.247	TRUE	0.037	0.476
	AUG	-0.046	FALSE	-0.353	0.302	-0.253	TRUE	-0.470	-0.022	0.008	FALSE	-0.333	0.346
	SEP	-0.225	FALSE	-0.499	0.115	-0.089	FALSE	-0.454	0.264	-0.284	FALSE	-0.562	0.040
Mean Temperature	JAN	0.381	TRUE	0.165	0.553	0.223	FALSE	-0.023	0.436	0.318	TRUE	0.068	0.514
	FEB	0.368	TRUE	0.130	0.586	0.300	FALSE	-0.006	0.550	0.309	FALSE	-0.005	0.585
	MAR	0.512	TRUE	0.308	0.679	0.307	TRUE	0.074	0.515	0.510	TRUE	0.304	0.682
	APR	0.069	FALSE	-0.117	0.240	0.366	TRUE	0.091	0.594	0.054	FALSE	-0.149	0.235
	MAY	-0.096	FALSE	-0.332	0.113	0.137	FALSE	-0.138	0.363	-0.094	FALSE	-0.318	0.120
	JUN	0.135	FALSE	-0.100	0.370	0.177	FALSE	-0.098	0.466	0.179	FALSE	-0.070	0.423
	JUL	0.009	FALSE	-0.235	0.249	0.329	TRUE	0.124	0.524	0.016	FALSE	-0.199	0.242
	AUG	-0.167	FALSE	-0.365	0.116	0.167	FALSE	-0.119	0.458	-0.179	FALSE	-0.409	0.097
	SEP	0.129	FALSE	-0.115	0.409	0.133	FALSE	-0.177	0.387	0.108	FALSE	-0.151	0.368
Vapor Pressure Deficit	JAN	0.172	FALSE	-0.045	0.387	0.418	TRUE	0.176	0.627	0.186	FALSE	-0.065	0.405
	FEB	0.294	TRUE	0.061	0.454	0.548	TRUE	0.371	0.685	0.311	TRUE	0.063	0.479
	MAR	0.344	TRUE	0.159	0.508	0.512	TRUE	0.318	0.655	0.387	TRUE	0.192	0.545
	APR	0.039	FALSE	-0.164	0.238	0.486	TRUE	0.266	0.658	0.074	FALSE	-0.154	0.293
	MAY	0.056	FALSE	-0.177	0.268	0.310	TRUE	0.077	0.501	0.080	FALSE	-0.164	0.284
	JUN	0.089	FALSE	-0.186	0.372	0.302	TRUE	0.045	0.535	0.207	FALSE	-0.081	0.451
	JUL	-0.159	FALSE	-0.388	0.099	0.250	TRUE	0.014	0.480	-0.085	FALSE	-0.303	0.155
	AUG	-0.206	FALSE	-0.436	0.088	0.235	FALSE	-0.001	0.476	-0.160	FALSE	-0.409	0.135
	SEP	0.079	FALSE	-0.134	0.292	0.386	TRUE	0.152	0.579	0.160	FALSE	-0.070	0.383

Forest type		**Pure**											
Series		**Wood Density**				**BAIden**				**BAIden.i**			
Climatic Variable	Month	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper
Precipitation	JAN	0.173	FALSE	-0.077	0.430	0.181	FALSE	-0.049	0.426	0.104	FALSE	-0.159	0.329
	FEB	0.058	FALSE	-0.178	0.303	0.181	FALSE	-0.083	0.439	0.194	FALSE	-0.030	0.414
	MAR	0.010	FALSE	-0.250	0.259	0.220	FALSE	-0.008	0.422	0.023	FALSE	-0.200	0.241
	APR	-0.134	FALSE	-0.322	0.082	0.070	FALSE	-0.210	0.332	-0.021	FALSE	-0.221	0.192
	MAY	-0.137	FALSE	-0.531	0.227	0.107	FALSE	-0.187	0.395	-0.096	FALSE	-0.384	0.196
	JUN	-0.179	FALSE	-0.428	0.087	-0.025	FALSE	-0.304	0.273	-0.047	FALSE	-0.304	0.221
	JUL	0.311	TRUE	0.078	0.483	0.148	FALSE	-0.119	0.407	0.305	TRUE	0.087	0.509
	AUG	0.083	FALSE	-0.179	0.339	-0.239	TRUE	-0.445	-0.003	0.023	FALSE	-0.263	0.326
	SEP	-0.099	FALSE	-0.359	0.156	-0.114	FALSE	-0.467	0.253	-0.292	FALSE	-0.560	0.039
Mean Temperature	JAN	0.113	FALSE	-0.170	0.380	0.209	FALSE	-0.033	0.416	0.319	TRUE	0.083	0.505
	FEB	0.118	FALSE	-0.196	0.399	0.305	TRUE	0.005	0.569	0.321	TRUE	0.022	0.555
	MAR	0.259	FALSE	-0.003	0.496	0.324	TRUE	0.090	0.505	0.540	TRUE	0.349	0.691
	APR	0.098	FALSE	-0.126	0.324	0.372	TRUE	0.107	0.613	0.070	FALSE	-0.161	0.273
	MAY	0.350	TRUE	0.138	0.538	0.155	FALSE	-0.110	0.396	-0.027	FALSE	-0.249	0.192
	JUN	-0.017	FALSE	-0.280	0.269	0.173	FALSE	-0.087	0.470	0.172	FALSE	-0.092	0.412
	JUL	-0.114	FALSE	-0.367	0.134	0.313	TRUE	0.099	0.511	0.003	FALSE	-0.210	0.239
	AUG	-0.089	FALSE	-0.387	0.286	0.137	FALSE	-0.146	0.427	-0.181	FALSE	-0.412	0.126
	SEP	-0.114	FALSE	-0.321	0.099	0.113	FALSE	-0.181	0.372	0.097	FALSE	-0.160	0.354
Vapor Pressure Deficit	JAN	0.040	FALSE	-0.193	0.247	0.416	TRUE	0.180	0.634	0.204	FALSE	-0.062	0.387
	FEB	0.273	TRUE	0.055	0.501	0.562	TRUE	0.404	0.701	0.361	TRUE	0.105	0.531
	MAR	0.219	FALSE	-0.019	0.480	0.526	TRUE	0.330	0.654	0.428	TRUE	0.227	0.577
	APR	0.229	TRUE	0.040	0.405	0.507	TRUE	0.283	0.682	0.131	FALSE	-0.124	0.344
	MAY	0.421	TRUE	0.182	0.608	0.345	TRUE	0.131	0.524	0.153	FALSE	-0.084	0.365
	JUN	-0.011	FALSE	-0.252	0.230	0.311	TRUE	0.053	0.536	0.190	FALSE	-0.117	0.457
	JUL	-0.164	FALSE	-0.430	0.104	0.233	FALSE	-0.027	0.456	-0.101	FALSE	-0.314	0.159
	AUG	-0.184	FALSE	-0.491	0.225	0.206	FALSE	-0.029	0.449	-0.179	FALSE	-0.417	0.151
	SEP	-0.073	FALSE	-0.303	0.158	0.371	TRUE	0.158	0.570	0.150	FALSE	-0.082	0.370

Forest type		Mixed											
Series		RWI				BAI				BAI.i			
Climatic Variable	Month	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper
Precipitation	JAN	-0.004	FALSE	-0.268	0.241	0.270	TRUE	0.059	0.475	0.072	FALSE	-0.176	0.315
	FEB	0.004	FALSE	-0.233	0.272	0.036	FALSE	-0.212	0.313	-0.011	FALSE	-0.253	0.234
	MAR	-0.012	FALSE	-0.254	0.220	0.298	TRUE	0.050	0.500	0.009	FALSE	-0.209	0.227
	APR	-0.058	FALSE	-0.263	0.142	-0.092	FALSE	-0.378	0.170	-0.122	FALSE	-0.332	0.100
	MAY	0.107	FALSE	-0.205	0.382	0.112	FALSE	-0.245	0.429	-0.017	FALSE	-0.328	0.279
	JUN	0.041	FALSE	-0.233	0.273	-0.015	FALSE	-0.286	0.262	0.057	FALSE	-0.223	0.324
	JUL	0.250	FALSE	-0.026	0.497	0.141	FALSE	-0.148	0.394	0.222	FALSE	-0.028	0.468
	AUG	-0.048	FALSE	-0.341	0.328	-0.207	FALSE	-0.418	0.022	-0.088	FALSE	-0.352	0.237
	SEP	-0.164	FALSE	-0.429	0.078	-0.125	FALSE	-0.392	0.121	-0.209	FALSE	-0.471	0.055
Mean Temperature	JAN	0.169	FALSE	-0.093	0.400	0.203	FALSE	-0.025	0.411	0.205	FALSE	-0.035	0.396
	FEB	0.086	FALSE	-0.202	0.369	0.193	FALSE	-0.064	0.441	0.100	FALSE	-0.166	0.361
	MAR	0.244	FALSE	-0.026	0.475	0.284	TRUE	0.043	0.482	0.326	TRUE	0.086	0.528
	APR	-0.016	FALSE	-0.220	0.209	0.282	TRUE	0.008	0.481	-0.002	FALSE	-0.221	0.217
	MAY	-0.223	FALSE	-0.424	0.008	0.136	FALSE	-0.146	0.396	-0.114	FALSE	-0.348	0.120
	JUN	0.028	FALSE	-0.212	0.280	0.045	FALSE	-0.217	0.342	0.085	FALSE	-0.124	0.324
	JUL	-0.083	FALSE	-0.324	0.160	0.255	TRUE	0.032	0.454	-0.002	FALSE	-0.218	0.216
	AUG	-0.108	FALSE	-0.337	0.134	0.170	FALSE	-0.078	0.413	-0.077	FALSE	-0.306	0.179
	SEP	0.079	FALSE	-0.134	0.279	0.096	FALSE	-0.155	0.359	0.100	FALSE	-0.093	0.328
Vapor Pressure Deficit	JAN	0.054	FALSE	-0.183	0.283	0.406	TRUE	0.175	0.594	0.155	FALSE	-0.109	0.390
	FEB	0.103	FALSE	-0.150	0.358	0.498	TRUE	0.261	0.674	0.224	FALSE	-0.036	0.451
	MAR	0.173	FALSE	-0.047	0.409	0.458	TRUE	0.255	0.641	0.291	TRUE	0.103	0.505
	APR	0.006	FALSE	-0.250	0.257	0.489	TRUE	0.226	0.668	0.090	FALSE	-0.176	0.349
	MAY	-0.112	FALSE	-0.361	0.169	0.338	TRUE	0.072	0.558	0.071	FALSE	-0.193	0.340
	JUN	0.042	FALSE	-0.229	0.303	0.208	FALSE	-0.046	0.437	0.105	FALSE	-0.146	0.357
	JUL	-0.204	FALSE	-0.478	0.102	0.175	FALSE	-0.052	0.434	-0.117	FALSE	-0.373	0.192
	AUG	-0.132	FALSE	-0.393	0.151	0.235	TRUE	0.020	0.481	-0.044	FALSE	-0.291	0.254
	SEP	0.041	FALSE	-0.204	0.281	0.339	TRUE	0.109	0.503	0.143	FALSE	-0.105	0.365

Forest type		Mixed											
Series		Wood Density				BAlden				BAlden.i			
Climatic Variable	Month	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper	Correlation Coefficient	Significance	Confidence interval_lower	Confidence interval_upper
Precipitation	JAN	0.126	FALSE	-0.124	0.387	0.264	TRUE	0.072	0.474	0.115	FALSE	-0.157	0.336
	FEB	0.280	TRUE	0.044	0.476	0.051	FALSE	-0.223	0.303	0.041	FALSE	-0.196	0.279
	MAR	0.135	FALSE	-0.151	0.412	0.293	TRUE	0.066	0.480	0.040	FALSE	-0.190	0.274
	APR	-0.107	FALSE	-0.347	0.186	-0.095	FALSE	-0.343	0.168	-0.137	FALSE	-0.346	0.085
	MAY	0.039	FALSE	-0.362	0.387	0.095	FALSE	-0.248	0.429	0.001	FALSE	-0.338	0.331
	JUN	-0.039	FALSE	-0.370	0.302	-0.024	FALSE	-0.289	0.229	0.045	FALSE	-0.232	0.316
	JUL	0.387	TRUE	0.181	0.566	0.163	FALSE	-0.096	0.423	0.274	FALSE	-0.006	0.484
	AUG	0.043	FALSE	-0.275	0.317	-0.212	FALSE	-0.391	0.022	-0.088	FALSE	-0.338	0.230
	SEP	-0.058	FALSE	-0.366	0.225	-0.126	FALSE	-0.400	0.144	-0.206	FALSE	-0.469	0.054
Mean Temperature	JAN	0.023	FALSE	-0.242	0.306	0.202	FALSE	-0.020	0.381	0.216	FALSE	-0.004	0.407
	FEB	0.186	FALSE	-0.105	0.459	0.215	FALSE	-0.041	0.434	0.138	FALSE	-0.138	0.361
	MAR	0.225	FALSE	-0.030	0.456	0.296	TRUE	0.078	0.480	0.345	TRUE	0.120	0.545
	APR	0.245	TRUE	0.014	0.445	0.273	TRUE	0.001	0.497	0.037	FALSE	-0.176	0.246
	MAY	0.351	TRUE	0.158	0.518	0.135	FALSE	-0.139	0.388	-0.067	FALSE	-0.295	0.190
	JUN	0.047	FALSE	-0.157	0.254	0.051	FALSE	-0.216	0.341	0.097	FALSE	-0.121	0.316
	JUL	-0.178	FALSE	-0.386	0.055	0.226	TRUE	0.023	0.424	-0.026	FALSE	-0.252	0.193
	AUG	-0.189	FALSE	-0.517	0.205	0.145	FALSE	-0.069	0.428	-0.099	FALSE	-0.339	0.176
	SEP	-0.149	FALSE	-0.341	0.059	0.087	FALSE	-0.182	0.330	0.076	FALSE	-0.137	0.289
Vapor Pressure Deficit	JAN	0.039	FALSE	-0.194	0.280	0.399	TRUE	0.148	0.580	0.162	FALSE	-0.098	0.391
	FEB	0.378	TRUE	0.171	0.563	0.508	TRUE	0.291	0.688	0.277	TRUE	0.020	0.505
	MAR	0.229	FALSE	-0.016	0.434	0.468	TRUE	0.279	0.641	0.313	TRUE	0.098	0.514
	APR	0.326	TRUE	0.123	0.513	0.487	TRUE	0.257	0.664	0.142	FALSE	-0.145	0.372
	MAY	0.429	TRUE	0.214	0.605	0.350	TRUE	0.076	0.576	0.114	FALSE	-0.146	0.350
	JUN	0.083	FALSE	-0.155	0.311	0.218	FALSE	-0.037	0.439	0.120	FALSE	-0.156	0.369
	JUL	-0.216	FALSE	-0.460	0.041	0.153	FALSE	-0.068	0.393	-0.145	FALSE	-0.382	0.146
	AUG	-0.264	FALSE	-0.581	0.103	0.215	FALSE	-0.004	0.446	-0.069	FALSE	-0.328	0.235
	SEP	-0.074	FALSE	-0.333	0.153	0.324	TRUE	0.102	0.502	0.128	FALSE	-0.091	0.331