

Supplementary Materials:

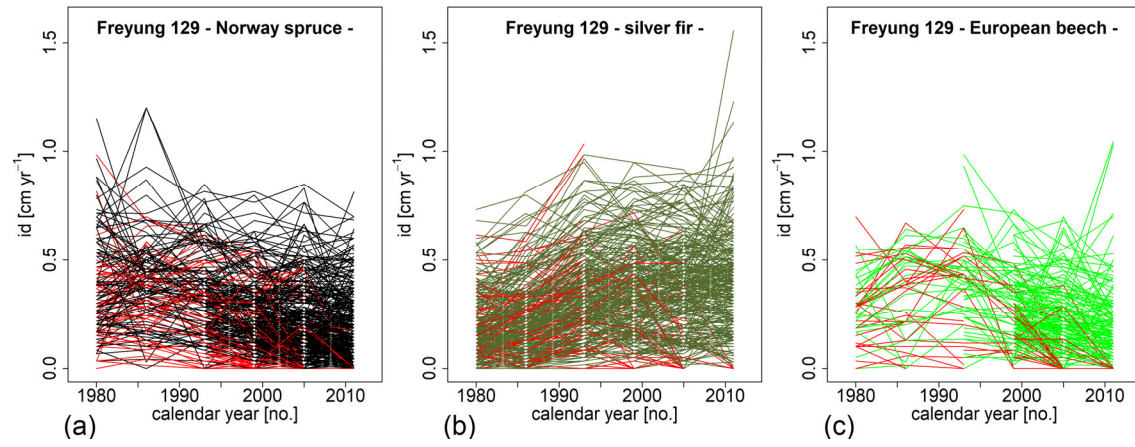


Figure S1. Periodical mean annual stem diameter growth of (a) Norway spruce, (b) silver fir, and (c) European beech from 1980-2018 on all plots (FRY 129/11, 12, 21, 22, 31, and 32) of the selection forest experiment Freyung 129. Growth rates plotted over the begin of the respective survey periods, i.e., the growth plotted over 1980 refers to the period 1980-1985, the growth plotted over 2011 refers to the period 2011-2018. The red trajectories represent the removal trees.

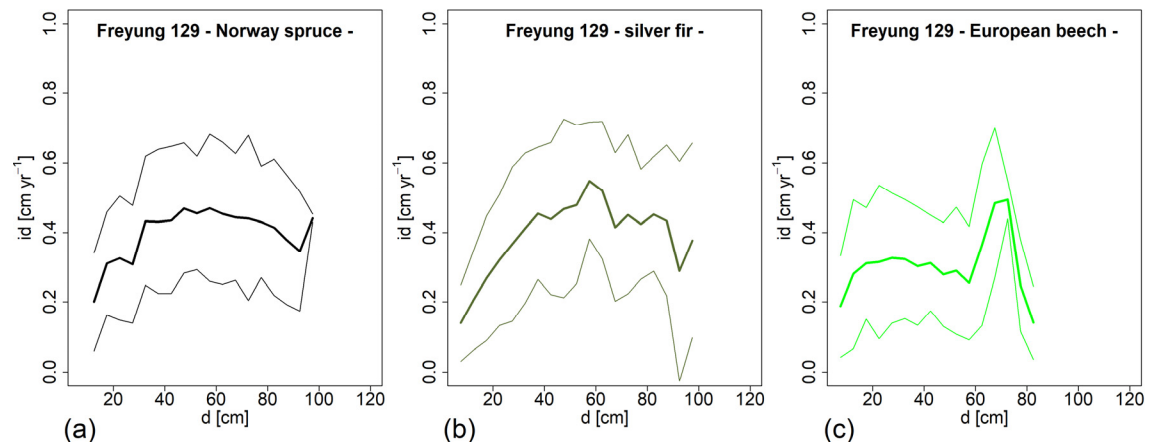


Figure S2. Periodical mean annual stem diameter growth (mean \pm standard deviation) plotted over stem diameter at the beginning of the respective growth periods. The courses of growth are shown for all (a) Norway spruces, (b) silver firs, and (c) European beeches on the selection forest experiment Freyung 129 for the survey from 1980-2018.

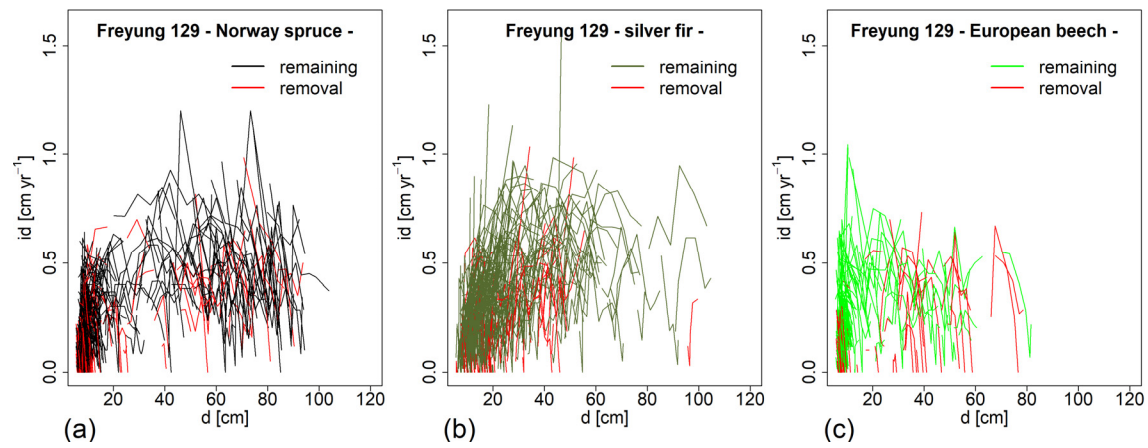


Figure S3. Periodical mean annual stem diameter growth plotted over stem diameter at the beginning of the respective growth periods. The courses of growth are shown for all (a) Norway spruces, (b) silver firs, and (c) European beeches on the selection forest experiment Freyung 129 for the surveys from 1980-2018. The red lines represent the removed trees.

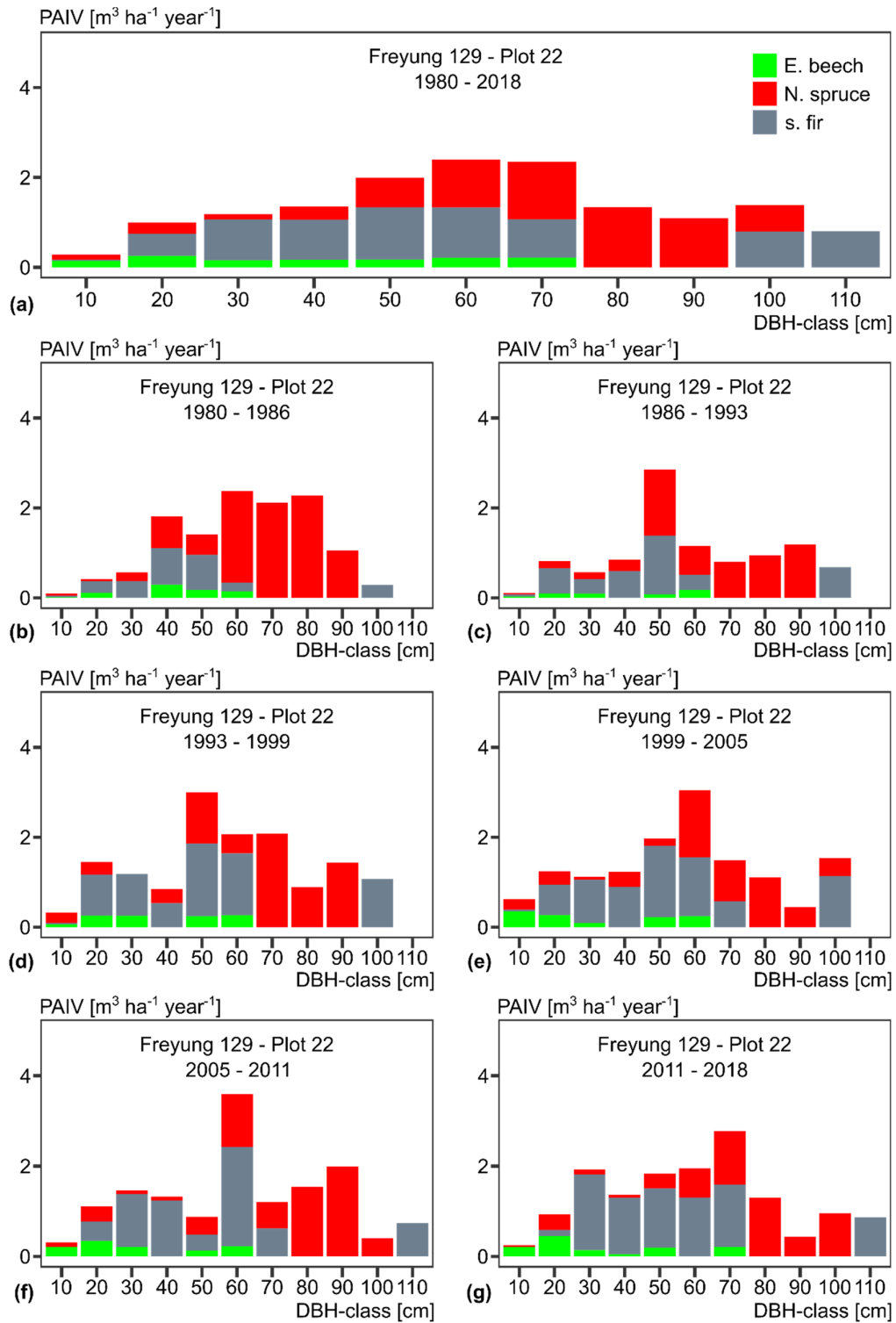


Figure S4. Species-specific periodic annual volume increment (PAIV [$\text{m}^3 \text{ha}^{-1} \text{year}^{-1}$]) distribution over DBH-classes of the plot Freyung 129/22. (a) Mean values for the survey from 1980-2018; (b) - (g) PAIV distributions in the respective observation periods; (b) 1980-1986; (c) 1986-1993; (d) 1993-1999; (e) 1999-2005; (f) 2005-2011; (g) 2011-2018. Green, European beech; grey, silver fir; red, Norway spruce.

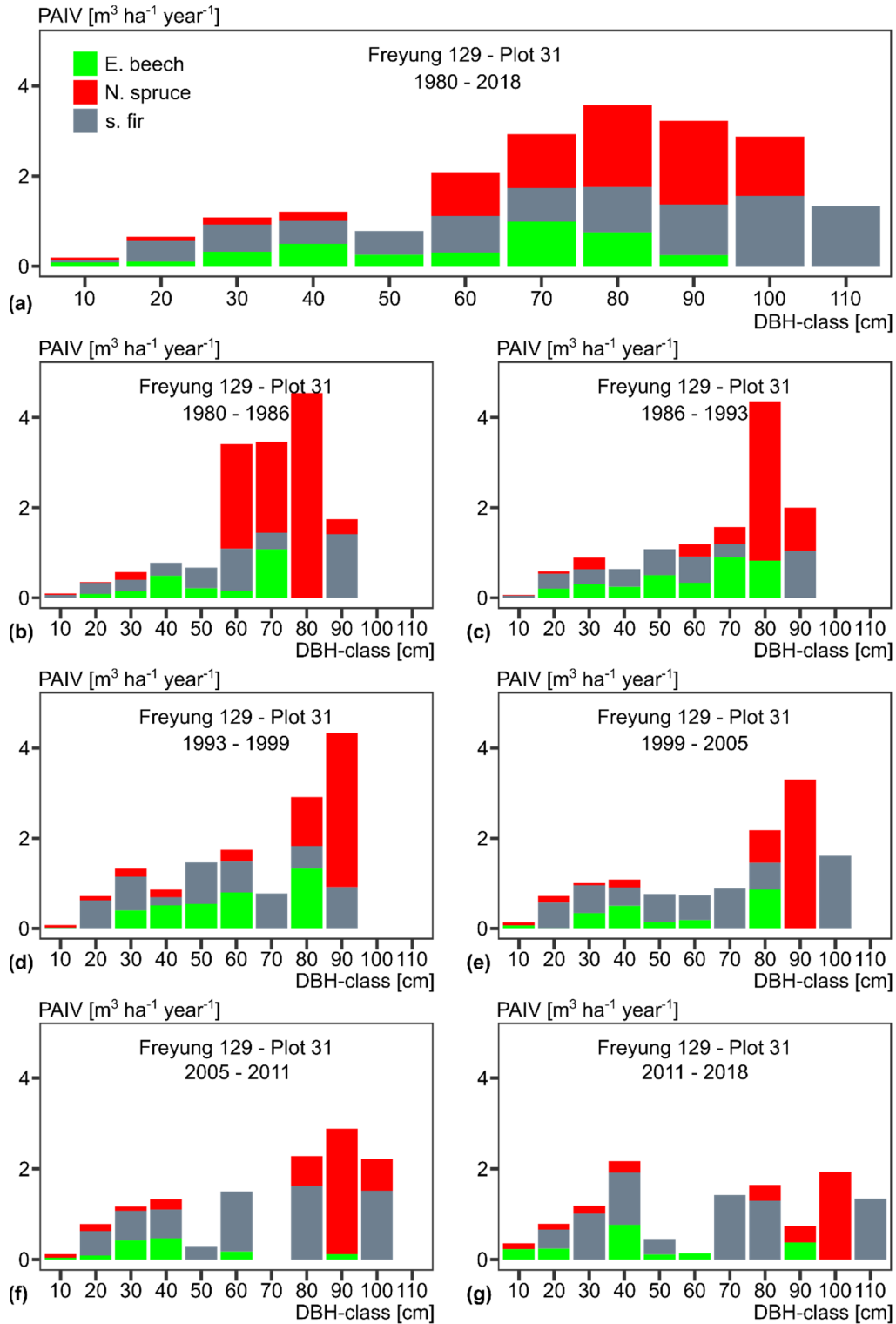


Figure S5. Species-specific periodic annual volume increment (PAIV [$\text{m}^3 \text{ha}^{-1} \text{year}^{-1}$]) distribution over DBH-classes of the plot Freyung 129/31. (a) Mean values for the survey from 1980-2018; (b) - (g) PAIV distributions in the respective observation periods; (b) 1980-1986; (c) 1986-1993; (d) 1993-1999; (e) 1999-2005; (f) 2005-2011; (g) 2011-2018. Green, European beech; grey, silver fir; red, Norway spruce.

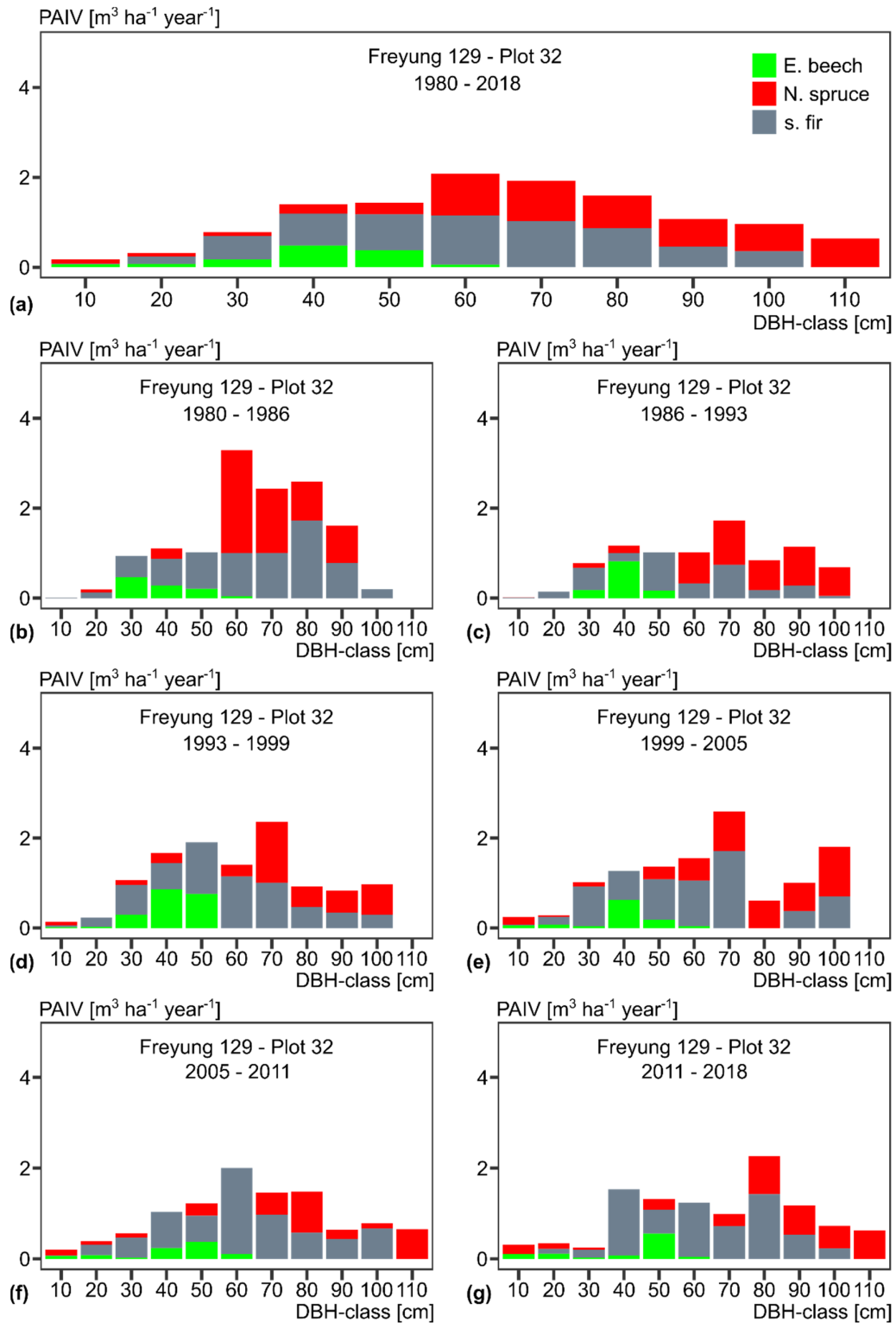


Figure S6. Species-specific periodic annual volume increment (PAIV [$\text{m}^3 \text{ha}^{-1} \text{year}^{-1}$]) distribution over DBH-classes of the plot Freyung 129/32. (a) Mean values for the survey from 1980-2018; (b) - (g) PAIV distributions in the respective observation periods; (b) 1980-1986; (c) 1986-1993; (d) 1993-1999; (e) 1999-2005; (f) 2005-2011; (g) 2011-2018. Green, European beech; grey, silver fir; red, Norway spruce.

Table S1. Species-specific estimates for modelling tree height in dependence of stem diameter. The model function was $\ln(h) = a_0 + a_1 \times \ln(d)$. All regression coefficients and models were significant at the level of $p < 0.001$.

species	n	a_0	$SE(a_0)$	p-value	a_1	$SE(a_1)$	p-value	R ²
N. spruce	1578	0.31	0.01	<0.001	0.80	0.01	<0.001	0.95
s. fir	1511	0.16	0.02	<0.001	0.86	0.01	<0.001	0.92
E. beech	717	0.96	0.03	<0.001	0.62	0.00	<0.001	0.85