SUPPLEMENTAL MATERIALS

Table S1. Generalized linear mixed model results for soil variables. The same five models were run for each response variable, including a null model, and each included site as a random effect to account for repeat measurements. AICc is Akaike's Information Criterion, and ΔAICc is the difference between a given model and the best fit model for that response variable. Cum.Wt stand for cumulative weight; it gives the sum of Akaike's weights and indicates the likelihood that the models up to that point are the best in the set. Models with a ΔAICc value of 2 are considered roughly equivalent in fit and are italicized. R^2 is the proportion of variance explained by a model. Coefficients (± standard error) are shown for each predictor and model. Rows are organized in blocks by response variable. Within blocks, models are listed in order of increasing ΔAICc.

Model	**Model Fit**				**Coefficients ± *SE***		
	AICc	**ΔAICc**	**Cum. Wt**	**R^2**	**Soil Type**	**Distance**	**Soil Type × Distance**
Log Nitrogen (%)							
Soil	*19.08*	*0.00*	*0.63*	*0.34*	*-0.47 ± 0.17*		
Null	*20.88*	*1.80*	*0.89*				
Soil × Distance	23.70	4.61	0.95	0.41	-0.26 ± 0.18	0.00 ± 0.01	-0.03 ± 0.01
Soil + Distance	25.00	5.91	0.99	0.36	-0.47 ± 0.17	-0.01 ± 0.01	
Distance	26.69	7.60	1.00	0.03		-0.01 ± 0.01	
Log Nitrate (mg/L)							
Distance	*156.31*	*0.00*	*0.54*	*0.17*		*-0.08 ± 0.03*	
Null	*157.99*	*1.68*	*0.77*				
Soil + Distance	158.80	2.49	0.92	0.17	-0.20 ± 0.35	-0.08 ± 0.03	
Soil	160.37	4.06	0.99	0.01	-0.20 ± 0.34		
Soil × Distance	165.49	9.17	1.00	0.17	-0.18 ± 0.47	-0.08 ± 0.04	0.00 ± 0.05
Log ^{15}N							
Distance	*5.79*	*0.00*	*0.60*	*0.28*		*-0.03 ± 0.00*	
Soil + Distance	*6.73*	*0.94*	*0.98*	*0.43*	*0.26 ± 0.12*	*-0.03 ± 0.00*	
Soil × Distance	12.28	6.50	1.00	0.45	0.38 ± 0.13	-0.02 ± 0.01	-0.02 ± 0.01

Null	26.60	20.82	1.00				
Soil	27.43	21.65	1.00	0.16	0.26 ± 0.12		
Log Ammonium (mg/L)							
Soil + Distance	*213.21*	*0.00*	*0.85*	*0.39*	*2.33 ± 0.94*	*-0.21 ± 0.04*	
Distance	217.51	4.30	0.95	0.19		-0.21 ± 0.04	
Soil × Distance	218.91	5.70	1.00	0.39	2.25 ± 1.09	-0.22 ± 0.06	0.01 ± 0.08
Soil	226.54	13.32	1.00	0.20	2.33 ± 0.94		
Null	230.94	17.73	1.00				
Log Phosphate (mg/L)							
Soil × Distance	*253.62*	*0.00*	*0.89*	*0.28*	*2.42 ± 1.57*	*0.10 ± 0.11*	*-0.60 ± 0.16*
Soil	259.48	5.86	0.94	0.03	-1.21 ± 1.31		
Null	260.31	6.69	0.97				
Soil + Distance	261.40	7.77	0.99	0.09	-1.31 ± 1.27	-0.18 ± 0.09	
Distance	262.26	8.64	1.00	0.06		-0.17 ± 0.09	
Log Plant Available Phosphorus (mg/kg)							
Soil + Distance	*219.05*	*0.00*	*0.35*	*0.18*	*-1.41 ± 0.99*	*-0.14 ± 0.04*	
Soil × Distance	*219.64*	*0.59*	*0.61*	*0.23*	*-0.16 ± 1.13*	*-0.04 ± 0.06*	*-0.19 ± 0.08*
Distance	*220.38*	*1.33*	*0.79*	*0.10*		*-0.14 ± 0.04*	
Soil	*220.90*	*1.85*	*0.93*	*0.09*	*-1.41 ± 0.99*		
Null	222.33	3.28	1.00				
Log Sodium (mg/kg)							
Distance	*74.12*	*0.00*	*0.79*	*0.19*		*-0.05 ± 0.01*	
Soil + Distance	77.17	3.05	0.96	0.18	-0.09 ± 0.29	-0.05 ± 0.01	
Soil × Distance	80.16	6.04	1.00	0.22	0.19 ± 0.31	-0.03 ± 0.01	-0.04 ± 0.02
Null	85.14	11.02	1.00				
Soil	88.09	13.97	1.00	0.01	-0.09 ± 0.29		
Potassium (mg/kg)							
Soil × Distance	*648.62*	*0.00*	*0.99*	*0.16*	*-462.26 ± 422.97*	*5.36 ± 4.68*	*-17.82 ± 6.63*
Soil + Distance	658.44	9.81	1.00	0.16	-578.09 ± 420.78	-3.55 ± 3.57	
Soil	661.33	12.71	1.00	0.16	-578.10 ± 420.80		
Distance	671.73	23.11	1.00	0.00		-3.55 ± 3.57	
Null	674.74	26.11	1.00				
Log Calcium (mg/kg)							
Soil	*-0.60*	*0.00*	*0.98*	*0.64*	*-1.47 ± 0.34*		
Null	7.51	8.11	1.00				
Soil + Distance	10.89	11.50	1.00	0.64	-1.47 ± 0.34	0.00 ± 0.00	
Distance	18.90	19.51	1.00	0.00		0.00 ± 0.00	
Soil × Distance	21.03	21.63	1.00	0.64	-1.44 ± 0.34	0.00 ± 0.01	0.00 ± 0.01

Log Iron (mg/kg)							
Soil	*-36.74*	*0.00*	*0.99*	*0.73*	*-1.22 ± 0.23*		
Null	-26.64	10.10	1.00				
Soil + Distance	-24.28	12.45	1.00	0.73	-1.22 ± 0.23	0.00 ± 0.00	
Distance	-14.30	22.44	1.00	0.00		0.00 ± 0.00	
Soil × Distance	-13.79	22.95	1.00	0.73	-1.19 ± 0.23	0.00 ± 0.00	0.00 ± 0.01
Log Magnesium (mg/kg)							
Soil	*-18.70*	*0.00*	*0.99*	*0.71*	*-1.53 ± 0.30*		
Null	-8.76	9.94	1.00				
Soil + Distance	-6.52	12.18	1.00	0.71	-1.53 ± 0.30	0.00 ± 0.00	
Soil × Distance	2.65	21.35	1.00	0.71	-1.48 ± 0.30	0.00 ± 0.00	-0.01 ± 0.01
Distance	3.32	22.01	1.00	0.00		0.00 ± 0.00	
Log Water (mmol/mol)							
Soil	*110.41*	*0.00*	*0.52*	*0.16*	*0.65 ± 0.36*		
Null	*110.83*	*0.42*	*0.94*				
Soil + Distance	116.00	5.59	0.97	0.19	0.65 ± 0.36	0.03 ± 0.01	
Distance	116.31	5.90	1.00	0.03		0.03 ± 0.01	
Soil × Distance	123.56	13.15	1.00	0.19	0.74 ± 0.41	0.03 ± 0.02	-0.01 ± 0.03

13

Table S2. Generalized linear mixed model results for leaf variables. The same five models were run for each response variable, including a null model, and each included site as a random effect to account for repeat measurements. AICc is Akaike's Information Criterion, and ΔAICc is the difference between a given model and the best fit model for that response variable. Cum.Wt stand for cumulative weight; it gives the sum of Akaike's weights and indicates the likelihood that the models up to that point are the best in the set. Models with a ΔAICc value of 2 are considered roughly equivalent in fit and are italicized. R^2 is the proportion of variance explained by a model. Coefficients (± standard error) are shown for each predictor and model. Rows are organized in blocks by response variable. Within blocks, models are listed in order of increasing ΔAICc.

Model	**Model Fit**				**Coefficients ± *SE***		
	AICc	**ΔAICc**	**Cum. Wt**	**R^2**	**Soil Type**	**Distance**	**Soil Type × Distance**
Log Nitrogen (%)							
Distance	*0.04*	*0.00*	*0.86*	*0.34*		*-0.03 ± 0.00*	
Soil + Distance	3.73	3.69	1.00	0.37	0.13 ± 0.11	-0.03 ± 0.00	
Soil × Distance	13.81	13.77	1.00	0.37	0.15 ± 0.13	-0.03 ± 0.01	0.00 ± 0.01
Null	18.12	18.08	1.00				
Soil	22.31	22.27	1.00	0.03	0.10 ± 0.10		
Log ^{15}N							
Distance	*75.08*	*0.00*	*0.67*	*0.36*		*-0.09 ± 0.01*	
Soil + Distance	75.80	2.72	0.84	0.35	-0.10 ± 0.35	-0.09 ± 0.01	
Soil × Distance	77.96	2.88	1.00	0.37	-0.49 ± 0.38	-0.11 ± 0.01	0.06 ± 0.02
Null	108.18	33.10	1.00				
Soil	110.55	35.47	1.00	0.01	-0.18 ± 0.37		
Phosphorus (%)							
Null	*-57.76*	*0.00*	*0.79*				
Soil	-55.08	2.68	1.00	0.18	-0.15 ± 0.09		
Distance	-45.22	12.54	1.00	0.00		0.00 ± 0.00	
Soil × Distance	-43.48	14.28	1.00	0.24	-0.04 ± 0.09	0.01 ± 0.00*	-0.02 ± 0.00
Soil + Distance	-42.43	15.33	1.00	0.18	-0.15 ± 0.09	0.00 ± 0.00	
Sodium (mg/kg)							

Soil × Distance	*790.83*	*0.00*	*0.99*	*0.62*	*-4989.53 ± 1153.34*	*-192.64 ± 50.42*	*59.57 ± 76.04*
Soil + Distance	799.30	8.48	1.00	0.62	-4570.16 ± 1015.91	-166.46 ± 37.59	
Soil	822.11	31.28	1.00	0.54	-4723.3 ± 1044.7		
Distance	823.81	32.98	1.00	0.08		-167.14 ± 37.61	
Null	846.86	56.03	1.00				
Magnesium (mg/kg)							
Null	*-105.00*	*0.00*	*0.67*				
Distance	-102.59	2.41	0.88	0.05		0.00 ± 0.00	
Soil	-101.15	3.85	0.97	0.17	-0.09 ± 0.06		
Soil + Distance	-98.45	6.55	1.00	0.22	-0.09 ± 0.06	0.00 ± 0.00	
Soil × Distance	-91.73	13.27	1.00	0.25	-0.04 ± 0.06	0.00 ± 0.00	-0.01 ± 0.00*
Potassium (%)							
Distance	*93.64*	*0.00*	*0.74*	*0.15*		*-0.06 ± 0.01*	
Soil + Distance	95.88	2.24	0.98	0.15	0.20 ± 0.42	-0.06 ± 0.01	
Null	102.49	8.85	0.99				
Soil × Distance	103.76	10.12	1.00	0.15	0.30 ± 0.45	-0.05 ± 0.02	-0.01 ± 0.02
Soil	104.71	11.08	1.00	0.01	0.14 ± 0.42		
Calcium (%)							
Null	*-41.65*	*0.00*	*0.89*				
Soil	-37.38	4.27	1.00	0.07	-0.09 ± 0.09		
Distance	-30.11	11.55	1.00	0.01		0.00 ± 0.00	
Soil + Distance	-25.77	15.88	1.00	0.08	-0.10 ± 0.09	0.00 ± 0.00	
Soil × Distance	-15.52	26.13	1.00	0.08	-0.06 ± 0.10	0.00 ± 0.00	-0.01 ± 0.01
Iron (mg/kg)							
Distance	*108.49*	*0.00*	*0.76*	*0.24*		*-0.08 ± 0.02*	
Soil + Distance	110.91	2.41	0.99	0.24	-0.14 ± 0.41	-0.08 ± 0.02	
Soil × Distance	118.32	9.83	1.00	0.24	-0.02 ± 0.47	-0.07 ± 0.02	-0.02 ± 0.03
Null	120.79	12.30	1.00				
Soil	122.75	14.26	1.00	0.02	-0.24 ± 0.43		

24

Table S3. Generalized linear mixed model results testing for correlations between leaf and soil micronutrients. The same model was run for each of five micronutrients (Na, K, Ca, Mg, and Fe) with leaf micronutrient concentration as the response variable, soil micronutrient + distance as the main effects, and site as a random effect. R^2 is the proportion of variance explained by the model. Coefficients (± standard error) are shown for each predictor and model.

Leaf Micronutrient	**R^2**	**Soil Micronutrient Coefficient ± *SE***	**Distance Coefficient ± *SE***
Sodium	0.07	12.19 ± 11.03	-130.67 ± 41.12
Potassium	0.29	< 0.001	-0.06 ± 0.01
Calcium	0.30	< 0.001	< 0.001
Magnesium	0.17	< 0.001	< 0.001
Iron	0.11	0.00 ± 0.01	-52.85 ± 20.57

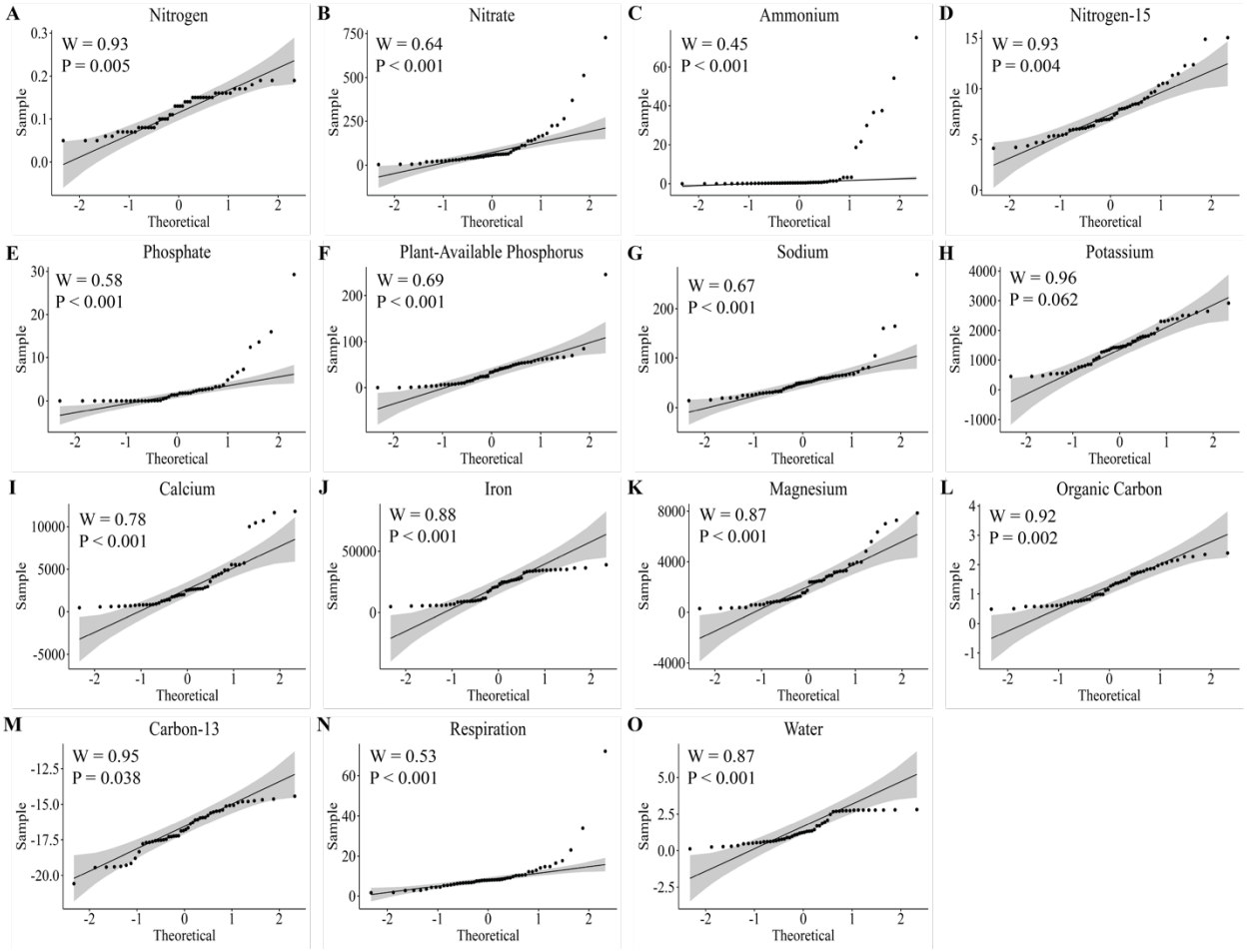


Figure S1. Quantile-quantile plots for soil variables, including results of Shapiro-Wilk normality tests. W is the Shapiro-Wilk statistic. A *p*-value < 0.050 indicates that the data are not normally distributed.

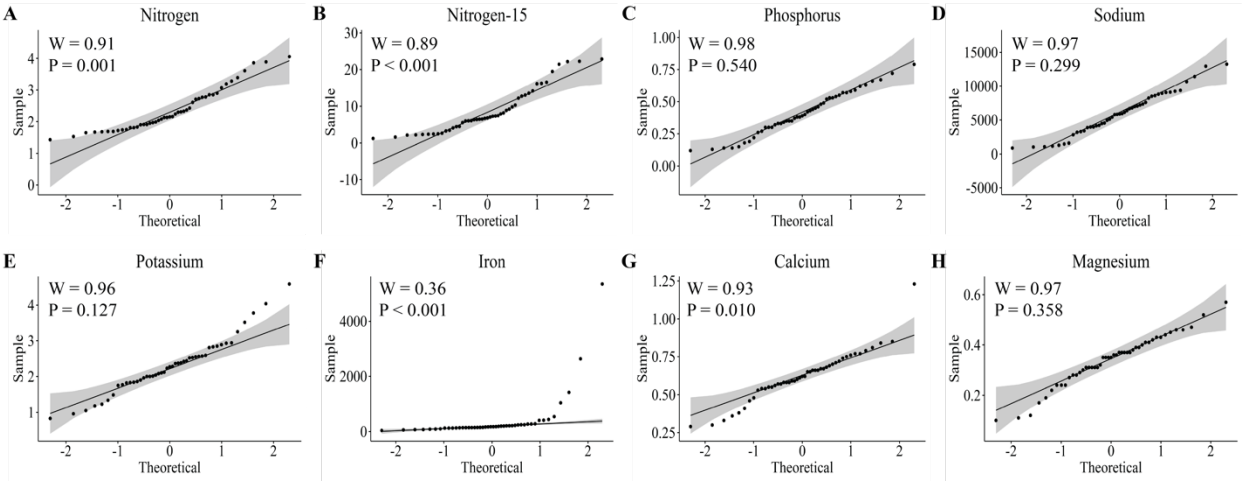


Figure S2. Quantile-quantile plots for leaf variables, including results of Shapiro-Wilk normality tests. W is the Shapiro-Wilk statistic. A p-value < 0.050 indicates that the data are not normally distributed.

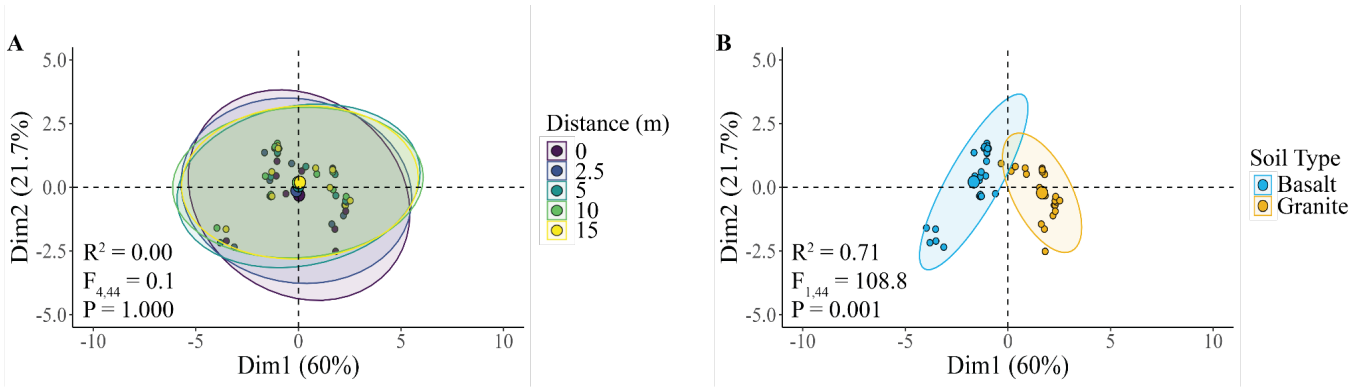


Figure S3. PerMANOVA results for soil micronutrients. (A) Soil micronutrient composition did not differ significantly with distance from the carcass but (B) was distinct in different soil types.

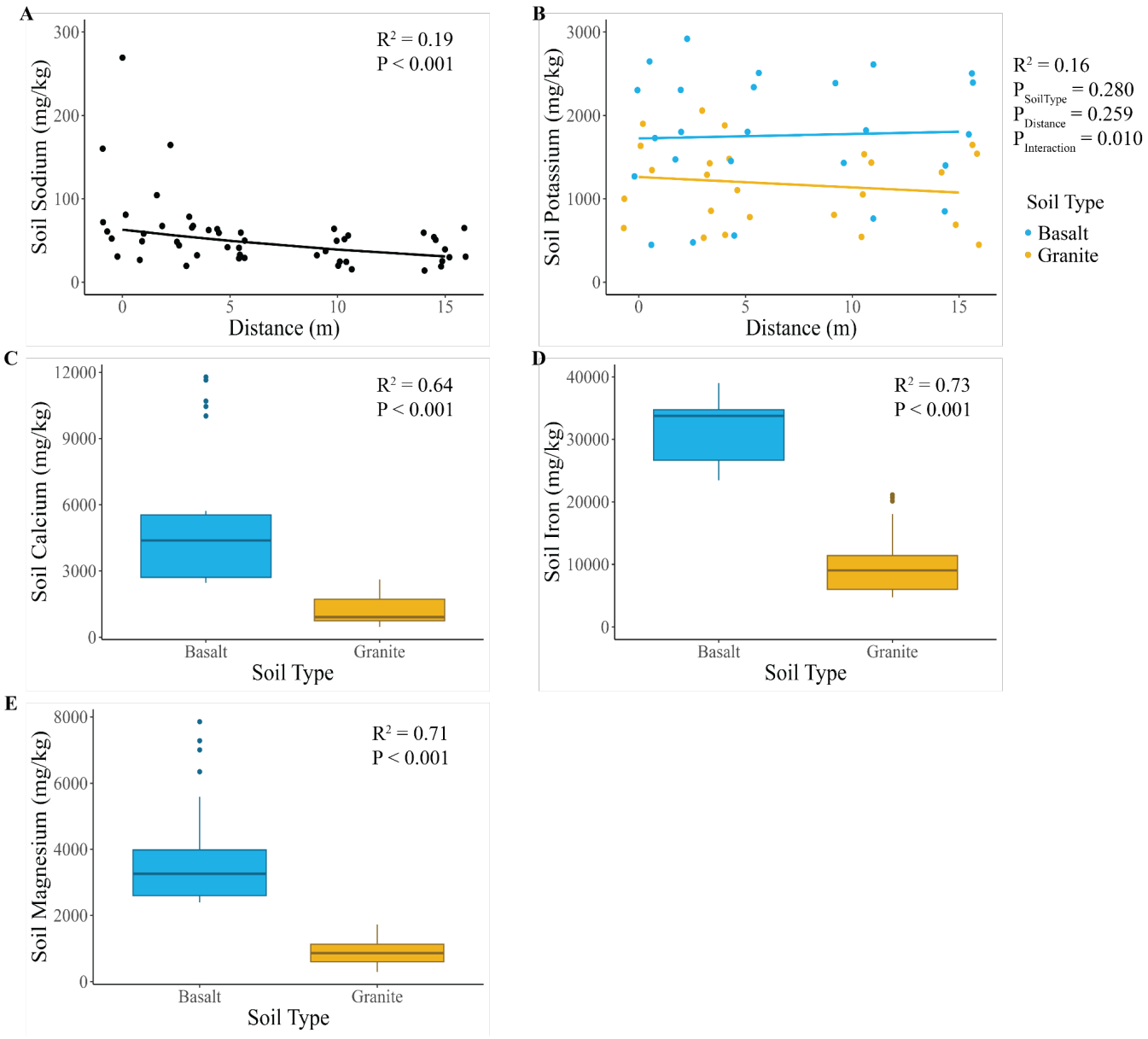


Figure S4. Generalized linear mixed model results for soil micronutrients. (A) Soil sodium decreased significantly with distance from the carcass. (B) Potassium decreased with distance but only in granitic soils. (C) Calcium, (D) iron, and (E) magnesium were all greater in basaltic soils but did not differ significantly with distance from the carcass site. Points represent individual measurements and are offset to be visible when they would otherwise overlap.

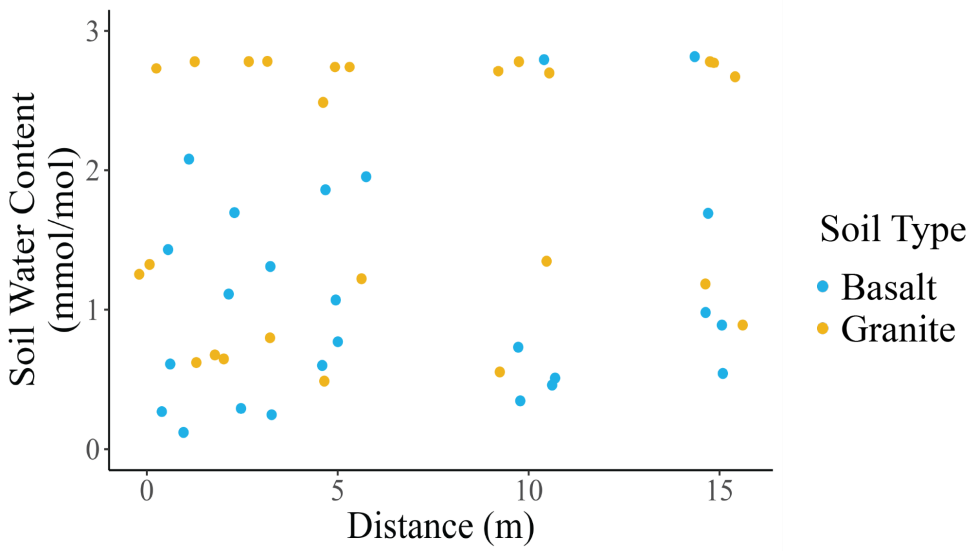
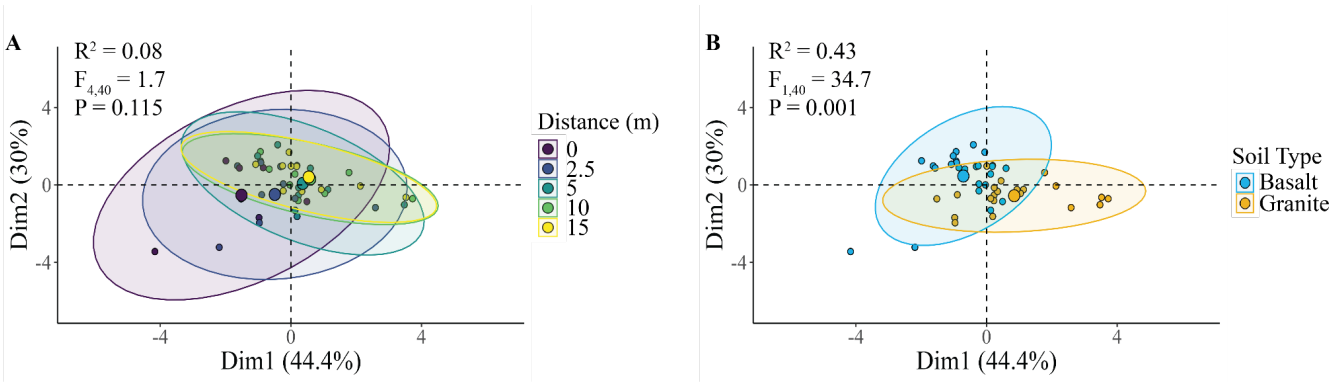


Figure S5. Soil water content was marginally higher in granitic soils. The top models were soil type and the null.



54

55 **Figure S6.** PerMANOVA results for leaf micronutrients. (A) Leaf micronutrient composition did

56 not differ significantly with distance from the carcass but (B) was distinct in different soil types.