1   SUPPLEMENTARY INFORMATION

3   # Impacts of fire severity and salvage-logging on soil carbon fluxes in a

4   # boreal forest

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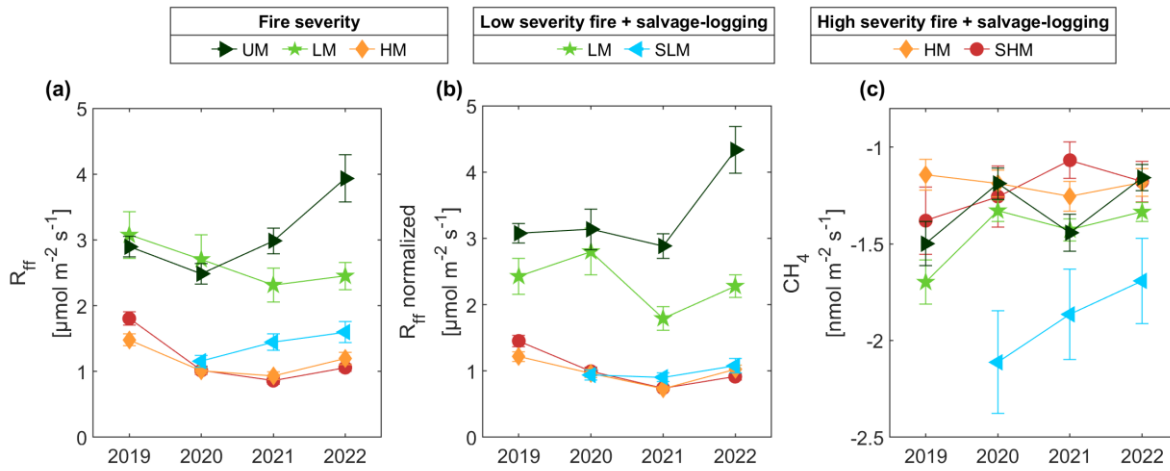
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19 Figure S1. July-August means (±SE) of forest floor respiration (R_{ff}), normalized R_{ff} (R_{ff_norm}) and soil

20 CH_4 flux for 2019-2022. R_{ff_norm} is normalized to soil temperature of 15 °C and 10% soil water content.

21 See Table 1 for site names.

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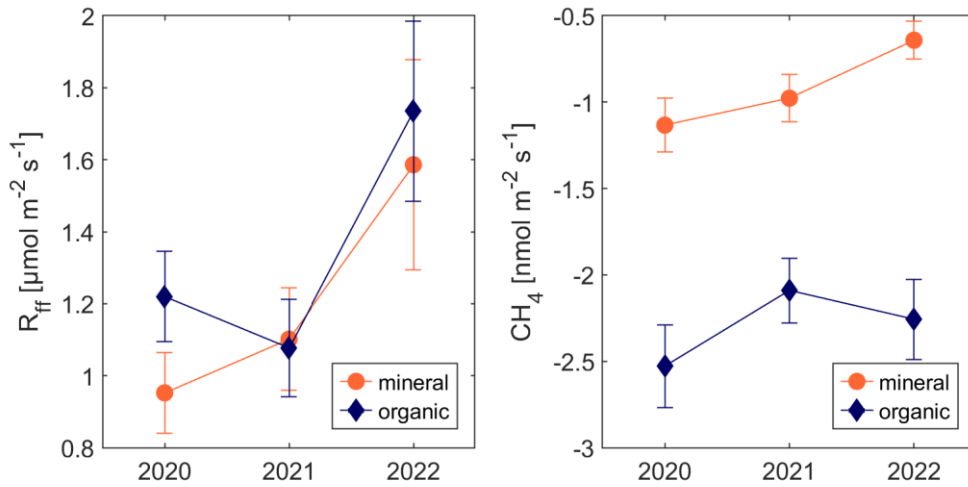
Table S1. Results of ANOVAs on the mixed effects models of the forest floor respiration flux data using only July-August 2019-2022 data. Low + SL is low-severity fire followed by salvage-logging, High + SL is high-severity fire followed by salvage-logging. Interactions were only included in the models if significant. The interaction of Site × Tsoil was not significant in any model. Tsoil = soil temperature at 5 cm depth, df = numerator degrees of freedom, denominator degrees of freedom. R^2_{marg} = marginal R^2 (variance explained by fixed effects), R^2_{con} = conditional R^2 (variance explained by the fixed and random effects), RMSE = root mean square error (μmol CO_2 m^{-2} s^{-1}). Statistically significant effects are marked in bold ($p < 0.05$).

Group	Site			Time			Tsoil			Site × Time			Model fit		
	df	F	p	df	F	p	df	F	p	df	F	p	R^2_{marg}	R^2_{con}	RMSE
Fire severity	2, 33	31.96	**<0.001**	1, 236	8.00	**0.005**	1, 236	13.46	**<0.001**	2, 236	8.72	**<0.001**	0.497	0.766	0.270
Low + SL	1, 22	10.22	**0.004**	1, 118	2.97	0.087	1, 118	3.83	0.053	-	-	-	0.220	0.757	0.261
High + SL	1, 22	0.004	0.953	1, 157	26.50	**<0.001**	1, 157	27.28	**<0.001**	1, 157	4.75	**0.031**	0.246	0.363	0.273

Table S2. Results of ANOVAs on the mixed effects models of the soil CH_4 flux data, using only July-August 2019-2022 data. Low + SL is low-severity fire followed by salvage-logging, High + SL is high-severity fire followed by salvage-logging. Interactions were only included in the models if significant. The interaction of Site × Time was not significant in any model. SWC is soil water content at 0-6 cm depth. df = numerator degrees of freedom, denominator degrees of freedom, R^2_{marg} = marginal R^2 (variance explained by fixed effects), R^2_{con} = conditional R^2 (variance explained by the fixed and random effects), RMSE = root mean square error (nmol CH_4 m^{-2} s^{-1}). Statistically significant effects are marked in bold ($p < 0.05$).

Group	Site			SWC			Time			Site × SWC			Model fit		
	df	F	p	df	F	p	df	F	p	df	F	p	R^2_{marg}	R^2_{con}	RMSE
Fire severity	2, 33	1.145	0.330	1, 237	30.778	**<0.001**	1, 237	1.013	0.315	-	-	-	0.090	0.617	0.213
Low + SL	1, 22	9.761	**0.005**	1, 117	19.477	**<0.001**	1, 117	0.262	0.610	1, 117	10.400	**0.002**	0.198	0.702	0.333
High + SL	1, 22	0.008	0.928	1, 158	5.204	**0.024**	1, 158	0.092	0.762	-	-	-	0.006	0.669	0.236

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43 Figure S2. Growing season mean (±SE) forest floor respiration (R_{ff}) and CH_4 fluxes at SLM (low-severity

44 fire, living trees salvage-logged), divided into collars where soil organic layer is intact ('organic') and

45 collars where the mineral soil is exposed due to the scarification ('mineral').

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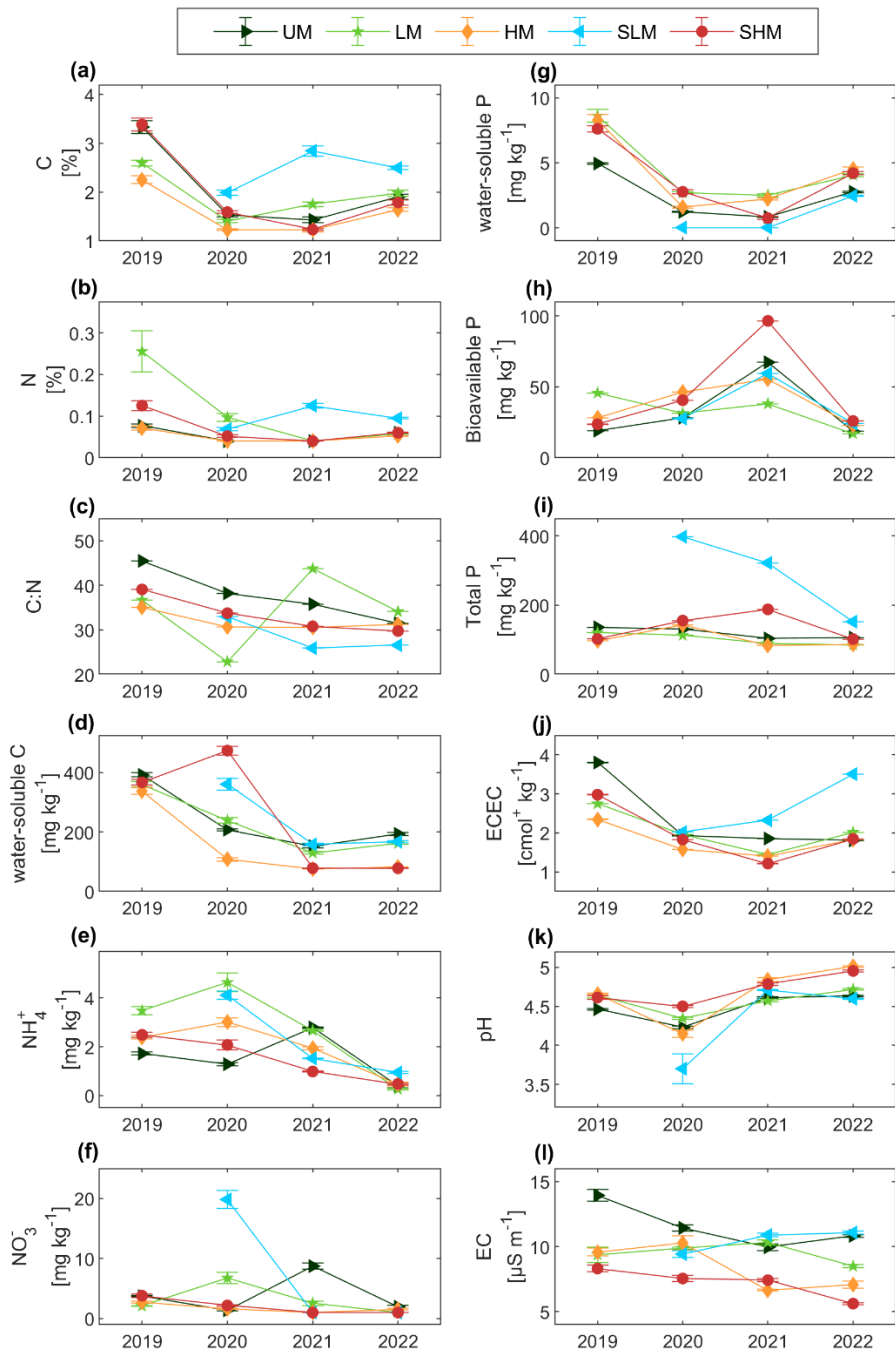
Figure S3. Time series of yearly mean (±SE) soil nutrient content in the mineral soil (0-2 cm depth) at all

sites. See Table 1 for site names.
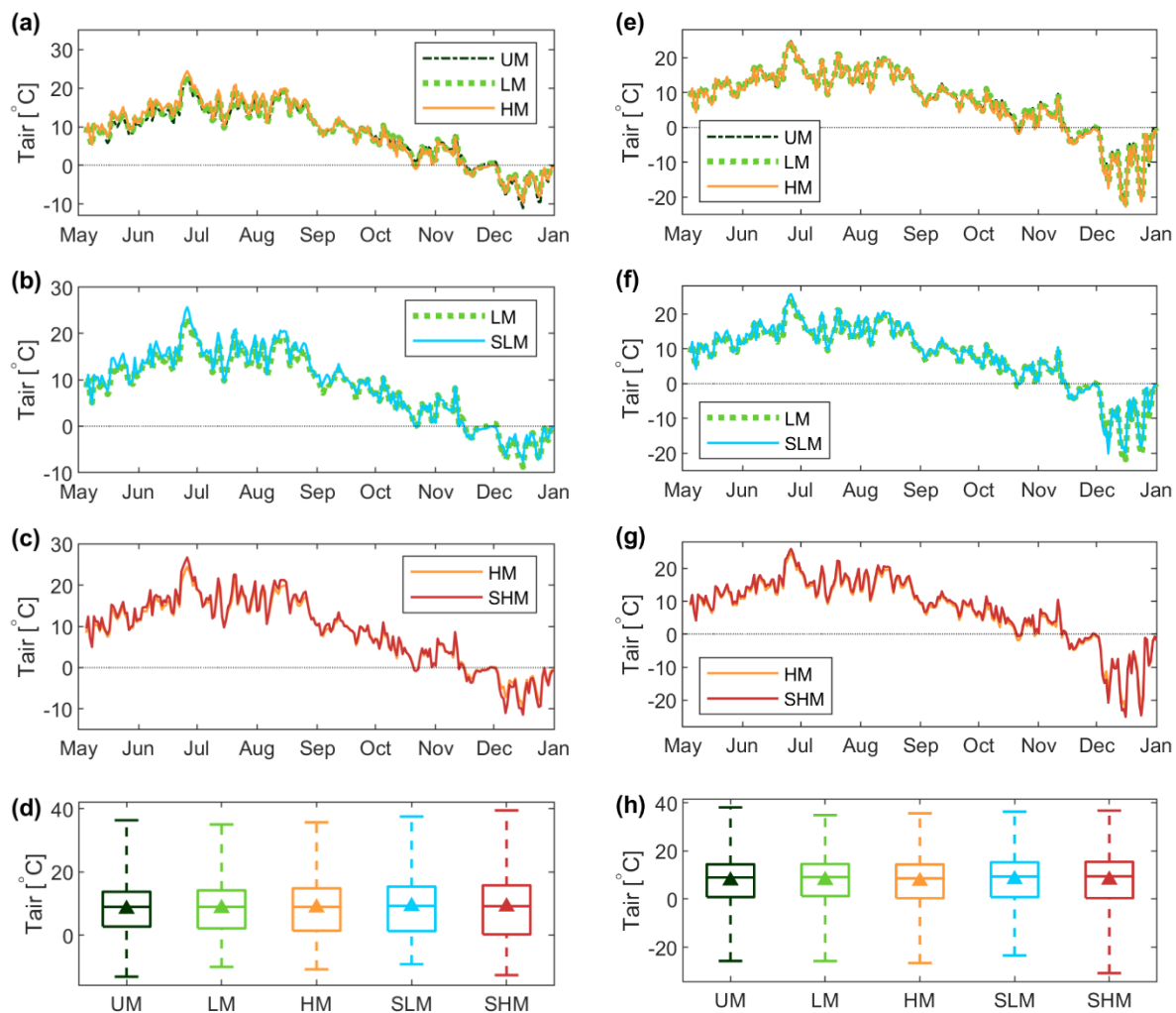
Figure S4. Daily mean and boxplot of air temperatures at 1.5cm above the surface (a-d) and 14 cm above the surface (e-h). In all boxplots the triangle shows the mean. See Table 1 for site names.
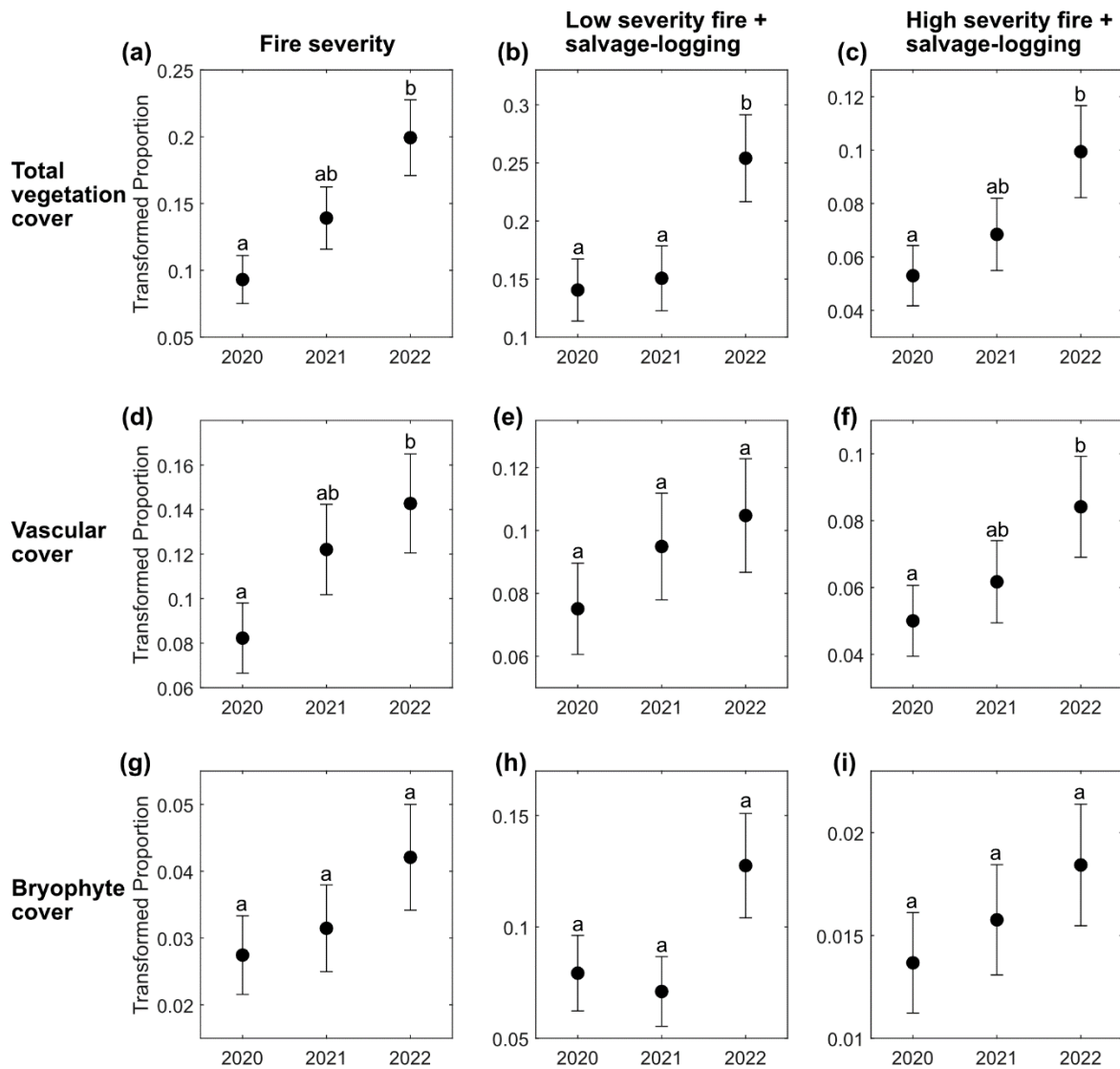
Figure S5. Modelled annual mean ± SE of total vegetation cover, vascular plant and bryophyte cover for each site group based on beta regressions. Different letters above the bars indicate significant differences between the years according to chi-square likelihood ratio tests.