

Table S1 Pearson correlation coefficients for soil metrics in sites that receive 711 mm of total annual rainfall.

Metric	OC	TN	NH ₄	NO ₃	TP	AP	MBC	MBN	SBR	MIN	NIT	BG	POX	BNA	PHO
OC	1.000														
TN	0.774***	1.000													
NH ₄	-0.187*	-0.240	1.000												
NO ₃	-0.523	-0.489*	0.763***	1.000											
TP	0.383	0.408*	-0.023	0.080	1.000										
AP	0.856***	0.512*	-0.206	-0.454	0.457	1.000									
MBC	0.023	0.222	-0.055	0.224	0.122	-0.019	1.000								
MBN	0.523*	0.374	-0.134	-0.106	0.346	0.694**	0.571*	1.000							
SBR	0.276	0.602**	-0.570*	-0.560*	-0.035	-0.048	0.391	0.089	1.000						
MIN	0.835***	0.820***	-0.174	-0.469*	0.462	0.703**	-0.066	0.430	0.286	1.000					
NIT	0.823***	0.801***	-0.427	-0.637**	0.458	0.783***	0.068	0.563*	0.364	0.921***	1.000				
BG	0.770***	0.821***	-0.459	-0.625**	0.129	0.556*	0.237	0.445	0.525*	0.652**	0.729**	1.000			
POX	-0.180	-0.041	0.076	-0.109	-0.314	-0.328	-0.470*	-0.429	0.184	0.024	-0.122	-0.282	1.000		
BNA	0.725***	0.619**	-0.561*	-0.685**	0.134	0.689**	0.075	0.542*	0.304	0.585*	0.760***	0.863***	-0.235	1.000	
PHO	-0.068	-0.041	-0.446	-0.488*	-0.314	-0.019	-0.257	-0.339	0.187	-0.301	-0.096	0.042	0.028	0.228	1.000

Significance: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$

Abbreviations: OC, organic carbon; TN, total nitrogen; NH₄, ammonium; NO₃, nitrate; TP, total phosphorus; AP, available phosphorus; MBC, microbial biomass carbon; MBN, microbial biomass nitrogen; SBR, soil basal respiration; MIN, net nitrogen mineralization; NIT, net nitrification; BG, β -1, 4-glucosidase; POX, polyphenol oxidase; BNA, β -1, 4-N-acetylglucosaminidase; PHO, acid phosphatase

Table S2 Pearson correlation coefficients for soil metrics in sites that receive 917 mm of total annual rainfall.

Metric	OC	TN	NH ₄	NO ₃	TP	AP	MBC	MBN	SBR	MIN	NIT	BG	POX	BNA	PHO
OC	1.000														
TN	0.940***	1.000													
NH ₄	0.095	0.146	1.000												
NO ₃	-0.216	-0.254	0.622**	1.000											
TP	0.078	0.237	0.067	-0.008	1.000										
AP	0.392	0.301	-0.119	-0.131	0.274	1.000									
MBC	0.459	0.469*	-0.144	-0.361	0.038	0.649**	1.000								
MBN	0.289	0.243	-0.223	-0.157	-0.035	0.642**	0.863***	1.000							
SBR	0.027	0.026	0.109	0.098	0.046	-0.133	-0.224	-0.030	1.000						
MIN	0.190	0.086	0.064	0.444	0.037	-0.405	-0.399	-0.245	0.032	1.000					
NIT	0.528*	0.546*	0.228	0.037	0.153	-0.146	0.121	-0.139	-0.256	0.414	1.000				
BG	0.392	0.446*	-0.134	-0.410	0.209	0.666**	0.503*	0.348	0.088	-0.583*	-0.181	1.000			
POX	0.537*	0.503*	-0.010	-0.052	0.281	0.518*	0.249	0.221	0.154	-0.103	0.090	0.717**	1.000		
BNA	0.535*	0.567*	0.120	-0.061	0.211	-0.241	-0.137	-0.275	-0.133	0.274	0.593*	-0.111	0.172	1.000	
PHO	-0.419	-0.452	-0.304	-0.130	-0.368	-0.659**	-0.366	-0.311	0.242	0.018	-0.040	-0.322	-0.297	-0.057	1.000

Significance: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$

Abbreviations: OC, organic carbon; TN, total nitrogen; NH₄, ammonium; NO₃, nitrate; TP, total phosphorus; AP, available phosphorus; MBC, microbial biomass carbon; MBN, microbial biomass nitrogen; SBR, soil basal respiration; MIN, net nitrogen mineralization; NIT, net nitrification; BG, β -1, 4-glucosidase; POX, polyphenol oxidase; BNA, β -1, 4-N-acetylglucosaminidase; PHO, acid phosphatase

Table S3 Pearson correlation coefficients for soil metrics in sites that receive 1232 mm of total annual rainfall.

Metric	OC	TN	NH ₄	NO ₃	TP	AP	MBC	MBN	SBR	MIN	NIT	BG	POX	BNA	PHO
OC	1.000														
TN	0.096***	1.000													
NH ₄	0.051	0.125	1.000												
NO ₃	0.142	0.099	0.792***	1.000											
TP	0.573*	0.645**	-0.359	-0.424	1.000										
AP	0.530*	0.566*	-0.547*	-0.601**	0.820***	1.000									
MBC	0.783*	0.764***	0.100	0.127	0.598**	0.553*	1.000								
MBN	0.063	0.088	0.413	0.439	0.121	-0.040	0.490*	1.000							
SBR	-0.252	-0.200	0.787***	0.754***	-0.424	-0.683**	0.000	0.609**	1.000						
MIN	-0.061	0.018	0.756***	0.764***	-0.180	-0.441	0.140	0.524*	0.775***	1.000					
NIT	-0.223	-0.152	-0.575*	-0.820***		0.381	0.496*	-0.067	-0.288	-0.427	-0.460	1.000			
BG	-0.291	-0.303	0.076	0.000	-0.103	0.060	0.165	0.355	0.214	0.220	0.352	1.000			
POX	0.401	0.320	0.364	0.443	-0.012	-0.107	0.464	0.312	0.219	0.343	-0.458	0.225	1.000		
BNA	0.302	0.229	-0.042	0.224	-0.091	-0.006	0.105	-0.084	0.089	-0.155	-0.186	-0.320	-0.132	1.000	
PHO	-0.346	-0.395	0.559*	0.536*	-0.516*	-0.582*	-0.007	0.320	0.672**	0.548*	-0.186	0.642**	0.330	-0.122	1.000

Significance: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$

Abbreviations: OC, organic carbon; TN, total nitrogen; NH₄, ammonium; NO₃, nitrate; TP, total phosphorus; AP, available phosphorus; MBC, microbial biomass carbon; MBN, microbial biomass nitrogen; SBR, soil basal respiration; MIN, net nitrogen mineralization; NIT, net nitrification; BG, β -1, 4-glucosidase; POX, polyphenol oxidase; BNA, β -1, 4-N-acetylglucosaminidase; PHO, acid phosphatase

Table S4 Pearson correlation coefficients for soil metrics in sites that receive 1661 mm of total annual rainfall.

Metric	OC	TN	NH ₄	NO ₃	TP	AP	MBC	MBN	SBR	MIN	NIT	BG	POX	BNA	PHO
OC	1.000														
TN	0.699**	1.000													
NH ₄	-0.565*	-0.395	1.000												
NO ₃	0.088	0.205	0.235	1.000											
TP	0.652**	0.459	-0.196	-0.170	1.000										
AP	0.454	0.666**	-0.649**	-0.126	0.080	1.000									
MBC	0.411	0.366	-0.071	0.109	0.315	0.108	1.000								
MBN	0.111	0.493*	-0.038	0.705**	-0.196	0.414	0.251	1.000							
SBR	-0.186	-0.229	0.730**	0.099	0.006	-0.619	0.291	-0.219	1.000						
MIN	-0.143	-0.089	0.578*	0.805***	-0.234	-0.449	0.222	0.468*	0.558*	1.000					
NIT	-0.432	-0.201	0.682**	0.653**	-0.352	-0.552*	0.198	0.374	0.611**	0.898***	1.000				
BG	-0.123	-0.229	0.361	0.490*	-0.319	-0.326	0.165	0.335	0.581*	0.730**	0.638**	1.000			
POX	-0.322	-0.501	0.647**	0.530*	-0.062	0.483*	0.150	0.095	0.700**	0.812***	0.828***	0.567*	1.000		
BNA	0.926***	0.631**	-0.626**	-0.064	0.658**	0.483*	0.452	0.089	-0.213	-0.257	-0.480*	-0.103	-0.379	1.000	
PHO	-0.685**	-0.501*	0.613**	0.126	-0.525*	-0.558*	0.014	0.055	0.523*	0.479*	0.638**	0.479*	0.565*	-0.668**	1.000

Significance: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$

Abbreviations: OC, organic carbon; TN, total nitrogen; NH₄, ammonium; NO₃, nitrate; TP, total phosphorus; AP, available phosphorus; MBC, microbial biomass carbon; MBN, microbial biomass nitrogen; SBR, soil basal respiration; MIN, net nitrogen mineralization; NIT, net nitrification; BG, β -1, 4-glucosidase; POX, polyphenol oxidase; BNA, β -1, 4-N-acetylglucosaminidase; PHO, acid phosphatase

