Supporting Information

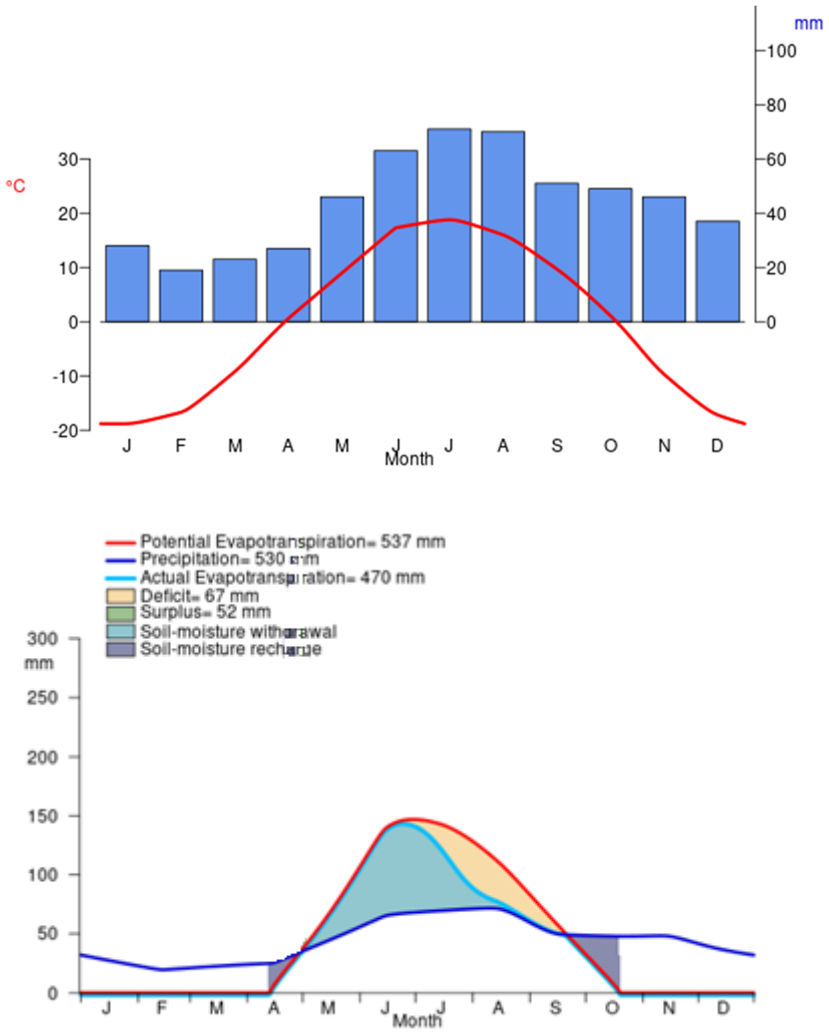

Figure S1. Monthly climate conditions and climate water balance in the study area according to data from the Tomsk meteorological station (1950–2019 period). The climate water balance was calculated using the AET calculator developed by Daniel Gavin and based on the modified Thornthwaite method (this program is available at https://pages.uoregon.edu/dgavin/software.html).

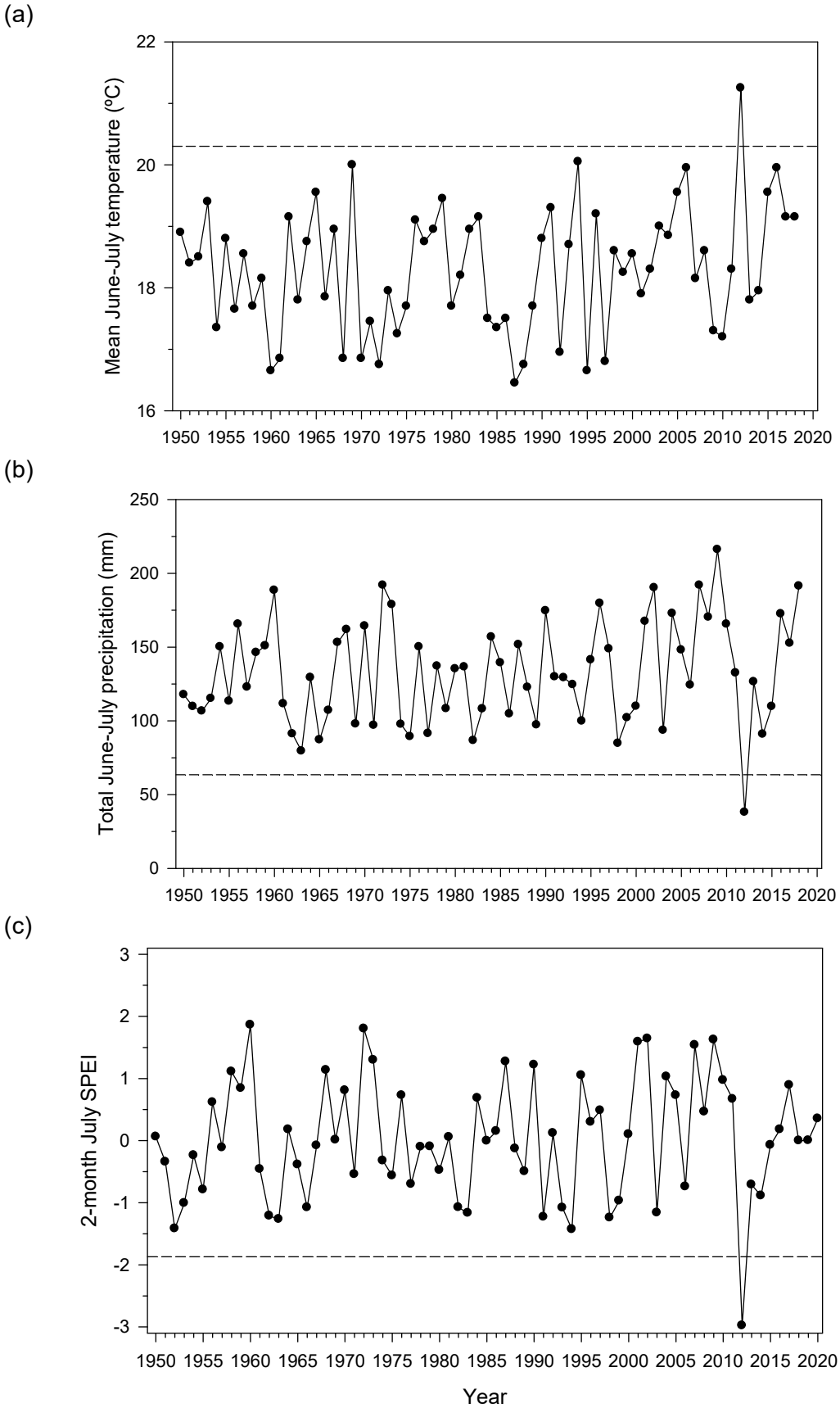

Figure S2. (a) June-July mean temperature, (b) total precipitation, and 2-month July SPEI values in the study area. The dashed lines indicate the 0.05 significance level thresholds to highlight the 2012 summer heat wave and drought.

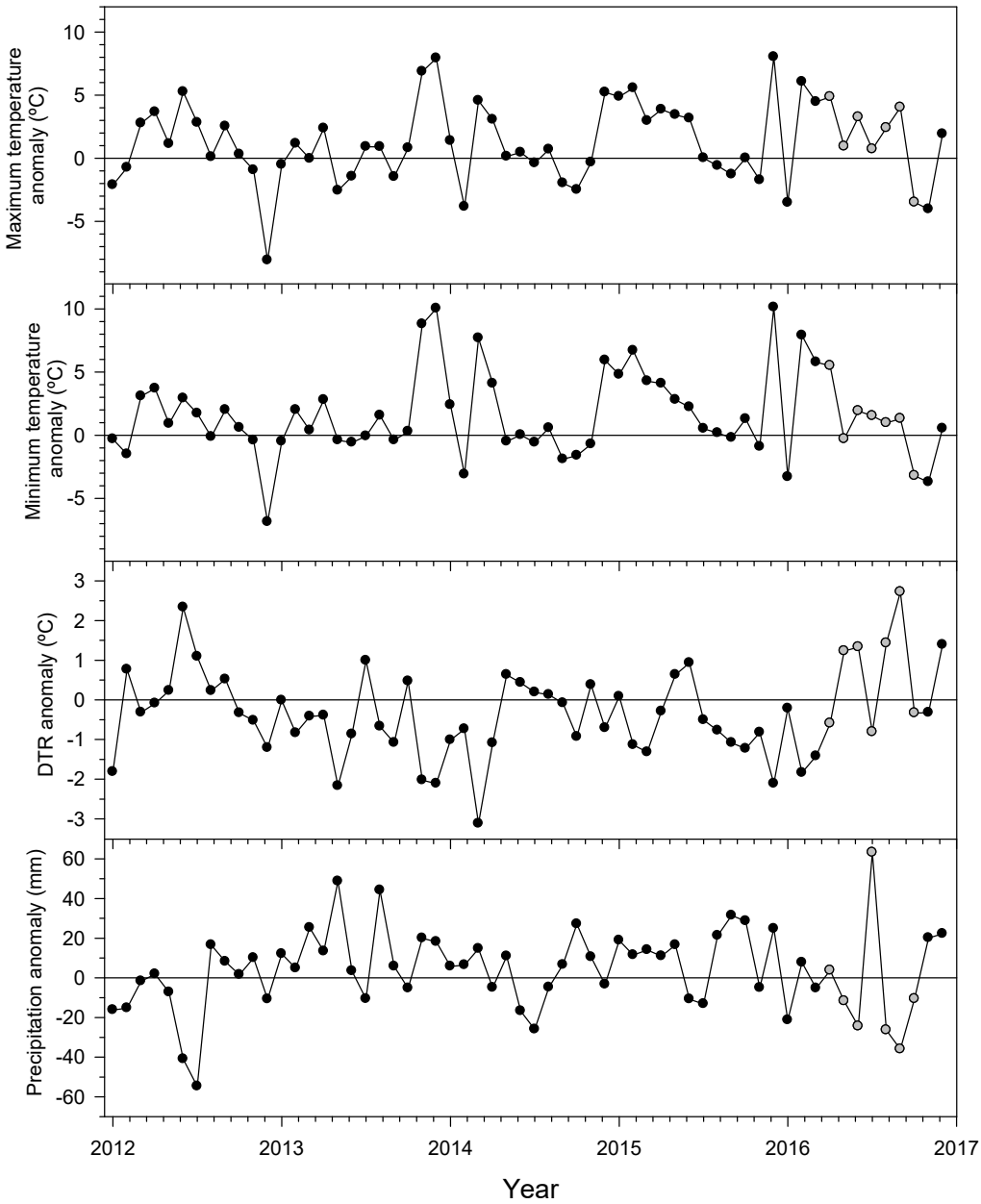

Figure S3. Monthly climatic anomalies from 2012 to 2017 compared with 1981–2010 averages (maximum and minimal temperatures, diurnal temperature range – DTR) or totals (precipitation). The grey symbols indicate the period when the SSM outbreak was assumed to occur.

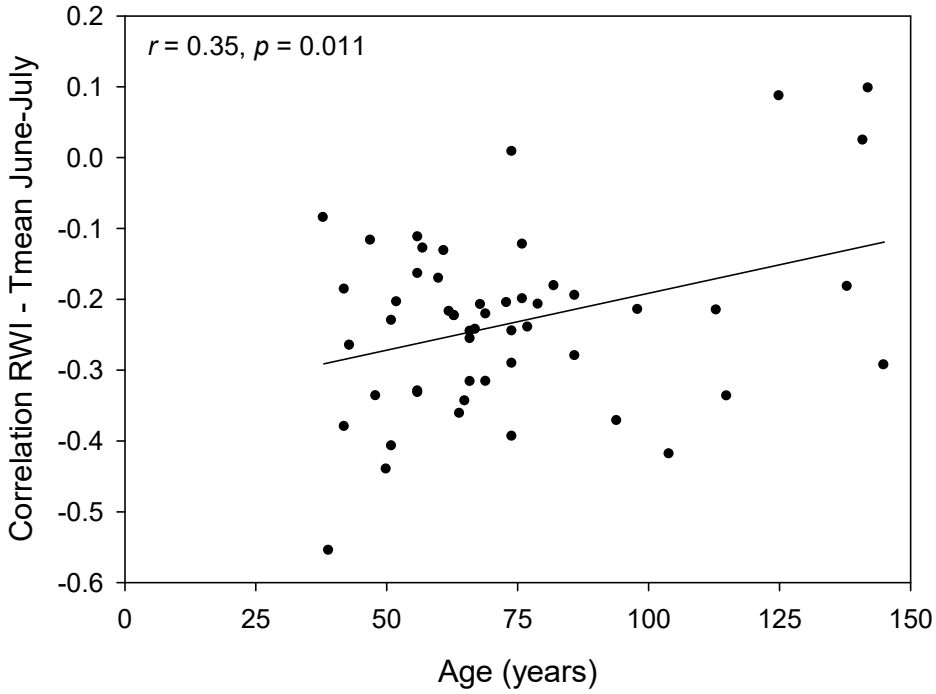

Figure S4. Positive relationship found between tree age estimated at 1.3 m and the Pearson correlation obtained by relating individual, indexed ring-width series vs. mean June-July temperatures.

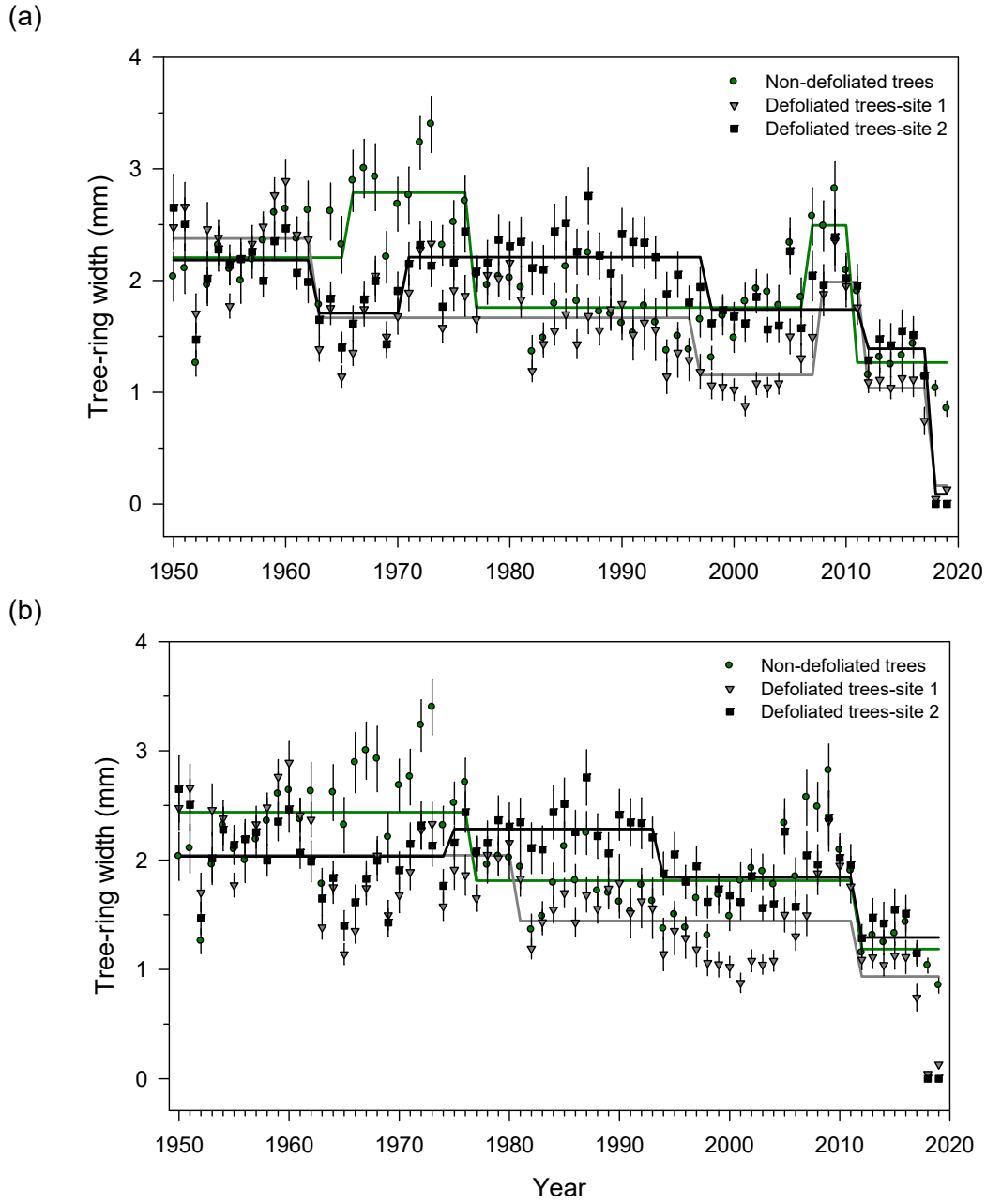

Figure S5. Regime shift analyses of spruce tree growth patterns in the three study stands considering (a) 5- and (b) 15-year cutoff lengths, respectively.