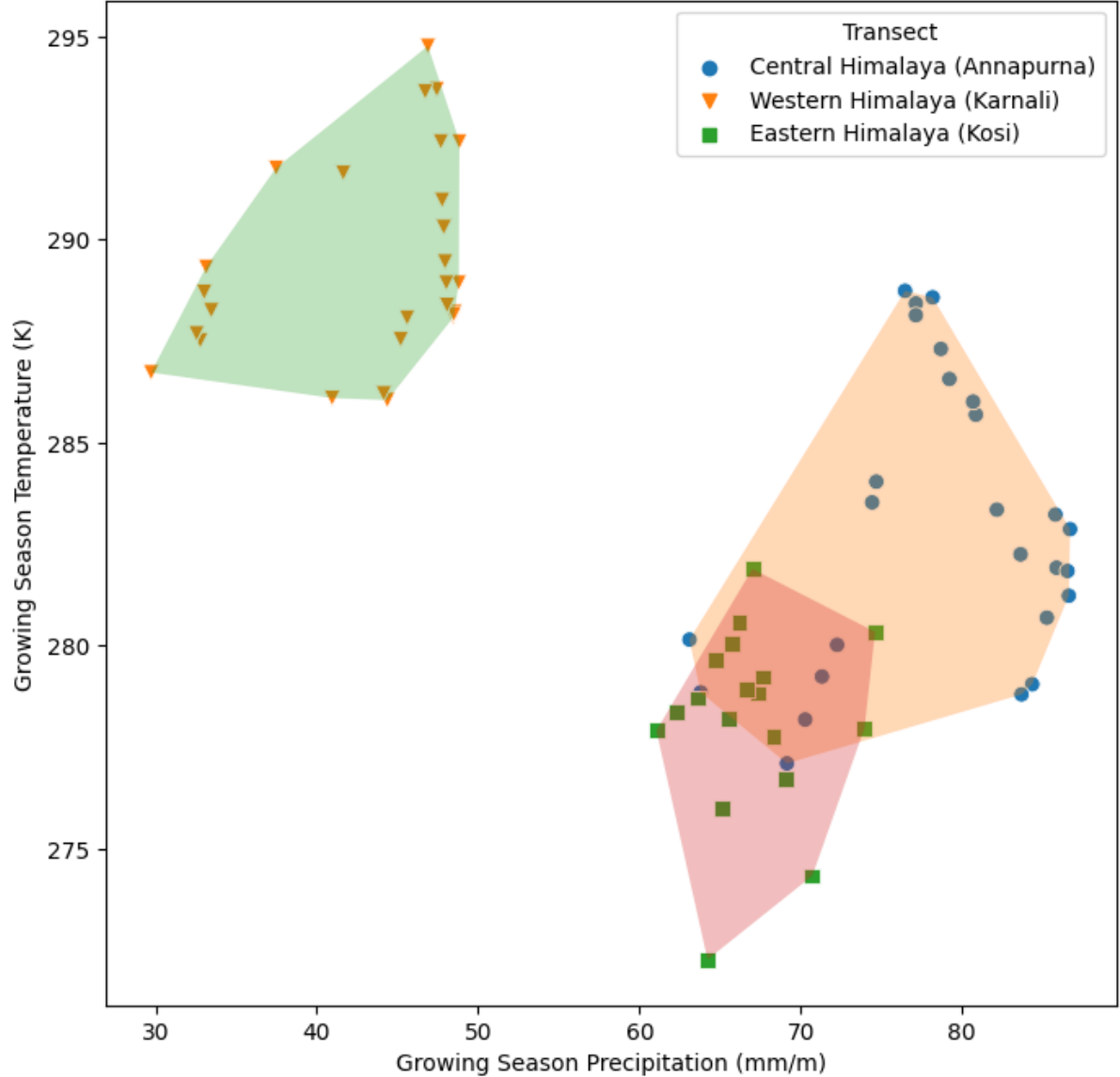
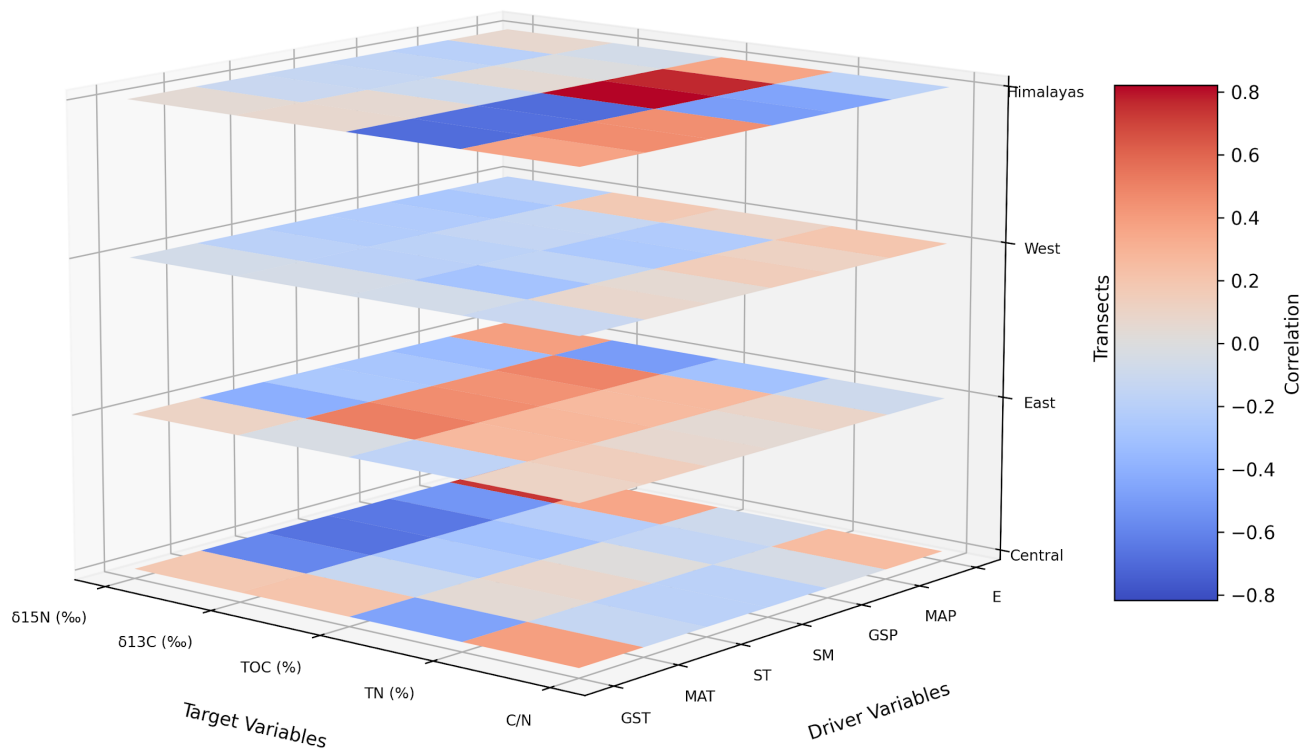


Supplementary I: Figures

Figure S1: Climatological distinction between the 3 transects, with a dry-to-wet and hot-to-cold gradient from the west and east





5 **Figure S2: 3D Heatmap of Pearson Correlation between Drivers and Target Variables categorised by Transects and the whole study area**

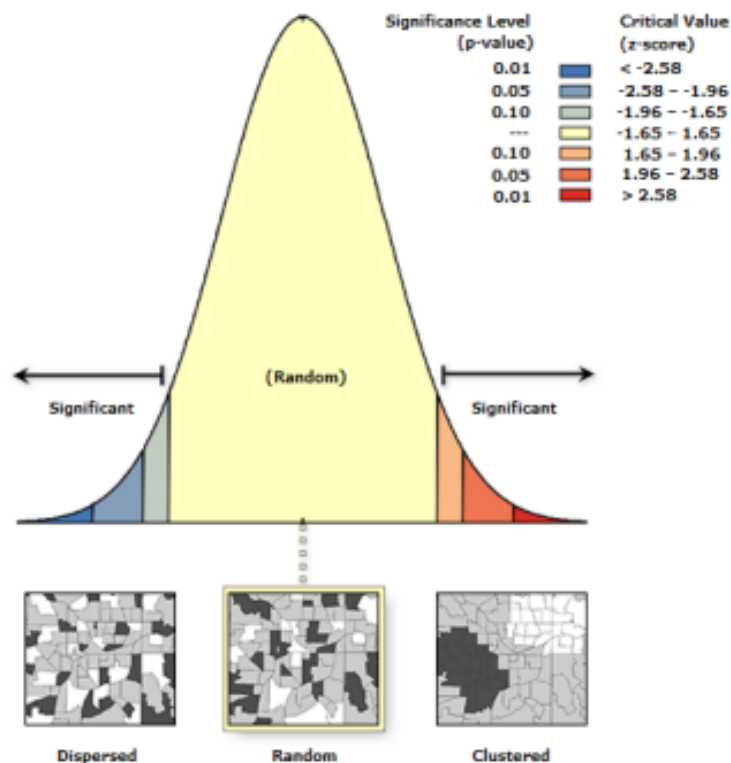


Figure S3 (a): Moran's I for Foliar $\delta^{13}\text{C}$. Given the z-score of 1.0406, the pattern does not appear to be significantly different than random.

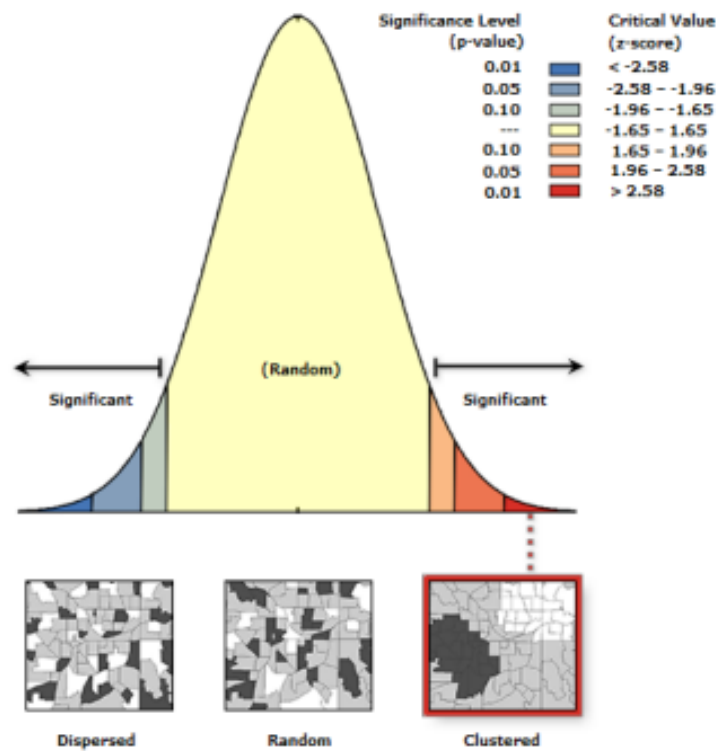


Figure S3 (b): Moran's I for Foliar $\delta^{15}\text{N}$. Given the z-score of 9.662064, there is a less than 1% likelihood that this clustered pattern could be the result of random chance.

Supplementary II: Tables (attached separately as .xlsx file with all 3 tables)

Supplementary III: Python code for Genera-Mycorrhizal clustering

```
import pandas as pd
from sklearn.cluster import KMeans
20 from sklearn.preprocessing import StandardScaler, LabelEncoder
from sklearn.metrics import silhouette_score, adjusted_rand_score
import matplotlib.pyplot as plt
from itertools import combinations

25 # Function to evaluate and visualize clustering for a given dataframe and features
def evaluate_clustering(df, features, true_label_column, k=4):
    # Extract the relevant columns
    X = df[features]

30    # Standardize the features
    scaler = StandardScaler()
    X_scaled = scaler.fit_transform(X)

    # Perform clustering
35    kmeans = KMeans(n_clusters=k, random_state=0)
    df['Cluster'] = kmeans.fit_predict(X_scaled)

    # Evaluate clustering using Silhouette Score
    silhouette_avg = silhouette_score(X_scaled, df['Cluster'])
40    print(f'Silhouette Score for features {features}: {silhouette_avg}')

    # Evaluate clustering against true labels using Adjusted Rand Index
    label_encoder = LabelEncoder()
    true_labels = label_encoder.fit_transform(df[true_label_column])
45    adjusted_rand = adjusted_rand_score(true_labels, df['Cluster'])
```

```

print(f'Adjusted Rand Index for features {features}: {adjusted_rand}')

# Visualize the clusters and label association
plt.figure(figsize=(8, 6))
50 scatter = plt.scatter(X_scaled[:, 0], X_scaled[:, 1], c=df['Cluster'], cmap='viridis')

plt.xlabel(f'{features[0]} (Standardized)')
plt.ylabel(f'{features[1]} (Standardized)')
plt.title(f'Clustering Results with {true_label_column} Labels')
55 plt.grid()

# Create a legend for cluster colors
handles, _ = scatter.legend_elements()
plt.legend(handles, df[true_label_column].unique(), title=true_label_column)
60 plt.show()

return silhouette_avg, adjusted_rand

# First condition: Mycorrhizal association filtering
65 options_1 = ['Endomycorrhizal', 'Ectomycorrhizal', 'Arbuscular mycorrhiza', 'Ericoid']
df_filtered_1 = data.loc[data['Mycorrhizal association'].isin(options_1)]

# Evaluate clustering for  $\delta^{13}\text{C}$  (‰) and TN (%)
evaluate_clustering(df_filtered_1, [' $\delta^{13}\text{C}$  (‰)', 'TN (%)'], 'Mycorrhizal association')
70

# Second condition: Domain filtering
options_2 = ['Gymnosperm', 'Angiosperm', 'Grass C3', 'Grass C4']
df_filtered_2 = data.loc[data['Domain'].isin(options_2)]

75 # Define the features you want to consider in combinations
feature_columns = ["TOC (%)", " $\delta^{13}\text{C}$  (‰)", "TN (%)", " $\delta^{15}\text{N}$  (‰)", "C/N"]

# Initialize lists to store the results
results = []
80

# Generate dual feature combinations and evaluate clustering for each combination
for comb in combinations(feature_columns, 2):

```

```

    silhouette_avg, adjusted_rand = evaluate_clustering(df_filtered_2, list(comb), 'Mycorrhizal
association')
85     # Append the results to the list
    results.append({
        'Features': ', '.join(comb),
        'Silhouette Score': silhouette_avg,
        'Adjusted Rand Index': adjusted_rand
90     })

# Create an output DataFrame and display it
output_df = pd.DataFrame(results)
print(output_df)
95

```

ID	Transect	Species	Genus	Domain	association	Latitude	Longitude	Elevation (m)	Precipitation (mm/m)	Temperature (K)	δ15N (‰)	TN (‰)	δ13C (‰)	TOC (‰)	C/N
1	Central Himalay	Juniperus Recun	Juniperus	Gymnosperm	Endomycorrhiza	28.76130	83.96540	4389	69.1	277.1	3.7	8.0	-24.1	53.7	6.7
2	Central Himalay	Juniperus Recun	Juniperus	Gymnosperm	Endomycorrhiza	28.80960	83.89620	4358	63.8	278.9	3.1	10.2	-24.5	39.7	3.9
3	Central Himalay	Rhododendron	Rhododendron	Angiosperm	Eroid	28.81425	83.88452	3995	63.1	280.1	4.6	13.8	-24.8	37.4	2.7
4	Central Himalay	Abies Densa	Abies	Gymnosperm	Ecotmycorrhizal	28.58150	84.41820	2674	84.3	279.0	2.5	11.3	-24.3	30.5	2.7
5	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.58150	84.41820	2674	84.3	279.0	1.4	11.5	-28.4	37.1	3.2
6	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.59620	84.42840	2837	83.7	278.8	-1.4	14.5	-29.7	40.1	2.8
7	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.55905	84.39427	2379	85.3	280.7	0.5	10.7	-29.0	40.9	3.8
8	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.53850	84.37360	2227	85.9	281.9	1.1	10.6	-28.8	37.7	3.6
9	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.53004	84.34921	2007	85.8	282.3	0.9	10.2	-29.2	42.4	3.9
10	Central Himalay	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	28.53900	84.30020	2679	86.7	282.9	0.5	12.2	-27.3	25.9	2.1
11	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.55170	84.27390	2646	86.5	281.8	0.0	10.7	-26.7	37.9	3.5
12	Central Himalay	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	28.55580	84.22805	2739	86.6	281.2	0.7	11.6	-30.7	33.9	2.9
13	Central Himalay	Juniperus Recun	Juniperus	Gymnosperm	Endomycorrhiza	28.58780	84.18660	3089	83.6	282.3	-0.2	11.0	-29.1	36.3	3.3
14	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.58780	84.18660	3089	83.6	282.3	0.4	8.9	-26.9	45.5	5.1
15	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.58780	84.18660	3089	83.6	282.3	-0.4	8.9	-25.7	40.3	3.7
16	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.60504	84.16655	3189	82.1	283.3	-2.0	10.8	-27.5	37.3	3.5
17	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.62070	84.14240	3251	80.9	285.7	-3.7	10.7	-26.3	35.0	3.3
18	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.62070	84.14240	3251	80.9	285.7	-3.7	10.7	-26.9	38.2	3.6
19	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.62260	84.14100	3258	80.7	286.0	-2.4	11.3	-24.9	44.6	3.9
20	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.62260	84.14100	3258	80.7	286.0	-1.2	12.0	-28.0	39.9	3.3
21	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.63900	84.12751	3472	79.2	286.6	-1.1	7.2	-24.5	41.7	5.8
22	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.64420	84.11080	3716	78.7	287.3	2.6	9.8	-23.4	48.7	5.0
23	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.64870	84.08990	3447	78.2	288.6	-1.4	5.7	-23.9	40.3	7.0
24	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.64870	84.08990	3447	78.2	288.6	-3.0	5.9	-24.8	47.8	8.1
25	Central Himalay	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	28.66320	84.02790	3485	77.1	288.4	-4.4	10.5	-26.7	36.8	3.5
26	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.66452	84.01903	3482	77.1	288.1	0.7	8.5	-25.9	41.1	4.8
27	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.67469	84.00431	3774	76.5	288.7	2.8	10.1	-23.2	47.2	5.6
28	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.67469	84.00431	3774	76.5	288.7	3.0	10.5	-23.2	41.6	4.0
29	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.69740	83.98940	3917	74.7	289.4	0.6	9.4	-25.0	44.9	4.0
30	Central Himalay	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	28.70060	83.98690	3962	74.4	283.5	3.2	10.8	-23.9	37.9	3.5
31	Central Himalay	Rhododendron	Rhododendron	Angiosperm	Eroid	28.72627	83.97682	4286	72.2	280.0	4.6	13.8	-24.0	33.0	2.4
32	Central Himalay	Juniperus Recun	Juniperus	Gymnosperm	Endomycorrhiza	28.73708	83.97301	4220	71.3	279.2	3.3	10.2	-25.2	36.4	3.6
33	Central Himalay	Rhododendron	Rhododendron	Angiosperm	Eroid	28.74885	83.97061	4307	70.3	278.2	4.6	13.8	-25.6	48.5	3.5
34	Western Himala	Rhododendron	Rhododendron	Angiosperm	Eroid	29.29760	82.18000	2426	47.4	293.7	9.5	2.0	-27.2	44.9	22.7
35	Western Himala	Rhododendron	Rhododendron	Angiosperm	Eroid	29.31280	81.73280	2551	33.5	288.3	1.8	28.8	-35.7	35.7	19.8
36	Western Himala	Rhododendron	Rhododendron	Angiosperm	Eroid	29.04510	81.63460	2817	42.8	287.5	11.8	21.2	-25.9	34.7	22.8
37	Western Himala	Rhododendron	Rhododendron	Angiosperm	Eroid	29.44280	82.11110	2867	48.8	288.9	6.6	3.1	-24.4	23.2	7.6
38	Western Himala	Rhododendron	Rhododendron	Angiosperm	Eroid	29.51710	82.07960	2930	48.8	292.4	11.4	0.4	-27.6	48.8	125.2
39	Western Himala	Rhododendron	Rhododendron	Angiosperm	Eroid	29.35040	82.16050	3599	48.0	288.9	11.8	1.3	-27.2	37.0	29.3
40	Western Himala	Abies Densa	Abies	Gymnosperm	Ecotmycorrhizal	29.68240	82.10420	2729	44.2	286.2	6.5	0.4	-31.4	43.9	112.5
41	Western Himala	Abies Densa	Abies	Gymnosperm	Ecotmycorrhizal	29.64520	82.11480	3348	45.2	287.6	9.5	0.7	-30.5	41.4	58.3
42	Western Himala	Abies Densa	Abies	Gymnosperm	Ecotmycorrhizal	29.34310	82.16060	3672	47.9	289.5	1.9	2.1	-29.4	36.1	39.5
43	Western Himala	Dung	Dung	Dung	Dung	29.40700	82.12470	2662	48.5	288.1	10.0	2.4	-25.9	33.4	13.7
44	Western Himala	Dung	Dung	Dung	Dung	29.79070	82.00390	2850	41.6	291.7	9.2	1.2	-20.0	25.2	21.2
45	Western Himala	Dung	Dung	Dung	Dung	29.51710	82.07960	2930	48.8	292.4	9.1	1.5	-19.7	32.9	22.3
46	Western Himala	Dung	Dung	Dung	Dung	29.67501	82.10554	2986	44.4	286.1	9.5	0.6	-23.6	28.9	48.5
47	Western Himala	Dung	Dung	Dung	Dung	30.04680	81.66110	3114	32.6	287.7	10.0	2.7	-20.7	30.8	11.6
48	Western Himala	Dung	Dung	Dung	Dung	30.24480	81.64290	4111	29.7	286.7	10.9	13.4	-28.3	34.8	2.6
49	Western Himala	Grass C4	Grass C4	Arbuscular mycc	Arbuscular mycc	29.56630	82.15890	1962	45.9	294.8	11.5	2.1	-13.7	31.8	15.8
50	Western Himala	Grass	Grass C4	Arbuscular mycc	Arbuscular mycc	29.40970	82.12210	2594	48.5	288.2	9.6	1.6	-13.0	33.5	20.6
51	Western Himala	Grass	Grass C4	Arbuscular mycc	Arbuscular mycc	30.04510	81.63660	2837	32.8	287.5	5.8	0.7	-14.2	42.3	57.9
52	Western Himala	Grass	Grass C4	Arbuscular mycc	Arbuscular mycc	29.82150	81.97040	2899	41.0	286.1	14.2	1.6	-13.2	38.1	23.4
53	Western Himala	Grass	Grass C3	Arbuscular mycc	Arbuscular mycc	29.51710	82.07960	2930	48.8	292.4	6.0	0.3	-28.9	35.0	116.6
54	Western Himala	Grass	Grass C4	Arbuscular mycc	Arbuscular mycc	30.04680	81.66110	3114	32.6	287.7	6.8	3.2	-13.0	41.7	13.0
55	Western Himala	Grass	Grass C3	Arbuscular mycc	Arbuscular mycc	29.64520	82.16050	3299	47.9	289.4	11.8	2.1	-28.4	39.3	29.3
56	Western Himala	Grass	Grass C4	Arbuscular mycc	Arbuscular mycc	29.62950	82.12230	3302	45.6	288.1	9.1	0.9	-13.3	36.8	39.5
57	Western Himala	Grass	Grass C3	Arbuscular mycc	Arbuscular mycc	30.09520	81.49630	3450	33.1	289.3	7.0	3.8	-29.4	36.5	9.5
58	Western Himala	Grass	Grass C3	Arbuscular mycc	Arbuscular mycc	29.34310	82.16060	3672	47.9	289.5	11.2	0.2	-29.8	34.0	141.8
59	Western Himala	Juniperus Pseud	Juniperus	Gymnosperm	Endomycorrhiza	30.04680	81.66110	3114	32.6	287.7	9.7	2.1	-28.1	49.5	23.2
60	Western Himala	Juniperus Pseud	Juniperus	Gymnosperm	Endomycorrhiza	29.97190	81.49630	3228	37.5	291.8	10.2	2.8	-23.8	44.0	15.8
61	Western Himala	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	30.09520	81.49630	3450	33.1	289.3	11.6	1.8	-24.4	46.2	25.2
62	Western Himala	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	30.24480	81.64290	4111	29.7	286.7	12.7	0.9	-27.0	37.8	70.1
63	Western Himala	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	30.16390	81.37080	4141	33.0	288.7	9.2	0.6	-24.6	46.5	76.2
64	Western Himala	Juniperus Semig	Juniperus	Gymnosperm	Endomycorrhiza	29.51710	82.07960	2930	48.8	292.4	11.7	1.9	-28.4	47.3	25.0
65	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.40970	82.12210	2594	48.5	288.2	10.4	1.4	-28.3	34.2	24.6
66	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.68240	82.10420	2729	44.2	286.2	9.0	0.4	-29.5	36.1	83.8
67	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.32690	82.16660	3084	47.8	291.0	5.1	0.9	-31.0	37.8	42.0
68	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.32690	82.16660	3084	47.8	291.0	4.8	1.7	-28.2	32.8	16.5
69	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	30.04680	81.66110	3114	32.6	287.7	10.2	2.8	-23.8	44.0	15.8
70	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.97190	81.49630	3228	37.5	291.8	6.9	5.8	-26.1	35.9	6.2
71	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.33490	82.16610	3298	47.9	290.3	9.9	3.6	-26.6	39.3	10.8
72	Western Himala	Pinus Roxburghi	Pinus	Gymnosperm	Ecotmycorrhizal	29.33490	82.16610	3298	47.9	290.3	10.7	0.5	-27.3	51.1	94.6
73	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.56630	82.15890	1962	46.9	294.8	10.3	1.3	-23.3	35.5	27.9
74	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.29760	82.18000	2426	47.4	293.7	9.0	3.5	-27.0	37.3	4.8
75	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.31640	82.18200	2746	47.7	294.4	4.4	4.7	-27.1	24.7	10.6
76	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.41450	82.12140	2773	48.5	289.2	11.7	0.6	-27.0	38.7	47.8
77	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.79070	82.00390	2850	41.6	291.7	9.4	1.8	-27.6	34.6	19.0
78	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.82150	81.97040	2899	41.0	286.1	4.9	0.9	-29.2	34.2	39.4
79	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.51710	82.07960	2930	48.8	292.4	11.0	4.8	-24.9	37.5	7.9
80	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	29.32690	82.16660	3084	47.8	291.0	11.0	4.0	-28.9	36.9	9.2
81	Western Himala	Pinus Wallichiar	Pinus	Gymnosperm	Ecotmycorrhizal	30.04680	81.66110	3114	32.6	287.7	8.7	2.4	-25.4	32.7	13.4

Driver	Target	Correlation (Full)	R-squared
Elevation (m)	TN (%)	0.37	0.13
Elevation (m)	$\delta^{15}\text{N}$ (‰)	-0.28	0.08
Elevation (m)	C/N	-0.18	0.03
Elevation (m)	$\delta^{13}\text{C}$ (‰)	0.07	0.01
Elevation (m)	TOC (%)	-0.06	0.00
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	-0.80	0.63
Precipitation Annual (mm/m)	TN (%)	0.77	0.59
Precipitation Annual (mm/m)	C/N	-0.46	0.22
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	-0.20	0.04
Precipitation Annual (mm/m)	TOC (%)	-0.01	0.00
Precipitation MAM (mm/m)	TN (%)	0.82	0.67
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	-0.82	0.67
Precipitation MAM (mm/m)	C/N	-0.49	0.24
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	-0.15	0.02
Precipitation MAM (mm/m)	TOC (%)	0.05	0.00
Soil Moisture (m3/m3)	TN (%)	-0.69	0.48
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	0.60	0.36
Soil Moisture (m3/m3)	C/N	0.45	0.20
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	-0.13	0.02
Soil Moisture (m3/m3)	TOC (%)	-0.10	0.01
Soil Temperature (K)	TN (%)	-0.68	0.46
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	0.61	0.37
Soil Temperature (K)	C/N	0.46	0.21
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	-0.12	0.01
Soil Temperature (K)	TOC (%)	0.06	0.00
Surface Temperature Annual (K)	TN (%)	-0.69	0.48
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	0.58	0.33
Surface Temperature Annual (K)	C/N	0.37	0.14
Surface Temperature Annual (K)	TOC (%)	0.07	0.01
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	0.04	0.00
Surface Temperature JJA (K)	TN (%)	-0.77	0.60
Surface Temperature JJA (K)	TOC (%)	0.11	0.01
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	0.08	0.01
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	0.68	0.47
Surface Temperature JJA (K)	C/N	0.45	0.21

Driver	Target	Transect	Correlation (Transect)	R-squared
Elevation (m)	C/N	Central Himalaya (Annapurna)	0.26	0.07
Elevation (m)	TN (%)	Central Himalaya (Annapurna)	-0.09	0.01
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	0.73	0.54
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	0.46	0.21
Elevation (m)	TOC (%)	Central Himalaya (Annapurna)	0.36	0.13
Precipitation Annual (mm/m)	TOC (%)	Central Himalaya (Annapurna)	-0.22	0.05
Precipitation Annual (mm/m)	C/N	Central Himalaya (Annapurna)	-0.04	0.00
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	-0.52	0.27
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	-0.59	0.35
Precipitation Annual (mm/m)	TN (%)	Central Himalaya (Annapurna)	-0.15	0.02
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	-0.65	0.42
Precipitation MAM (mm/m)	TN (%)	Central Himalaya (Annapurna)	0.01	0.00
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	-0.52	0.27
Precipitation MAM (mm/m)	TOC (%)	Central Himalaya (Annapurna)	-0.30	0.09
Precipitation MAM (mm/m)	C/N	Central Himalaya (Annapurna)	-0.18	0.03
Soil Moisture (m3/m3)	TOC (%)	Central Himalaya (Annapurna)	-0.24	0.06
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	-0.67	0.45
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	-0.38	0.15
Soil Moisture (m3/m3)	C/N	Central Himalaya (Annapurna)	-0.19	0.03
Soil Moisture (m3/m3)	TN (%)	Central Himalaya (Annapurna)	0.07	0.01
Soil Temperature (K)	TOC (%)	Central Himalaya (Annapurna)	-0.12	0.02
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	-0.59	0.34
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	-0.20	0.04
Soil Temperature (K)	C/N	Central Himalaya (Annapurna)	-0.13	0.02
Soil Temperature (K)	TN (%)	Central Himalaya (Annapurna)	0.04	0.00
Surface Temperature Annual (K)	C/N	Central Himalaya (Annapurna)	0.39	0.15
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	-0.43	0.19
Surface Temperature Annual (K)	TOC (%)	Central Himalaya (Annapurna)	0.21	0.05
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	0.18	0.03
Surface Temperature Annual (K)	TN (%)	Central Himalaya (Annapurna)	-0.47	0.22
Surface Temperature JJA (K)	TOC (%)	Central Himalaya (Annapurna)	0.23	0.05
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Central Himalaya (Annapurna)	-0.46	0.21
Surface Temperature JJA (K)	C/N	Central Himalaya (Annapurna)	0.45	0.20
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Central Himalaya (Annapurna)	0.26	0.07
Surface Temperature JJA (K)	TN (%)	Central Himalaya (Annapurna)	-0.51	0.26
Elevation (m)	TOC (%)	Eastern Himalaya (Kosi)	-0.50	0.25
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	0.42	0.18
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	0.39	0.15
Elevation (m)	TN (%)	Eastern Himalaya (Kosi)	-0.30	0.09
Elevation (m)	C/N	Eastern Himalaya (Kosi)	-0.09	0.01
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	-0.50	0.25
Precipitation Annual (mm/m)	TOC (%)	Eastern Himalaya (Kosi)	0.49	0.24
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	-0.34	0.11
Precipitation Annual (mm/m)	TN (%)	Eastern Himalaya (Kosi)	0.27	0.07
Precipitation Annual (mm/m)	C/N	Eastern Himalaya (Kosi)	0.09	0.01
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	-0.53	0.28

Precipitation MAM (mm/m)	TOC (%)	Eastern Himalaya (Kosi)	0.44	0.20
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	-0.27	0.08
Precipitation MAM (mm/m)	TN (%)	Eastern Himalaya (Kosi)	0.26	0.07
Precipitation MAM (mm/m)	C/N	Eastern Himalaya (Kosi)	0.05	0.00
Soil Moisture (m3/m3)	TOC (%)	Eastern Himalaya (Kosi)	0.46	0.21
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	-0.44	0.19
Soil Moisture (m3/m3)	TN (%)	Eastern Himalaya (Kosi)	0.28	0.08
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	-0.26	0.07
Soil Moisture (m3/m3)	C/N	Eastern Himalaya (Kosi)	0.07	0.00
Soil Temperature (K)	TOC (%)	Eastern Himalaya (Kosi)	0.51	0.26
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	-0.41	0.17
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	-0.41	0.17
Soil Temperature (K)	TN (%)	Eastern Himalaya (Kosi)	0.27	0.07
Soil Temperature (K)	C/N	Eastern Himalaya (Kosi)	0.14	0.02
Surface Temperature Annual (K)	TN (%)	Eastern Himalaya (Kosi)	-0.17	0.03
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	0.11	0.01
Surface Temperature Annual (K)	C/N	Eastern Himalaya (Kosi)	0.11	0.01
Surface Temperature Annual (K)	TOC (%)	Eastern Himalaya (Kosi)	-0.03	0.00
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	-0.02	0.00
Surface Temperature JJA (K)	TN (%)	Eastern Himalaya (Kosi)	-0.18	0.03
Surface Temperature JJA (K)	TOC (%)	Eastern Himalaya (Kosi)	-0.09	0.01
Surface Temperature JJA (K)	C/N	Eastern Himalaya (Kosi)	0.08	0.01
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Eastern Himalaya (Kosi)	0.05	0.00
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Eastern Himalaya (Kosi)	-0.05	0.00
Elevation (m)	C/N	Western Himalaya (Karnali)	0.20	0.04
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	-0.19	0.04
Elevation (m)	TOC (%)	Western Himalaya (Karnali)	0.18	0.03
Elevation (m)	TN (%)	Western Himalaya (Karnali)	0.10	0.01
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	-0.07	0.01
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	-0.27	0.07
Precipitation Annual (mm/m)	TN (%)	Western Himalaya (Karnali)	-0.24	0.06
Precipitation Annual (mm/m)	TOC (%)	Western Himalaya (Karnali)	-0.14	0.02
Precipitation Annual (mm/m)	C/N	Western Himalaya (Karnali)	0.12	0.01
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	0.03	0.00
Precipitation MAM (mm/m)	TN (%)	Western Himalaya (Karnali)	-0.26	0.07
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	-0.24	0.06
Precipitation MAM (mm/m)	C/N	Western Himalaya (Karnali)	0.15	0.02
Precipitation MAM (mm/m)	TOC (%)	Western Himalaya (Karnali)	-0.14	0.02
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	0.08	0.01
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	-0.23	0.05
Soil Moisture (m3/m3)	TOC (%)	Western Himalaya (Karnali)	-0.18	0.03
Soil Moisture (m3/m3)	TN (%)	Western Himalaya (Karnali)	-0.16	0.03
Soil Moisture (m3/m3)	C/N	Western Himalaya (Karnali)	0.05	0.00
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	0.02	0.00
Soil Temperature (K)	TN (%)	Western Himalaya (Karnali)	-0.30	0.09
Soil Temperature (K)	TOC (%)	Western Himalaya (Karnali)	-0.19	0.04
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	-0.19	0.03
Soil Temperature (K)	C/N	Western Himalaya (Karnali)	0.08	0.01

Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	0.06	0.00
Surface Temperature Annual (K)	C/N	Western Himalaya (Karnali)	-0.12	0.01
Surface Temperature Annual (K)	TN (%)	Western Himalaya (Karnali)	-0.07	0.00
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	-0.07	0.00
Surface Temperature Annual (K)	TOC (%)	Western Himalaya (Karnali)	-0.05	0.00
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	0.01	0.00
Surface Temperature JJA (K)	C/N	Western Himalaya (Karnali)	-0.14	0.02
Surface Temperature JJA (K)	TN (%)	Western Himalaya (Karnali)	0.10	0.01
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Western Himalaya (Karnali)	0.06	0.00
Surface Temperature JJA (K)	TOC (%)	Western Himalaya (Karnali)	-0.01	0.00
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Western Himalaya (Karnali)	0.00	0.00

Driver	Target	Genus	Correlation (Genus)	R-squared
Precipitation Annual (mm/m)	C/N	Abies	-0.90	0.81
Precipitation MAM (mm/m)	C/N	Abies	-0.82	0.67
Surface Temperature JJA (K)	C/N	Abies	0.72	0.51
Soil Temperature (K)	C/N	Abies	0.69	0.48
Soil Moisture (m3/m3)	C/N	Abies	0.59	0.35
Surface Temperature Annual (K)	C/N	Abies	0.51	0.26
Elevation (m)	C/N	Abies	-0.24	0.06
Precipitation MAM (mm/m)	C/N	Dung	0.53	0.28
Soil Temperature (K)	C/N	Dung	0.53	0.28
Precipitation Annual (mm/m)	C/N	Dung	0.49	0.24
Elevation (m)	C/N	Dung	-0.47	0.22
Soil Moisture (m3/m3)	C/N	Dung	0.44	0.20
Surface Temperature Annual (K)	C/N	Dung	0.25	0.06
Surface Temperature JJA (K)	C/N	Dung	-0.08	0.01
Precipitation MAM (mm/m)	C/N	Grass C3	0.68	0.47
Soil Temperature (K)	C/N	Grass C3	0.64	0.41
Precipitation Annual (mm/m)	C/N	Grass C3	0.62	0.38
Soil Moisture (m3/m3)	C/N	Grass C3	0.61	0.37
Surface Temperature Annual (K)	C/N	Grass C3	0.55	0.30
Surface Temperature JJA (K)	C/N	Grass C3	0.35	0.12
Elevation (m)	C/N	Grass C3	0.00	0.00
Soil Moisture (m3/m3)	C/N	Grass C4	-0.36	0.13
Elevation (m)	C/N	Grass C4	0.34	0.12
Precipitation Annual (mm/m)	C/N	Grass C4	-0.33	0.11
Surface Temperature JJA (K)	C/N	Grass C4	-0.33	0.11
Precipitation MAM (mm/m)	C/N	Grass C4	-0.32	0.10
Soil Temperature (K)	C/N	Grass C4	-0.32	0.10
Surface Temperature Annual (K)	C/N	Grass C4	-0.31	0.10
Precipitation Annual (mm/m)	C/N	Juniperus	-0.81	0.65
Precipitation MAM (mm/m)	C/N	Juniperus	-0.75	0.56
Surface Temperature JJA (K)	C/N	Juniperus	0.41	0.17
Soil Temperature (K)	C/N	Juniperus	-0.05	0.00
Surface Temperature Annual (K)	C/N	Juniperus	0.03	0.00
Soil Moisture (m3/m3)	C/N	Juniperus	0.02	0.00
Elevation (m)	C/N	Juniperus	0.01	0.00
Precipitation MAM (mm/m)	C/N	Pinus	-0.44	0.19
Precipitation Annual (mm/m)	C/N	Pinus	-0.38	0.15
Soil Temperature (K)	C/N	Pinus	0.35	0.12
Soil Moisture (m3/m3)	C/N	Pinus	0.33	0.11
Surface Temperature JJA (K)	C/N	Pinus	0.26	0.07
Elevation (m)	C/N	Pinus	0.19	0.04
Surface Temperature Annual (K)	C/N	Pinus	0.16	0.03
Surface Temperature JJA (K)	C/N	Rhododendron	0.60	0.35
Soil Temperature (K)	C/N	Rhododendron	0.58	0.33
Surface Temperature Annual (K)	C/N	Rhododendron	0.56	0.32
Soil Moisture (m3/m3)	C/N	Rhododendron	0.56	0.31

Precipitation MAM (mm/m)	C/N	Rhododendron	-0.53	0.28
Precipitation Annual (mm/m)	C/N	Rhododendron	-0.48	0.23
Elevation (m)	C/N	Rhododendron	-0.28	0.08
Precipitation MAM (mm/m)	TN (%)	Abies	0.91	0.82
Elevation (m)	TN (%)	Dung	0.94	0.88
Precipitation MAM (mm/m)	TN (%)	Pinus	0.92	0.84
Precipitation Annual (mm/m)	TN (%)	Abies	0.95	0.91
Precipitation Annual (mm/m)	TN (%)	Juniperus	0.85	0.72
Precipitation MAM (mm/m)	TN (%)	Grass C3	-0.96	0.93
Precipitation MAM (mm/m)	TN (%)	Rhododendron	0.90	0.81
Surface Temperature JJA (K)	TN (%)	Abies	-0.93	0.87
Surface Temperature Annual (K)	TN (%)	Abies	-0.81	0.66
Soil Moisture (m3/m3)	TN (%)	Abies	-0.79	0.63
Soil Temperature (K)	TN (%)	Grass C4	-0.24	0.06
Elevation (m)	TN (%)	Abies	-0.04	0.00
Soil Temperature (K)	TN (%)	Abies	-0.82	0.67
Precipitation MAM (mm/m)	TN (%)	Dung	-0.71	0.51
Soil Temperature (K)	TN (%)	Dung	-0.84	0.70
Surface Temperature Annual (K)	TN (%)	Dung	-0.74	0.55
Precipitation Annual (mm/m)	TN (%)	Dung	-0.73	0.54
Soil Moisture (m3/m3)	TN (%)	Dung	-0.68	0.47
Surface Temperature JJA (K)	TN (%)	Dung	-0.39	0.15
Soil Temperature (K)	TN (%)	Grass C3	-0.95	0.90
Soil Moisture (m3/m3)	TN (%)	Grass C3	-0.92	0.85
Precipitation Annual (mm/m)	TN (%)	Grass C3	-0.92	0.85
Surface Temperature Annual (K)	TN (%)	Grass C3	-0.88	0.77
Surface Temperature JJA (K)	TN (%)	Grass C3	-0.52	0.27
Elevation (m)	TN (%)	Grass C3	0.21	0.05
Precipitation MAM (mm/m)	TN (%)	Grass C4	-0.21	0.05
Precipitation Annual (mm/m)	TN (%)	Grass C4	-0.20	0.04
Soil Moisture (m3/m3)	TN (%)	Grass C4	-0.18	0.03
Surface Temperature JJA (K)	TN (%)	Grass C4	0.18	0.03
Elevation (m)	TN (%)	Grass C4	-0.11	0.01
Surface Temperature Annual (K)	TN (%)	Grass C4	0.03	0.00
Precipitation MAM (mm/m)	TN (%)	Juniperus	0.82	0.67
Surface Temperature JJA (K)	TN (%)	Juniperus	-0.52	0.27
Soil Moisture (m3/m3)	TN (%)	Juniperus	-0.29	0.08
Surface Temperature Annual (K)	TN (%)	Juniperus	-0.25	0.06
Soil Temperature (K)	TN (%)	Juniperus	-0.13	0.02
Elevation (m)	TN (%)	Juniperus	0.10	0.01
Precipitation Annual (mm/m)	TN (%)	Pinus	0.82	0.68
Surface Temperature JJA (K)	TN (%)	Pinus	-0.77	0.59
Surface Temperature Annual (K)	TN (%)	Pinus	-0.64	0.41
Soil Moisture (m3/m3)	TN (%)	Pinus	-0.62	0.39
Soil Temperature (K)	TN (%)	Pinus	-0.57	0.33
Elevation (m)	TN (%)	Pinus	-0.35	0.12
Surface Temperature JJA (K)	TN (%)	Rhododendron	-0.88	0.77
Soil Moisture (m3/m3)	TN (%)	Rhododendron	-0.84	0.70

Surface Temperature Annual (K)	TN (%)	Rhododendron	-0.83	0.70
Soil Temperature (K)	TN (%)	Rhododendron	-0.81	0.65
Precipitation Annual (mm/m)	TN (%)	Rhododendron	0.79	0.63
Elevation (m)	TN (%)	Rhododendron	0.53	0.28
Surface Temperature JJA (K)	TOC (%)	Juniperus	0.60	0.36
Precipitation MAM (mm/m)	TOC (%)	Grass C4	-0.94	0.89
Soil Temperature (K)	TOC (%)	Abies	0.71	0.51
Precipitation Annual (mm/m)	TOC (%)	Pinus	0.25	0.06
Precipitation MAM (mm/m)	TOC (%)	Grass C3	-0.22	0.05
Elevation (m)	TOC (%)	Rhododendron	-0.35	0.12
Surface Temperature Annual (K)	TOC (%)	Dung	-0.49	0.24
Soil Moisture (m3/m3)	TOC (%)	Abies	0.63	0.39
Elevation (m)	TOC (%)	Abies	-0.48	0.23
Precipitation Annual (mm/m)	TOC (%)	Abies	-0.42	0.17
Precipitation MAM (mm/m)	TOC (%)	Abies	-0.41	0.17
Surface Temperature JJA (K)	TOC (%)	Abies	0.30	0.09
Surface Temperature Annual (K)	TOC (%)	Abies	0.18	0.03
Elevation (m)	TOC (%)	Dung	0.46	0.21
Soil Temperature (K)	TOC (%)	Dung	-0.32	0.10
Surface Temperature JJA (K)	TOC (%)	Dung	-0.28	0.08
Precipitation Annual (mm/m)	TOC (%)	Dung	-0.14	0.02
Precipitation MAM (mm/m)	TOC (%)	Dung	-0.14	0.02
Soil Moisture (m3/m3)	TOC (%)	Dung	-0.12	0.02
Soil Temperature (K)	TOC (%)	Grass C3	-0.17	0.03
Elevation (m)	TOC (%)	Grass C3	-0.16	0.03
Precipitation Annual (mm/m)	TOC (%)	Grass C3	-0.14	0.02
Soil Moisture (m3/m3)	TOC (%)	Grass C3	-0.13	0.02
Surface Temperature JJA (K)	TOC (%)	Grass C3	-0.12	0.01
Surface Temperature Annual (K)	TOC (%)	Grass C3	-0.09	0.01
Precipitation Annual (mm/m)	TOC (%)	Grass C4	-0.94	0.88
Soil Moisture (m3/m3)	TOC (%)	Grass C4	-0.93	0.87
Soil Temperature (K)	TOC (%)	Grass C4	-0.83	0.68
Surface Temperature Annual (K)	TOC (%)	Grass C4	-0.77	0.59
Elevation (m)	TOC (%)	Grass C4	0.68	0.46
Surface Temperature JJA (K)	TOC (%)	Grass C4	-0.67	0.45
Soil Temperature (K)	TOC (%)	Juniperus	0.50	0.25
Surface Temperature Annual (K)	TOC (%)	Juniperus	0.41	0.17
Elevation (m)	TOC (%)	Juniperus	-0.37	0.13
Precipitation Annual (mm/m)	TOC (%)	Juniperus	-0.33	0.11
Precipitation MAM (mm/m)	TOC (%)	Juniperus	-0.22	0.05
Soil Moisture (m3/m3)	TOC (%)	Juniperus	-0.04	0.00
Precipitation MAM (mm/m)	TOC (%)	Pinus	0.20	0.04
Soil Moisture (m3/m3)	TOC (%)	Pinus	0.09	0.01
Soil Temperature (K)	TOC (%)	Pinus	0.09	0.01
Surface Temperature JJA (K)	TOC (%)	Pinus	-0.06	0.00
Elevation (m)	TOC (%)	Pinus	-0.05	0.00
Surface Temperature Annual (K)	TOC (%)	Pinus	0.02	0.00
Soil Temperature (K)	TOC (%)	Rhododendron	0.24	0.06

Surface Temperature Annual (K)	TOC (%)	Rhododendron	0.20	0.04
Surface Temperature JJA (K)	TOC (%)	Rhododendron	0.19	0.04
Soil Moisture (m3/m3)	TOC (%)	Rhododendron	0.13	0.02
Precipitation Annual (mm/m)	TOC (%)	Rhododendron	-0.12	0.01
Precipitation MAM (mm/m)	TOC (%)	Rhododendron	-0.11	0.01
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Juniperus	0.59	0.35
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Pinus	0.53	0.28
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Grass C3	-0.68	0.46
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Rhododendron	-0.40	0.16
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Grass C4	0.46	0.21
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Dung	0.83	0.68
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Abies	0.79	0.63
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Abies	-0.59	0.35
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Abies	0.79	0.62
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Abies	-0.53	0.28
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Abies	-0.29	0.09
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Abies	-0.28	0.08
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Abies	-0.26	0.07
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Dung	0.70	0.49
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Dung	-0.58	0.34
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Dung	0.45	0.20
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Dung	0.31	0.10
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Dung	0.30	0.09
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Dung	0.27	0.07
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Grass C3	0.51	0.27
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Grass C3	0.50	0.25
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Grass C3	0.32	0.10
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Grass C3	0.29	0.08
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Grass C3	0.28	0.08
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Grass C3	0.25	0.06
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Grass C4	0.40	0.16
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Grass C4	0.36	0.13
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Grass C4	0.33	0.11
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Grass C4	0.27	0.07
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Grass C4	-0.25	0.06
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Grass C4	-0.14	0.02
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Juniperus	-0.53	0.28
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Juniperus	-0.34	0.12
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Juniperus	-0.19	0.04
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Juniperus	-0.17	0.03
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Juniperus	-0.13	0.02
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Juniperus	-0.10	0.01
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Pinus	0.47	0.22
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Pinus	-0.44	0.20
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Pinus	-0.40	0.16
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Pinus	0.17	0.03
Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Pinus	-0.10	0.01
Soil Moisture (m3/m3)	$\delta^{13}\text{C}$ (‰)	Pinus	0.01	0.00

Soil Temperature (K)	$\delta^{13}\text{C}$ (‰)	Rhododendron	-0.38	0.15
Elevation (m)	$\delta^{13}\text{C}$ (‰)	Rhododendron	0.35	0.12
Surface Temperature Annual (K)	$\delta^{13}\text{C}$ (‰)	Rhododendron	-0.18	0.03
Surface Temperature JJA (K)	$\delta^{13}\text{C}$ (‰)	Rhododendron	-0.17	0.03
Precipitation MAM (mm/m)	$\delta^{13}\text{C}$ (‰)	Rhododendron	0.08	0.01
Precipitation Annual (mm/m)	$\delta^{13}\text{C}$ (‰)	Rhododendron	-0.03	0.00
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Pinus	-0.79	0.63
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Dung	-0.91	0.83
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Grass C4	0.74	0.55
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Abies	-0.80	0.64
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Abies	-0.92	0.85
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Abies	0.82	0.67
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Grass C3	0.84	0.70
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Juniperus	-0.84	0.70
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Rhododendron	-0.85	0.73
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Abies	0.72	0.52
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Abies	0.68	0.46
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Abies	0.64	0.41
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Abies	0.02	0.00
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Dung	-0.79	0.62
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Dung	0.77	0.59
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Dung	-0.72	0.51
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Dung	-0.70	0.49
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Dung	-0.69	0.48
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Dung	-0.67	0.45
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Grass C3	-0.62	0.39
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Grass C3	0.44	0.19
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Grass C3	0.39	0.15
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Grass C3	0.28	0.08
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Grass C3	0.28	0.08
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Grass C3	-0.05	0.00
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Grass C4	0.65	0.42
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Grass C4	0.59	0.34
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Grass C4	0.57	0.32
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Grass C4	0.40	0.16
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Grass C4	-0.33	0.11
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Grass C4	0.15	0.02
Precipitation MAM (mm/m)	$\delta^{15}\text{N}$ (‰)	Juniperus	-0.82	0.68
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Juniperus	0.37	0.13
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Juniperus	0.27	0.07
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Juniperus	0.19	0.04
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Juniperus	0.17	0.03
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Juniperus	0.04	0.00
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Pinus	0.71	0.51
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Pinus	-0.71	0.50
Soil Moisture (m3/m3)	$\delta^{15}\text{N}$ (‰)	Pinus	0.64	0.40
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Pinus	0.60	0.36
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Pinus	0.58	0.33

Elevation (m)	$\delta^{15}\text{N}$ (‰)	Pinus	0.15	0.02
Precipitation Annual (mm/m)	$\delta^{15}\text{N}$ (‰)	Rhododendron	-0.84	0.70
Surface Temperature JJA (K)	$\delta^{15}\text{N}$ (‰)	Rhododendron	0.82	0.67
Surface Temperature Annual (K)	$\delta^{15}\text{N}$ (‰)	Rhododendron	0.74	0.54
Soil Temperature (K)	$\delta^{15}\text{N}$ (‰)	Rhododendron	0.71	0.50
Soil Moisture (m ³ /m ³)	$\delta^{15}\text{N}$ (‰)	Rhododendron	0.63	0.40
Elevation (m)	$\delta^{15}\text{N}$ (‰)	Rhododendron	-0.34	0.11