Supplementary file 2: The main statistics of the entire and crossdated datasets

Comparison of mean time series of measurements of the initially used (24 trees), eliminated (6 trees) and complete datasets (30 trees) are shown in Table A. Generally, most of the time series of the initial 24 tree datasets corresponded to normal distribution as determined by Shapiro-Wilk test (p-value > 0.05); however, mean time series of the eliminated six trees mostly showed weak or no conformity to normal distribution (p-value < 0.05). A half of mean series of 30-tree datasets did not conform to normal distribution. Hence a non-parametric Wilcoxon test was applied for the comparison of the mean time series of measurements amongst the datasets. For all tree-ring parameters, significant differences were observed between the datasets of the initial (24 trees) and eliminated (6 trees) and the complete datasets (30 trees). Most parameters, differed between the datasets of fertilized trees, but tree-ring width differed between the datasets of control trees. The eliminated trees showed higher maximum density, mean density of earlywood, mean density of latewood, mean tree-ring density, but lower proportion of latewood and narrower tree-ring widths. Hence, the elimination of samples did not result in false negative effect; vice versa, in our opinion, the use of all samples (30 trees) would even overestimate most measurements and the effect of fertilization. Still, in our opinion, the observed differences, at least partially, arise from the imprecise and unconvincing dating of the eliminated datasets due to age trends present in tree-ring data. This was apparent also when tree-ring parameters were compared on annual basis (Fig. A). When complete datasets were used, differences in tree-ring width, proportion latewood, maximum and latewood density between fertilized and control were significant for longer period even up to 2001, likely due to lag in time series as suggested by weaker agreement between the pooled (mean) time series. When the 24 tree datasets, which were all crossdated, were used, mean time series showed more expressed annual variation that was more synchronous between groups. This was also supported by statistically significant differences which appeared in some years that might not be related to fertilization e.g. for proportion of latewood in 2004 and 2006 and for maximum and earlywood density in 2011. These differences obviously were caused by imprecise dating of the eliminated series as mean time series of measurements in these years were diverging.

Table A. Basic statistics for mean time series of measurements for datasets of datasets of 24 (used samples), 6 (eliminated samples) and 30 trees (whole datasets). Mean values in bold denote significant differences (determined by Wilcoxon test) from the relevant reference (dataset of 24 trees) for fertilized and control trees as denoted by letters a and b, respectively. Norm. – p-values of normality of mean time series estimated by Shapiro-Wilk test.

| Dataset, samples	Fertilized	Min	Max	Mean with conf. int.	Median	St. dev.	Norm.
Maximum density, kg m^{-3}							
24	Yes	767.68	876.88	830.69±9.67a	831.88	24.44	0.26
24	No	739.28	866.33	808.92±15.42	811.00	38.98	0.07
6	Yes	697.00	1057.50	**974.99±26.72a**	989.50	67.54	**< 0.001**
6	No	683.00	894.67	810.64±16.71	822.00	42.24	0.06
30	Yes	791.78	904.70	**858.5±11.39a**	865.45	28.80	**0.01**
30	No	732.92	857.97	809.07±13.26	813.68	33.51	0.36
Mean density of earlywood, kg m^{-3}							
24	Yes	324.63	457.96	401.15±11.36a	405.83	28.73	0.80
24	No	321.38	452.09	398.17±11.97	396.68	30.26	0.31
6	Yes	361.00	499.83	**427.79±13.09a**	426.67	33.08	0.91
6	No	274.50	492.33	392.06±21.48	404.17	54.30	0.18
30	Yes	334.24	466.33	**405.93±11.15a**	410.00	28.18	0.78
30	No	306.58	452.11	396.6±12.34	401.50	31.19	0.33
Mean density of latewood, kg m^{-3}							
24	Yes	636.89	723.50	689.88±9.04a	694.42	22.85	0.09
24	No	595.39	719.79	669.74±15.11	665.91	38.20	0.07
6	Yes	584.50	884.50	**814.57±23.75a**	827.50	60.04	**<0.01**
6	No	535.50	754.50	686.62±18.16	694.83	45.91	**0.03**
30	Yes	632.22	746.73	**713.99±11.28a**	723.93	28.50	**<0.01**
30	No	587.58	724.60	673.04±13.81	676.82	34.91	0.41
Mean tree-ring density, kg m^{-3}							
24	Yes	445.79	542.88	489.23±9.22a	485.88	23.30	0.51
24	No	453.96	542.50	494.82±9.55	495.96	24.14	0.54
6	Yes	424.00	615.50	**513.22±12.99a**	512.00	32.83	**<0.01**
6	No	450.50	556.50	493.65±10.58	489.17	26.75	0.30
30	Yes	455.70	557.40	**493.78±9.09a**	489.86	22.98	0.34
30	No	460.17	535.60	494.16±8.36	490.14	21.14	0.32
Proportion of latewood							
24	Yes	0.19	0.51	0.32±0.03a	0.28	0.08	**0.01**
24	No	0.27	0.55	0.37±0.03	0.35	0.07	0.07
6	Yes	0.12	0.38	**0.22±0.03a**	0.20	0.07	0.14
6	No	0.16	0.59	0.35±0.05	0.33	0.12	0.41
30	Yes	0.18	0.48	**0.30±0.03a**	0.27	0.08	**0.01**
30	No	0.27	0.56	0.37±0.03	0.35	0.07	0.05
Tree-ring width, 10^{-2} mm							
24	Yes	168.74	564.29	360.76±49.3	393.83	124.63	0.10
24	No	177.13	681.60	341.96±51.14b	317.55	129.28	**<0.01**
6	Yes	225.50	637.00	348.16±41.66	318.00	105.32	**<0.01**
6	No	141.17	747.60	**297.63±61.17b**	246.17	154.64	**<0.01**
30	Yes	180.48	559.14	359.2±46.51	362.83	117.58	0.20
30	No	172.87	694.80	**332.99±52.15b**	302.07	131.82	**<0.01**
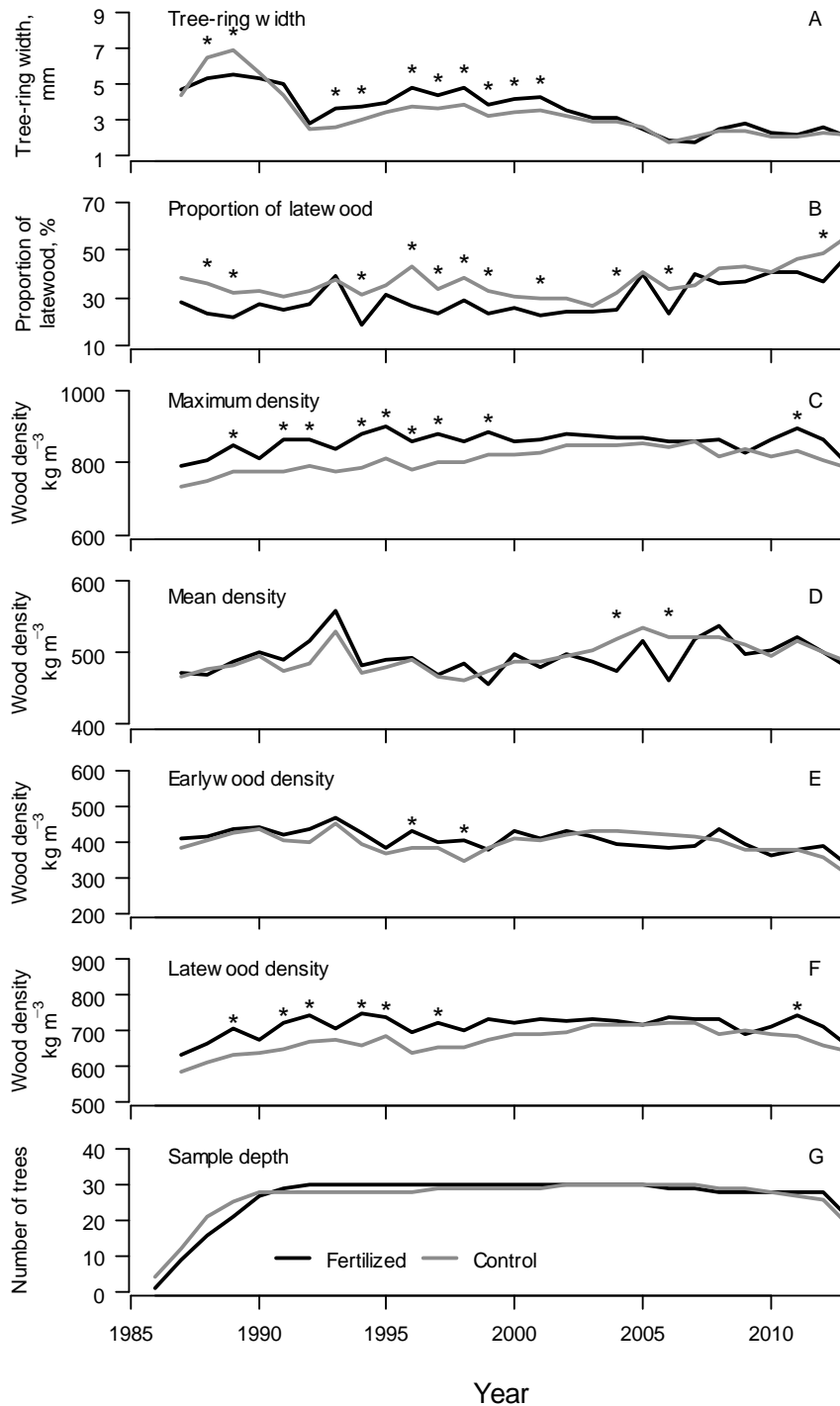
Fig. A. Mean measurement (tree-ring width (A); proportion of latewood in tree-ring (B); maximum (C) and mean (D) wood density of tree-ring; earlywood (E) and latewood (F) density) time series and sample depth (G) of fertilized (black line) and control (grey line) Norway spruce trees for complete datasets of 30 trees (including trees with inconsistent dating) each. Asterisks indicate significance (p-value < 0.05) of differences between fertilized and control trees.