Table S1. Results of linear mixed effect model of soil penetration resistance

	Soil Penetration		
Predictors	**Estimates**	**CI**	***p***
(Intercept)	0.37	0.29 – 0.45	**<0.001**
Depth [10 20]	-0.04	-0.10 – 0.01	0.123
Depth [20 40]	-0.05	-0.11 – 0.01	0.090
Depth [40 80]	-0.03	-0.09 – 0.03	0.297
Site type [CP]	0.28	0.16 – 0.40	**<0.001**
Site type [Sph]	0.28	0.17 – 0.39	**<0.001**
Water	0.00	0.00 – 0.01	**<0.001**
Depth [10 20] * Site type [CP]	0.10	-0.03 – 0.24	0.128
Depth [20 40] * Site type [CP]	-0.07	-0.21 – 0.06	0.301
Depth [40 80] * Site type [CP]	-0.24	-0.38 – -0.11	**0.001**
Depth [10 20] * Site type [Sph]	0.18	0.06 – 0.29	**0.003**
Depth [20 40] * Site type [Sph]	-0.10	-0.22 – 0.01	0.075
Depth [40 80] * Site type [Sph]	-0.26	-0.37 – -0.14	**<0.001**
Random Effects			
σ2		0.01	
τ00 Pl		0.00	
ICC (Sample plot)		0.19	
N Pl		29	
Observations		116	
Marginal R2 / Conditional R2		0.585 / 0.662	

Table S2. Factors affecting soil penetration resistance based on analysis of variance (ANOVA) results

Variables	**Sum of squares**	**Mean square**	**df**	**F value**	***p* value**
Depth	0.707	0.236	3	30.589	<0.001
Site type	0.327	0.164	2	21.220	<0.001
Water	0.136	0.136	1	17.642	<0.001
Depth * Site type	0.573	0.096	6	12.395	<0.001

Table S3. Results of linear mixed effect model of soil carbon stock

Soil Carbon Stock			
Predictors	**Estimates**	**CI**	***p***
(Intercept)	13.96	3.04 – 24.87	**0.013**
Depth [0 10]	59.37	48.69 – 70.06	**<0.001**
Depth [10 20]	54.41	43.72 – 65.09	**<0.001**
Depth [20 40]	107.62	96.93 – 118.30	**<0.001**
Depth [40 80]	222.02	211.34 – 232.71	**<0.001**
Site type [CP]	-27.06	-48.06 – -6.06	**0.012**
Site type [Sph]	-34.79	-52.63 – -16.94	**<0.001**
Random Effects			
σ2		438.08	
τ00 Pl		288.45	
ICC (Sample plot)		0.40	
N Pl		30	
Observations		150	
Marginal R2 / Conditional R2		0.890 / 0.934	

Table S4. Factors affecting soil carbon stock based on analysis of variance (ANOVA) results

Variables	**Sum of Squares**	**Mean Square**	**df**	**F value**	***p* value**
Depth	8411003	210276	4	526.209	<0.001
Site type	7269	3634	2	9.095	<0.001
Depth * Site type	7660	958	8	2.396	<0.05