Supplementary materials:

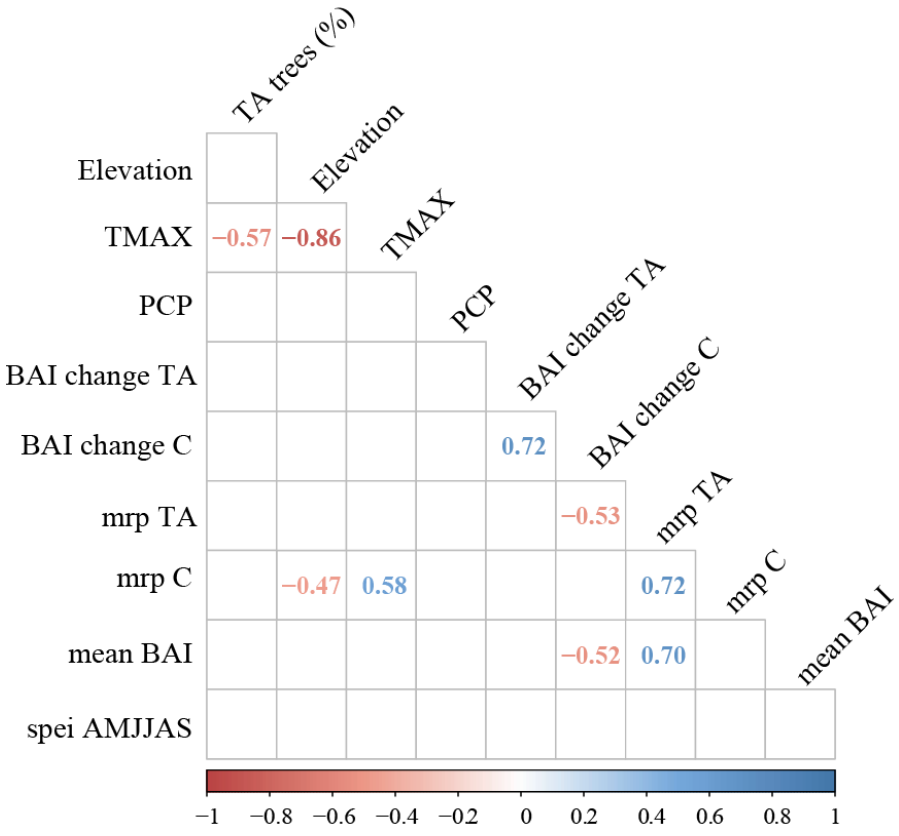
Supplementary Table 1. *Pinus sylvestris* tree-ring network, including site coordinates (Lat – latitude, Lon – longitude), elevation (Elev, m.asl), number of trees, mean tree age, start and end of the chronology, the average maximum and minimum temperatures (TMAX and TMIN) and precipitation (PCP), interseries correlation (rbar), expressed population signal (eps) and sensitivity (sens).

CODE	Lat	Lon	Elev.	Nr. Trees	Mean age	Start	End	TMAX	TMIN	PCP	rbar	eps	sens
EDB03	48.09	8.39	720	55	184	1826	2017	10.86	2.78	952	0.423	0.985	0.232
EDI00	50.42	7.26	330	51	87	1928	2020	12.39	4.96	623	0.639	0.994	0.354
EDK01	50.12	9.01	118	47	129	1878	2016	13.56	6.10	730	0.44	0.987	0.303
EDL03	50.07	7.51	518	32	122	1883	2016	11.55	4.09	704	0.523	0.986	0.258
EDN00	50.01	8.19	139	94	170	1827	2016	13.58	6.17	590	0.422	0.993	0.281
EDO02	49.95	9.00	150	35	115	1891	2014	13.52	6.05	675	0.401	0.978	0.264
EDO03	49.98	8.68	140	47	159	1843	2015	13.62	6.16	738	0.489	0.989	0.297
EDP01	49.34	8.11	490	40	109	1839	2011	12.25	4.66	627	0.517	0.988	0.293
EDP05	49.28	8.01	565	50	143	1862	2016	12.14	4.53	847	0.388	0.985	0.281
EDP07	49.33	8.38	106	48	122	1862	2013	14.21	6.64	669	0.468	0.988	0.337
EDP08	49.24	8.05	363	48	125	1870	2014	12.88	5.28	863	0.334	0.979	0.265
EDU05	49.62	6.71	383	49	109	1902	2014	12.53	4.87	818	0.584	0.993	0.263
EDU07	49.70	7.40	354	45	133	1871	2018	12.25	4.69	761	0.554	0.991	0.352
EDW09	50.70	8.23	334	56	144	1856	2012	11.78	4.49	743	0.35	0.984	0.295
EDW12	50.46	8.22	230	27	145	1856	2017	12.70	5.37	812	0.389	0.972	0.286
HDL00	50.01	8.19	140	86	148	1882	2018	13.58	6.17	590	0.397	0.991	0.306
KD001	49.34	8.11	460	49	116	1840	2011	12.25	4.66	627	0.424	0.986	0.271
KD002	49.34	8.12	490	42	142	1832	2011	13.10	5.53	581	0.491	0.988	0.286
KD003	49.33	8.11	500	124	116	1859	2011	12.39	4.81	623	0.234	0.987	0.257

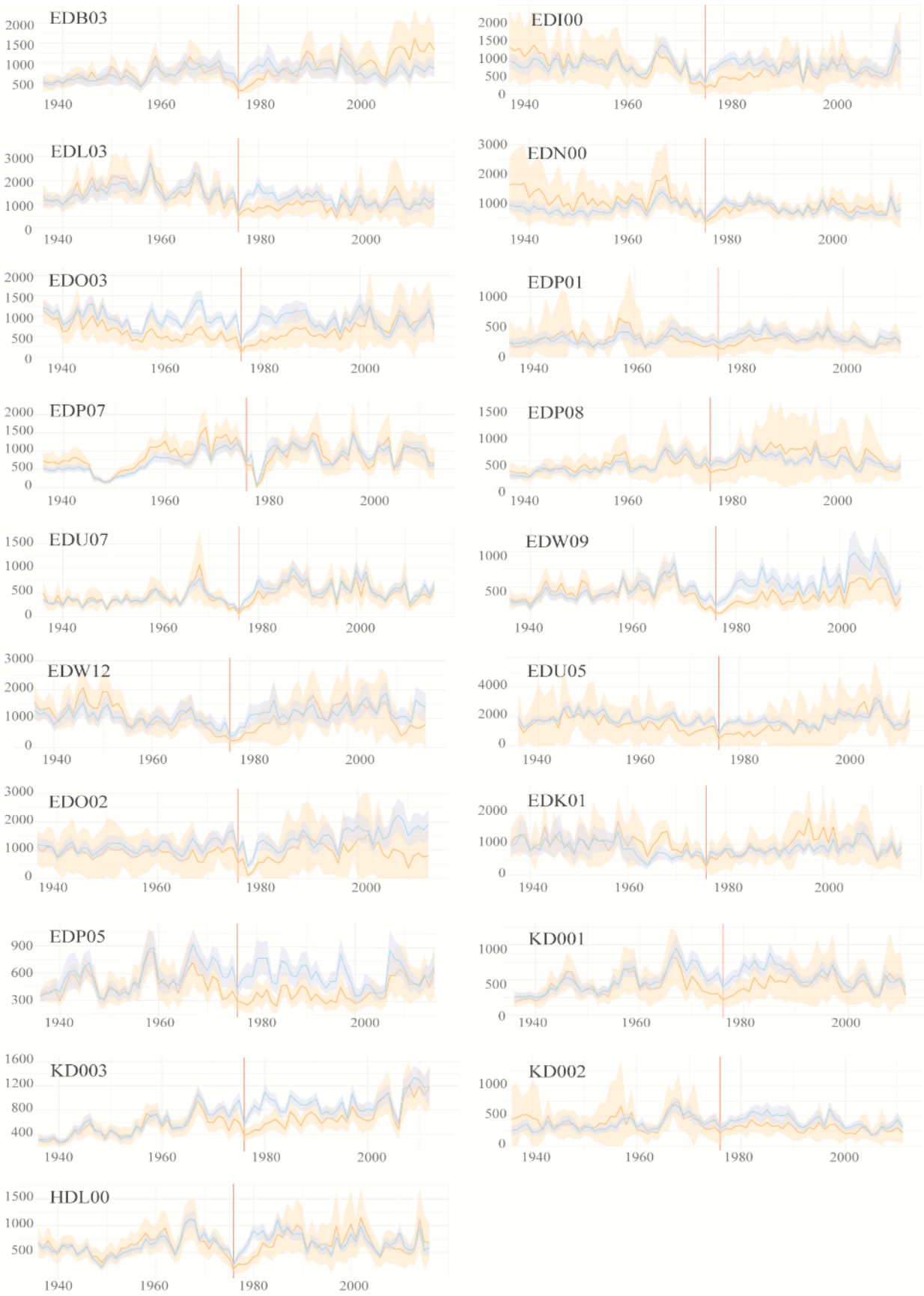
Supplementary Table 2. Mean age and standard deviation (sd) in years of TA and Control trees groups.

CODE	Group	Mean age	sd
EDB03	Control	183.14	6.05
	TA	187.57	3.57
EDI00	Control	87.26	4.36
	TA	87.88	5.25
EDK01	Control	128.60	6.70
	TA	131.40	2.51
EDL03	Control	122.58	7.29
	TA	123.71	9.74
EDN00	Control	171.07	22.96
	TA	166.85	27.66
EDO02	Control	115.39	6.96
	TA	117.50	4.04
EDO03	Control	155.88	12.20
	TA	159.88	9.42
EDP01	Control	110.95	28.34
	TA	101.33	32.62
EDP05	Control	143.32	10.59
	TA	142.67	6.24
EDP07	Control	122.41	8.50
	TA	124.78	5.12
EDP08	Control	125.02	11.83
	TA	127.50	8.07
EDU05	Control	109.27	3.12
	TA	109.00	2.16
EDU07	Control	132.54	6.54
	TA	134.80	6.65
EDW09	Control	143.86	12.60
	TA	146.31	11.01
EDW12	Control	145.10	15.02
	TA	146.29	7.78
HDL00	Control	150.47	24.02
	TA	137.87	26.35
KD001	Control	117.26	19.10
	TA	115.67	25.47
KD002	Control	149.67	29.57
	TA	138.80	26.67
KD003	Control	118.91	19.66
	TA	109.79	20.24

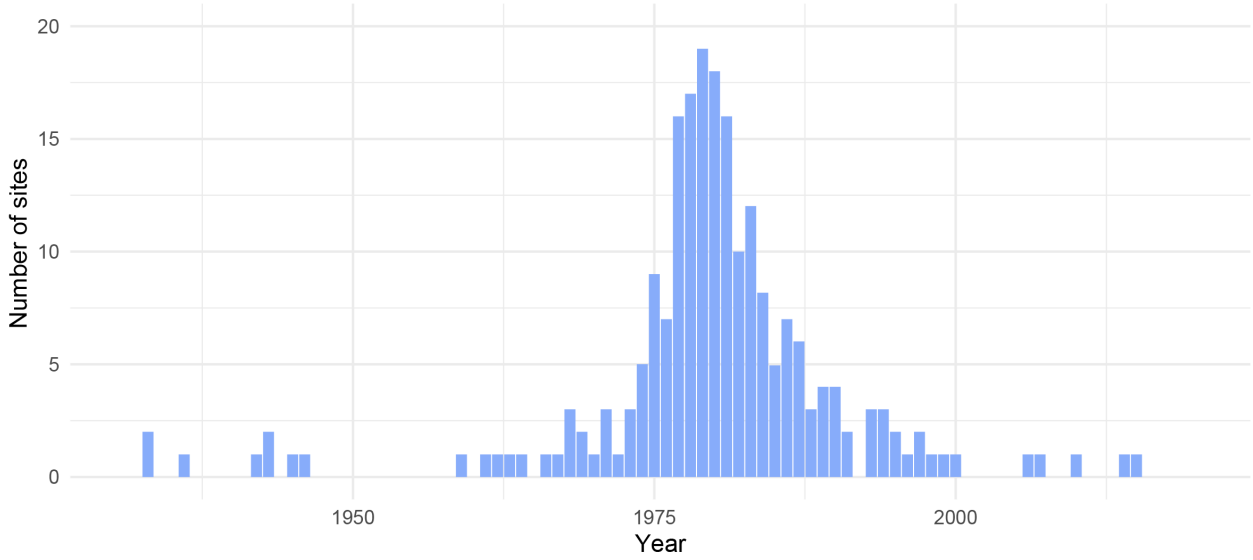
Supplementary Figure 1. Correlation matrix between the percentage of temporarily affected (TA) trees and site-variables: Elevation, mean maximum temperature (TMAX), precipitation (PCP), relative growth changes before/after 1976 in TA trees (BAI change TA), relative growth changes before/after 1976 in control trees (BAI change C), mean recovery period for TA trees (mrp TA), mean recovery period in control trees (mrp C), mean basal area increment (mean BAI), and April-September SPEI in 1976 (spei AMJJAS). Only significant correlations are shown.



Supplementary Figure 2. Site-specific tree growth patterns of temporarily affected trees and control trees, as shown in Figure 2.



Supplementary Figure 3. Number of forest stands displaying significant differences in mean BAI between TA and control trees per year (Student's t-test $p<0.001$).



Supplementary Figure 4. Climate-growth correlations coefficients before and after 1976 for all trees together (grey), temporarily suppressed trees (orange) and control trees (light blue), related to precipitation (upper panel), maximum temperature (middle panel) and SPEI (lower panel). The variability between sites can be seen in the boxplots, and letters refer to different monthly aggregations, from January (J) to December (D).