Supplementary Material 3 to The short-term effects of experimental forestry treatments on site conditions in an oak-hornbeam forest

Bence Kovács[1,2,3]*, Flóra Tinya[1], Erika Guba[1], Csaba Németh[2], Vivien Sass[4], András Bidló[4], Péter Ódor[1,2]

[1] MTA Centre for Ecological Research, Institute of Ecology and Botany, Alkotmány út 2-4, H-2163 Vácrátót, Hungary

[2] MTA Centre for Ecological Research, GINOP Sustainable Ecosystems Research Group, Klebelsberg Kuno utca 3, H-8237 Tihany, Hungary

[3] Department of Plant Systematics, Ecology and Theoretical Biology, Eötvös Loránd University, Pázmány Péter sétány 1/C, H-1117 Budapest, Hungary

[4] University of Sopron, Institute of Environmental and Earth Sciences, Bajcsy-Zsilinszky utca 4, H-9400 Sopron, Hungary

* Correspondence: kovacs.bence@okologia.mta.hu; Tel.: +36-28-360-122/107

Supplementary Material 3 – Effect of treatments on microclimate, litter and soil variables in 2014 (pre-treatment year)

Table S3.1. The results of linear mixed effects models performed for site condition variables and the mean (± standard deviation) among the treatment levels in 2014. PAR: photosynthetically active radiation ($\mu Em^{-2}s^{-1}$); DIFN: relative diffuse light (%); T_{air}: air temperature (℃); RH: relative humidity (%); VPD: vapor pressure deficit (kPa); T_{soil}: soil temperature (℃); SWC: soil moisture (m^3/m^3); Litter mass: total mass of collected litter on the surface (gm^{-2}); Litter pH: litter pH in water; Litter moisture content: gravimetric moisture content of litter samples (%); Soil pH: soil pH in water; hy: Kuron's hygrscopicity (%); [SOC]: total soil carbon content (%); [N]: total nitrogen content (%); [P_{AL}]: concentration of AL-soluble phosphorus (mg/100 g soil); [K_{AL}]: concentration of AL-soluble potassium (mg/100 g soil). '*d*' refers to the difference from values measured in control plots. For modeling, 24-hour-means were used except in the case of PAR, where daytime (6:00-18:00 UTC) means were calculated. Treatment types: 'CC' – clear-cutting; 'G' – gap-cutting; 'P' – preparation cutting and 'R' – retention tree group. As fix factor treatment was used; block was random factor. F and p values of the model statistics are presented. Superscripts refer to significant differences among treatments (pairwise Tukey comparisons, alpha=0.05), treatment codes marked with bold indicates significant departures from control (alpha=0.05).

Dependent variable	F	p	CC	G	P	R
*d*PAR mean	2.217	0.0878	13.58 ± 27.64	3.09 ± 23.90	8.36 ± 26.72	9.22 ± 21.89
*d*PAR IQR	0.657	0.5794	23.94 ± 36.49	19.58 ± 26.72	24.63 ± 32.75	21.51 ± 26.93
dT_{air} mean	**6.943**	**0.0002**	0.004 ± 0.084 [a]	-0.011 ± 0.101 [a]	-0.042 ± 0.093 [ab]	-0.074 ± 0.101 [b]
dT_{air} IQR	0.234	0.8729	0.211 ± 0.090	0.201 ± 0.106	0.213 ± 0.099	0.216 ± 0.121
*d*RH mean	0.241	0.8677	0.194 ± 0.812	0.307 ± 1.181	0.243 ± 1.142	0.196 ± 0.961
*d*RH IQR	0.009	0.9608	1.770 ± 0.851	1.691 ± 0.791	1.793 ± 0.837	1.731 ± 0.853
*d*VPD mean	0.523	0.6671	-0.001 ± 0.018	-0.004 ± 0.024	-0.004 ± 0.022	-0.004 ± 0.021
*d*VPD IQR	0.078	0.9721	0.035 ± 0.023	0.033 ± 0.022	0.034 ± 0.021	0.035 ± 0.025
dT_{soil} mean	2.529	0.0588	0.148 ± 0.402	-0.019 ± 0.377	0.089 ± 0.356	-0.027 ± 0.422
dT_{soil} IQR	2.240	0.0852	0.467 ± 0.373	0.363 ± 0.266	0.379 ± 0.358	0.322 ± 0.240
*d*SWC mean	**7.404**	**0.0001**	0.004 ± 0.032 [ab]	0.014 ± 0.046 [b]	-0.02 ± 0.056 [c]	-0.006 ± 0.041 [ac]
*d*Litter mass	0.180	0.9090	-45.2 ± 245.76	-7.85 ± 189.22	-45.73 ± 294.44	6.45 ± 224.57
*d*Litter pH	0.755	0.5264	0.024 ± 0.271	-0.025 ± 0.156	-0.088 ± 0.163	0.052 ± 0.283
*d*Litter moisture	1.202	0.3223	1.066 ± 2.355	-0.172 ± 2.175	0.955 ± 2.761	1.596 ± 2.050
*d*Soil pH	2.458	0.0772	-0.003 ± 0.117	0.136 ± 0.189	0.003 ± 0.158	0.172 ± 0.301
*d*hy	1.481	0.2346	-0.006 ± 0.114	0.034 ± 0.131	0.086 ± 0.373	0.305 ± 0.592
d[SOC]	0.414	0.7437	0.325 ± 1.312	0.753 ± 1.227	0.448 ± 1.010	1.026 ± 1.914
d[N]	0.605	0.6160	0.005 ± 0.038	0.008 ± 0.042	-0.001 ± 0.035	0.024 ± 0.055
d[P_{AL}]	0.042	0.9885	-0.151 ± 1.210	0.023 ± 1.860	0.192 ± 2.102	0.618 ± 3.217
d[K_{AL}]	0.179	0.9095	-0.550 ± 4.734	-0.667 ± 3.865	-0.500 ± 4.843	0.308 ± 5.412