

1 **Table S3.** UniFrac Mantel's correlation values between UniFrac distance matrix and the
 2 pairwise dissimilarity matrix for each environmental variable.

3

Environmental Variable	Mantel's r	p - value	q - value
Unweighted Unifrac Analysis			
High Soil RH	0.663	0.0001	0.0001
Elevation*	0.651	0.0001	0.0001
Average Soil RH	0.625	0.0001	0.0001
Low Soil Temperature	0.541	0.0001	0.0001
Electrical Conductivity	0.496	0.0001	0.0001
Percent Days at 100% Soil RH	0.479	0.0001	0.0001
Average Soil Temperature	0.477	0.0001	0.0001
High Soil Temperature	0.377	0.0001	0.0001
Low Soil RH	0.320	0.0002	0.0003
Plant Cover (%)	0.184	0.016	0.018
pH	0.176	0.009	0.010
Soil Organic Carbon	0.151	0.052	0.055
Weighted Unifrac Analysis			
Elevation*	0.596	0.0001	0.0001
Average Soil RH	0.574	0.0001	0.0001
High Soil RH	0.566	0.0001	0.0001
Electrical Conductivity	0.458	0.0001	0.0001
Low Soil Temperature	0.458	0.0001	0.0001
Percent Days at 100% Soil RH	0.454	0.0001	0.0001
Average Soil Temperature	0.394	0.0001	0.0001
Low Soil RH Minimum	0.362	0.0001	0.0001
Soil Organic Carbon	0.309	0.0009	0.001
High Soil Temperature	0.304	0.0001	0.0001
Plant Cover (%)	0.233	0.004	0.004
pH	0.108	0.063	0.063

4 *q*-value: false discovery rate (FDR) corrected *p* - values; RH, relative humidity

5 *Elevation is conflated with collection site.