

Table S2. Mantel tests between soil properties, enzyme activities, alpha diversities and community composition across seasons.

	NH ₄ ⁺	ST	AP	TP	pH	SMC	Enzyme activity	Alpha diversity	Community composition
NH ₄ ⁺	1	-0.033	0.168	0.246	-0.036	0.278	0.320	0.231	0.179
	ST	1	-0.138	0.226	-0.046	0.087	0.171	-0.107	0.459**
	AP		1	0.529	0.496	0.356	0.399*	0.094	0.296*
		TP		1	0.699	0.091	0.428**	0.171	0.495**
			pH		1	-0.200	0.180	0.075	0.350*
				SMC		1	0.275	-0.099	0.239
					Enzyme activity		1	0.272	0.256*
						Alpha diversity		1	0.015
							Community composition		1

Data in bold indicate *r* value from Mantel test; *: P < 0.05; **: P < 0.01; ***: P < 0.001