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Long-term nitrogen fertilization alters microbial respiration sensitivity to temperature and moisture, potentially enhancing soil carbon retention in a boreal Scots pine forest

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Table S1. Goodness of fit statistics of NLS models $R_{h/SOC}(T, SWC)$ (Eq. 1) for control (CTR), and N-fertilized (N+) plots after 10-fold cross validation: the R-squared (R^2), the root mean square error (RMSE), the mean absolute error (MAE), and their standard deviation (SD). All values are in µg C g^{-1} SOC h^{-1}.

Treatment	R^2	R^2 SD	RMSE	RMSESD	MAE	MAESD
			µg C g^{-1} SOC h^{-1}			
CTR	0.43	0.17	15.34	3.1	11.49	2.59
N+	0.44	0.1	13.06	3.1	9.27	2.32

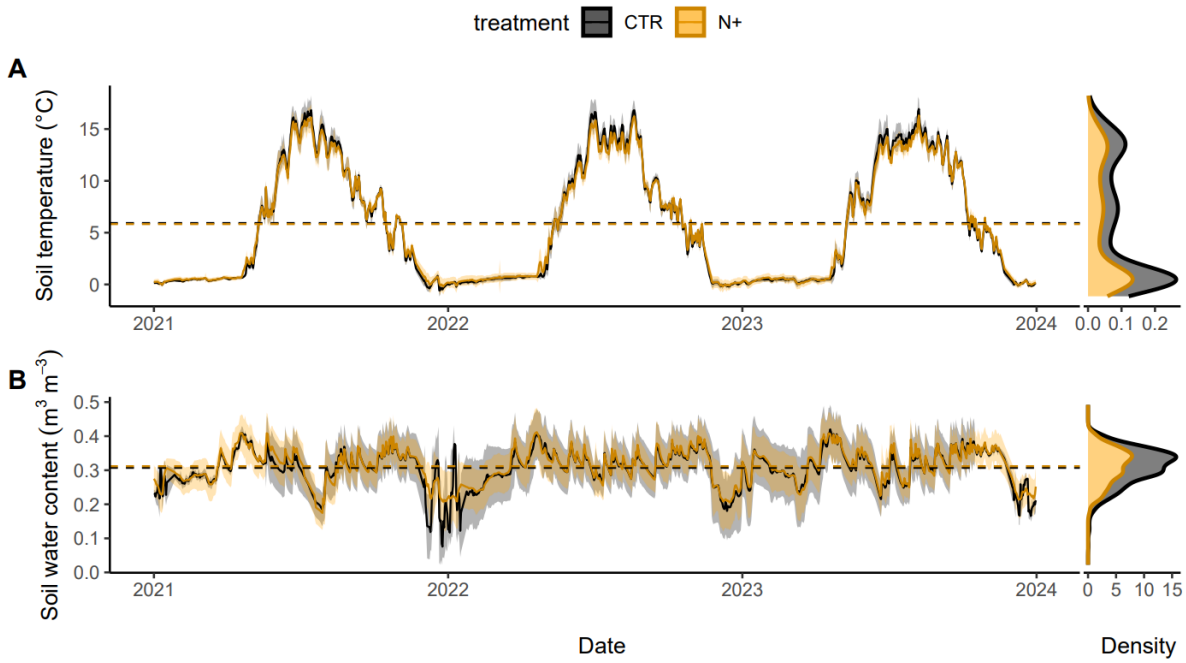

Figure S1. The daily mean timeseries and their density plots of A soil temperature at 5 cm depth (°C) and B soil volumetric water content at 5 cm depth (m^3 m^{-3}) for control (CTR) and N fertilized (N+) plots during the period from Jan 2021 to Dec 2023. The full line shows the daily mean, the ribbon is the SE of plots, and the dashed line is the mean over the whole period.

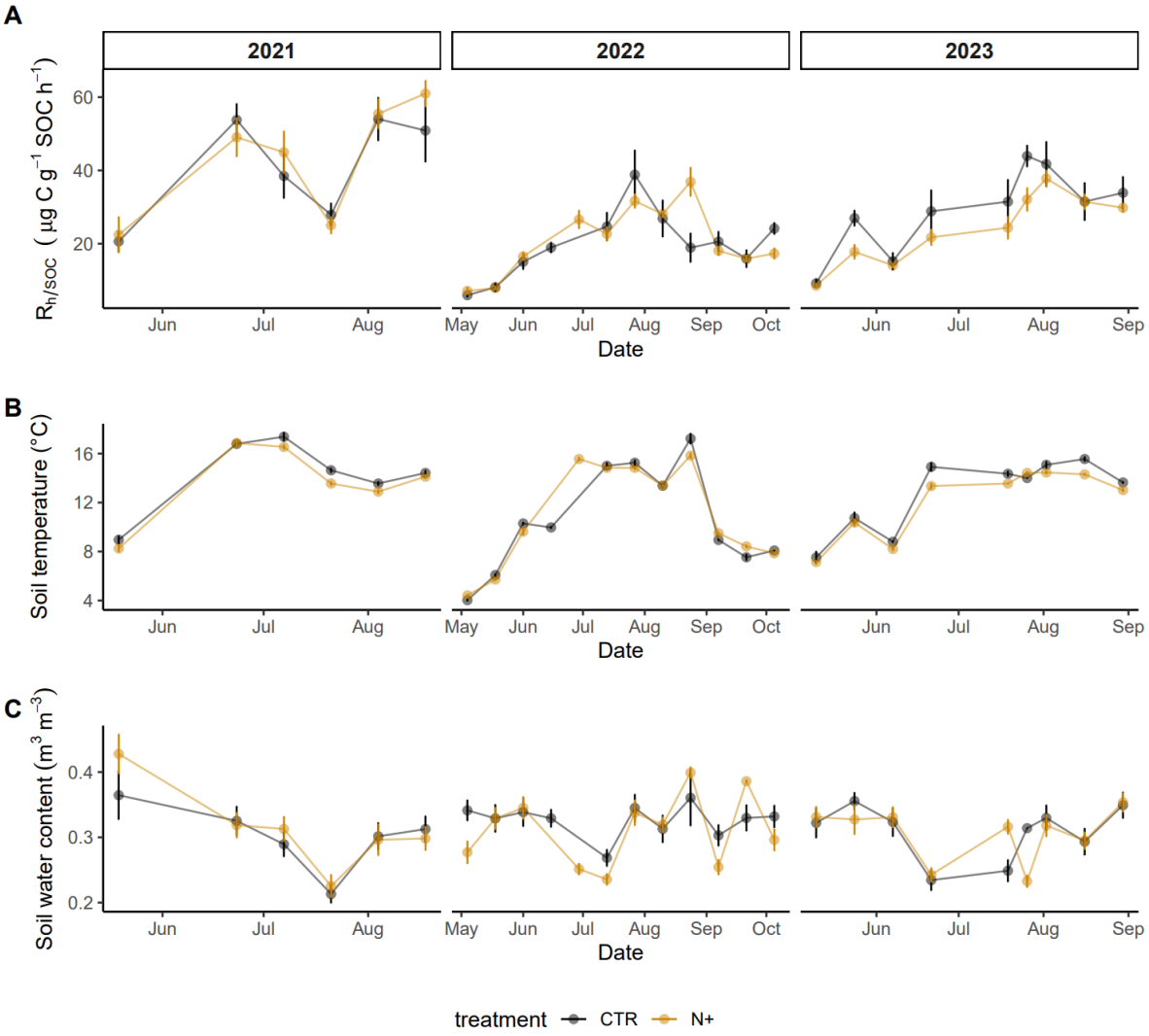

Figure S2. The weekly mean measured timeseries of A soil microbial respiration normalized by SOC ($R_{h/SOC}$, µg C g^{-1} SOC h^{-1}), B soil temperature at 5 cm depth (°C) and C soil volumetric water content at 5 cm depth (m^3 m^{-3}) for control (CTR) and N fertilized (N+) plots during the period from May 2021 to September 2023. The error bars show the SE of the mean of plots.