

Table S1 Table of monitoring dates. At the Schwäbische Alb in early summer 2013 at the beech unmanaged stand we could not take $\Delta^{13}\text{C}$ samples and we could not measure the transpiration rates because of rain. In late summer 2013 at beech unmanaged and at the beech managed stand we could not measure the transpiration rates because the device was broken. We did not measure stand Schorfheide beech unmanaged, because the understory coverage was <0.5%.

stand ID_a	spring 2012 (1 month)	late summer 2012 (6 months)	early summer 2013 (14-15 months)	late summer 2013 (18 months)
Scm	11.4.	1.9.	10.6.	30.9.
Sbm	14.4.	30.8.	28.5.	5.9.
Sbu	coverage <0.5%	coverage <0.5%	coverage <0.5%	coverage <0.5%
Hcm	23.4.	7.9.	17.5.	28.8.
Hbm	22.4.	8.9.	16.5.	26.8.
Hbu	21.4.	9.9.	15.5.	27.8.
Acm	8.4.	4.9.	13.6.	10.9.
Abm	19.4./ rain	3.9.	12.6.	11.9. / device was broken
Abu	17.4.	5.9.	rain	12.9./device was broken

^a S = Schorfheide-Chorin; H = Hainich-Dün; A = Schwäbische Alb; bu = beech, unmanaged; bm = beech, managed; cm = conifer, intensively managed;