**Appendix S2**

Spectral diversity as a predictor of tree diversity: exploring challenges and opportunities across various forest ecosystems

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**Table S1. Tree biodiversity indices calculated on the forest inventory plots**

|  |  |  |
| --- | --- | --- |
| **Diversity Index** | **Formulas** | **Reference** |
| Species richness (SR) | ndist | Whittaker (1972) |
| Where ndist is the number of distinct species in a sample. |
| Shannon diversity (H) |  | Shannon (1948) |
| Where p is the proportion of each species (S) within the sample |
| Percent Conifer (PC) |  |  |
| Where n is the number of conifer species in the plot and N is the total number of species. |
| Functional Dispersion (FDis) |  | Laliberté & Legendre (2010) |
| Where aj is the abundance of species j and zj is the distance of species j to the weighted centroid |

**Table S2. Sentinel-2 bands and associated wavelengths used in this study**

|  |  |  |
| --- | --- | --- |
| **Sentinel-2 bands** | **Central wavelength (nm)** | **Resolution (m)** |
| Band 2 - Blue | 490 | 10 |
| Band 3 - Green | 560 | 10 |
| Band 4 - Red | 665 | 10 |
| Band 5 - Red edge | 705 | 20 |
| Band 6 - Red edge | 740 | 20 |
| Band 7 - Red edge | 783 | 20 |
| Band 8 - Near-infrared (NIR) | 842 | 10 |
| Band 8A - Near-infrared (NIR) | 865 | 20 |
| Band 11 - Short-wave infrared (SWIR) | 1,610 | 20 |
| Band 12 - Short-wave infrared (SWIR) | 2,190 | 20 |

**Table S3. Vegetation indices extracted from each forest inventory plot**

|  |  |  |
| --- | --- | --- |
| **Index** | **Formulas** | **Reference** |
| NDVI | (NIR (B8) – Red (B4)) / (NIR (B8) + Red (B4)) | Rouse et al. (1974) |
| EVI | 2.5 \* ((NIR (B8) – Red (B4)) / (NIR (B8) + 6.0\*Red (B4) – 7.5\*Blue (B2) + 1)) | Justice et al. (1998) |
| SR | NIR (B8) / Red (B4) | Jordan (1969) |
| GRVI | (Green (B3) – Red (B4)) / (Green(B3) + Red (B4)) | Falkowski et al. (2005) |
| VARI | (Green (B3) – Red (B4)) / (Green (B3) + Red (B4) – Blue (B2)) | Gitelson et al. (2002) |
|  | | **Selected Bands** |
| Standard deviation (SD) |  | [NIR (B8), Red (B4), Red Edge (B5)]  [NIR (B8), Red (B4), Red Edge (B5), Green (B3)]  [Blue (B2), Green (B3), Red (B4)]  [SWIR (B11), SWIR (B12)]  [SWIR (B11), SWIR (B12), RED (B4)]  [SWIR (B11), SWIR (B12), NIR (B8)] |
| Where: xi is the band value within a pixel, x̄ is the mean of the selected bands within a pixel, and n is the number of bands | |
| Coefficient of variation (CV) | CV = |
| Where: SD is the standard deviation of the selected bands within a pixel, and x̄ is the mean of the selected bands | |

**Table S4. Texture metrics calculated for each image**

|  |  |
| --- | --- |
| **Texture** | **Formulas** |
| Variance |  |
| Correlation |  |
| Dissimilarity |  |
| Entropy |  |

Where *Pi,j* is the probability occurrence of pixel intensities or digital numbers, *i* and *j* for two adjacent pixels. *i* and *j* index the pixel intensities in the GLCM, corresponding to the original pixel and its neighbour respectively. *u* denotes the mean intensity value from the GLCM. *σ* represents the standard deviation of the intensities in the GLCM. The textures are computed within a defined neighborhood window around each pixel in the image. Due to the symmetry of the GLCM, variance can be computed with either *i* or *j*, yielding the same result.

**Table S5. Moving window coefficient of variation calculations**

|  |  |  |
| --- | --- | --- |
| Metric | Equation | Reference |
| Single dimensional coefficient of variation (SDCV) |  | Wang et al. (2016) |
| Multi-dimensional coefficient of variation (MDCV) |  |

\*Where SD is the standard deviation of the l-th band and x̄ is the mean of the l-th band calculated using a moving window, and n is the total number of bands

**Table S6. Pearson’s correlations for species richness in the Quebec region.**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 1.000 | 0.000 |
| shannon | 0.880 | 0.000 |
| lat\_copy | -0.406 | 0.000 |
| lon\_copy | 0.030 | 0.130 |
| B11\_end | 0.065 | 0.001 |
| B11\_correlation\_end | -0.047 | 0.019 |
| B11\_dissimilarity\_end | 0.013 | 0.504 |
| B11\_entropy\_end | 0.081 | 0.000 |
| B11\_variance\_end | -0.017 | 0.391 |
| B12\_end | -0.014 | 0.477 |
| B12\_correlation\_end | -0.020 | 0.322 |
| B12\_dissimilarity\_end | -0.058 | 0.003 |
| B12\_entropy\_end | 0.022 | 0.271 |
| B12\_variance\_end | -0.042 | 0.034 |
| B2\_end | -0.082 | 0.000 |
| B2\_correlation\_end | -0.028 | 0.156 |
| B2\_dissimilarity\_end | -0.020 | 0.310 |
| B2\_entropy\_end | 0.014 | 0.487 |
| B2\_variance\_end | -0.039 | 0.049 |
| B3\_end | 0.069 | 0.000 |
| B3\_correlation\_end | -0.080 | 0.000 |
| B3\_dissimilarity\_end | 0.144 | 0.000 |
| B3\_entropy\_end | 0.220 | 0.000 |
| B3\_variance\_end | 0.075 | 0.000 |
| B4\_end | 0.053 | 0.008 |
| B4\_correlation\_end | -0.100 | 0.000 |
| B4\_dissimilarity\_end | 0.133 | 0.000 |
| B4\_entropy\_end | 0.189 | 0.000 |
| B4\_variance\_end | 0.080 | 0.000 |
| B5\_end | 0.113 | 0.000 |
| B5\_correlation\_end | -0.074 | 0.000 |
| B5\_dissimilarity\_end | 0.101 | 0.000 |
| B5\_entropy\_end | 0.103 | 0.000 |
| B5\_variance\_end | 0.066 | 0.001 |
| B6\_end | 0.210 | 0.000 |
| B6\_correlation\_end | -0.096 | 0.000 |
| B6\_dissimilarity\_end | 0.177 | 0.000 |
| B6\_entropy\_end | 0.142 | 0.000 |
| B6\_variance\_end | 0.125 | 0.000 |
| B7\_end | 0.216 | 0.000 |
| B7\_correlation\_end | -0.042 | 0.034 |
| B7\_dissimilarity\_end | 0.176 | 0.000 |
| B7\_entropy\_end | 0.098 | 0.000 |
| B7\_variance\_end | 0.130 | 0.000 |
| B8\_end | 0.212 | 0.000 |
| B8A\_end | 0.213 | 0.000 |
| B8A\_correlation\_end | -0.055 | 0.005 |
| B8A\_dissimilarity\_end | 0.160 | 0.000 |
| B8A\_entropy\_end | 0.108 | 0.000 |
| B8A\_variance\_end | 0.107 | 0.000 |
| B8\_correlation\_end | 0.016 | 0.412 |
| B8\_dissimilarity\_end | 0.243 | 0.000 |
| B8\_entropy\_end | 0.231 | 0.000 |
| B8\_variance\_end | 0.176 | 0.000 |
| CV\_B11B12\_end | 0.241 | 0.000 |
| CV\_B11B12red\_end | 0.031 | 0.115 |
| CV\_B2B3B4\_end | 0.153 | 0.000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.141 | 0.000 |
| CV\_NirRedRedEdge\_end | 0.094 | 0.000 |
| EVI\_end | 0.229 | 0.000 |
| GRVI\_end | 0.236 | 0.000 |
| NDVI\_end | 0.075 | 0.000 |
| SD\_B11B12\_end | 0.140 | 0.000 |
| SD\_B11B12red\_end | 0.076 | 0.000 |
| SD\_B2B3B4\_end | 0.102 | 0.000 |
| SD\_NirRedRe\_end | 0.231 | 0.000 |
| SD\_NirRedReG\_end | 0.228 | 0.000 |
| SR\_end | 0.056 | 0.005 |
| VARI\_end | -0.110 | 0.000 |
| scaled\_GRVI\_correlation\_end | 0.007 | 0.716 |
| scaled\_GRVI\_dissimilarity\_end | 0.030 | 0.135 |
| scaled\_GRVI\_entropy\_end | 0.112 | 0.000 |
| scaled\_GRVI\_variance\_end | -0.006 | 0.776 |
| scaled\_NDVI\_correlation\_end | -0.007 | 0.710 |
| scaled\_NDVI\_dissimilarity\_end | 0.078 | 0.000 |
| scaled\_NDVI\_entropy\_end | 0.127 | 0.000 |
| scaled\_NDVI\_variance\_end | 0.022 | 0.279 |
| scaled\_VARI\_correlation\_end | 0.023 | 0.257 |
| scaled\_VARI\_dissimilarity\_end | 0.204 | 0.000 |
| scaled\_VARI\_entropy\_end | 0.129 | 0.000 |
| scaled\_VARI\_variance\_end | 0.163 | 0.000 |
| CV\_11128\_end | 0.189 | 0.000 |
| SD\_11128\_end | 0.255 | 0.000 |
| winCVedge\_end | 0.048 | 0.017 |
| winCVgreen\_end | 0.117 | 0.000 |
| winCVnir\_end | 0.124 | 0.000 |
| winCVred\_end | 0.103 | 0.000 |
| winCV\_avg\_end | 0.114 | 0.000 |
| B11\_peak | 0.056 | 0.005 |
| B11\_correlation\_peak | -0.040 | 0.047 |
| B11\_dissimilarity\_peak | -0.064 | 0.001 |
| B11\_entropy\_peak | 0.042 | 0.034 |
| B11\_variance\_peak | -0.049 | 0.013 |
| B12\_peak | -0.047 | 0.018 |
| B12\_correlation\_peak | 0.041 | 0.041 |
| B12\_dissimilarity\_peak | -0.101 | 0.000 |
| B12\_entropy\_peak | -0.044 | 0.026 |
| B12\_variance\_peak | -0.029 | 0.151 |
| B2\_peak | -0.115 | 0.000 |
| B2\_correlation\_peak | -0.002 | 0.905 |
| B2\_dissimilarity\_peak | -0.051 | 0.010 |
| B2\_entropy\_peak | -0.056 | 0.005 |
| B2\_variance\_peak | -0.031 | 0.120 |
| B3\_peak | -0.129 | 0.000 |
| B3\_correlation\_peak | -0.065 | 0.001 |
| B3\_dissimilarity\_peak | -0.044 | 0.028 |
| B3\_entropy\_peak | -0.001 | 0.975 |
| B3\_variance\_peak | -0.030 | 0.129 |
| B4\_peak | -0.156 | 0.000 |
| B4\_correlation\_peak | 0.046 | 0.021 |
| B4\_dissimilarity\_peak | -0.068 | 0.001 |
| B4\_entropy\_peak | -0.114 | 0.000 |
| B4\_variance\_peak | -0.029 | 0.138 |
| B5\_peak | -0.100 | 0.000 |
| B5\_correlation\_peak | -0.002 | 0.904 |
| B5\_dissimilarity\_peak | -0.074 | 0.000 |
| B5\_entropy\_peak | -0.015 | 0.447 |
| B5\_variance\_peak | -0.033 | 0.097 |
| B6\_peak | 0.153 | 0.000 |
| B6\_correlation\_peak | -0.063 | 0.001 |
| B6\_dissimilarity\_peak | 0.042 | 0.033 |
| B6\_entropy\_peak | 0.112 | 0.000 |
| B6\_variance\_peak | -0.014 | 0.486 |
| B7\_peak | 0.174 | 0.000 |
| B7\_correlation\_peak | -0.059 | 0.003 |
| B7\_dissimilarity\_peak | 0.086 | 0.000 |
| B7\_entropy\_peak | 0.104 | 0.000 |
| B7\_variance\_peak | 0.023 | 0.241 |
| B8\_peak | 0.168 | 0.000 |
| B8A\_peak | 0.171 | 0.000 |
| B8A\_correlation\_peak | -0.036 | 0.067 |
| B8A\_dissimilarity\_peak | 0.067 | 0.001 |
| B8A\_entropy\_peak | 0.084 | 0.000 |
| B8A\_variance\_peak | 0.016 | 0.430 |
| B8\_correlation\_peak | 0.020 | 0.324 |
| B8\_dissimilarity\_peak | 0.110 | 0.000 |
| B8\_entropy\_peak | 0.225 | 0.000 |
| B8\_variance\_peak | 0.023 | 0.245 |
| CV\_B11B12\_peak | 0.265 | 0.000 |
| CV\_B11B12red\_peak | 0.282 | 0.000 |
| CV\_B2B3B4\_peak | 0.165 | 0.000 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.310 | 0.000 |
| CV\_NirRedRedEdge\_peak | 0.307 | 0.000 |
| EVI\_peak | 0.098 | 0.000 |
| GRVI\_peak | 0.312 | 0.000 |
| NDVI\_peak | 0.274 | 0.000 |
| SD\_B11B12\_peak | 0.133 | 0.000 |
| SD\_B11B12red\_peak | 0.108 | 0.000 |
| SD\_B2B3B4\_peak | -0.013 | 0.498 |
| SD\_NirRedRe\_peak | 0.191 | 0.000 |
| SD\_NirRedReG\_peak | 0.191 | 0.000 |
| SR\_peak | 0.258 | 0.000 |
| VARI\_peak | 0.175 | 0.000 |
| scaled\_GRVI\_correlation\_peak | 0.064 | 0.001 |
| scaled\_GRVI\_dissimilarity\_peak | -0.035 | 0.077 |
| scaled\_GRVI\_entropy\_peak | 0.050 | 0.012 |
| scaled\_GRVI\_variance\_peak | -0.030 | 0.128 |
| scaled\_NDVI\_correlation\_peak | 0.039 | 0.052 |
| scaled\_NDVI\_dissimilarity\_peak | -0.071 | 0.000 |
| scaled\_NDVI\_entropy\_peak | -0.022 | 0.261 |
| scaled\_NDVI\_variance\_peak | -0.031 | 0.115 |
| scaled\_VARI\_correlation\_peak | -0.027 | 0.177 |
| scaled\_VARI\_dissimilarity\_peak | 0.012 | 0.543 |
| scaled\_VARI\_entropy\_peak | 0.083 | 0.000 |
| scaled\_VARI\_variance\_peak | 0.030 | 0.130 |
| CV\_11128\_peak | 0.250 | 0.000 |
| SD\_11128\_peak | 0.197 | 0.000 |
| winCVedge\_peak | -0.070 | 0.000 |
| winCVgreen\_peak | -0.015 | 0.451 |
| winCVnir\_peak | 0.013 | 0.524 |
| winCVred\_peak | -0.054 | 0.007 |
| winCV\_avg\_peak | -0.041 | 0.037 |
| B11\_start | -0.008 | 0.694 |
| B11\_correlation\_start | -0.033 | 0.098 |
| B11\_dissimilarity\_start | -0.048 | 0.016 |
| B11\_entropy\_start | 0.023 | 0.241 |
| B11\_variance\_start | -0.052 | 0.009 |
| B12\_start | -0.091 | 0.000 |
| B12\_correlation\_start | -0.016 | 0.414 |
| B12\_dissimilarity\_start | -0.075 | 0.000 |
| B12\_entropy\_start | -0.002 | 0.924 |
| B12\_variance\_start | -0.047 | 0.017 |
| B2\_start | -0.133 | 0.000 |
| B2\_correlation\_start | -0.015 | 0.451 |
| B2\_dissimilarity\_start | -0.084 | 0.000 |
| B2\_entropy\_start | -0.040 | 0.042 |
| B2\_variance\_start | -0.041 | 0.040 |
| B3\_start | 0.002 | 0.929 |
| B3\_correlation\_start | -0.059 | 0.003 |
| B3\_dissimilarity\_start | 0.005 | 0.785 |
| B3\_entropy\_start | 0.091 | 0.000 |
| B3\_variance\_start | -0.023 | 0.248 |
| B4\_start | -0.190 | 0.000 |
| B4\_correlation\_start | -0.018 | 0.365 |
| B4\_dissimilarity\_start | -0.100 | 0.000 |
| B4\_entropy\_start | -0.062 | 0.002 |
| B4\_variance\_start | -0.058 | 0.004 |
| B5\_start | 0.006 | 0.771 |
| B5\_correlation\_start | -0.052 | 0.009 |
| B5\_dissimilarity\_start | 0.007 | 0.726 |
| B5\_entropy\_start | 0.055 | 0.005 |
| B5\_variance\_start | -0.003 | 0.887 |
| B6\_start | 0.186 | 0.000 |
| B6\_correlation\_start | -0.077 | 0.000 |
| B6\_dissimilarity\_start | 0.176 | 0.000 |
| B6\_entropy\_start | 0.118 | 0.000 |
| B6\_variance\_start | 0.123 | 0.000 |
| B7\_start | 0.195 | 0.000 |
| B7\_correlation\_start | -0.082 | 0.000 |
| B7\_dissimilarity\_start | 0.178 | 0.000 |
| B7\_entropy\_start | 0.138 | 0.000 |
| B7\_variance\_start | 0.122 | 0.000 |
| B8\_start | 0.183 | 0.000 |
| B8A\_start | 0.193 | 0.000 |
| B8A\_correlation\_start | -0.038 | 0.058 |
| B8A\_dissimilarity\_start | 0.163 | 0.000 |
| B8A\_entropy\_start | 0.084 | 0.000 |
| B8A\_variance\_start | 0.115 | 0.000 |
| B8\_correlation\_start | 0.025 | 0.201 |
| B8\_dissimilarity\_start | 0.200 | 0.000 |
| B8\_entropy\_start | 0.236 | 0.000 |
| B8\_variance\_start | 0.127 | 0.000 |
| CV\_B11B12\_start | 0.221 | 0.000 |
| CV\_B11B12red\_start | 0.267 | 0.000 |
| CV\_B2B3B4\_start | 0.190 | 0.000 |
| CV\_NIRRedRedEdgeGreen\_start | 0.288 | 0.000 |
| CV\_NirRedRedEdge\_start | 0.287 | 0.000 |
| EVI\_start | 0.234 | 0.000 |
| GRVI\_start | 0.278 | 0.000 |
| NDVI\_start | 0.282 | 0.000 |
| SD\_B11B12\_start | 0.105 | 0.000 |
| SD\_B11B12red\_start | 0.058 | 0.004 |
| SD\_B2B3B4\_start | 0.082 | 0.000 |
| SD\_NirRedRe\_start | 0.214 | 0.000 |
| SD\_NirRedReG\_start | 0.209 | 0.000 |
| SR\_start | 0.229 | 0.000 |
| VARI\_start | 0.236 | 0.000 |
| scaled\_GRVI\_correlation\_start | 0.009 | 0.636 |
| scaled\_GRVI\_dissimilarity\_start | -0.015 | 0.439 |
| scaled\_GRVI\_entropy\_start | 0.054 | 0.007 |
| scaled\_GRVI\_variance\_start | -0.022 | 0.266 |
| scaled\_NDVI\_correlation\_start | 0.023 | 0.248 |
| scaled\_NDVI\_dissimilarity\_start | -0.059 | 0.003 |
| scaled\_NDVI\_entropy\_start | 0.021 | 0.286 |
| scaled\_NDVI\_variance\_start | -0.047 | 0.018 |
| scaled\_VARI\_correlation\_start | 0.035 | 0.079 |
| scaled\_VARI\_dissimilarity\_start | 0.047 | 0.018 |
| scaled\_VARI\_entropy\_start | 0.113 | 0.000 |
| scaled\_VARI\_variance\_start | 0.024 | 0.234 |
| CV\_11128\_start | 0.198 | 0.000 |
| SD\_11128\_start | 0.207 | 0.000 |
| winCVedge\_start | 0.009 | 0.664 |
| winCVgreen\_start | 0.001 | 0.954 |
| winCVnir\_start | 0.119 | 0.000 |
| winCVred\_start | -0.036 | 0.068 |
| winCV\_avg\_start | 0.013 | 0.512 |
| bio01 | 0.365 | 0.000 |
| bio04 | -0.315 | 0.000 |
| bio12 | 0.002 | 0.933 |
| bio15 | -0.334 | 0.000 |
| carbon05 | 0.199 | 0.000 |
| carbon100200 | 0.090 | 0.000 |
| carbon1530 | 0.252 | 0.000 |
| carbon3060 | 0.100 | 0.000 |
| carbon515 | 0.268 | 0.000 |
| carbon60100 | 0.091 | 0.000 |
| cec05 | -0.158 | 0.000 |
| cec100200 | -0.189 | 0.000 |
| cec1530 | -0.183 | 0.000 |
| cec3060 | -0.188 | 0.000 |
| cec515 | -0.158 | 0.000 |
| cec60100 | -0.189 | 0.000 |
| clay05 | -0.200 | 0.000 |
| clay100200 | -0.203 | 0.000 |
| clay1530 | -0.200 | 0.000 |
| clay3060 | -0.201 | 0.000 |
| clay515 | -0.200 | 0.000 |
| clay60100 | -0.203 | 0.000 |
| elevation | -0.146 | 0.000 |
| pH05 | -0.001 | 0.946 |
| pH100200 | -0.043 | 0.030 |
| pH1530 | 0.001 | 0.944 |
| pH3060 | -0.053 | 0.007 |
| pH515 | -0.017 | 0.387 |
| pH60100 | -0.046 | 0.021 |
| sand05 | 0.133 | 0.000 |
| sand100200 | 0.146 | 0.000 |
| sand1530 | 0.142 | 0.000 |
| sand3060 | 0.144 | 0.000 |
| sand515 | 0.137 | 0.000 |
| sand60100 | 0.146 | 0.000 |
| silt05 | 0.121 | 0.000 |
| silt100200 | 0.103 | 0.000 |
| silt1530 | 0.108 | 0.000 |
| silt3060 | 0.107 | 0.000 |
| silt515 | 0.117 | 0.000 |
| silt60100 | 0.103 | 0.000 |
| fdis | 0.661 | 0.000 |
| Conifer\_Percentage | -0.206 | 0.000 |

**Table S7. Pearson’s correlations for Shannon diversity in the Quebec region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.880 | 0.000 |
| shannon | 1.000 | 0.000 |
| lat\_copy | -0.399 | 0.000 |
| lon\_copy | 0.035 | 0.077 |
| B11\_end | 0.114 | 0.000 |
| B11\_correlation\_end | -0.074 | 0.000 |
| B11\_dissimilarity\_end | 0.059 | 0.003 |
| B11\_entropy\_end | 0.116 | 0.000 |
| B11\_variance\_end | 0.021 | 0.297 |
| B12\_end | 0.040 | 0.043 |
| B12\_correlation\_end | -0.043 | 0.030 |
| B12\_dissimilarity\_end | -0.020 | 0.304 |
| B12\_entropy\_end | 0.057 | 0.004 |
| B12\_variance\_end | -0.019 | 0.349 |
| B2\_end | -0.039 | 0.050 |
| B2\_correlation\_end | -0.066 | 0.001 |
| B2\_dissimilarity\_end | 0.035 | 0.082 |
| B2\_entropy\_end | 0.071 | 0.000 |
| B2\_variance\_end | -0.005 | 0.801 |
| B3\_end | 0.108 | 0.000 |
| B3\_correlation\_end | -0.112 | 0.000 |
| B3\_dissimilarity\_end | 0.196 | 0.000 |
| B3\_entropy\_end | 0.281 | 0.000 |
| B3\_variance\_end | 0.112 | 0.000 |
| B4\_end | 0.090 | 0.000 |
| B4\_correlation\_end | -0.132 | 0.000 |
| B4\_dissimilarity\_end | 0.185 | 0.000 |
| B4\_entropy\_end | 0.254 | 0.000 |
| B4\_variance\_end | 0.119 | 0.000 |
| B5\_end | 0.147 | 0.000 |
| B5\_correlation\_end | -0.103 | 0.000 |
| B5\_dissimilarity\_end | 0.138 | 0.000 |
| B5\_entropy\_end | 0.140 | 0.000 |
| B5\_variance\_end | 0.094 | 0.000 |
| B6\_end | 0.233 | 0.000 |
| B6\_correlation\_end | -0.126 | 0.000 |
| B6\_dissimilarity\_end | 0.222 | 0.000 |
| B6\_entropy\_end | 0.175 | 0.000 |
| B6\_variance\_end | 0.161 | 0.000 |
| B7\_end | 0.238 | 0.000 |
| B7\_correlation\_end | -0.058 | 0.003 |
| B7\_dissimilarity\_end | 0.217 | 0.000 |
| B7\_entropy\_end | 0.120 | 0.000 |
| B7\_variance\_end | 0.163 | 0.000 |
| B8\_end | 0.237 | 0.000 |
| B8A\_end | 0.240 | 0.000 |
| B8A\_correlation\_end | -0.071 | 0.000 |
| B8A\_dissimilarity\_end | 0.209 | 0.000 |
| B8A\_entropy\_end | 0.124 | 0.000 |
| B8A\_variance\_end | 0.148 | 0.000 |
| B8\_correlation\_end | 0.008 | 0.706 |
| B8\_dissimilarity\_end | 0.298 | 0.000 |
| B8\_entropy\_end | 0.269 | 0.000 |
| B8\_variance\_end | 0.222 | 0.000 |
| CV\_B11B12\_end | 0.198 | 0.000 |
| CV\_B11B12red\_end | -0.002 | 0.933 |
| CV\_B2B3B4\_end | 0.123 | 0.000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.106 | 0.000 |
| CV\_NirRedRedEdge\_end | 0.057 | 0.004 |
| EVI\_end | 0.243 | 0.000 |
| GRVI\_end | 0.220 | 0.000 |
| NDVI\_end | 0.035 | 0.075 |
| SD\_B11B12\_end | 0.180 | 0.000 |
| SD\_B11B12red\_end | 0.124 | 0.000 |
| SD\_B2B3B4\_end | 0.122 | 0.000 |
| SD\_NirRedRe\_end | 0.249 | 0.000 |
| SD\_NirRedReG\_end | 0.248 | 0.000 |
| SR\_end | 0.012 | 0.544 |
| VARI\_end | -0.154 | 0.000 |
| scaled\_GRVI\_correlation\_end | 0.015 | 0.445 |
| scaled\_GRVI\_dissimilarity\_end | 0.078 | 0.000 |
| scaled\_GRVI\_entropy\_end | 0.146 | 0.000 |
| scaled\_GRVI\_variance\_end | 0.029 | 0.140 |
| scaled\_NDVI\_correlation\_end | 0.014 | 0.469 |
| scaled\_NDVI\_dissimilarity\_end | 0.131 | 0.000 |
| scaled\_NDVI\_entropy\_end | 0.165 | 0.000 |
| scaled\_NDVI\_variance\_end | 0.066 | 0.001 |
| scaled\_VARI\_correlation\_end | 0.044 | 0.027 |
| scaled\_VARI\_dissimilarity\_end | 0.232 | 0.000 |
| scaled\_VARI\_entropy\_end | 0.139 | 0.000 |
| scaled\_VARI\_variance\_end | 0.191 | 0.000 |
| CV\_11128\_end | 0.140 | 0.000 |
| SD\_11128\_end | 0.264 | 0.000 |
| winCVedge\_end | 0.069 | 0.000 |
| winCVgreen\_end | 0.150 | 0.000 |
| winCVnir\_end | 0.163 | 0.000 |
| winCVred\_end | 0.133 | 0.000 |
| winCV\_avg\_end | 0.150 | 0.000 |
| B11\_peak | 0.111 | 0.000 |
| B11\_correlation\_peak | -0.052 | 0.009 |
| B11\_dissimilarity\_peak | -0.040 | 0.042 |
| B11\_entropy\_peak | 0.062 | 0.002 |
| B11\_variance\_peak | -0.034 | 0.088 |
| B12\_peak | 0.004 | 0.857 |
| B12\_correlation\_peak | 0.018 | 0.360 |
| B12\_dissimilarity\_peak | -0.085 | 0.000 |
| B12\_entropy\_peak | -0.020 | 0.320 |
| B12\_variance\_peak | -0.023 | 0.239 |
| B2\_peak | -0.100 | 0.000 |
| B2\_correlation\_peak | -0.012 | 0.544 |
| B2\_dissimilarity\_peak | -0.036 | 0.070 |
| B2\_entropy\_peak | -0.036 | 0.067 |
| B2\_variance\_peak | -0.018 | 0.379 |
| B3\_peak | -0.100 | 0.000 |
| B3\_correlation\_peak | -0.108 | 0.000 |
| B3\_dissimilarity\_peak | -0.010 | 0.605 |
| B3\_entropy\_peak | 0.079 | 0.000 |
| B3\_variance\_peak | -0.017 | 0.398 |
| B4\_peak | -0.146 | 0.000 |
| B4\_correlation\_peak | 0.016 | 0.410 |
| B4\_dissimilarity\_peak | -0.050 | 0.011 |
| B4\_entropy\_peak | -0.076 | 0.000 |
| B4\_variance\_peak | -0.017 | 0.383 |
| B5\_peak | -0.062 | 0.002 |
| B5\_correlation\_peak | -0.026 | 0.186 |
| B5\_dissimilarity\_peak | -0.054 | 0.006 |
| B5\_entropy\_peak | 0.015 | 0.441 |
| B5\_variance\_peak | -0.020 | 0.308 |
| B6\_peak | 0.203 | 0.000 |
| B6\_correlation\_peak | -0.070 | 0.000 |
| B6\_dissimilarity\_peak | 0.074 | 0.000 |
| B6\_entropy\_peak | 0.118 | 0.000 |
| B6\_variance\_peak | 0.011 | 0.596 |
| B7\_peak | 0.219 | 0.000 |
| B7\_correlation\_peak | -0.062 | 0.002 |
| B7\_dissimilarity\_peak | 0.122 | 0.000 |
| B7\_entropy\_peak | 0.109 | 0.000 |
| B7\_variance\_peak | 0.054 | 0.007 |
| B8\_peak | 0.217 | 0.000 |
| B8A\_peak | 0.218 | 0.000 |
| B8A\_correlation\_peak | -0.049 | 0.013 |
| B8A\_dissimilarity\_peak | 0.109 | 0.000 |
| B8A\_entropy\_peak | 0.096 | 0.000 |
| B8A\_variance\_peak | 0.050 | 0.011 |
| B8\_correlation\_peak | 0.007 | 0.708 |
| B8\_dissimilarity\_peak | 0.176 | 0.000 |
| B8\_entropy\_peak | 0.249 | 0.000 |
| B8\_variance\_peak | 0.071 | 0.000 |
| CV\_B11B12\_peak | 0.271 | 0.000 |
| CV\_B11B12red\_peak | 0.318 | 0.000 |
| CV\_B2B3B4\_peak | 0.208 | 0.000 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.347 | 0.000 |
| CV\_NirRedRedEdge\_peak | 0.343 | 0.000 |
| EVI\_peak | 0.128 | 0.000 |
| GRVI\_peak | 0.347 | 0.000 |
| NDVI\_peak | 0.307 | 0.000 |
| SD\_B11B12\_peak | 0.182 | 0.000 |
| SD\_B11B12red\_peak | 0.163 | 0.000 |
| SD\_B2B3B4\_peak | 0.027 | 0.182 |
| SD\_NirRedRe\_peak | 0.237 | 0.000 |
| SD\_NirRedReG\_peak | 0.236 | 0.000 |
| SR\_peak | 0.297 | 0.000 |
| VARI\_peak | 0.208 | 0.000 |
| scaled\_GRVI\_correlation\_peak | 0.072 | 0.000 |
| scaled\_GRVI\_dissimilarity\_peak | -0.024 | 0.225 |
| scaled\_GRVI\_entropy\_peak | 0.070 | 0.000 |
| scaled\_GRVI\_variance\_peak | -0.023 | 0.248 |
| scaled\_NDVI\_correlation\_peak | 0.040 | 0.047 |
| scaled\_NDVI\_dissimilarity\_peak | -0.067 | 0.001 |
| scaled\_NDVI\_entropy\_peak | -0.020 | 0.323 |
| scaled\_NDVI\_variance\_peak | -0.026 | 0.189 |
| scaled\_VARI\_correlation\_peak | -0.013 | 0.506 |
| scaled\_VARI\_dissimilarity\_peak | 0.023 | 0.248 |
| scaled\_VARI\_entropy\_peak | 0.090 | 0.000 |
| scaled\_VARI\_variance\_peak | 0.007 | 0.732 |
| CV\_11128\_peak | 0.258 | 0.000 |
| SD\_11128\_peak | 0.238 | 0.000 |
| winCVedge\_peak | -0.053 | 0.008 |
| winCVgreen\_peak | 0.028 | 0.156 |
| winCVnir\_peak | 0.040 | 0.042 |
| winCVred\_peak | -0.023 | 0.241 |
| winCV\_avg\_peak | -0.005 | 0.783 |
| B11\_start | 0.052 | 0.009 |
| B11\_correlation\_start | -0.056 | 0.005 |
| B11\_dissimilarity\_start | -0.006 | 0.748 |
| B11\_entropy\_start | 0.066 | 0.001 |
| B11\_variance\_start | -0.025 | 0.202 |
| B12\_start | -0.029 | 0.149 |
| B12\_correlation\_start | -0.044 | 0.026 |
| B12\_dissimilarity\_start | -0.036 | 0.067 |
| B12\_entropy\_start | 0.041 | 0.040 |
| B12\_variance\_start | -0.029 | 0.150 |
| B2\_start | -0.087 | 0.000 |
| B2\_correlation\_start | -0.050 | 0.012 |
| B2\_dissimilarity\_start | -0.043 | 0.031 |
| B2\_entropy\_start | 0.024 | 0.228 |
| B2\_variance\_start | -0.026 | 0.191 |
| B3\_start | 0.047 | 0.018 |
| B3\_correlation\_start | -0.081 | 0.000 |
| B3\_dissimilarity\_start | 0.063 | 0.002 |
| B3\_entropy\_start | 0.160 | 0.000 |
| B3\_variance\_start | 0.004 | 0.842 |
| B4\_start | -0.135 | 0.000 |
| B4\_correlation\_start | -0.047 | 0.018 |
| B4\_dissimilarity\_start | -0.046 | 0.020 |
| B4\_entropy\_start | 0.010 | 0.620 |
| B4\_variance\_start | -0.036 | 0.072 |
| B5\_start | 0.053 | 0.007 |
| B5\_correlation\_start | -0.080 | 0.000 |
| B5\_dissimilarity\_start | 0.048 | 0.016 |
| B5\_entropy\_start | 0.092 | 0.000 |
| B5\_variance\_start | 0.022 | 0.267 |
| B6\_start | 0.202 | 0.000 |
| B6\_correlation\_start | -0.092 | 0.000 |
| B6\_dissimilarity\_start | 0.211 | 0.000 |
| B6\_entropy\_start | 0.138 | 0.000 |
| B6\_variance\_start | 0.153 | 0.000 |
| B7\_start | 0.206 | 0.000 |
| B7\_correlation\_start | -0.099 | 0.000 |
| B7\_dissimilarity\_start | 0.209 | 0.000 |
| B7\_entropy\_start | 0.154 | 0.000 |
| B7\_variance\_start | 0.150 | 0.000 |
| B8\_start | 0.198 | 0.000 |
| B8A\_start | 0.208 | 0.000 |
| B8A\_correlation\_start | -0.042 | 0.036 |
| B8A\_dissimilarity\_start | 0.199 | 0.000 |
| B8A\_entropy\_start | 0.114 | 0.000 |
| B8A\_variance\_start | 0.143 | 0.000 |
| B8\_correlation\_start | 0.018 | 0.367 |
| B8\_dissimilarity\_start | 0.250 | 0.000 |
| B8\_entropy\_start | 0.273 | 0.000 |
| B8\_variance\_start | 0.167 | 0.000 |
| CV\_B11B12\_start | 0.183 | 0.000 |
| CV\_B11B12red\_start | 0.245 | 0.000 |
| CV\_B2B3B4\_start | 0.176 | 0.000 |
| CV\_NIRRedRedEdgeGreen\_start | 0.248 | 0.000 |
| CV\_NirRedRedEdge\_start | 0.246 | 0.000 |
| EVI\_start | 0.231 | 0.000 |
| GRVI\_start | 0.247 | 0.000 |
| NDVI\_start | 0.243 | 0.000 |
| SD\_B11B12\_start | 0.147 | 0.000 |
| SD\_B11B12red\_start | 0.109 | 0.000 |
| SD\_B2B3B4\_start | 0.105 | 0.000 |
| SD\_NirRedRe\_start | 0.217 | 0.000 |
| SD\_NirRedReG\_start | 0.214 | 0.000 |
| SR\_start | 0.197 | 0.000 |
| VARI\_start | 0.196 | 0.000 |
| scaled\_GRVI\_correlation\_start | 0.013 | 0.502 |
| scaled\_GRVI\_dissimilarity\_start | 0.020 | 0.320 |
| scaled\_GRVI\_entropy\_start | 0.089 | 0.000 |
| scaled\_GRVI\_variance\_start | -0.001 | 0.955 |
| scaled\_NDVI\_correlation\_start | 0.038 | 0.058 |
| scaled\_NDVI\_dissimilarity\_start | -0.018 | 0.370 |
| scaled\_NDVI\_entropy\_start | 0.053 | 0.008 |
| scaled\_NDVI\_variance\_start | -0.023 | 0.247 |
| scaled\_VARI\_correlation\_start | 0.055 | 0.006 |
| scaled\_VARI\_dissimilarity\_start | 0.084 | 0.000 |
| scaled\_VARI\_entropy\_start | 0.118 | 0.000 |
| scaled\_VARI\_variance\_start | 0.054 | 0.006 |
| CV\_11128\_start | 0.141 | 0.000 |
| SD\_11128\_start | 0.198 | 0.000 |
| winCVedge\_start | 0.039 | 0.052 |
| winCVgreen\_start | 0.056 | 0.005 |
| winCVnir\_start | 0.164 | 0.000 |
| winCVred\_start | 0.006 | 0.756 |
| winCV\_avg\_start | 0.065 | 0.001 |
| bio01 | 0.355 | 0.000 |
| bio04 | -0.310 | 0.000 |
| bio12 | 0.017 | 0.406 |
| bio15 | -0.341 | 0.000 |
| carbon05 | 0.192 | 0.000 |
| carbon100200 | 0.081 | 0.000 |
| carbon1530 | 0.272 | 0.000 |
| carbon3060 | 0.094 | 0.000 |
| carbon515 | 0.275 | 0.000 |
| carbon60100 | 0.082 | 0.000 |
| cec05 | -0.167 | 0.000 |
| cec100200 | -0.198 | 0.000 |
| cec1530 | -0.193 | 0.000 |
| cec3060 | -0.197 | 0.000 |
| cec515 | -0.167 | 0.000 |
| cec60100 | -0.198 | 0.000 |
| clay05 | -0.203 | 0.000 |
| clay100200 | -0.207 | 0.000 |
| clay1530 | -0.204 | 0.000 |
| clay3060 | -0.205 | 0.000 |
| clay515 | -0.204 | 0.000 |
| clay60100 | -0.207 | 0.000 |
| elevation | -0.131 | 0.000 |
| pH05 | -0.010 | 0.617 |
| pH100200 | -0.060 | 0.003 |
| pH1530 | -0.007 | 0.742 |
| pH3060 | -0.068 | 0.001 |
| pH515 | -0.026 | 0.187 |
| pH60100 | -0.062 | 0.002 |
| sand05 | 0.132 | 0.000 |
| sand100200 | 0.147 | 0.000 |
| sand1530 | 0.141 | 0.000 |
| sand3060 | 0.143 | 0.000 |
| sand515 | 0.136 | 0.000 |
| sand60100 | 0.147 | 0.000 |
| silt05 | 0.134 | 0.000 |
| silt100200 | 0.112 | 0.000 |
| silt1530 | 0.119 | 0.000 |
| silt3060 | 0.117 | 0.000 |
| silt515 | 0.129 | 0.000 |
| silt60100 | 0.112 | 0.000 |
| fdis | 0.818 | 0.000 |
| Conifer\_Percentage | -0.270 | 0.000 |

**Table S8. Pearson’s correlations for functional dispersion in the Quebec region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.6607 | 0.0000 |
| shannon | 0.8184 | 0.0000 |
| lat\_copy | -0.3791 | 0.0000 |
| lon\_copy | 0.0762 | 0.0001 |
| B11\_end | 0.1786 | 0.0000 |
| B11\_correlation\_end | -0.0829 | 0.0000 |
| B11\_dissimilarity\_end | 0.0864 | 0.0000 |
| B11\_entropy\_end | 0.1306 | 0.0000 |
| B11\_variance\_end | 0.0443 | 0.0258 |
| B12\_end | 0.1045 | 0.0000 |
| B12\_correlation\_end | -0.0427 | 0.0319 |
| B12\_dissimilarity\_end | 0.0001 | 0.9949 |
| B12\_entropy\_end | 0.0604 | 0.0024 |
| B12\_variance\_end | -0.0073 | 0.7146 |
| B2\_end | 0.0119 | 0.5489 |
| B2\_correlation\_end | -0.0512 | 0.0100 |
| B2\_dissimilarity\_end | 0.0401 | 0.0436 |
| B2\_entropy\_end | 0.0713 | 0.0003 |
| B2\_variance\_end | -0.0005 | 0.9807 |
| B3\_end | 0.1508 | 0.0000 |
| B3\_correlation\_end | -0.1218 | 0.0000 |
| B3\_dissimilarity\_end | 0.2092 | 0.0000 |
| B3\_entropy\_end | 0.2952 | 0.0000 |
| B3\_variance\_end | 0.1162 | 0.0000 |
| B4\_end | 0.1251 | 0.0000 |
| B4\_correlation\_end | -0.1192 | 0.0000 |
| B4\_dissimilarity\_end | 0.2106 | 0.0000 |
| B4\_entropy\_end | 0.2765 | 0.0000 |
| B4\_variance\_end | 0.1424 | 0.0000 |
| B5\_end | 0.2010 | 0.0000 |
| B5\_correlation\_end | -0.1011 | 0.0000 |
| B5\_dissimilarity\_end | 0.1594 | 0.0000 |
| B5\_entropy\_end | 0.1373 | 0.0000 |
| B5\_variance\_end | 0.1129 | 0.0000 |
| B6\_end | 0.2675 | 0.0000 |
| B6\_correlation\_end | -0.1325 | 0.0000 |
| B6\_dissimilarity\_end | 0.2278 | 0.0000 |
| B6\_entropy\_end | 0.1787 | 0.0000 |
| B6\_variance\_end | 0.1687 | 0.0000 |
| B7\_end | 0.2734 | 0.0000 |
| B7\_correlation\_end | -0.0558 | 0.0050 |
| B7\_dissimilarity\_end | 0.2208 | 0.0000 |
| B7\_entropy\_end | 0.1205 | 0.0000 |
| B7\_variance\_end | 0.1731 | 0.0000 |
| B8\_end | 0.2753 | 0.0000 |
| B8A\_end | 0.2807 | 0.0000 |
| B8A\_correlation\_end | -0.0815 | 0.0000 |
| B8A\_dissimilarity\_end | 0.2254 | 0.0000 |
| B8A\_entropy\_end | 0.1331 | 0.0000 |
| B8A\_variance\_end | 0.1655 | 0.0000 |
| B8\_correlation\_end | -0.0010 | 0.9598 |
| B8\_dissimilarity\_end | 0.3060 | 0.0000 |
| B8\_entropy\_end | 0.2488 | 0.0000 |
| B8\_variance\_end | 0.2353 | 0.0000 |
| CV\_B11B12\_end | 0.1773 | 0.0000 |
| CV\_B11B12red\_end | 0.0009 | 0.9635 |
| CV\_B2B3B4\_end | 0.0968 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.0805 | 0.0001 |
| CV\_NirRedRedEdge\_end | 0.0258 | 0.1945 |
| EVI\_end | 0.2759 | 0.0000 |
| GRVI\_end | 0.2134 | 0.0000 |
| NDVI\_end | 0.0139 | 0.4836 |
| SD\_B11B12\_end | 0.2385 | 0.0000 |
| SD\_B11B12red\_end | 0.1953 | 0.0000 |
| SD\_B2B3B4\_end | 0.1475 | 0.0000 |
| SD\_NirRedRe\_end | 0.2809 | 0.0000 |
| SD\_NirRedReG\_end | 0.2820 | 0.0000 |
| SR\_end | -0.0055 | 0.7824 |
| VARI\_end | -0.1751 | 0.0000 |
| scaled\_GRVI\_correlation\_end | 0.0115 | 0.5625 |
| scaled\_GRVI\_dissimilarity\_end | 0.0638 | 0.0013 |
| scaled\_GRVI\_entropy\_end | 0.1175 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.0204 | 0.3061 |
| scaled\_NDVI\_correlation\_end | 0.0318 | 0.1095 |
| scaled\_NDVI\_dissimilarity\_end | 0.1406 | 0.0000 |
| scaled\_NDVI\_entropy\_end | 0.1513 | 0.0000 |
| scaled\_NDVI\_variance\_end | 0.0806 | 0.0001 |
| scaled\_VARI\_correlation\_end | 0.0560 | 0.0048 |
| scaled\_VARI\_dissimilarity\_end | 0.2383 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.1185 | 0.0000 |
| scaled\_VARI\_variance\_end | 0.2035 | 0.0000 |
| CV\_11128\_end | 0.0945 | 0.0000 |
| SD\_11128\_end | 0.2859 | 0.0000 |
| winCVedge\_end | 0.0587 | 0.0032 |
| winCVgreen\_end | 0.1257 | 0.0000 |
| winCVnir\_end | 0.1445 | 0.0000 |
| winCVred\_end | 0.1277 | 0.0000 |
| winCV\_avg\_end | 0.1330 | 0.0000 |
| B11\_peak | 0.1819 | 0.0000 |
| B11\_correlation\_peak | -0.0614 | 0.0020 |
| B11\_dissimilarity\_peak | -0.0215 | 0.2798 |
| B11\_entropy\_peak | 0.0736 | 0.0002 |
| B11\_variance\_peak | -0.0226 | 0.2551 |
| B12\_peak | 0.0592 | 0.0029 |
| B12\_correlation\_peak | 0.0207 | 0.2980 |
| B12\_dissimilarity\_peak | -0.0777 | 0.0001 |
| B12\_entropy\_peak | -0.0297 | 0.1356 |
| B12\_variance\_peak | -0.0277 | 0.1644 |
| B2\_peak | -0.0957 | 0.0000 |
| B2\_correlation\_peak | -0.0007 | 0.9706 |
| B2\_dissimilarity\_peak | -0.0358 | 0.0716 |
| B2\_entropy\_peak | -0.0538 | 0.0068 |
| B2\_variance\_peak | -0.0083 | 0.6777 |
| B3\_peak | -0.0694 | 0.0005 |
| B3\_correlation\_peak | -0.1114 | 0.0000 |
| B3\_dissimilarity\_peak | 0.0003 | 0.9876 |
| B3\_entropy\_peak | 0.0986 | 0.0000 |
| B3\_variance\_peak | -0.0091 | 0.6487 |
| B4\_peak | -0.1441 | 0.0000 |
| B4\_correlation\_peak | 0.0385 | 0.0530 |
| B4\_dissimilarity\_peak | -0.0529 | 0.0078 |
| B4\_entropy\_peak | -0.0918 | 0.0000 |
| B4\_variance\_peak | -0.0130 | 0.5147 |
| B5\_peak | -0.0088 | 0.6597 |
| B5\_correlation\_peak | -0.0387 | 0.0518 |
| B5\_dissimilarity\_peak | -0.0406 | 0.0410 |
| B5\_entropy\_peak | 0.0171 | 0.3911 |
| B5\_variance\_peak | -0.0140 | 0.4816 |
| B6\_peak | 0.2725 | 0.0000 |
| B6\_correlation\_peak | -0.0771 | 0.0001 |
| B6\_dissimilarity\_peak | 0.1052 | 0.0000 |
| B6\_entropy\_peak | 0.1157 | 0.0000 |
| B6\_variance\_peak | 0.0351 | 0.0773 |
| B7\_peak | 0.2838 | 0.0000 |
| B7\_correlation\_peak | -0.0777 | 0.0001 |
| B7\_dissimilarity\_peak | 0.1473 | 0.0000 |
| B7\_entropy\_peak | 0.1244 | 0.0000 |
| B7\_variance\_peak | 0.0775 | 0.0001 |
| B8\_peak | 0.2856 | 0.0000 |
| B8A\_peak | 0.2839 | 0.0000 |
| B8A\_correlation\_peak | -0.0638 | 0.0013 |
| B8A\_dissimilarity\_peak | 0.1411 | 0.0000 |
| B8A\_entropy\_peak | 0.1016 | 0.0000 |
| B8A\_variance\_peak | 0.0776 | 0.0001 |
| B8\_correlation\_peak | -0.0014 | 0.9443 |
| B8\_dissimilarity\_peak | 0.2233 | 0.0000 |
| B8\_entropy\_peak | 0.2302 | 0.0000 |
| B8\_variance\_peak | 0.1189 | 0.0000 |
| CV\_B11B12\_peak | 0.2963 | 0.0000 |
| CV\_B11B12red\_peak | 0.3746 | 0.0000 |
| CV\_B2B3B4\_peak | 0.2772 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.3898 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.3837 | 0.0000 |
| EVI\_peak | 0.1681 | 0.0000 |
| GRVI\_peak | 0.3874 | 0.0000 |
| NDVI\_peak | 0.3470 | 0.0000 |
| SD\_B11B12\_peak | 0.2523 | 0.0000 |
| SD\_B11B12red\_peak | 0.2357 | 0.0000 |
| SD\_B2B3B4\_peak | 0.0942 | 0.0000 |
| SD\_NirRedRe\_peak | 0.3035 | 0.0000 |
| SD\_NirRedReG\_peak | 0.3029 | 0.0000 |
| SR\_peak | 0.3574 | 0.0000 |
| VARI\_peak | 0.2525 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | 0.0528 | 0.0079 |
| scaled\_GRVI\_dissimilarity\_peak | -0.0497 | 0.0124 |
| scaled\_GRVI\_entropy\_peak | 0.0417 | 0.0360 |
| scaled\_GRVI\_variance\_peak | -0.0302 | 0.1292 |
| scaled\_NDVI\_correlation\_peak | 0.0420 | 0.0347 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0982 | 0.0000 |
| scaled\_NDVI\_entropy\_peak | -0.0817 | 0.0000 |
| scaled\_NDVI\_variance\_peak | -0.0363 | 0.0679 |
| scaled\_VARI\_correlation\_peak | -0.0333 | 0.0942 |
| scaled\_VARI\_dissimilarity\_peak | -0.0007 | 0.9713 |
| scaled\_VARI\_entropy\_peak | 0.0591 | 0.0030 |
| scaled\_VARI\_variance\_peak | -0.0138 | 0.4866 |
| CV\_11128\_peak | 0.2773 | 0.0000 |
| SD\_11128\_peak | 0.3022 | 0.0000 |
| winCVedge\_peak | -0.0484 | 0.0149 |
| winCVgreen\_peak | 0.0315 | 0.1131 |
| winCVnir\_peak | 0.0428 | 0.0312 |
| winCVred\_peak | -0.0316 | 0.1115 |
| winCV\_avg\_peak | -0.0063 | 0.7530 |
| B11\_start | 0.1238 | 0.0000 |
| B11\_correlation\_start | -0.0609 | 0.0022 |
| B11\_dissimilarity\_start | 0.0313 | 0.1150 |
| B11\_entropy\_start | 0.0770 | 0.0001 |
| B11\_variance\_start | -0.0026 | 0.8951 |
| B12\_start | 0.0474 | 0.0171 |
| B12\_correlation\_start | -0.0711 | 0.0004 |
| B12\_dissimilarity\_start | 0.0005 | 0.9795 |
| B12\_entropy\_start | 0.0708 | 0.0004 |
| B12\_variance\_start | -0.0135 | 0.4960 |
| B2\_start | -0.0335 | 0.0916 |
| B2\_correlation\_start | -0.0483 | 0.0151 |
| B2\_dissimilarity\_start | -0.0246 | 0.2164 |
| B2\_entropy\_start | 0.0525 | 0.0082 |
| B2\_variance\_start | -0.0293 | 0.1405 |
| B3\_start | 0.1019 | 0.0000 |
| B3\_correlation\_start | -0.0866 | 0.0000 |
| B3\_dissimilarity\_start | 0.0934 | 0.0000 |
| B3\_entropy\_start | 0.1910 | 0.0000 |
| B3\_variance\_start | 0.0065 | 0.7444 |
| B4\_start | -0.0646 | 0.0012 |
| B4\_correlation\_start | -0.0613 | 0.0020 |
| B4\_dissimilarity\_start | -0.0118 | 0.5536 |
| B4\_entropy\_start | 0.0543 | 0.0063 |
| B4\_variance\_start | -0.0323 | 0.1041 |
| B5\_start | 0.1193 | 0.0000 |
| B5\_correlation\_start | -0.0838 | 0.0000 |
| B5\_dissimilarity\_start | 0.0810 | 0.0000 |
| B5\_entropy\_start | 0.1075 | 0.0000 |
| B5\_variance\_start | 0.0368 | 0.0640 |
| B6\_start | 0.2149 | 0.0000 |
| B6\_correlation\_start | -0.0943 | 0.0000 |
| B6\_dissimilarity\_start | 0.2207 | 0.0000 |
| B6\_entropy\_start | 0.1355 | 0.0000 |
| B6\_variance\_start | 0.1601 | 0.0000 |
| B7\_start | 0.2132 | 0.0000 |
| B7\_correlation\_start | -0.0783 | 0.0001 |
| B7\_dissimilarity\_start | 0.2063 | 0.0000 |
| B7\_entropy\_start | 0.1289 | 0.0000 |
| B7\_variance\_start | 0.1513 | 0.0000 |
| B8\_start | 0.2110 | 0.0000 |
| B8A\_start | 0.2192 | 0.0000 |
| B8A\_correlation\_start | -0.0347 | 0.0808 |
| B8A\_dissimilarity\_start | 0.1969 | 0.0000 |
| B8A\_entropy\_start | 0.1040 | 0.0000 |
| B8A\_variance\_start | 0.1436 | 0.0000 |
| B8\_correlation\_start | -0.0040 | 0.8425 |
| B8\_dissimilarity\_start | 0.2544 | 0.0000 |
| B8\_entropy\_start | 0.2465 | 0.0000 |
| B8\_variance\_start | 0.1828 | 0.0000 |
| CV\_B11B12\_start | 0.1409 | 0.0000 |
| CV\_B11B12red\_start | 0.2183 | 0.0000 |
| CV\_B2B3B4\_start | 0.1708 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_start | 0.1921 | 0.0000 |
| CV\_NirRedRedEdge\_start | 0.1875 | 0.0000 |
| EVI\_start | 0.2211 | 0.0000 |
| GRVI\_start | 0.1988 | 0.0000 |
| NDVI\_start | 0.1890 | 0.0000 |
| SD\_B11B12\_start | 0.1944 | 0.0000 |
| SD\_B11B12red\_start | 0.1684 | 0.0000 |
| SD\_B2B3B4\_start | 0.1428 | 0.0000 |
| SD\_NirRedRe\_start | 0.2151 | 0.0000 |
| SD\_NirRedReG\_start | 0.2155 | 0.0000 |
| SR\_start | 0.1580 | 0.0000 |
| VARI\_start | 0.1484 | 0.0000 |
| scaled\_GRVI\_correlation\_start | 0.0032 | 0.8737 |
| scaled\_GRVI\_dissimilarity\_start | 0.0355 | 0.0744 |
| scaled\_GRVI\_entropy\_start | 0.0867 | 0.0000 |
| scaled\_GRVI\_variance\_start | 0.0006 | 0.9748 |
| scaled\_NDVI\_correlation\_start | 0.0146 | 0.4628 |
| scaled\_NDVI\_dissimilarity\_start | -0.0014 | 0.9454 |
| scaled\_NDVI\_entropy\_start | 0.0506 | 0.0109 |
| scaled\_NDVI\_variance\_start | -0.0192 | 0.3345 |
| scaled\_VARI\_correlation\_start | 0.0246 | 0.2164 |
| scaled\_VARI\_dissimilarity\_start | 0.1104 | 0.0000 |
| scaled\_VARI\_entropy\_start | 0.1107 | 0.0000 |
| scaled\_VARI\_variance\_start | 0.0768 | 0.0001 |
| CV\_11128\_start | 0.0803 | 0.0001 |
| SD\_11128\_start | 0.1858 | 0.0000 |
| winCVedge\_start | 0.0530 | 0.0076 |
| winCVgreen\_start | 0.0765 | 0.0001 |
| winCVnir\_start | 0.1636 | 0.0000 |
| winCVred\_start | 0.0212 | 0.2871 |
| winCV\_avg\_start | 0.0812 | 0.0000 |
| bio01 | 0.3264 | 0.0000 |
| bio04 | -0.3119 | 0.0000 |
| bio12 | 0.0696 | 0.0005 |
| bio15 | -0.3342 | 0.0000 |
| carbon05 | 0.1954 | 0.0000 |
| carbon100200 | 0.0968 | 0.0000 |
| carbon1530 | 0.2916 | 0.0000 |
| carbon3060 | 0.1169 | 0.0000 |
| carbon515 | 0.2824 | 0.0000 |
| carbon60100 | 0.0976 | 0.0000 |
| cec05 | -0.1358 | 0.0000 |
| cec100200 | -0.1738 | 0.0000 |
| cec1530 | -0.1674 | 0.0000 |
| cec3060 | -0.1731 | 0.0000 |
| cec515 | -0.1363 | 0.0000 |
| cec60100 | -0.1738 | 0.0000 |
| clay05 | -0.1925 | 0.0000 |
| clay100200 | -0.1951 | 0.0000 |
| clay1530 | -0.1920 | 0.0000 |
| clay3060 | -0.1931 | 0.0000 |
| clay515 | -0.1923 | 0.0000 |
| clay60100 | -0.1951 | 0.0000 |
| elevation | -0.0806 | 0.0001 |
| pH05 | -0.0002 | 0.9939 |
| pH100200 | -0.0458 | 0.0212 |
| pH1530 | 0.0050 | 0.8010 |
| pH3060 | -0.0555 | 0.0053 |
| pH515 | -0.0150 | 0.4511 |
| pH60100 | -0.0484 | 0.0148 |
| sand05 | 0.1300 | 0.0000 |
| sand100200 | 0.1442 | 0.0000 |
| sand1530 | 0.1377 | 0.0000 |
| sand3060 | 0.1407 | 0.0000 |
| sand515 | 0.1333 | 0.0000 |
| sand60100 | 0.1442 | 0.0000 |
| silt05 | 0.1134 | 0.0000 |
| silt100200 | 0.0900 | 0.0000 |
| silt1530 | 0.1000 | 0.0000 |
| silt3060 | 0.0951 | 0.0000 |
| silt515 | 0.1088 | 0.0000 |
| silt60100 | 0.0899 | 0.0000 |
| fdis | 1.0000 | 0.0000 |
| Conifer\_Percentage | -0.3182 | 0.0000 |

**Table S9. Pearson’s correlations for percent conifer in the Quebec region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | -0.2062 | 0.0000 |
| shannon | -0.2698 | 0.0000 |
| lat\_copy | 0.4567 | 0.0000 |
| lon\_copy | -0.1675 | 0.0000 |
| B11\_end | -0.7689 | 0.0000 |
| B11\_correlation\_end | 0.0963 | 0.0000 |
| B11\_dissimilarity\_end | -0.0827 | 0.0000 |
| B11\_entropy\_end | -0.1309 | 0.0000 |
| B11\_variance\_end | -0.0267 | 0.1793 |
| B12\_end | -0.6782 | 0.0000 |
| B12\_correlation\_end | 0.1209 | 0.0000 |
| B12\_dissimilarity\_end | -0.0648 | 0.0011 |
| B12\_entropy\_end | -0.1476 | 0.0000 |
| B12\_variance\_end | 0.0026 | 0.8971 |
| B2\_end | -0.4605 | 0.0000 |
| B2\_correlation\_end | 0.0772 | 0.0001 |
| B2\_dissimilarity\_end | -0.0726 | 0.0003 |
| B2\_entropy\_end | -0.1066 | 0.0000 |
| B2\_variance\_end | -0.0177 | 0.3742 |
| B3\_end | -0.6481 | 0.0000 |
| B3\_correlation\_end | 0.0781 | 0.0001 |
| B3\_dissimilarity\_end | -0.2444 | 0.0000 |
| B3\_entropy\_end | -0.2821 | 0.0000 |
| B3\_variance\_end | -0.1792 | 0.0000 |
| B4\_end | -0.6966 | 0.0000 |
| B4\_correlation\_end | 0.1160 | 0.0000 |
| B4\_dissimilarity\_end | -0.4082 | 0.0000 |
| B4\_entropy\_end | -0.4529 | 0.0000 |
| B4\_variance\_end | -0.2907 | 0.0000 |
| B5\_end | -0.7416 | 0.0000 |
| B5\_correlation\_end | 0.1183 | 0.0000 |
| B5\_dissimilarity\_end | -0.2218 | 0.0000 |
| B5\_entropy\_end | -0.1655 | 0.0000 |
| B5\_variance\_end | -0.1741 | 0.0000 |
| B6\_end | -0.6904 | 0.0000 |
| B6\_correlation\_end | 0.1183 | 0.0000 |
| B6\_dissimilarity\_end | -0.2313 | 0.0000 |
| B6\_entropy\_end | -0.1495 | 0.0000 |
| B6\_variance\_end | -0.1764 | 0.0000 |
| B7\_end | -0.6797 | 0.0000 |
| B7\_correlation\_end | 0.0582 | 0.0034 |
| B7\_dissimilarity\_end | -0.2241 | 0.0000 |
| B7\_entropy\_end | -0.1053 | 0.0000 |
| B7\_variance\_end | -0.1764 | 0.0000 |
| B8\_end | -0.6957 | 0.0000 |
| B8A\_end | -0.7110 | 0.0000 |
| B8A\_correlation\_end | 0.0769 | 0.0001 |
| B8A\_dissimilarity\_end | -0.2138 | 0.0000 |
| B8A\_entropy\_end | -0.1168 | 0.0000 |
| B8A\_variance\_end | -0.1507 | 0.0000 |
| B8\_correlation\_end | 0.0069 | 0.7295 |
| B8\_dissimilarity\_end | -0.3547 | 0.0000 |
| B8\_entropy\_end | -0.2477 | 0.0000 |
| B8\_variance\_end | -0.2901 | 0.0000 |
| CV\_B11B12\_end | -0.0301 | 0.1297 |
| CV\_B11B12red\_end | 0.2979 | 0.0000 |
| CV\_B2B3B4\_end | -0.1799 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.2066 | 0.0000 |
| CV\_NirRedRedEdge\_end | 0.3215 | 0.0000 |
| EVI\_end | -0.4723 | 0.0000 |
| GRVI\_end | -0.1389 | 0.0000 |
| NDVI\_end | 0.3741 | 0.0000 |
| SD\_B11B12\_end | -0.7894 | 0.0000 |
| SD\_B11B12red\_end | -0.7261 | 0.0000 |
| SD\_B2B3B4\_end | -0.6512 | 0.0000 |
| SD\_NirRedRe\_end | -0.6002 | 0.0000 |
| SD\_NirRedReG\_end | -0.6372 | 0.0000 |
| SR\_end | 0.3255 | 0.0000 |
| VARI\_end | 0.6189 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.0701 | 0.0004 |
| scaled\_GRVI\_dissimilarity\_end | 0.0208 | 0.2966 |
| scaled\_GRVI\_entropy\_end | -0.0200 | 0.3138 |
| scaled\_GRVI\_variance\_end | 0.0263 | 0.1863 |
| scaled\_NDVI\_correlation\_end | -0.0743 | 0.0002 |
| scaled\_NDVI\_dissimilarity\_end | -0.1695 | 0.0000 |
| scaled\_NDVI\_entropy\_end | -0.2164 | 0.0000 |
| scaled\_NDVI\_variance\_end | -0.0649 | 0.0011 |
| scaled\_VARI\_correlation\_end | -0.1081 | 0.0000 |
| scaled\_VARI\_dissimilarity\_end | -0.0392 | 0.0487 |
| scaled\_VARI\_entropy\_end | -0.0495 | 0.0127 |
| scaled\_VARI\_variance\_end | -0.0492 | 0.0132 |
| CV\_11128\_end | 0.1988 | 0.0000 |
| SD\_11128\_end | -0.5706 | 0.0000 |
| winCVedge\_end | 0.1313 | 0.0000 |
| winCVgreen\_end | 0.0985 | 0.0000 |
| winCVnir\_end | 0.0493 | 0.0132 |
| winCVred\_end | 0.0929 | 0.0000 |
| winCV\_avg\_end | 0.1064 | 0.0000 |
| B11\_peak | -0.6898 | 0.0000 |
| B11\_correlation\_peak | 0.0406 | 0.0410 |
| B11\_dissimilarity\_peak | 0.0827 | 0.0000 |
| B11\_entropy\_peak | -0.0207 | 0.2977 |
| B11\_variance\_peak | 0.0546 | 0.0060 |
| B12\_peak | -0.4237 | 0.0000 |
| B12\_correlation\_peak | -0.0018 | 0.9270 |
| B12\_dissimilarity\_peak | 0.0904 | 0.0000 |
| B12\_entropy\_peak | 0.0220 | 0.2688 |
| B12\_variance\_peak | 0.0349 | 0.0796 |
| B2\_peak | 0.0875 | 0.0000 |
| B2\_correlation\_peak | -0.0256 | 0.1988 |
| B2\_dissimilarity\_peak | 0.0283 | 0.1543 |
| B2\_entropy\_peak | 0.0563 | 0.0046 |
| B2\_variance\_peak | -0.0002 | 0.9920 |
| B3\_peak | -0.0693 | 0.0005 |
| B3\_correlation\_peak | 0.0866 | 0.0000 |
| B3\_dissimilarity\_peak | -0.0407 | 0.0406 |
| B3\_entropy\_peak | -0.1810 | 0.0000 |
| B3\_variance\_peak | -0.0029 | 0.8858 |
| B4\_peak | 0.1575 | 0.0000 |
| B4\_correlation\_peak | -0.0845 | 0.0000 |
| B4\_dissimilarity\_peak | 0.0549 | 0.0057 |
| B4\_entropy\_peak | 0.1260 | 0.0000 |
| B4\_variance\_peak | 0.0012 | 0.9517 |
| B5\_peak | -0.2814 | 0.0000 |
| B5\_correlation\_peak | 0.0844 | 0.0000 |
| B5\_dissimilarity\_peak | 0.0092 | 0.6424 |
| B5\_entropy\_peak | -0.0919 | 0.0000 |
| B5\_variance\_peak | 0.0029 | 0.8846 |
| B6\_peak | -0.7741 | 0.0000 |
| B6\_correlation\_peak | 0.0560 | 0.0048 |
| B6\_dissimilarity\_peak | 0.0107 | 0.5910 |
| B6\_entropy\_peak | -0.0456 | 0.0218 |
| B6\_variance\_peak | 0.0238 | 0.2306 |
| B7\_peak | -0.7983 | 0.0000 |
| B7\_correlation\_peak | 0.0429 | 0.0308 |
| B7\_dissimilarity\_peak | -0.0186 | 0.3497 |
| B7\_entropy\_peak | -0.0502 | 0.0115 |
| B7\_variance\_peak | 0.0106 | 0.5935 |
| B8\_peak | -0.7965 | 0.0000 |
| B8A\_peak | -0.7962 | 0.0000 |
| B8A\_correlation\_peak | 0.0426 | 0.0320 |
| B8A\_dissimilarity\_peak | -0.0059 | 0.7678 |
| B8A\_entropy\_peak | -0.0146 | 0.4636 |
| B8A\_variance\_peak | 0.0184 | 0.3537 |
| B8\_correlation\_peak | 0.0516 | 0.0094 |
| B8\_dissimilarity\_peak | -0.1640 | 0.0000 |
| B8\_entropy\_peak | -0.1755 | 0.0000 |
| B8\_variance\_peak | -0.0693 | 0.0005 |
| CV\_B11B12\_peak | -0.4891 | 0.0000 |
| CV\_B11B12red\_peak | -0.7020 | 0.0000 |
| CV\_B2B3B4\_peak | -0.5815 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_peak | -0.6887 | 0.0000 |
| CV\_NirRedRedEdge\_peak | -0.6607 | 0.0000 |
| EVI\_peak | -0.4059 | 0.0000 |
| GRVI\_peak | -0.6694 | 0.0000 |
| NDVI\_peak | -0.5848 | 0.0000 |
| SD\_B11B12\_peak | -0.7893 | 0.0000 |
| SD\_B11B12red\_peak | -0.7644 | 0.0000 |
| SD\_B2B3B4\_peak | -0.4225 | 0.0000 |
| SD\_NirRedRe\_peak | -0.8054 | 0.0000 |
| SD\_NirRedReG\_peak | -0.8066 | 0.0000 |
| SR\_peak | -0.7658 | 0.0000 |
| VARI\_peak | -0.4676 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | 0.0432 | 0.0298 |
| scaled\_GRVI\_dissimilarity\_peak | 0.1955 | 0.0000 |
| scaled\_GRVI\_entropy\_peak | 0.2620 | 0.0000 |
| scaled\_GRVI\_variance\_peak | 0.0334 | 0.0931 |
| scaled\_NDVI\_correlation\_peak | -0.0336 | 0.0912 |
| scaled\_NDVI\_dissimilarity\_peak | 0.2548 | 0.0000 |
| scaled\_NDVI\_entropy\_peak | 0.5106 | 0.0000 |
| scaled\_NDVI\_variance\_peak | 0.0406 | 0.0411 |
| scaled\_VARI\_correlation\_peak | 0.0774 | 0.0001 |
| scaled\_VARI\_dissimilarity\_peak | 0.1096 | 0.0000 |
| scaled\_VARI\_entropy\_peak | 0.0201 | 0.3130 |
| scaled\_VARI\_variance\_peak | 0.0464 | 0.0196 |
| CV\_11128\_peak | -0.3908 | 0.0000 |
| SD\_11128\_peak | -0.7821 | 0.0000 |
| winCVedge\_peak | 0.0622 | 0.0018 |
| winCVgreen\_peak | -0.0584 | 0.0033 |
| winCVnir\_peak | 0.2402 | 0.0000 |
| winCVred\_peak | 0.0585 | 0.0032 |
| winCV\_avg\_peak | 0.0778 | 0.0001 |
| B11\_start | -0.7113 | 0.0000 |
| B11\_correlation\_start | 0.0186 | 0.3507 |
| B11\_dissimilarity\_start | 0.0524 | 0.0084 |
| B11\_entropy\_start | -0.0238 | 0.2317 |
| B11\_variance\_start | 0.0682 | 0.0006 |
| B12\_start | -0.5465 | 0.0000 |
| B12\_correlation\_start | 0.0180 | 0.3660 |
| B12\_dissimilarity\_start | 0.0534 | 0.0072 |
| B12\_entropy\_start | -0.0050 | 0.8010 |
| B12\_variance\_start | 0.0527 | 0.0080 |
| B2\_start | -0.3303 | 0.0000 |
| B2\_correlation\_start | 0.0600 | 0.0025 |
| B2\_dissimilarity\_start | 0.0490 | 0.0136 |
| B2\_entropy\_start | -0.0440 | 0.0268 |
| B2\_variance\_start | 0.0605 | 0.0023 |
| B3\_start | -0.6362 | 0.0000 |
| B3\_correlation\_start | 0.1082 | 0.0000 |
| B3\_dissimilarity\_start | -0.1142 | 0.0000 |
| B3\_entropy\_start | -0.2388 | 0.0000 |
| B3\_variance\_start | 0.0126 | 0.5263 |
| B4\_start | -0.2162 | 0.0000 |
| B4\_correlation\_start | -0.0048 | 0.8091 |
| B4\_dissimilarity\_start | 0.0298 | 0.1335 |
| B4\_entropy\_start | -0.0129 | 0.5171 |
| B4\_variance\_start | 0.0486 | 0.0144 |
| B5\_start | -0.6868 | 0.0000 |
| B5\_correlation\_start | 0.0778 | 0.0001 |
| B5\_dissimilarity\_start | -0.0439 | 0.0273 |
| B5\_entropy\_start | -0.1023 | 0.0000 |
| B5\_variance\_start | 0.0191 | 0.3375 |
| B6\_start | -0.6320 | 0.0000 |
| B6\_correlation\_start | 0.0903 | 0.0000 |
| B6\_dissimilarity\_start | -0.2195 | 0.0000 |
| B6\_entropy\_start | -0.1277 | 0.0000 |
| B6\_variance\_start | -0.1588 | 0.0000 |
| B7\_start | -0.6126 | 0.0000 |
| B7\_correlation\_start | 0.0939 | 0.0000 |
| B7\_dissimilarity\_start | -0.2215 | 0.0000 |
| B7\_entropy\_start | -0.1214 | 0.0000 |
| B7\_variance\_start | -0.1630 | 0.0000 |
| B8\_start | -0.6241 | 0.0000 |
| B8A\_start | -0.6288 | 0.0000 |
| B8A\_correlation\_start | 0.0966 | 0.0000 |
| B8A\_dissimilarity\_start | -0.1936 | 0.0000 |
| B8A\_entropy\_start | -0.1345 | 0.0000 |
| B8A\_variance\_start | -0.1367 | 0.0000 |
| B8\_correlation\_start | -0.0053 | 0.7917 |
| B8\_dissimilarity\_start | -0.3052 | 0.0000 |
| B8\_entropy\_start | -0.2451 | 0.0000 |
| B8\_variance\_start | -0.2436 | 0.0000 |
| CV\_B11B12\_start | -0.1371 | 0.0000 |
| CV\_B11B12red\_start | -0.3930 | 0.0000 |
| CV\_B2B3B4\_start | -0.4237 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_start | -0.1451 | 0.0000 |
| CV\_NirRedRedEdge\_start | -0.1322 | 0.0000 |
| EVI\_start | -0.5184 | 0.0000 |
| GRVI\_start | -0.1229 | 0.0000 |
| NDVI\_start | -0.1510 | 0.0000 |
| SD\_B11B12\_start | -0.7540 | 0.0000 |
| SD\_B11B12red\_start | -0.7602 | 0.0000 |
| SD\_B2B3B4\_start | -0.6452 | 0.0000 |
| SD\_NirRedRe\_start | -0.5526 | 0.0000 |
| SD\_NirRedReG\_start | -0.5685 | 0.0000 |
| SR\_start | -0.3199 | 0.0000 |
| VARI\_start | -0.2240 | 0.0000 |
| scaled\_GRVI\_correlation\_start | -0.0272 | 0.1707 |
| scaled\_GRVI\_dissimilarity\_start | 0.1066 | 0.0000 |
| scaled\_GRVI\_entropy\_start | 0.0776 | 0.0001 |
| scaled\_GRVI\_variance\_start | 0.0788 | 0.0001 |
| scaled\_NDVI\_correlation\_start | -0.0384 | 0.0532 |
| scaled\_NDVI\_dissimilarity\_start | 0.1298 | 0.0000 |
| scaled\_NDVI\_entropy\_start | 0.1898 | 0.0000 |
| scaled\_NDVI\_variance\_start | 0.0782 | 0.0001 |
| scaled\_VARI\_correlation\_start | -0.0423 | 0.0333 |
| scaled\_VARI\_dissimilarity\_start | 0.0816 | 0.0000 |
| scaled\_VARI\_entropy\_start | 0.0186 | 0.3500 |
| scaled\_VARI\_variance\_start | 0.0270 | 0.1743 |
| CV\_11128\_start | 0.0658 | 0.0009 |
| SD\_11128\_start | -0.4511 | 0.0000 |
| winCVedge\_start | 0.1170 | 0.0000 |
| winCVgreen\_start | 0.0958 | 0.0000 |
| winCVnir\_start | -0.0019 | 0.9245 |
| winCVred\_start | 0.1374 | 0.0000 |
| winCV\_avg\_start | 0.1170 | 0.0000 |
| bio01 | -0.4410 | 0.0000 |
| bio04 | 0.3703 | 0.0000 |
| bio12 | -0.0709 | 0.0004 |
| bio15 | 0.4232 | 0.0000 |
| carbon05 | -0.1611 | 0.0000 |
| carbon100200 | -0.0601 | 0.0025 |
| carbon1530 | -0.2837 | 0.0000 |
| carbon3060 | -0.0949 | 0.0000 |
| carbon515 | -0.2795 | 0.0000 |
| carbon60100 | -0.0639 | 0.0013 |
| cec05 | -0.0281 | 0.1573 |
| cec100200 | 0.0097 | 0.6258 |
| cec1530 | 0.0033 | 0.8686 |
| cec3060 | 0.0091 | 0.6477 |
| cec515 | -0.0300 | 0.1314 |
| cec60100 | 0.0097 | 0.6258 |
| clay05 | 0.0647 | 0.0011 |
| clay100200 | 0.0665 | 0.0008 |
| clay1530 | 0.0631 | 0.0015 |
| clay3060 | 0.0645 | 0.0012 |
| clay515 | 0.0644 | 0.0012 |
| clay60100 | 0.0665 | 0.0008 |
| elevation | 0.1464 | 0.0000 |
| pH05 | -0.1912 | 0.0000 |
| pH100200 | -0.1330 | 0.0000 |
| pH1530 | -0.1985 | 0.0000 |
| pH3060 | -0.1261 | 0.0000 |
| pH515 | -0.1691 | 0.0000 |
| pH60100 | -0.1299 | 0.0000 |
| sand05 | 0.0212 | 0.2860 |
| sand100200 | 0.0058 | 0.7699 |
| sand1530 | 0.0120 | 0.5451 |
| sand3060 | 0.0084 | 0.6739 |
| sand515 | 0.0176 | 0.3753 |
| sand60100 | 0.0058 | 0.7699 |
| silt05 | -0.2053 | 0.0000 |
| silt100200 | -0.1813 | 0.0000 |
| silt1530 | -0.1879 | 0.0000 |
| silt3060 | -0.1829 | 0.0000 |
| silt515 | -0.2002 | 0.0000 |
| silt60100 | -0.1813 | 0.0000 |
| fdis | -0.3182 | 0.0000 |
| Conifer\_Percentage | 1.0000 | 0.0000 |

**Table S10. Pearson’s correlations for species richness in the deciduous region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 1.0000 | 0.0000 |
| shannon | 0.8731 | 0.0000 |
| lat\_copy | -0.0454 | 0.1146 |
| lon\_copy | -0.0802 | 0.0052 |
| B11\_end | -0.1848 | 0.0000 |
| B11\_correlation\_end | -0.0356 | 0.2159 |
| B11\_dissimilarity\_end | 0.0130 | 0.6518 |
| B11\_entropy\_end | 0.0597 | 0.0378 |
| B11\_variance\_end | -0.0167 | 0.5626 |
| B12\_end | -0.2244 | 0.0000 |
| B12\_correlation\_end | -0.0120 | 0.6765 |
| B12\_dissimilarity\_end | -0.0490 | 0.0880 |
| B12\_entropy\_end | 0.0097 | 0.7356 |
| B12\_variance\_end | -0.0240 | 0.4049 |
| B2\_end | -0.1509 | 0.0000 |
| B2\_correlation\_end | 0.0243 | 0.3982 |
| B2\_dissimilarity\_end | -0.0194 | 0.5007 |
| B2\_entropy\_end | -0.0185 | 0.5196 |
| B2\_variance\_end | -0.0295 | 0.3042 |
| B3\_end | -0.0819 | 0.0044 |
| B3\_correlation\_end | -0.0132 | 0.6458 |
| B3\_dissimilarity\_end | 0.0349 | 0.2249 |
| B3\_entropy\_end | 0.0663 | 0.0210 |
| B3\_variance\_end | 0.0009 | 0.9746 |
| B4\_end | -0.1735 | 0.0000 |
| B4\_correlation\_end | -0.0376 | 0.1912 |
| B4\_dissimilarity\_end | -0.0321 | 0.2641 |
| B4\_entropy\_end | -0.0049 | 0.8639 |
| B4\_variance\_end | -0.0496 | 0.0844 |
| B5\_end | -0.1273 | 0.0000 |
| B5\_correlation\_end | -0.0147 | 0.6086 |
| B5\_dissimilarity\_end | 0.0203 | 0.4810 |
| B5\_entropy\_end | -0.0064 | 0.8252 |
| B5\_variance\_end | -0.0014 | 0.9616 |
| B6\_end | -0.0325 | 0.2586 |
| B6\_correlation\_end | -0.0526 | 0.0671 |
| B6\_dissimilarity\_end | 0.0607 | 0.0348 |
| B6\_entropy\_end | 0.0624 | 0.0299 |
| B6\_variance\_end | 0.0312 | 0.2786 |
| B7\_end | -0.0387 | 0.1777 |
| B7\_correlation\_end | -0.0099 | 0.7309 |
| B7\_dissimilarity\_end | 0.0516 | 0.0723 |
| B7\_entropy\_end | 0.0126 | 0.6605 |
| B7\_variance\_end | 0.0307 | 0.2862 |
| B8\_end | -0.0489 | 0.0887 |
| B8A\_end | -0.0521 | 0.0696 |
| B8A\_correlation\_end | -0.0043 | 0.8819 |
| B8A\_dissimilarity\_end | 0.0444 | 0.1220 |
| B8A\_entropy\_end | 0.0389 | 0.1763 |
| B8A\_variance\_end | 0.0186 | 0.5186 |
| B8\_correlation\_end | 0.0299 | 0.2981 |
| B8\_dissimilarity\_end | 0.0458 | 0.1107 |
| B8\_entropy\_end | 0.0447 | 0.1199 |
| B8\_variance\_end | 0.0193 | 0.5015 |
| CV\_B11B12\_end | 0.1871 | 0.0000 |
| CV\_B11B12red\_end | 0.1072 | 0.0002 |
| CV\_B2B3B4\_end | -0.0139 | 0.6298 |
| CV\_NIRRedRedEdgeGreen\_end | 0.1254 | 0.0000 |
| CV\_NirRedRedEdge\_end | 0.1394 | 0.0000 |
| EVI\_end | 0.0543 | 0.0586 |
| GRVI\_end | 0.0537 | 0.0617 |
| NDVI\_end | 0.1553 | 0.0000 |
| SD\_B11B12\_end | -0.1260 | 0.0000 |
| SD\_B11B12red\_end | -0.1511 | 0.0000 |
| SD\_B2B3B4\_end | -0.1360 | 0.0000 |
| SD\_NirRedRe\_end | -0.0018 | 0.9495 |
| SD\_NirRedReG\_end | -0.0220 | 0.4446 |
| SR\_end | 0.1098 | 0.0001 |
| VARI\_end | 0.1363 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.0249 | 0.3860 |
| scaled\_GRVI\_dissimilarity\_end | 0.0250 | 0.3855 |
| scaled\_GRVI\_entropy\_end | 0.0257 | 0.3706 |
| scaled\_GRVI\_variance\_end | 0.0071 | 0.8058 |
| scaled\_NDVI\_correlation\_end | -0.0494 | 0.0859 |
| scaled\_NDVI\_dissimilarity\_end | -0.0048 | 0.8668 |
| scaled\_NDVI\_entropy\_end | -0.0425 | 0.1395 |
| scaled\_NDVI\_variance\_end | -0.0087 | 0.7630 |
| scaled\_VARI\_correlation\_end | -0.0554 | 0.0540 |
| scaled\_VARI\_dissimilarity\_end | 0.1420 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.0285 | 0.3223 |
| scaled\_VARI\_variance\_end | 0.1017 | 0.0004 |
| CV\_11128\_end | 0.2037 | 0.0000 |
| SD\_11128\_end | 0.0247 | 0.3902 |
| winCVedge\_end | 0.0683 | 0.0174 |
| winCVgreen\_end | 0.0880 | 0.0022 |
| winCVnir\_end | 0.0763 | 0.0079 |
| winCVred\_end | 0.0805 | 0.0050 |
| winCV\_avg\_end | 0.0902 | 0.0017 |
| B11\_peak | -0.1839 | 0.0000 |
| B11\_correlation\_peak | -0.0542 | 0.0591 |
| B11\_dissimilarity\_peak | 0.0262 | 0.3617 |
| B11\_entropy\_peak | 0.0791 | 0.0059 |
| B11\_variance\_peak | -0.0099 | 0.7309 |
| B12\_peak | -0.2082 | 0.0000 |
| B12\_correlation\_peak | 0.0287 | 0.3174 |
| B12\_dissimilarity\_peak | -0.0398 | 0.1664 |
| B12\_entropy\_peak | -0.0120 | 0.6770 |
| B12\_variance\_peak | -0.0106 | 0.7136 |
| B2\_peak | -0.1150 | 0.0001 |
| B2\_correlation\_peak | -0.0239 | 0.4059 |
| B2\_dissimilarity\_peak | -0.0036 | 0.8999 |
| B2\_entropy\_peak | -0.0298 | 0.3008 |
| B2\_variance\_peak | 0.0308 | 0.2839 |
| B3\_peak | -0.1807 | 0.0000 |
| B3\_correlation\_peak | 0.0103 | 0.7192 |
| B3\_dissimilarity\_peak | -0.0639 | 0.0262 |
| B3\_entropy\_peak | -0.0717 | 0.0126 |
| B3\_variance\_peak | 0.0040 | 0.8905 |
| B4\_peak | -0.1231 | 0.0000 |
| B4\_correlation\_peak | 0.0380 | 0.1864 |
| B4\_dissimilarity\_peak | -0.0463 | 0.1071 |
| B4\_entropy\_peak | -0.0915 | 0.0014 |
| B4\_variance\_peak | 0.0158 | 0.5820 |
| B5\_peak | -0.1924 | 0.0000 |
| B5\_correlation\_peak | -0.0074 | 0.7979 |
| B5\_dissimilarity\_peak | -0.0484 | 0.0919 |
| B5\_entropy\_peak | -0.0032 | 0.9107 |
| B5\_variance\_peak | -0.0290 | 0.3128 |
| B6\_peak | -0.1094 | 0.0001 |
| B6\_correlation\_peak | -0.0426 | 0.1383 |
| B6\_dissimilarity\_peak | 0.0398 | 0.1664 |
| B6\_entropy\_peak | 0.0697 | 0.0153 |
| B6\_variance\_peak | -0.0022 | 0.9391 |
| B7\_peak | -0.1095 | 0.0001 |
| B7\_correlation\_peak | -0.0456 | 0.1127 |
| B7\_dissimilarity\_peak | 0.0570 | 0.0475 |
| B7\_entropy\_peak | 0.0652 | 0.0232 |
| B7\_variance\_peak | 0.0133 | 0.6434 |
| B8\_peak | -0.1090 | 0.0001 |
| B8A\_peak | -0.1114 | 0.0001 |
| B8A\_correlation\_peak | 0.0043 | 0.8807 |
| B8A\_dissimilarity\_peak | 0.0486 | 0.0905 |
| B8A\_entropy\_peak | 0.0484 | 0.0922 |
| B8A\_variance\_peak | 0.0108 | 0.7085 |
| B8\_correlation\_peak | 0.0708 | 0.0137 |
| B8\_dissimilarity\_peak | -0.0153 | 0.5942 |
| B8\_entropy\_peak | 0.0516 | 0.0726 |
| B8\_variance\_peak | -0.0336 | 0.2423 |
| CV\_B11B12\_peak | 0.0959 | 0.0008 |
| CV\_B11B12red\_peak | 0.0234 | 0.4160 |
| CV\_B2B3B4\_peak | -0.0441 | 0.1246 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.0551 | 0.0554 |
| CV\_NirRedRedEdge\_peak | 0.0599 | 0.0369 |
| EVI\_peak | -0.0825 | 0.0041 |
| GRVI\_peak | 0.0557 | 0.0525 |
| NDVI\_peak | 0.0436 | 0.1291 |
| SD\_B11B12\_peak | -0.1529 | 0.0000 |
| SD\_B11B12red\_peak | -0.1664 | 0.0000 |
| SD\_B2B3B4\_peak | -0.1513 | 0.0000 |
| SD\_NirRedRe\_peak | -0.0959 | 0.0008 |
| SD\_NirRedReG\_peak | -0.0966 | 0.0008 |
| SR\_peak | -0.0070 | 0.8065 |
| VARI\_peak | 0.0075 | 0.7949 |
| scaled\_GRVI\_correlation\_peak | 0.0773 | 0.0071 |
| scaled\_GRVI\_dissimilarity\_peak | 0.0268 | 0.3511 |
| scaled\_GRVI\_entropy\_peak | 0.0246 | 0.3931 |
| scaled\_GRVI\_variance\_peak | 0.0352 | 0.2204 |
| scaled\_NDVI\_correlation\_peak | 0.0349 | 0.2247 |
| scaled\_NDVI\_dissimilarity\_peak | 0.0102 | 0.7216 |
| scaled\_NDVI\_entropy\_peak | 0.0545 | 0.0580 |
| scaled\_NDVI\_variance\_peak | 0.0157 | 0.5840 |
| scaled\_VARI\_correlation\_peak | -0.0136 | 0.6369 |
| scaled\_VARI\_dissimilarity\_peak | 0.0084 | 0.7705 |
| scaled\_VARI\_entropy\_peak | -0.0068 | 0.8141 |
| scaled\_VARI\_variance\_peak | 0.0091 | 0.7521 |
| CV\_11128\_peak | 0.1293 | 0.0000 |
| SD\_11128\_peak | -0.0757 | 0.0084 |
| winCVedge\_peak | 0.0013 | 0.9637 |
| winCVgreen\_peak | -0.0303 | 0.2920 |
| winCVnir\_peak | 0.0486 | 0.0907 |
| winCVred\_peak | -0.0328 | 0.2537 |
| winCV\_avg\_peak | -0.0085 | 0.7674 |
| B11\_start | -0.2109 | 0.0000 |
| B11\_correlation\_start | -0.0431 | 0.1338 |
| B11\_dissimilarity\_start | 0.0428 | 0.1369 |
| B11\_entropy\_start | 0.0379 | 0.1871 |
| B11\_variance\_start | 0.0102 | 0.7239 |
| B12\_start | -0.1975 | 0.0000 |
| B12\_correlation\_start | -0.0723 | 0.0118 |
| B12\_dissimilarity\_start | 0.0113 | 0.6944 |
| B12\_entropy\_start | 0.0617 | 0.0317 |
| B12\_variance\_start | 0.0007 | 0.9809 |
| B2\_start | -0.2029 | 0.0000 |
| B2\_correlation\_start | 0.0051 | 0.8591 |
| B2\_dissimilarity\_start | -0.0272 | 0.3447 |
| B2\_entropy\_start | -0.0106 | 0.7127 |
| B2\_variance\_start | -0.0089 | 0.7578 |
| B3\_start | -0.2575 | 0.0000 |
| B3\_correlation\_start | 0.0040 | 0.8898 |
| B3\_dissimilarity\_start | -0.0376 | 0.1909 |
| B3\_entropy\_start | -0.0289 | 0.3156 |
| B3\_variance\_start | -0.0180 | 0.5322 |
| B4\_start | -0.1609 | 0.0000 |
| B4\_correlation\_start | -0.0297 | 0.3012 |
| B4\_dissimilarity\_start | -0.0565 | 0.0493 |
| B4\_entropy\_start | -0.0322 | 0.2630 |
| B4\_variance\_start | -0.0337 | 0.2412 |
| B5\_start | -0.2306 | 0.0000 |
| B5\_correlation\_start | -0.0318 | 0.2680 |
| B5\_dissimilarity\_start | 0.0188 | 0.5133 |
| B5\_entropy\_start | 0.0322 | 0.2621 |
| B5\_variance\_start | 0.0087 | 0.7628 |
| B6\_start | -0.1008 | 0.0004 |
| B6\_correlation\_start | -0.0144 | 0.6164 |
| B6\_dissimilarity\_start | 0.0466 | 0.1048 |
| B6\_entropy\_start | 0.0249 | 0.3864 |
| B6\_variance\_start | 0.0261 | 0.3642 |
| B7\_start | -0.0861 | 0.0027 |
| B7\_correlation\_start | -0.0364 | 0.2052 |
| B7\_dissimilarity\_start | 0.0537 | 0.0618 |
| B7\_entropy\_start | 0.0637 | 0.0266 |
| B7\_variance\_start | 0.0246 | 0.3919 |
| B8\_start | -0.1024 | 0.0004 |
| B8A\_start | -0.0906 | 0.0016 |
| B8A\_correlation\_start | -0.0267 | 0.3528 |
| B8A\_dissimilarity\_start | 0.0519 | 0.0708 |
| B8A\_entropy\_start | 0.0261 | 0.3638 |
| B8A\_variance\_start | 0.0292 | 0.3094 |
| B8\_correlation\_start | 0.0655 | 0.0225 |
| B8\_dissimilarity\_start | 0.0006 | 0.9821 |
| B8\_entropy\_start | 0.0657 | 0.0222 |
| B8\_variance\_start | -0.0295 | 0.3056 |
| CV\_B11B12\_start | 0.0553 | 0.0543 |
| CV\_B11B12red\_start | 0.0510 | 0.0760 |
| CV\_B2B3B4\_start | -0.0403 | 0.1608 |
| CV\_NIRRedRedEdgeGreen\_start | 0.1127 | 0.0001 |
| CV\_NirRedRedEdge\_start | 0.1047 | 0.0003 |
| EVI\_start | -0.0425 | 0.1389 |
| GRVI\_start | 0.1438 | 0.0000 |
| NDVI\_start | 0.0934 | 0.0011 |
| SD\_B11B12\_start | -0.1677 | 0.0000 |
| SD\_B11B12red\_start | -0.1791 | 0.0000 |
| SD\_B2B3B4\_start | -0.1917 | 0.0000 |
| SD\_NirRedRe\_start | -0.0645 | 0.0248 |
| SD\_NirRedReG\_start | -0.0687 | 0.0168 |
| SR\_start | 0.0221 | 0.4412 |
| VARI\_start | 0.0260 | 0.3665 |
| scaled\_GRVI\_correlation\_start | 0.0006 | 0.9833 |
| scaled\_GRVI\_dissimilarity\_start | 0.0139 | 0.6278 |
| scaled\_GRVI\_entropy\_start | 0.0145 | 0.6134 |
| scaled\_GRVI\_variance\_start | -0.0039 | 0.8919 |
| scaled\_NDVI\_correlation\_start | 0.0034 | 0.9063 |
| scaled\_NDVI\_dissimilarity\_start | 0.0148 | 0.6077 |
| scaled\_NDVI\_entropy\_start | 0.0807 | 0.0050 |
| scaled\_NDVI\_variance\_start | -0.0116 | 0.6862 |
| scaled\_VARI\_correlation\_start | 0.0002 | 0.9955 |
| scaled\_VARI\_dissimilarity\_start | 0.0581 | 0.0432 |
| scaled\_VARI\_entropy\_start | 0.0903 | 0.0016 |
| scaled\_VARI\_variance\_start | 0.0134 | 0.6412 |
| CV\_11128\_start | 0.0854 | 0.0029 |
| SD\_11128\_start | -0.0465 | 0.1054 |
| winCVedge\_start | 0.0695 | 0.0155 |
| winCVgreen\_start | 0.0493 | 0.0862 |
| winCVnir\_start | 0.0531 | 0.0649 |
| winCVred\_start | 0.0115 | 0.6896 |
| winCV\_avg\_start | 0.0491 | 0.0873 |
| bio01 | 0.0700 | 0.0147 |
| bio04 | -0.0064 | 0.8229 |
| bio12 | -0.1141 | 0.0001 |
| bio15 | 0.0121 | 0.6738 |
| carbon05 | 0.0326 | 0.2571 |
| carbon100200 | 0.0154 | 0.5922 |
| carbon1530 | 0.0379 | 0.1872 |
| carbon3060 | 0.0127 | 0.6596 |
| carbon515 | 0.0540 | 0.0604 |
| carbon60100 | 0.0146 | 0.6117 |
| cec05 | -0.1215 | 0.0000 |
| cec100200 | -0.0981 | 0.0006 |
| cec1530 | -0.1013 | 0.0004 |
| cec3060 | -0.0987 | 0.0006 |
| cec515 | -0.1172 | 0.0000 |
| cec60100 | -0.0981 | 0.0006 |
| clay05 | -0.0338 | 0.2391 |
| clay100200 | -0.0355 | 0.2172 |
| clay1530 | -0.0337 | 0.2411 |
| clay3060 | -0.0329 | 0.2519 |
| clay515 | -0.0338 | 0.2401 |
| clay60100 | -0.0355 | 0.2171 |
| elevation | -0.0934 | 0.0011 |
| pH05 | -0.0461 | 0.1087 |
| pH100200 | -0.0698 | 0.0151 |
| pH1530 | -0.0624 | 0.0298 |
| pH3060 | -0.0657 | 0.0221 |
| pH515 | -0.0474 | 0.0988 |
| pH60100 | -0.0699 | 0.0149 |
| sand05 | 0.0526 | 0.0670 |
| sand100200 | 0.0556 | 0.0531 |
| sand1530 | 0.0542 | 0.0593 |
| sand3060 | 0.0516 | 0.0725 |
| sand515 | 0.0530 | 0.0653 |
| sand60100 | 0.0556 | 0.0531 |
| silt05 | -0.0456 | 0.1127 |
| silt100200 | -0.0529 | 0.0658 |
| silt1530 | -0.0497 | 0.0836 |
| silt3060 | -0.0482 | 0.0937 |
| silt515 | -0.0467 | 0.1043 |
| silt60100 | -0.0529 | 0.0656 |
| fdis | 0.5795 | 0.0000 |
| Conifer\_Percentage | 0.0806 | 0.0050 |

**Table S11. Pearson’s correlation for Shannon diversity in the deciduous region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.8731 | 0.0000 |
| shannon | 1.0000 | 0.0000 |
| lat\_copy | -0.0139 | 0.6297 |
| lon\_copy | -0.0815 | 0.0045 |
| B11\_end | -0.1683 | 0.0000 |
| B11\_correlation\_end | -0.0335 | 0.2444 |
| B11\_dissimilarity\_end | 0.0522 | 0.0692 |
| B11\_entropy\_end | 0.0709 | 0.0136 |
| B11\_variance\_end | 0.0167 | 0.5611 |
| B12\_end | -0.2015 | 0.0000 |
| B12\_correlation\_end | -0.0106 | 0.7133 |
| B12\_dissimilarity\_end | -0.0138 | 0.6316 |
| B12\_entropy\_end | 0.0182 | 0.5272 |
| B12\_variance\_end | -0.0014 | 0.9607 |
| B2\_end | -0.1394 | 0.0000 |
| B2\_correlation\_end | -0.0126 | 0.6603 |
| B2\_dissimilarity\_end | 0.0276 | 0.3376 |
| B2\_entropy\_end | 0.0279 | 0.3315 |
| B2\_variance\_end | -0.0030 | 0.9183 |
| B3\_end | -0.0744 | 0.0096 |
| B3\_correlation\_end | -0.0291 | 0.3120 |
| B3\_dissimilarity\_end | 0.0814 | 0.0046 |
| B3\_entropy\_end | 0.1237 | 0.0000 |
| B3\_variance\_end | 0.0337 | 0.2407 |
| B4\_end | -0.1767 | 0.0000 |
| B4\_correlation\_end | -0.0583 | 0.0423 |
| B4\_dissimilarity\_end | 0.0028 | 0.9221 |
| B4\_entropy\_end | 0.0337 | 0.2411 |
| B4\_variance\_end | -0.0202 | 0.4815 |
| B5\_end | -0.1269 | 0.0000 |
| B5\_correlation\_end | -0.0341 | 0.2362 |
| B5\_dissimilarity\_end | 0.0572 | 0.0465 |
| B5\_entropy\_end | 0.0224 | 0.4360 |
| B5\_variance\_end | 0.0285 | 0.3220 |
| B6\_end | -0.0372 | 0.1953 |
| B6\_correlation\_end | -0.1004 | 0.0005 |
| B6\_dissimilarity\_end | 0.1041 | 0.0003 |
| B6\_entropy\_end | 0.1129 | 0.0001 |
| B6\_variance\_end | 0.0667 | 0.0202 |
| B7\_end | -0.0432 | 0.1326 |
| B7\_correlation\_end | -0.0366 | 0.2032 |
| B7\_dissimilarity\_end | 0.0883 | 0.0021 |
| B7\_entropy\_end | 0.0570 | 0.0475 |
| B7\_variance\_end | 0.0602 | 0.0360 |
| B8\_end | -0.0512 | 0.0746 |
| B8A\_end | -0.0537 | 0.0615 |
| B8A\_correlation\_end | -0.0300 | 0.2971 |
| B8A\_dissimilarity\_end | 0.0952 | 0.0009 |
| B8A\_entropy\_end | 0.0732 | 0.0108 |
| B8A\_variance\_end | 0.0598 | 0.0373 |
| B8\_correlation\_end | 0.0310 | 0.2814 |
| B8\_dissimilarity\_end | 0.0998 | 0.0005 |
| B8\_entropy\_end | 0.0901 | 0.0017 |
| B8\_variance\_end | 0.0634 | 0.0274 |
| CV\_B11B12\_end | 0.1563 | 0.0000 |
| CV\_B11B12red\_end | 0.1078 | 0.0002 |
| CV\_B2B3B4\_end | -0.0349 | 0.2244 |
| CV\_NIRRedRedEdgeGreen\_end | 0.1123 | 0.0001 |
| CV\_NirRedRedEdge\_end | 0.1287 | 0.0000 |
| EVI\_end | 0.0560 | 0.0514 |
| GRVI\_end | 0.0383 | 0.1822 |
| NDVI\_end | 0.1488 | 0.0000 |
| SD\_B11B12\_end | -0.1176 | 0.0000 |
| SD\_B11B12red\_end | -0.1289 | 0.0000 |
| SD\_B2B3B4\_end | -0.1481 | 0.0000 |
| SD\_NirRedRe\_end | -0.0040 | 0.8904 |
| SD\_NirRedReG\_end | -0.0250 | 0.3842 |
| SR\_end | 0.0991 | 0.0006 |
| VARI\_end | 0.1345 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.0368 | 0.2009 |
| scaled\_GRVI\_dissimilarity\_end | 0.0644 | 0.0250 |
| scaled\_GRVI\_entropy\_end | 0.0570 | 0.0474 |
| scaled\_GRVI\_variance\_end | 0.0269 | 0.3491 |
| scaled\_NDVI\_correlation\_end | -0.0301 | 0.2948 |
| scaled\_NDVI\_dissimilarity\_end | 0.0318 | 0.2683 |
| scaled\_NDVI\_entropy\_end | -0.0276 | 0.3370 |
| scaled\_NDVI\_variance\_end | 0.0251 | 0.3828 |
| scaled\_VARI\_correlation\_end | -0.0333 | 0.2464 |
| scaled\_VARI\_dissimilarity\_end | 0.1650 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.0521 | 0.0696 |
| scaled\_VARI\_variance\_end | 0.1199 | 0.0000 |
| CV\_11128\_end | 0.1669 | 0.0000 |
| SD\_11128\_end | 0.0126 | 0.6616 |
| winCVedge\_end | 0.1013 | 0.0004 |
| winCVgreen\_end | 0.1239 | 0.0000 |
| winCVnir\_end | 0.1207 | 0.0000 |
| winCVred\_end | 0.1099 | 0.0001 |
| winCV\_avg\_end | 0.1306 | 0.0000 |
| B11\_peak | -0.1610 | 0.0000 |
| B11\_correlation\_peak | -0.0680 | 0.0179 |
| B11\_dissimilarity\_peak | 0.0551 | 0.0550 |
| B11\_entropy\_peak | 0.0942 | 0.0010 |
| B11\_variance\_peak | 0.0107 | 0.7103 |
| B12\_peak | -0.1778 | 0.0000 |
| B12\_correlation\_peak | 0.0160 | 0.5777 |
| B12\_dissimilarity\_peak | -0.0215 | 0.4541 |
| B12\_entropy\_peak | -0.0045 | 0.8754 |
| B12\_variance\_peak | -0.0005 | 0.9869 |
| B2\_peak | -0.1212 | 0.0000 |
| B2\_correlation\_peak | -0.0352 | 0.2210 |
| B2\_dissimilarity\_peak | 0.0016 | 0.9567 |
| B2\_entropy\_peak | -0.0092 | 0.7503 |
| B2\_variance\_peak | 0.0276 | 0.3368 |
| B3\_peak | -0.1670 | 0.0000 |
| B3\_correlation\_peak | -0.0196 | 0.4961 |
| B3\_dissimilarity\_peak | -0.0134 | 0.6411 |
| B3\_entropy\_peak | 0.0028 | 0.9223 |
| B3\_variance\_peak | 0.0114 | 0.6923 |
| B4\_peak | -0.1240 | 0.0000 |
| B4\_correlation\_peak | 0.0098 | 0.7338 |
| B4\_dissimilarity\_peak | -0.0217 | 0.4513 |
| B4\_entropy\_peak | -0.0454 | 0.1142 |
| B4\_variance\_peak | 0.0164 | 0.5696 |
| B5\_peak | -0.1745 | 0.0000 |
| B5\_correlation\_peak | -0.0424 | 0.1400 |
| B5\_dissimilarity\_peak | -0.0225 | 0.4340 |
| B5\_entropy\_peak | 0.0353 | 0.2198 |
| B5\_variance\_peak | -0.0184 | 0.5232 |
| B6\_peak | -0.0949 | 0.0009 |
| B6\_correlation\_peak | -0.0668 | 0.0200 |
| B6\_dissimilarity\_peak | 0.0700 | 0.0148 |
| B6\_entropy\_peak | 0.1024 | 0.0004 |
| B6\_variance\_peak | 0.0190 | 0.5087 |
| B7\_peak | -0.1002 | 0.0005 |
| B7\_correlation\_peak | -0.0558 | 0.0523 |
| B7\_dissimilarity\_peak | 0.0949 | 0.0009 |
| B7\_entropy\_peak | 0.0728 | 0.0113 |
| B7\_variance\_peak | 0.0430 | 0.1346 |
| B8\_peak | -0.0978 | 0.0007 |
| B8A\_peak | -0.1014 | 0.0004 |
| B8A\_correlation\_peak | -0.0168 | 0.5583 |
| B8A\_dissimilarity\_peak | 0.0920 | 0.0014 |
| B8A\_entropy\_peak | 0.0685 | 0.0171 |
| B8A\_variance\_peak | 0.0431 | 0.1336 |
| B8\_correlation\_peak | 0.0661 | 0.0215 |
| B8\_dissimilarity\_peak | 0.0519 | 0.0711 |
| B8\_entropy\_peak | 0.0785 | 0.0062 |
| B8\_variance\_peak | 0.0155 | 0.5905 |
| CV\_B11B12\_peak | 0.0776 | 0.0069 |
| CV\_B11B12red\_peak | 0.0344 | 0.2319 |
| CV\_B2B3B4\_peak | -0.0169 | 0.5566 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.0660 | 0.0217 |
| CV\_NirRedRedEdge\_peak | 0.0714 | 0.0129 |
| EVI\_peak | -0.0691 | 0.0162 |
| GRVI\_peak | 0.0687 | 0.0168 |
| NDVI\_peak | 0.0618 | 0.0314 |
| SD\_B11B12\_peak | -0.1371 | 0.0000 |
| SD\_B11B12red\_peak | -0.1440 | 0.0000 |
| SD\_B2B3B4\_peak | -0.1274 | 0.0000 |
| SD\_NirRedRe\_peak | -0.0854 | 0.0029 |
| SD\_NirRedReG\_peak | -0.0861 | 0.0027 |
| SR\_peak | 0.0010 | 0.9718 |
| VARI\_peak | 0.0213 | 0.4580 |
| scaled\_GRVI\_correlation\_peak | 0.0957 | 0.0009 |
| scaled\_GRVI\_dissimilarity\_peak | 0.0481 | 0.0946 |
| scaled\_GRVI\_entropy\_peak | 0.0714 | 0.0130 |
| scaled\_GRVI\_variance\_peak | 0.0378 | 0.1883 |
| scaled\_NDVI\_correlation\_peak | 0.0271 | 0.3458 |
| scaled\_NDVI\_dissimilarity\_peak | 0.0240 | 0.4040 |
| scaled\_NDVI\_entropy\_peak | 0.0903 | 0.0017 |
| scaled\_NDVI\_variance\_peak | 0.0159 | 0.5813 |
| scaled\_VARI\_correlation\_peak | 0.0061 | 0.8330 |
| scaled\_VARI\_dissimilarity\_peak | 0.0420 | 0.1437 |
| scaled\_VARI\_entropy\_peak | 0.0189 | 0.5104 |
| scaled\_VARI\_variance\_peak | 0.0278 | 0.3328 |
| CV\_11128\_peak | 0.1147 | 0.0001 |
| SD\_11128\_peak | -0.0703 | 0.0143 |
| winCVedge\_peak | 0.0290 | 0.3127 |
| winCVgreen\_peak | 0.0293 | 0.3084 |
| winCVnir\_peak | 0.0896 | 0.0018 |
| winCVred\_peak | 0.0133 | 0.6435 |
| winCV\_avg\_peak | 0.0464 | 0.1067 |
| B11\_start | -0.1855 | 0.0000 |
| B11\_correlation\_start | -0.0575 | 0.0454 |
| B11\_dissimilarity\_start | 0.0755 | 0.0086 |
| B11\_entropy\_start | 0.0667 | 0.0202 |
| B11\_variance\_start | 0.0325 | 0.2581 |
| B12\_start | -0.1651 | 0.0000 |
| B12\_correlation\_start | -0.1000 | 0.0005 |
| B12\_dissimilarity\_start | 0.0435 | 0.1301 |
| B12\_entropy\_start | 0.1046 | 0.0003 |
| B12\_variance\_start | 0.0180 | 0.5318 |
| B2\_start | -0.1798 | 0.0000 |
| B2\_correlation\_start | -0.0231 | 0.4216 |
| B2\_dissimilarity\_start | 0.0057 | 0.8437 |
| B2\_entropy\_start | 0.0403 | 0.1613 |
| B2\_variance\_start | 0.0023 | 0.9359 |
| B3\_start | -0.2424 | 0.0000 |
| B3\_correlation\_start | -0.0146 | 0.6120 |
| B3\_dissimilarity\_start | 0.0229 | 0.4255 |
| B3\_entropy\_start | 0.0405 | 0.1588 |
| B3\_variance\_start | 0.0098 | 0.7329 |
| B4\_start | -0.1268 | 0.0000 |
| B4\_correlation\_start | -0.0564 | 0.0497 |
| B4\_dissimilarity\_start | -0.0099 | 0.7312 |
| B4\_entropy\_start | 0.0357 | 0.2140 |
| B4\_variance\_start | -0.0170 | 0.5547 |
| B5\_start | -0.2162 | 0.0000 |
| B5\_correlation\_start | -0.0556 | 0.0532 |
| B5\_dissimilarity\_start | 0.0680 | 0.0179 |
| B5\_entropy\_start | 0.0710 | 0.0135 |
| B5\_variance\_start | 0.0396 | 0.1679 |
| B6\_start | -0.1122 | 0.0001 |
| B6\_correlation\_start | -0.0348 | 0.2259 |
| B6\_dissimilarity\_start | 0.0879 | 0.0022 |
| B6\_entropy\_start | 0.0443 | 0.1230 |
| B6\_variance\_start | 0.0632 | 0.0278 |
| B7\_start | -0.1026 | 0.0004 |
| B7\_correlation\_start | -0.0646 | 0.0246 |
| B7\_dissimilarity\_start | 0.0873 | 0.0024 |
| B7\_entropy\_start | 0.0872 | 0.0024 |
| B7\_variance\_start | 0.0569 | 0.0475 |
| B8\_start | -0.1139 | 0.0001 |
| B8A\_start | -0.1032 | 0.0003 |
| B8A\_correlation\_start | -0.0327 | 0.2561 |
| B8A\_dissimilarity\_start | 0.0904 | 0.0016 |
| B8A\_entropy\_start | 0.0421 | 0.1431 |
| B8A\_variance\_start | 0.0620 | 0.0310 |
| B8\_correlation\_start | 0.0506 | 0.0783 |
| B8\_dissimilarity\_start | 0.0556 | 0.0530 |
| B8\_entropy\_start | 0.1034 | 0.0003 |
| B8\_variance\_start | 0.0164 | 0.5679 |
| CV\_B11B12\_start | 0.0204 | 0.4784 |
| CV\_B11B12red\_start | 0.0192 | 0.5037 |
| CV\_B2B3B4\_start | -0.0636 | 0.0269 |
| CV\_NIRRedRedEdgeGreen\_start | 0.0738 | 0.0101 |
| CV\_NirRedRedEdge\_start | 0.0658 | 0.0219 |
| EVI\_start | -0.0637 | 0.0265 |
| GRVI\_start | 0.1109 | 0.0001 |
| NDVI\_start | 0.0566 | 0.0488 |
| SD\_B11B12\_start | -0.1578 | 0.0000 |
| SD\_B11B12red\_start | -0.1637 | 0.0000 |
| SD\_B2B3B4\_start | -0.1969 | 0.0000 |
| SD\_NirRedRe\_start | -0.0817 | 0.0044 |
| SD\_NirRedReG\_start | -0.0851 | 0.0030 |
| SR\_start | -0.0137 | 0.6337 |
| VARI\_start | -0.0124 | 0.6676 |
| scaled\_GRVI\_correlation\_start | -0.0212 | 0.4616 |
| scaled\_GRVI\_dissimilarity\_start | 0.0383 | 0.1833 |
| scaled\_GRVI\_entropy\_start | 0.0483 | 0.0929 |
| scaled\_GRVI\_variance\_start | 0.0102 | 0.7233 |
| scaled\_NDVI\_correlation\_start | 0.0097 | 0.7357 |
| scaled\_NDVI\_dissimilarity\_start | 0.0457 | 0.1122 |
| scaled\_NDVI\_entropy\_start | 0.1175 | 0.0000 |
| scaled\_NDVI\_variance\_start | 0.0041 | 0.8861 |
| scaled\_VARI\_correlation\_start | 0.0193 | 0.5029 |
| scaled\_VARI\_dissimilarity\_start | 0.0908 | 0.0016 |
| scaled\_VARI\_entropy\_start | 0.1122 | 0.0001 |
| scaled\_VARI\_variance\_start | 0.0337 | 0.2413 |
| CV\_11128\_start | 0.0386 | 0.1796 |
| SD\_11128\_start | -0.0706 | 0.0140 |
| winCVedge\_start | 0.1052 | 0.0002 |
| winCVgreen\_start | 0.1109 | 0.0001 |
| winCVnir\_start | 0.1055 | 0.0002 |
| winCVred\_start | 0.0561 | 0.0510 |
| winCV\_avg\_start | 0.1072 | 0.0002 |
| bio01 | 0.0281 | 0.3279 |
| bio04 | 0.0141 | 0.6233 |
| bio12 | -0.0764 | 0.0078 |
| bio15 | -0.0007 | 0.9806 |
| carbon05 | 0.0506 | 0.0780 |
| carbon100200 | 0.0220 | 0.4432 |
| carbon1530 | 0.0842 | 0.0033 |
| carbon3060 | 0.0198 | 0.4912 |
| carbon515 | 0.0831 | 0.0038 |
| carbon60100 | 0.0221 | 0.4427 |
| cec05 | -0.1373 | 0.0000 |
| cec100200 | -0.1224 | 0.0000 |
| cec1530 | -0.1239 | 0.0000 |
| cec3060 | -0.1229 | 0.0000 |
| cec515 | -0.1349 | 0.0000 |
| cec60100 | -0.1224 | 0.0000 |
| clay05 | -0.0702 | 0.0145 |
| clay100200 | -0.0709 | 0.0136 |
| clay1530 | -0.0689 | 0.0164 |
| clay3060 | -0.0676 | 0.0187 |
| clay515 | -0.0698 | 0.0151 |
| clay60100 | -0.0709 | 0.0135 |
| elevation | -0.0570 | 0.0474 |
| pH05 | -0.0788 | 0.0061 |
| pH100200 | -0.1088 | 0.0002 |
| pH1530 | -0.0907 | 0.0016 |
| pH3060 | -0.1008 | 0.0004 |
| pH515 | -0.0795 | 0.0056 |
| pH60100 | -0.1088 | 0.0002 |
| sand05 | 0.0586 | 0.0413 |
| sand100200 | 0.0675 | 0.0188 |
| sand1530 | 0.0614 | 0.0327 |
| sand3060 | 0.0612 | 0.0332 |
| sand515 | 0.0594 | 0.0388 |
| sand60100 | 0.0675 | 0.0189 |
| silt05 | -0.0239 | 0.4051 |
| silt100200 | -0.0379 | 0.1876 |
| silt1530 | -0.0293 | 0.3078 |
| silt3060 | -0.0314 | 0.2751 |
| silt515 | -0.0254 | 0.3778 |
| silt60100 | -0.0380 | 0.1862 |
| fdis | 0.7471 | 0.0000 |
| Conifer\_Percentage | 0.0526 | 0.0671 |

**Table S12. Pearson’s correlations for functional dispersion in the deciduous region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.5795 | 0.0000 |
| shannon | 0.7471 | 0.0000 |
| lat\_copy | -0.0553 | 0.0544 |
| lon\_copy | -0.0226 | 0.4329 |
| B11\_end | -0.0767 | 0.0075 |
| B11\_correlation\_end | -0.0420 | 0.1436 |
| B11\_dissimilarity\_end | 0.0583 | 0.0425 |
| B11\_entropy\_end | 0.0859 | 0.0028 |
| B11\_variance\_end | 0.0287 | 0.3176 |
| B12\_end | -0.1197 | 0.0000 |
| B12\_correlation\_end | -0.0071 | 0.8049 |
| B12\_dissimilarity\_end | 0.0023 | 0.9372 |
| B12\_entropy\_end | 0.0177 | 0.5387 |
| B12\_variance\_end | 0.0068 | 0.8124 |
| B2\_end | -0.0840 | 0.0034 |
| B2\_correlation\_end | -0.0089 | 0.7573 |
| B2\_dissimilarity\_end | 0.0244 | 0.3953 |
| B2\_entropy\_end | 0.0248 | 0.3888 |
| B2\_variance\_end | -0.0074 | 0.7972 |
| B3\_end | -0.0236 | 0.4117 |
| B3\_correlation\_end | -0.0598 | 0.0374 |
| B3\_dissimilarity\_end | 0.0865 | 0.0026 |
| B3\_entropy\_end | 0.1381 | 0.0000 |
| B3\_variance\_end | 0.0305 | 0.2893 |
| B4\_end | -0.1176 | 0.0000 |
| B4\_correlation\_end | -0.0286 | 0.3205 |
| B4\_dissimilarity\_end | 0.0484 | 0.0922 |
| B4\_entropy\_end | 0.0740 | 0.0100 |
| B4\_variance\_end | 0.0285 | 0.3214 |
| B5\_end | -0.0434 | 0.1311 |
| B5\_correlation\_end | -0.0442 | 0.1243 |
| B5\_dissimilarity\_end | 0.0854 | 0.0029 |
| B5\_entropy\_end | 0.0356 | 0.2158 |
| B5\_variance\_end | 0.0567 | 0.0485 |
| B6\_end | 0.0208 | 0.4695 |
| B6\_correlation\_end | -0.1104 | 0.0001 |
| B6\_dissimilarity\_end | 0.1180 | 0.0000 |
| B6\_entropy\_end | 0.1150 | 0.0001 |
| B6\_variance\_end | 0.0862 | 0.0027 |
| B7\_end | 0.0185 | 0.5195 |
| B7\_correlation\_end | -0.0153 | 0.5951 |
| B7\_dissimilarity\_end | 0.1007 | 0.0005 |
| B7\_entropy\_end | 0.0352 | 0.2202 |
| B7\_variance\_end | 0.0853 | 0.0030 |
| B8\_end | 0.0169 | 0.5565 |
| B8A\_end | 0.0155 | 0.5907 |
| B8A\_correlation\_end | -0.0504 | 0.0797 |
| B8A\_dissimilarity\_end | 0.1137 | 0.0001 |
| B8A\_entropy\_end | 0.0808 | 0.0049 |
| B8A\_variance\_end | 0.0852 | 0.0030 |
| B8\_correlation\_end | 0.0157 | 0.5863 |
| B8\_dissimilarity\_end | 0.1099 | 0.0001 |
| B8\_entropy\_end | 0.0702 | 0.0145 |
| B8\_variance\_end | 0.0845 | 0.0033 |
| CV\_B11B12\_end | 0.1520 | 0.0000 |
| CV\_B11B12red\_end | 0.0966 | 0.0008 |
| CV\_B2B3B4\_end | -0.0260 | 0.3656 |
| CV\_NIRRedRedEdgeGreen\_end | 0.0863 | 0.0027 |
| CV\_NirRedRedEdge\_end | 0.0882 | 0.0021 |
| EVI\_end | 0.1064 | 0.0002 |
| GRVI\_end | 0.0614 | 0.0327 |
| NDVI\_end | 0.1148 | 0.0001 |
| SD\_B11B12\_end | -0.0255 | 0.3743 |
| SD\_B11B12red\_end | -0.0335 | 0.2436 |
| SD\_B2B3B4\_end | -0.0955 | 0.0009 |
| SD\_NirRedRe\_end | 0.0530 | 0.0650 |
| SD\_NirRedReG\_end | 0.0384 | 0.1820 |
| SR\_end | 0.0792 | 0.0058 |
| VARI\_end | 0.0825 | 0.0040 |
| scaled\_GRVI\_correlation\_end | -0.0395 | 0.1689 |
| scaled\_GRVI\_dissimilarity\_end | 0.0217 | 0.4510 |
| scaled\_GRVI\_entropy\_end | 0.0265 | 0.3568 |
| scaled\_GRVI\_variance\_end | -0.0003 | 0.9917 |
| scaled\_NDVI\_correlation\_end | 0.0215 | 0.4557 |
| scaled\_NDVI\_dissimilarity\_end | 0.0514 | 0.0737 |
| scaled\_NDVI\_entropy\_end | -0.0450 | 0.1171 |
| scaled\_NDVI\_variance\_end | 0.0607 | 0.0346 |
| scaled\_VARI\_correlation\_end | 0.0145 | 0.6149 |
| scaled\_VARI\_dissimilarity\_end | 0.1837 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.0608 | 0.0344 |
| scaled\_VARI\_variance\_end | 0.1605 | 0.0000 |
| CV\_11128\_end | 0.1252 | 0.0000 |
| SD\_11128\_end | 0.0624 | 0.0299 |
| winCVedge\_end | 0.0833 | 0.0037 |
| winCVgreen\_end | 0.0767 | 0.0076 |
| winCVnir\_end | 0.0865 | 0.0026 |
| winCVred\_end | 0.1035 | 0.0003 |
| winCV\_avg\_end | 0.1011 | 0.0004 |
| B11\_peak | -0.0671 | 0.0195 |
| B11\_correlation\_peak | -0.0560 | 0.0515 |
| B11\_dissimilarity\_peak | 0.0625 | 0.0297 |
| B11\_entropy\_peak | 0.0924 | 0.0013 |
| B11\_variance\_peak | 0.0201 | 0.4844 |
| B12\_peak | -0.1008 | 0.0004 |
| B12\_correlation\_peak | 0.0182 | 0.5275 |
| B12\_dissimilarity\_peak | -0.0202 | 0.4814 |
| B12\_entropy\_peak | -0.0181 | 0.5300 |
| B12\_variance\_peak | -0.0058 | 0.8415 |
| B2\_peak | -0.1288 | 0.0000 |
| B2\_correlation\_peak | -0.0028 | 0.9214 |
| B2\_dissimilarity\_peak | -0.0309 | 0.2827 |
| B2\_entropy\_peak | -0.0494 | 0.0859 |
| B2\_variance\_peak | 0.0058 | 0.8411 |
| B3\_peak | -0.1070 | 0.0002 |
| B3\_correlation\_peak | -0.0190 | 0.5095 |
| B3\_dissimilarity\_peak | 0.0007 | 0.9797 |
| B3\_entropy\_peak | 0.0230 | 0.4231 |
| B3\_variance\_peak | 0.0090 | 0.7537 |
| B4\_peak | -0.1455 | 0.0000 |
| B4\_correlation\_peak | 0.0481 | 0.0940 |
| B4\_dissimilarity\_peak | -0.0444 | 0.1224 |
| B4\_entropy\_peak | -0.0772 | 0.0072 |
| B4\_variance\_peak | 0.0050 | 0.8618 |
| B5\_peak | -0.0915 | 0.0014 |
| B5\_correlation\_peak | -0.0477 | 0.0967 |
| B5\_dissimilarity\_peak | 0.0016 | 0.9545 |
| B5\_entropy\_peak | 0.0356 | 0.2155 |
| B5\_variance\_peak | 0.0002 | 0.9933 |
| B6\_peak | 0.0070 | 0.8090 |
| B6\_correlation\_peak | -0.0724 | 0.0117 |
| B6\_dissimilarity\_peak | 0.1013 | 0.0004 |
| B6\_entropy\_peak | 0.0812 | 0.0047 |
| B6\_variance\_peak | 0.0587 | 0.0410 |
| B7\_peak | 0.0000 | 0.9997 |
| B7\_correlation\_peak | -0.0601 | 0.0365 |
| B7\_dissimilarity\_peak | 0.1274 | 0.0000 |
| B7\_entropy\_peak | 0.0680 | 0.0180 |
| B7\_variance\_peak | 0.0826 | 0.0040 |
| B8\_peak | 0.0057 | 0.8444 |
| B8A\_peak | -0.0002 | 0.9947 |
| B8A\_correlation\_peak | -0.0418 | 0.1463 |
| B8A\_dissimilarity\_peak | 0.1276 | 0.0000 |
| B8A\_entropy\_peak | 0.0752 | 0.0088 |
| B8A\_variance\_peak | 0.0799 | 0.0054 |
| B8\_correlation\_peak | 0.0397 | 0.1676 |
| B8\_dissimilarity\_peak | 0.1053 | 0.0002 |
| B8\_entropy\_peak | 0.0891 | 0.0019 |
| B8\_variance\_peak | 0.0756 | 0.0085 |
| CV\_B11B12\_peak | 0.1317 | 0.0000 |
| CV\_B11B12red\_peak | 0.1294 | 0.0000 |
| CV\_B2B3B4\_peak | 0.0935 | 0.0011 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.1477 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.1535 | 0.0000 |
| EVI\_peak | 0.0366 | 0.2032 |
| GRVI\_peak | 0.1488 | 0.0000 |
| NDVI\_peak | 0.1567 | 0.0000 |
| SD\_B11B12\_peak | -0.0381 | 0.1851 |
| SD\_B11B12red\_peak | -0.0454 | 0.1144 |
| SD\_B2B3B4\_peak | -0.0234 | 0.4149 |
| SD\_NirRedRe\_peak | 0.0175 | 0.5438 |
| SD\_NirRedReG\_peak | 0.0167 | 0.5622 |
| SR\_peak | 0.0956 | 0.0009 |
| VARI\_peak | 0.1217 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | 0.0733 | 0.0107 |
| scaled\_GRVI\_dissimilarity\_peak | 0.0148 | 0.6074 |
| scaled\_GRVI\_entropy\_peak | 0.0532 | 0.0639 |
| scaled\_GRVI\_variance\_peak | 0.0145 | 0.6152 |
| scaled\_NDVI\_correlation\_peak | 0.0349 | 0.2249 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0363 | 0.2068 |
| scaled\_NDVI\_entropy\_peak | 0.0036 | 0.9008 |
| scaled\_NDVI\_variance\_peak | -0.0072 | 0.8012 |
| scaled\_VARI\_correlation\_peak | -0.0288 | 0.3167 |
| scaled\_VARI\_dissimilarity\_peak | -0.0051 | 0.8594 |
| scaled\_VARI\_entropy\_peak | -0.0109 | 0.7037 |
| scaled\_VARI\_variance\_peak | 0.0014 | 0.9607 |
| CV\_11128\_peak | 0.1612 | 0.0000 |
| SD\_11128\_peak | 0.0310 | 0.2807 |
| winCVedge\_peak | 0.0294 | 0.3062 |
| winCVgreen\_peak | 0.0361 | 0.2096 |
| winCVnir\_peak | 0.0778 | 0.0068 |
| winCVred\_peak | -0.0138 | 0.6315 |
| winCV\_avg\_peak | 0.0338 | 0.2393 |
| B11\_start | -0.0991 | 0.0006 |
| B11\_correlation\_start | -0.0324 | 0.2605 |
| B11\_dissimilarity\_start | 0.0974 | 0.0007 |
| B11\_entropy\_start | 0.0539 | 0.0606 |
| B11\_variance\_start | 0.0507 | 0.0780 |
| B12\_start | -0.0846 | 0.0032 |
| B12\_correlation\_start | -0.1065 | 0.0002 |
| B12\_dissimilarity\_start | 0.0663 | 0.0210 |
| B12\_entropy\_start | 0.1202 | 0.0000 |
| B12\_variance\_start | 0.0265 | 0.3560 |
| B2\_start | -0.1268 | 0.0000 |
| B2\_correlation\_start | -0.0138 | 0.6314 |
| B2\_dissimilarity\_start | 0.0103 | 0.7209 |
| B2\_entropy\_start | 0.0450 | 0.1176 |
| B2\_variance\_start | -0.0031 | 0.9149 |
| B3\_start | -0.1531 | 0.0000 |
| B3\_correlation\_start | -0.0162 | 0.5725 |
| B3\_dissimilarity\_start | 0.0533 | 0.0634 |
| B3\_entropy\_start | 0.0751 | 0.0089 |
| B3\_variance\_start | 0.0146 | 0.6128 |
| B4\_start | -0.0663 | 0.0211 |
| B4\_correlation\_start | -0.0635 | 0.0271 |
| B4\_dissimilarity\_start | 0.0140 | 0.6265 |
| B4\_entropy\_start | 0.0728 | 0.0113 |
| B4\_variance\_start | -0.0143 | 0.6185 |
| B5\_start | -0.1216 | 0.0000 |
| B5\_correlation\_start | -0.0570 | 0.0471 |
| B5\_dissimilarity\_start | 0.1076 | 0.0002 |
| B5\_entropy\_start | 0.1058 | 0.0002 |
| B5\_variance\_start | 0.0566 | 0.0490 |
| B6\_start | -0.0668 | 0.0201 |
| B6\_correlation\_start | -0.0773 | 0.0071 |
| B6\_dissimilarity\_start | 0.1141 | 0.0001 |
| B6\_entropy\_start | 0.0734 | 0.0106 |
| B6\_variance\_start | 0.0841 | 0.0034 |
| B7\_start | -0.0650 | 0.0235 |
| B7\_correlation\_start | -0.0367 | 0.2015 |
| B7\_dissimilarity\_start | 0.0881 | 0.0021 |
| B7\_entropy\_start | 0.0507 | 0.0778 |
| B7\_variance\_start | 0.0659 | 0.0218 |
| B8\_start | -0.0673 | 0.0191 |
| B8A\_start | -0.0634 | 0.0273 |
| B8A\_correlation\_start | -0.0321 | 0.2636 |
| B8A\_dissimilarity\_start | 0.0946 | 0.0010 |
| B8A\_entropy\_start | 0.0358 | 0.2127 |
| B8A\_variance\_start | 0.0734 | 0.0106 |
| B8\_correlation\_start | 0.0211 | 0.4624 |
| B8\_dissimilarity\_start | 0.0663 | 0.0211 |
| B8\_entropy\_start | 0.0670 | 0.0198 |
| B8\_variance\_start | 0.0471 | 0.1012 |
| CV\_B11B12\_start | -0.0010 | 0.9736 |
| CV\_B11B12red\_start | 0.0087 | 0.7616 |
| CV\_B2B3B4\_start | -0.0377 | 0.1899 |
| CV\_NIRRedRedEdgeGreen\_start | 0.0416 | 0.1480 |
| CV\_NirRedRedEdge\_start | 0.0327 | 0.2559 |
| EVI\_start | -0.0403 | 0.1610 |
| GRVI\_start | 0.0790 | 0.0059 |
| NDVI\_start | 0.0302 | 0.2943 |
| SD\_B11B12\_start | -0.0886 | 0.0020 |
| SD\_B11B12red\_start | -0.0885 | 0.0020 |
| SD\_B2B3B4\_start | -0.1223 | 0.0000 |
| SD\_NirRedRe\_start | -0.0501 | 0.0814 |
| SD\_NirRedReG\_start | -0.0509 | 0.0766 |
| SR\_start | -0.0258 | 0.3692 |
| VARI\_start | -0.0290 | 0.3133 |
| scaled\_GRVI\_correlation\_start | -0.0349 | 0.2254 |
| scaled\_GRVI\_dissimilarity\_start | 0.0356 | 0.2155 |
| scaled\_GRVI\_entropy\_start | 0.0330 | 0.2507 |
| scaled\_GRVI\_variance\_start | 0.0096 | 0.7388 |
| scaled\_NDVI\_correlation\_start | -0.0082 | 0.7750 |
| scaled\_NDVI\_dissimilarity\_start | 0.0443 | 0.1237 |
| scaled\_NDVI\_entropy\_start | 0.1070 | 0.0002 |
| scaled\_NDVI\_variance\_start | 0.0068 | 0.8133 |
| scaled\_VARI\_correlation\_start | -0.0023 | 0.9370 |
| scaled\_VARI\_dissimilarity\_start | 0.1055 | 0.0002 |
| scaled\_VARI\_entropy\_start | 0.1293 | 0.0000 |
| scaled\_VARI\_variance\_start | 0.0479 | 0.0957 |
| CV\_11128\_start | 0.0055 | 0.8476 |
| SD\_11128\_start | -0.0481 | 0.0940 |
| winCVedge\_start | 0.1132 | 0.0001 |
| winCVgreen\_start | 0.1183 | 0.0000 |
| winCVnir\_start | 0.1020 | 0.0004 |
| winCVred\_start | 0.0579 | 0.0438 |
| winCV\_avg\_start | 0.1112 | 0.0001 |
| bio01 | 0.0453 | 0.1148 |
| bio04 | -0.0317 | 0.2695 |
| bio12 | -0.0279 | 0.3314 |
| bio15 | -0.0396 | 0.1682 |
| carbon05 | 0.0496 | 0.0845 |
| carbon100200 | 0.0351 | 0.2219 |
| carbon1530 | 0.0905 | 0.0016 |
| carbon3060 | 0.0417 | 0.1472 |
| carbon515 | 0.0814 | 0.0046 |
| carbon60100 | 0.0356 | 0.2162 |
| cec05 | -0.0625 | 0.0295 |
| cec100200 | -0.0572 | 0.0465 |
| cec1530 | -0.0577 | 0.0446 |
| cec3060 | -0.0574 | 0.0457 |
| cec515 | -0.0618 | 0.0314 |
| cec60100 | -0.0572 | 0.0465 |
| clay05 | -0.0550 | 0.0554 |
| clay100200 | -0.0519 | 0.0709 |
| clay1530 | -0.0521 | 0.0698 |
| clay3060 | -0.0503 | 0.0800 |
| clay515 | -0.0539 | 0.0605 |
| clay60100 | -0.0519 | 0.0708 |
| elevation | -0.0393 | 0.1714 |
| pH05 | -0.0391 | 0.1742 |
| pH100200 | -0.0666 | 0.0204 |
| pH1530 | -0.0398 | 0.1665 |
| pH3060 | -0.0588 | 0.0407 |
| pH515 | -0.0393 | 0.1719 |
| pH60100 | -0.0663 | 0.0210 |
| sand05 | 0.0513 | 0.0742 |
| sand100200 | 0.0573 | 0.0460 |
| sand1530 | 0.0529 | 0.0658 |
| sand3060 | 0.0539 | 0.0608 |
| sand515 | 0.0518 | 0.0717 |
| sand60100 | 0.0573 | 0.0460 |
| silt05 | -0.0263 | 0.3607 |
| silt100200 | -0.0401 | 0.1631 |
| silt1530 | -0.0317 | 0.2703 |
| silt3060 | -0.0360 | 0.2109 |
| silt515 | -0.0280 | 0.3303 |
| silt60100 | -0.0402 | 0.1622 |
| fdis | 1.0000 | 0.0000 |
| Conifer\_Percentage | -0.0224 | 0.4370 |

**Table S13. Pearson’s correlations for percent conifer in the deciduous region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.0806 | 0.0050 |
| shannon | 0.0526 | 0.0671 |
| lat\_copy | 0.3153 | 0.0000 |
| lon\_copy | -0.2400 | 0.0000 |
| B11\_end | -0.7705 | 0.0000 |
| B11\_correlation\_end | 0.0393 | 0.1715 |
| B11\_dissimilarity\_end | -0.0068 | 0.8122 |
| B11\_entropy\_end | -0.0541 | 0.0597 |
| B11\_variance\_end | 0.0253 | 0.3788 |
| B12\_end | -0.6838 | 0.0000 |
| B12\_correlation\_end | 0.0687 | 0.0167 |
| B12\_dissimilarity\_end | -0.0364 | 0.2048 |
| B12\_entropy\_end | -0.0778 | 0.0067 |
| B12\_variance\_end | 0.0167 | 0.5603 |
| B2\_end | -0.4534 | 0.0000 |
| B2\_correlation\_end | 0.0200 | 0.4870 |
| B2\_dissimilarity\_end | 0.0183 | 0.5254 |
| B2\_entropy\_end | 0.0152 | 0.5972 |
| B2\_variance\_end | 0.0347 | 0.2267 |
| B3\_end | -0.6132 | 0.0000 |
| B3\_correlation\_end | 0.0104 | 0.7177 |
| B3\_dissimilarity\_end | -0.0807 | 0.0049 |
| B3\_entropy\_end | -0.0980 | 0.0006 |
| B3\_variance\_end | -0.0492 | 0.0869 |
| B4\_end | -0.6512 | 0.0000 |
| B4\_correlation\_end | 0.0649 | 0.0239 |
| B4\_dissimilarity\_end | -0.3241 | 0.0000 |
| B4\_entropy\_end | -0.3496 | 0.0000 |
| B4\_variance\_end | -0.2312 | 0.0000 |
| B5\_end | -0.7089 | 0.0000 |
| B5\_correlation\_end | 0.0653 | 0.0231 |
| B5\_dissimilarity\_end | -0.1354 | 0.0000 |
| B5\_entropy\_end | -0.0969 | 0.0007 |
| B5\_variance\_end | -0.1036 | 0.0003 |
| B6\_end | -0.6745 | 0.0000 |
| B6\_correlation\_end | 0.0876 | 0.0023 |
| B6\_dissimilarity\_end | -0.0894 | 0.0018 |
| B6\_entropy\_end | -0.0967 | 0.0007 |
| B6\_variance\_end | -0.0598 | 0.0373 |
| B7\_end | -0.6600 | 0.0000 |
| B7\_correlation\_end | -0.0253 | 0.3797 |
| B7\_dissimilarity\_end | -0.0772 | 0.0072 |
| B7\_entropy\_end | -0.0301 | 0.2944 |
| B7\_variance\_end | -0.0618 | 0.0314 |
| B8\_end | -0.6756 | 0.0000 |
| B8A\_end | -0.6929 | 0.0000 |
| B8A\_correlation\_end | 0.0508 | 0.0773 |
| B8A\_dissimilarity\_end | -0.0621 | 0.0308 |
| B8A\_entropy\_end | -0.0605 | 0.0353 |
| B8A\_variance\_end | -0.0352 | 0.2205 |
| B8\_correlation\_end | 0.0522 | 0.0692 |
| B8\_dissimilarity\_end | -0.1921 | 0.0000 |
| B8\_entropy\_end | -0.1274 | 0.0000 |
| B8\_variance\_end | -0.1517 | 0.0000 |
| CV\_B11B12\_end | -0.0246 | 0.3929 |
| CV\_B11B12red\_end | 0.2867 | 0.0000 |
| CV\_B2B3B4\_end | -0.2532 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.2268 | 0.0000 |
| CV\_NirRedRedEdge\_end | 0.3219 | 0.0000 |
| EVI\_end | -0.4105 | 0.0000 |
| GRVI\_end | -0.1303 | 0.0000 |
| NDVI\_end | 0.3698 | 0.0000 |
| SD\_B11B12\_end | -0.7793 | 0.0000 |
| SD\_B11B12red\_end | -0.7117 | 0.0000 |
| SD\_B2B3B4\_end | -0.6148 | 0.0000 |
| SD\_NirRedRe\_end | -0.5673 | 0.0000 |
| SD\_NirRedReG\_end | -0.6141 | 0.0000 |
| SR\_end | 0.3071 | 0.0000 |
| VARI\_end | 0.5544 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.0440 | 0.1255 |
| scaled\_GRVI\_dissimilarity\_end | 0.1676 | 0.0000 |
| scaled\_GRVI\_entropy\_end | 0.1336 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.1236 | 0.0000 |
| scaled\_NDVI\_correlation\_end | -0.0513 | 0.0744 |
| scaled\_NDVI\_dissimilarity\_end | -0.0663 | 0.0210 |
| scaled\_NDVI\_entropy\_end | -0.0975 | 0.0007 |
| scaled\_NDVI\_variance\_end | -0.0127 | 0.6585 |
| scaled\_VARI\_correlation\_end | -0.0747 | 0.0093 |
| scaled\_VARI\_dissimilarity\_end | 0.1169 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.0423 | 0.1410 |
| scaled\_VARI\_variance\_end | 0.0755 | 0.0085 |
| CV\_11128\_end | 0.1935 | 0.0000 |
| SD\_11128\_end | -0.5482 | 0.0000 |
| winCVedge\_end | 0.1964 | 0.0000 |
| winCVgreen\_end | 0.2544 | 0.0000 |
| winCVnir\_end | 0.1968 | 0.0000 |
| winCVred\_end | 0.1957 | 0.0000 |
| winCV\_avg\_end | 0.2418 | 0.0000 |
| B11\_peak | -0.7360 | 0.0000 |
| B11\_correlation\_peak | -0.0092 | 0.7490 |
| B11\_dissimilarity\_peak | 0.1212 | 0.0000 |
| B11\_entropy\_peak | 0.0267 | 0.3533 |
| B11\_variance\_peak | 0.1162 | 0.0001 |
| B12\_peak | -0.5861 | 0.0000 |
| B12\_correlation\_peak | 0.0137 | 0.6327 |
| B12\_dissimilarity\_peak | 0.1048 | 0.0003 |
| B12\_entropy\_peak | 0.0209 | 0.4666 |
| B12\_variance\_peak | 0.0603 | 0.0358 |
| B2\_peak | 0.0708 | 0.0137 |
| B2\_correlation\_peak | -0.0711 | 0.0133 |
| B2\_dissimilarity\_peak | 0.0538 | 0.0613 |
| B2\_entropy\_peak | 0.0974 | 0.0007 |
| B2\_variance\_peak | 0.0008 | 0.9782 |
| B3\_peak | -0.2561 | 0.0000 |
| B3\_correlation\_peak | 0.0408 | 0.1557 |
| B3\_dissimilarity\_peak | -0.1060 | 0.0002 |
| B3\_entropy\_peak | -0.1405 | 0.0000 |
| B3\_variance\_peak | -0.0329 | 0.2531 |
| B4\_peak | 0.1797 | 0.0000 |
| B4\_correlation\_peak | -0.1310 | 0.0000 |
| B4\_dissimilarity\_peak | 0.1053 | 0.0002 |
| B4\_entropy\_peak | 0.1609 | 0.0000 |
| B4\_variance\_peak | 0.0222 | 0.4395 |
| B5\_peak | -0.4572 | 0.0000 |
| B5\_correlation\_peak | 0.0876 | 0.0023 |
| B5\_dissimilarity\_peak | -0.0302 | 0.2934 |
| B5\_entropy\_peak | -0.0999 | 0.0005 |
| B5\_variance\_peak | 0.0276 | 0.3377 |
| B6\_peak | -0.7634 | 0.0000 |
| B6\_correlation\_peak | -0.0422 | 0.1424 |
| B6\_dissimilarity\_peak | 0.0995 | 0.0005 |
| B6\_entropy\_peak | 0.0286 | 0.3205 |
| B6\_variance\_peak | 0.0988 | 0.0006 |
| B7\_peak | -0.7874 | 0.0000 |
| B7\_correlation\_peak | -0.0357 | 0.2139 |
| B7\_dissimilarity\_peak | 0.0953 | 0.0009 |
| B7\_entropy\_peak | 0.0361 | 0.2093 |
| B7\_variance\_peak | 0.0917 | 0.0014 |
| B8\_peak | -0.7835 | 0.0000 |
| B8A\_peak | -0.7853 | 0.0000 |
| B8A\_correlation\_peak | 0.0056 | 0.8456 |
| B8A\_dissimilarity\_peak | 0.0956 | 0.0009 |
| B8A\_entropy\_peak | 0.0268 | 0.3513 |
| B8A\_variance\_peak | 0.0930 | 0.0012 |
| B8\_correlation\_peak | 0.0833 | 0.0037 |
| B8\_dissimilarity\_peak | -0.0279 | 0.3323 |
| B8\_entropy\_peak | 0.0041 | 0.8862 |
| B8\_variance\_peak | 0.0090 | 0.7551 |
| CV\_B11B12\_peak | -0.4436 | 0.0000 |
| CV\_B11B12red\_peak | -0.7137 | 0.0000 |
| CV\_B2B3B4\_peak | -0.5805 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_peak | -0.6749 | 0.0000 |
| CV\_NirRedRedEdge\_peak | -0.6567 | 0.0000 |
| EVI\_peak | -0.7862 | 0.0000 |
| GRVI\_peak | -0.6817 | 0.0000 |
| NDVI\_peak | -0.6589 | 0.0000 |
| SD\_B11B12\_peak | -0.7888 | 0.0000 |
| SD\_B11B12red\_peak | -0.7771 | 0.0000 |
| SD\_B2B3B4\_peak | -0.5059 | 0.0000 |
| SD\_NirRedRe\_peak | -0.7906 | 0.0000 |
| SD\_NirRedReG\_peak | -0.7915 | 0.0000 |
| SR\_peak | -0.7313 | 0.0000 |
| VARI\_peak | -0.5559 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | 0.1086 | 0.0002 |
| scaled\_GRVI\_dissimilarity\_peak | 0.2694 | 0.0000 |
| scaled\_GRVI\_entropy\_peak | 0.3155 | 0.0000 |
| scaled\_GRVI\_variance\_peak | 0.1220 | 0.0000 |
| scaled\_NDVI\_correlation\_peak | -0.0010 | 0.9732 |
| scaled\_NDVI\_dissimilarity\_peak | 0.3673 | 0.0000 |
| scaled\_NDVI\_entropy\_peak | 0.5270 | 0.0000 |
| scaled\_NDVI\_variance\_peak | 0.1244 | 0.0000 |
| scaled\_VARI\_correlation\_peak | 0.1021 | 0.0004 |
| scaled\_VARI\_dissimilarity\_peak | 0.1750 | 0.0000 |
| scaled\_VARI\_entropy\_peak | 0.1084 | 0.0002 |
| scaled\_VARI\_variance\_peak | 0.0998 | 0.0005 |
| CV\_11128\_peak | -0.2830 | 0.0000 |
| SD\_11128\_peak | -0.7646 | 0.0000 |
| winCVedge\_peak | 0.0628 | 0.0289 |
| winCVgreen\_peak | -0.0515 | 0.0731 |
| winCVnir\_peak | 0.3472 | 0.0000 |
| winCVred\_peak | 0.0997 | 0.0005 |
| winCV\_avg\_peak | 0.1395 | 0.0000 |
| B11\_start | -0.7493 | 0.0000 |
| B11\_correlation\_start | -0.0228 | 0.4283 |
| B11\_dissimilarity\_start | 0.1146 | 0.0001 |
| B11\_entropy\_start | 0.0303 | 0.2914 |
| B11\_variance\_start | 0.1172 | 0.0000 |
| B12\_start | -0.5724 | 0.0000 |
| B12\_correlation\_start | -0.0589 | 0.0402 |
| B12\_dissimilarity\_start | 0.1083 | 0.0002 |
| B12\_entropy\_start | 0.0709 | 0.0136 |
| B12\_variance\_start | 0.0802 | 0.0052 |
| B2\_start | -0.3219 | 0.0000 |
| B2\_correlation\_start | -0.0110 | 0.7026 |
| B2\_dissimilarity\_start | 0.0734 | 0.0105 |
| B2\_entropy\_start | 0.0298 | 0.3002 |
| B2\_variance\_start | 0.0621 | 0.0307 |
| B3\_start | -0.6670 | 0.0000 |
| B3\_correlation\_start | 0.0878 | 0.0022 |
| B3\_dissimilarity\_start | -0.1027 | 0.0003 |
| B3\_entropy\_start | -0.1850 | 0.0000 |
| B3\_variance\_start | 0.0206 | 0.4747 |
| B4\_start | -0.1986 | 0.0000 |
| B4\_correlation\_start | -0.0366 | 0.2025 |
| B4\_dissimilarity\_start | 0.0678 | 0.0182 |
| B4\_entropy\_start | 0.0556 | 0.0531 |
| B4\_variance\_start | 0.0667 | 0.0202 |
| B5\_start | -0.7245 | 0.0000 |
| B5\_correlation\_start | 0.0390 | 0.1752 |
| B5\_dissimilarity\_start | 0.0118 | 0.6817 |
| B5\_entropy\_start | -0.0636 | 0.0268 |
| B5\_variance\_start | 0.0571 | 0.0467 |
| B6\_start | -0.5906 | 0.0000 |
| B6\_correlation\_start | 0.0451 | 0.1163 |
| B6\_dissimilarity\_start | -0.0837 | 0.0036 |
| B6\_entropy\_start | -0.0460 | 0.1091 |
| B6\_variance\_start | -0.0620 | 0.0308 |
| B7\_start | -0.5642 | 0.0000 |
| B7\_correlation\_start | 0.0631 | 0.0281 |
| B7\_dissimilarity\_start | -0.0841 | 0.0034 |
| B7\_entropy\_start | -0.0618 | 0.0314 |
| B7\_variance\_start | -0.0640 | 0.0258 |
| B8\_start | -0.5774 | 0.0000 |
| B8A\_start | -0.5794 | 0.0000 |
| B8A\_correlation\_start | 0.0646 | 0.0246 |
| B8A\_dissimilarity\_start | -0.0610 | 0.0338 |
| B8A\_entropy\_start | -0.0732 | 0.0108 |
| B8A\_variance\_start | -0.0411 | 0.1528 |
| B8\_correlation\_start | 0.0497 | 0.0840 |
| B8\_dissimilarity\_start | -0.1626 | 0.0000 |
| B8\_entropy\_start | -0.0746 | 0.0094 |
| B8\_variance\_start | -0.1363 | 0.0000 |
| CV\_B11B12\_start | -0.1137 | 0.0001 |
| CV\_B11B12red\_start | -0.3065 | 0.0000 |
| CV\_B2B3B4\_start | -0.3967 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_start | -0.0793 | 0.0058 |
| CV\_NirRedRedEdge\_start | -0.0701 | 0.0147 |
| EVI\_start | -0.4648 | 0.0000 |
| GRVI\_start | -0.0517 | 0.0721 |
| NDVI\_start | -0.1204 | 0.0000 |
| SD\_B11B12\_start | -0.7492 | 0.0000 |
| SD\_B11B12red\_start | -0.7797 | 0.0000 |
| SD\_B2B3B4\_start | -0.6418 | 0.0000 |
| SD\_NirRedRe\_start | -0.5004 | 0.0000 |
| SD\_NirRedReG\_start | -0.5151 | 0.0000 |
| SR\_start | -0.2747 | 0.0000 |
| VARI\_start | -0.2017 | 0.0000 |
| scaled\_GRVI\_correlation\_start | 0.0241 | 0.4011 |
| scaled\_GRVI\_dissimilarity\_start | 0.1642 | 0.0000 |
| scaled\_GRVI\_entropy\_start | 0.1552 | 0.0000 |
| scaled\_GRVI\_variance\_start | 0.1074 | 0.0002 |
| scaled\_NDVI\_correlation\_start | 0.0095 | 0.7417 |
| scaled\_NDVI\_dissimilarity\_start | 0.1966 | 0.0000 |
| scaled\_NDVI\_entropy\_start | 0.2624 | 0.0000 |
| scaled\_NDVI\_variance\_start | 0.1217 | 0.0000 |
| scaled\_VARI\_correlation\_start | 0.0083 | 0.7734 |
| scaled\_VARI\_dissimilarity\_start | 0.1894 | 0.0000 |
| scaled\_VARI\_entropy\_start | 0.1239 | 0.0000 |
| scaled\_VARI\_variance\_start | 0.0997 | 0.0005 |
| CV\_11128\_start | 0.0623 | 0.0301 |
| SD\_11128\_start | -0.4126 | 0.0000 |
| winCVedge\_start | 0.1796 | 0.0000 |
| winCVgreen\_start | 0.1351 | 0.0000 |
| winCVnir\_start | 0.1371 | 0.0000 |
| winCVred\_start | 0.1807 | 0.0000 |
| winCV\_avg\_start | 0.1951 | 0.0000 |
| bio01 | -0.2313 | 0.0000 |
| bio04 | 0.2422 | 0.0000 |
| bio12 | -0.0886 | 0.0020 |
| bio15 | 0.2786 | 0.0000 |
| carbon05 | -0.1441 | 0.0000 |
| carbon100200 | -0.0602 | 0.0360 |
| carbon1530 | -0.1494 | 0.0000 |
| carbon3060 | -0.0846 | 0.0032 |
| carbon515 | -0.1919 | 0.0000 |
| carbon60100 | -0.0642 | 0.0255 |
| cec05 | -0.1747 | 0.0000 |
| cec100200 | -0.1640 | 0.0000 |
| cec1530 | -0.1655 | 0.0000 |
| cec3060 | -0.1646 | 0.0000 |
| cec515 | -0.1739 | 0.0000 |
| cec60100 | -0.1640 | 0.0000 |
| clay05 | -0.0524 | 0.0684 |
| clay100200 | -0.0494 | 0.0856 |
| clay1530 | -0.0566 | 0.0489 |
| clay3060 | -0.0536 | 0.0621 |
| clay515 | -0.0532 | 0.0640 |
| clay60100 | -0.0494 | 0.0855 |
| elevation | 0.0654 | 0.0228 |
| pH05 | -0.1540 | 0.0000 |
| pH100200 | -0.1174 | 0.0000 |
| pH1530 | -0.1414 | 0.0000 |
| pH3060 | -0.1163 | 0.0000 |
| pH515 | -0.1516 | 0.0000 |
| pH60100 | -0.1158 | 0.0001 |
| sand05 | 0.1525 | 0.0000 |
| sand100200 | 0.1338 | 0.0000 |
| sand1530 | 0.1455 | 0.0000 |
| sand3060 | 0.1384 | 0.0000 |
| sand515 | 0.1505 | 0.0000 |
| sand60100 | 0.1339 | 0.0000 |
| silt05 | -0.1696 | 0.0000 |
| silt100200 | -0.1609 | 0.0000 |
| silt1530 | -0.1628 | 0.0000 |
| silt3060 | -0.1600 | 0.0000 |
| silt515 | -0.1686 | 0.0000 |
| silt60100 | -0.1609 | 0.0000 |
| fdis | -0.0223 | 0.4370 |
| Conifer\_Percentage | 1.0000 | 0.0000 |

**Table S14. Pearson’s correlation for species richness in the mixed forest**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 1.0000 | 0.0000 |
| shannon | 0.8325 | 0.0000 |
| lat\_copy | -0.0729 | 0.0346 |
| lon\_copy | -0.0630 | 0.0678 |
| B11\_end | -0.0570 | 0.0986 |
| B11\_correlation\_end | -0.0149 | 0.6671 |
| B11\_dissimilarity\_end | -0.0167 | 0.6287 |
| B11\_entropy\_end | 0.0572 | 0.0973 |
| B11\_variance\_end | -0.0429 | 0.2142 |
| B12\_end | -0.0864 | 0.0122 |
| B12\_correlation\_end | 0.0375 | 0.2778 |
| B12\_dissimilarity\_end | -0.0692 | 0.0449 |
| B12\_entropy\_end | -0.0475 | 0.1691 |
| B12\_variance\_end | -0.0528 | 0.1258 |
| B2\_end | -0.1345 | 0.0001 |
| B2\_correlation\_end | -0.0631 | 0.0675 |
| B2\_dissimilarity\_end | -0.0219 | 0.5258 |
| B2\_entropy\_end | 0.0326 | 0.3444 |
| B2\_variance\_end | -0.0393 | 0.2550 |
| B3\_end | -0.0246 | 0.4764 |
| B3\_correlation\_end | -0.0440 | 0.2022 |
| B3\_dissimilarity\_end | 0.1170 | 0.0007 |
| B3\_entropy\_end | 0.1881 | 0.0000 |
| B3\_variance\_end | 0.0769 | 0.0257 |
| B4\_end | -0.0079 | 0.8203 |
| B4\_correlation\_end | -0.0492 | 0.1541 |
| B4\_dissimilarity\_end | 0.0995 | 0.0039 |
| B4\_entropy\_end | 0.1229 | 0.0004 |
| B4\_variance\_end | 0.0802 | 0.0200 |
| B5\_end | 0.0063 | 0.8564 |
| B5\_correlation\_end | -0.0503 | 0.1447 |
| B5\_dissimilarity\_end | 0.1060 | 0.0021 |
| B5\_entropy\_end | 0.1071 | 0.0019 |
| B5\_variance\_end | 0.0890 | 0.0098 |
| B6\_end | 0.0428 | 0.2154 |
| B6\_correlation\_end | -0.0623 | 0.0711 |
| B6\_dissimilarity\_end | 0.1573 | 0.0000 |
| B6\_entropy\_end | 0.1544 | 0.0000 |
| B6\_variance\_end | 0.1134 | 0.0010 |
| B7\_end | 0.0530 | 0.1244 |
| B7\_correlation\_end | -0.0097 | 0.7793 |
| B7\_dissimilarity\_end | 0.1455 | 0.0000 |
| B7\_entropy\_end | 0.1079 | 0.0017 |
| B7\_variance\_end | 0.1045 | 0.0024 |
| B8\_end | 0.0518 | 0.1335 |
| B8A\_end | 0.0469 | 0.1744 |
| B8A\_correlation\_end | -0.0691 | 0.0451 |
| B8A\_dissimilarity\_end | 0.1378 | 0.0001 |
| B8A\_entropy\_end | 0.1130 | 0.0010 |
| B8A\_variance\_end | 0.0923 | 0.0074 |
| B8\_correlation\_end | 0.0378 | 0.2738 |
| B8\_dissimilarity\_end | 0.1791 | 0.0000 |
| B8\_entropy\_end | 0.2064 | 0.0000 |
| B8\_variance\_end | 0.1243 | 0.0003 |
| CV\_B11B12\_end | 0.1066 | 0.0020 |
| CV\_B11B12red\_end | -0.0291 | 0.3989 |
| CV\_B2B3B4\_end | 0.1500 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.0604 | 0.0802 |
| CV\_NirRedRedEdge\_end | 0.0354 | 0.3050 |
| EVI\_end | 0.0525 | 0.1280 |
| GRVI\_end | 0.1243 | 0.0003 |
| NDVI\_end | 0.0282 | 0.4148 |
| SD\_B11B12\_end | -0.0179 | 0.6050 |
| SD\_B11B12red\_end | -0.0669 | 0.0526 |
| SD\_B2B3B4\_end | 0.0583 | 0.0909 |
| SD\_NirRedRe\_end | 0.0625 | 0.0701 |
| SD\_NirRedReG\_end | 0.0620 | 0.0724 |
| SR\_end | 0.0077 | 0.8228 |
| VARI\_end | -0.0851 | 0.0136 |
| scaled\_GRVI\_correlation\_end | -0.0178 | 0.6056 |
| scaled\_GRVI\_dissimilarity\_end | 0.0692 | 0.0450 |
| scaled\_GRVI\_entropy\_end | 0.1530 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.0223 | 0.5186 |
| scaled\_NDVI\_correlation\_end | 0.0135 | 0.6956 |
| scaled\_NDVI\_dissimilarity\_end | 0.0828 | 0.0163 |
| scaled\_NDVI\_entropy\_end | 0.1302 | 0.0002 |
| scaled\_NDVI\_variance\_end | 0.0428 | 0.2150 |
| scaled\_VARI\_correlation\_end | 0.0073 | 0.8322 |
| scaled\_VARI\_dissimilarity\_end | 0.1584 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.1551 | 0.0000 |
| scaled\_VARI\_variance\_end | 0.1220 | 0.0004 |
| CV\_11128\_end | 0.1056 | 0.0022 |
| SD\_11128\_end | 0.0940 | 0.0064 |
| winCVedge\_end | 0.0776 | 0.0245 |
| winCVgreen\_end | 0.1213 | 0.0004 |
| winCVnir\_end | 0.1346 | 0.0001 |
| winCVred\_end | 0.1117 | 0.0012 |
| winCV\_avg\_end | 0.1299 | 0.0002 |
| B11\_peak | -0.0583 | 0.0911 |
| B11\_correlation\_peak | -0.0182 | 0.5992 |
| B11\_dissimilarity\_peak | -0.0894 | 0.0095 |
| B11\_entropy\_peak | 0.0055 | 0.8741 |
| B11\_variance\_peak | -0.0455 | 0.1872 |
| B12\_peak | -0.1020 | 0.0031 |
| B12\_correlation\_peak | 0.0543 | 0.1156 |
| B12\_dissimilarity\_peak | -0.0856 | 0.0130 |
| B12\_entropy\_peak | -0.0712 | 0.0389 |
| B12\_variance\_peak | -0.0143 | 0.6784 |
| B2\_peak | -0.0900 | 0.0090 |
| B2\_correlation\_peak | -0.0125 | 0.7172 |
| B2\_dissimilarity\_peak | -0.0613 | 0.0756 |
| B2\_entropy\_peak | -0.0535 | 0.1208 |
| B2\_variance\_peak | -0.0536 | 0.1206 |
| B3\_peak | -0.1368 | 0.0001 |
| B3\_correlation\_peak | 0.0030 | 0.9318 |
| B3\_dissimilarity\_peak | -0.0800 | 0.0203 |
| B3\_entropy\_peak | -0.1471 | 0.0000 |
| B3\_variance\_peak | -0.0524 | 0.1288 |
| B4\_peak | -0.1135 | 0.0010 |
| B4\_correlation\_peak | 0.0405 | 0.2408 |
| B4\_dissimilarity\_peak | -0.0693 | 0.0444 |
| B4\_entropy\_peak | -0.1161 | 0.0007 |
| B4\_variance\_peak | -0.0483 | 0.1618 |
| B5\_peak | -0.1647 | 0.0000 |
| B5\_correlation\_peak | 0.0398 | 0.2487 |
| B5\_dissimilarity\_peak | -0.0857 | 0.0130 |
| B5\_entropy\_peak | -0.0815 | 0.0181 |
| B5\_variance\_peak | -0.0508 | 0.1409 |
| B6\_peak | -0.0032 | 0.9261 |
| B6\_correlation\_peak | -0.0530 | 0.1249 |
| B6\_dissimilarity\_peak | 0.0276 | 0.4244 |
| B6\_entropy\_peak | 0.1710 | 0.0000 |
| B6\_variance\_peak | -0.0321 | 0.3530 |
| B7\_peak | 0.0200 | 0.5635 |
| B7\_correlation\_peak | -0.0495 | 0.1518 |
| B7\_dissimilarity\_peak | 0.0768 | 0.0260 |
| B7\_entropy\_peak | 0.1639 | 0.0000 |
| B7\_variance\_peak | -0.0004 | 0.9917 |
| B8\_peak | 0.0164 | 0.6341 |
| B8A\_peak | 0.0192 | 0.5793 |
| B8A\_correlation\_peak | -0.0593 | 0.0857 |
| B8A\_dissimilarity\_peak | 0.0615 | 0.0748 |
| B8A\_entropy\_peak | 0.1752 | 0.0000 |
| B8A\_variance\_peak | -0.0037 | 0.9148 |
| B8\_correlation\_peak | 0.0185 | 0.5928 |
| B8\_dissimilarity\_peak | 0.0810 | 0.0188 |
| B8\_entropy\_peak | 0.2595 | 0.0000 |
| B8\_variance\_peak | -0.0141 | 0.6834 |
| CV\_B11B12\_peak | 0.1487 | 0.0000 |
| CV\_B11B12red\_peak | 0.1508 | 0.0000 |
| CV\_B2B3B4\_peak | -0.0013 | 0.9691 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.1957 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.1959 | 0.0000 |
| EVI\_peak | -0.0028 | 0.9352 |
| GRVI\_peak | 0.2010 | 0.0000 |
| NDVI\_peak | 0.1613 | 0.0000 |
| SD\_B11B12\_peak | 0.0069 | 0.8413 |
| SD\_B11B12red\_peak | -0.0131 | 0.7038 |
| SD\_B2B3B4\_peak | -0.1377 | 0.0001 |
| SD\_NirRedRe\_peak | 0.0491 | 0.1553 |
| SD\_NirRedReG\_peak | 0.0481 | 0.1631 |
| SR\_peak | 0.1060 | 0.0021 |
| VARI\_peak | 0.0519 | 0.1323 |
| scaled\_GRVI\_correlation\_peak | 0.0386 | 0.2636 |
| scaled\_GRVI\_dissimilarity\_peak | -0.0025 | 0.9430 |
| scaled\_GRVI\_entropy\_peak | 0.1578 | 0.0000 |
| scaled\_GRVI\_variance\_peak | -0.0342 | 0.3218 |
| scaled\_NDVI\_correlation\_peak | 0.0068 | 0.8446 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0176 | 0.6102 |
| scaled\_NDVI\_entropy\_peak | 0.1339 | 0.0001 |
| scaled\_NDVI\_variance\_peak | -0.0255 | 0.4596 |
| scaled\_VARI\_correlation\_peak | -0.0336 | 0.3310 |
| scaled\_VARI\_dissimilarity\_peak | 0.0578 | 0.0939 |
| scaled\_VARI\_entropy\_peak | 0.1282 | 0.0002 |
| scaled\_VARI\_variance\_peak | 0.0878 | 0.0109 |
| CV\_11128\_peak | 0.1351 | 0.0001 |
| SD\_11128\_peak | 0.0444 | 0.1986 |
| winCVedge\_peak | -0.0920 | 0.0076 |
| winCVgreen\_peak | -0.0735 | 0.0331 |
| winCVnir\_peak | 0.0540 | 0.1177 |
| winCVred\_peak | -0.0626 | 0.0696 |
| winCV\_avg\_peak | -0.0606 | 0.0790 |
| B11\_start | -0.1430 | 0.0000 |
| B11\_correlation\_start | -0.0486 | 0.1590 |
| B11\_dissimilarity\_start | -0.0411 | 0.2334 |
| B11\_entropy\_start | 0.0545 | 0.1146 |
| B11\_variance\_start | -0.0369 | 0.2858 |
| B12\_start | -0.1479 | 0.0000 |
| B12\_correlation\_start | 0.0263 | 0.4459 |
| B12\_dissimilarity\_start | -0.0617 | 0.0736 |
| B12\_entropy\_start | -0.0333 | 0.3354 |
| B12\_variance\_start | -0.0363 | 0.2927 |
| B2\_start | -0.2003 | 0.0000 |
| B2\_correlation\_start | -0.0124 | 0.7190 |
| B2\_dissimilarity\_start | -0.0736 | 0.0329 |
| B2\_entropy\_start | -0.0519 | 0.1329 |
| B2\_variance\_start | -0.0292 | 0.3978 |
| B3\_start | -0.1728 | 0.0000 |
| B3\_correlation\_start | -0.0514 | 0.1363 |
| B3\_dissimilarity\_start | -0.0491 | 0.1553 |
| B3\_entropy\_start | 0.0002 | 0.9947 |
| B3\_variance\_start | -0.0258 | 0.4550 |
| B4\_start | -0.2006 | 0.0000 |
| B4\_correlation\_start | -0.0154 | 0.6567 |
| B4\_dissimilarity\_start | -0.0783 | 0.0232 |
| B4\_entropy\_start | -0.0558 | 0.1060 |
| B4\_variance\_start | -0.0282 | 0.4139 |
| B5\_start | -0.1505 | 0.0000 |
| B5\_correlation\_start | -0.0408 | 0.2373 |
| B5\_dissimilarity\_start | -0.0270 | 0.4349 |
| B5\_entropy\_start | 0.0218 | 0.5282 |
| B5\_variance\_start | -0.0255 | 0.4596 |
| B6\_start | 0.0209 | 0.5444 |
| B6\_correlation\_start | -0.0824 | 0.0168 |
| B6\_dissimilarity\_start | 0.1409 | 0.0000 |
| B6\_entropy\_start | 0.1104 | 0.0013 |
| B6\_variance\_start | 0.1014 | 0.0033 |
| B7\_start | 0.0335 | 0.3317 |
| B7\_correlation\_start | -0.1109 | 0.0013 |
| B7\_dissimilarity\_start | 0.1282 | 0.0002 |
| B7\_entropy\_start | 0.1587 | 0.0000 |
| B7\_variance\_start | 0.0901 | 0.0089 |
| B8\_start | 0.0221 | 0.5228 |
| B8A\_start | 0.0206 | 0.5511 |
| B8A\_correlation\_start | 0.0095 | 0.7836 |
| B8A\_dissimilarity\_start | 0.0984 | 0.0043 |
| B8A\_entropy\_start | 0.0291 | 0.3998 |
| B8A\_variance\_start | 0.0788 | 0.0223 |
| B8\_correlation\_start | 0.0090 | 0.7936 |
| B8\_dissimilarity\_start | 0.1635 | 0.0000 |
| B8\_entropy\_start | 0.2122 | 0.0000 |
| B8\_variance\_start | 0.1187 | 0.0006 |
| CV\_B11B12\_start | 0.0775 | 0.0246 |
| CV\_B11B12red\_start | 0.1441 | 0.0000 |
| CV\_B2B3B4\_start | 0.0866 | 0.0120 |
| CV\_NIRRedRedEdgeGreen\_start | 0.2112 | 0.0000 |
| CV\_NirRedRedEdge\_start | 0.2047 | 0.0000 |
| EVI\_start | 0.1027 | 0.0029 |
| GRVI\_start | 0.2284 | 0.0000 |
| NDVI\_start | 0.2004 | 0.0000 |
| SD\_B11B12\_start | -0.1044 | 0.0024 |
| SD\_B11B12red\_start | -0.1059 | 0.0021 |
| SD\_B2B3B4\_start | -0.0946 | 0.0061 |
| SD\_NirRedRe\_start | 0.0782 | 0.0233 |
| SD\_NirRedReG\_start | 0.0690 | 0.0456 |
| SR\_start | 0.1585 | 0.0000 |
| VARI\_start | 0.1314 | 0.0001 |
| scaled\_GRVI\_correlation\_start | -0.0313 | 0.3649 |
| scaled\_GRVI\_dissimilarity\_start | 0.0650 | 0.0597 |
| scaled\_GRVI\_entropy\_start | 0.1383 | 0.0001 |
| scaled\_GRVI\_variance\_start | 0.0445 | 0.1973 |
| scaled\_NDVI\_correlation\_start | 0.0378 | 0.2735 |
| scaled\_NDVI\_dissimilarity\_start | -0.0006 | 0.9853 |
| scaled\_NDVI\_entropy\_start | 0.0995 | 0.0039 |
| scaled\_NDVI\_variance\_start | 0.0034 | 0.9208 |
| scaled\_VARI\_correlation\_start | -0.0128 | 0.7121 |
| scaled\_VARI\_dissimilarity\_start | 0.0807 | 0.0192 |
| scaled\_VARI\_entropy\_start | 0.1128 | 0.0011 |
| scaled\_VARI\_variance\_start | 0.0439 | 0.2035 |
| CV\_11128\_start | 0.1398 | 0.0001 |
| SD\_11128\_start | 0.0857 | 0.0129 |
| winCVedge\_start | 0.0018 | 0.9596 |
| winCVgreen\_start | -0.0100 | 0.7731 |
| winCVnir\_start | 0.1330 | 0.0001 |
| winCVred\_start | -0.0231 | 0.5039 |
| winCV\_avg\_start | 0.0156 | 0.6525 |
| bio01 | 0.0050 | 0.8851 |
| bio04 | -0.0117 | 0.7343 |
| bio12 | -0.0485 | 0.1600 |
| bio15 | 0.0108 | 0.7550 |
| carbon05 | 0.2628 | 0.0000 |
| carbon100200 | 0.1557 | 0.0000 |
| carbon1530 | 0.1865 | 0.0000 |
| carbon3060 | 0.1623 | 0.0000 |
| carbon515 | 0.2657 | 0.0000 |
| carbon60100 | 0.1548 | 0.0000 |
| cec05 | 0.0158 | 0.6464 |
| cec100200 | -0.0394 | 0.2535 |
| cec1530 | -0.0285 | 0.4099 |
| cec3060 | -0.0388 | 0.2607 |
| cec515 | 0.0134 | 0.6990 |
| cec60100 | -0.0394 | 0.2535 |
| clay05 | -0.0722 | 0.0363 |
| clay100200 | -0.0710 | 0.0396 |
| clay1530 | -0.0715 | 0.0382 |
| clay3060 | -0.0715 | 0.0381 |
| clay515 | -0.0728 | 0.0349 |
| clay60100 | -0.0710 | 0.0395 |
| elevation | 0.0013 | 0.9712 |
| pH05 | -0.1789 | 0.0000 |
| pH100200 | -0.1439 | 0.0000 |
| pH1530 | -0.1173 | 0.0007 |
| pH3060 | -0.1504 | 0.0000 |
| pH515 | -0.1780 | 0.0000 |
| pH60100 | -0.1429 | 0.0000 |
| sand05 | -0.0209 | 0.5451 |
| sand100200 | -0.0197 | 0.5680 |
| sand1530 | -0.0196 | 0.5704 |
| sand3060 | -0.0192 | 0.5790 |
| sand515 | -0.0189 | 0.5845 |
| sand60100 | -0.0199 | 0.5655 |
| silt05 | 0.1746 | 0.0000 |
| silt100200 | 0.1687 | 0.0000 |
| silt1530 | 0.1723 | 0.0000 |
| silt3060 | 0.1699 | 0.0000 |
| silt515 | 0.1729 | 0.0000 |
| silt60100 | 0.1685 | 0.0000 |
| fdis | 0.5700 | 0.0000 |
| Conifer\_Percentage | -0.1228 | 0.0004 |

**Table S15. Pearson’s correlation for Shannon diversity in the mixed forest**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.8325 | 0.0000 |
| shannon | 1.0000 | 0.0000 |
| lat\_copy | -0.0538 | 0.1193 |
| lon\_copy | -0.0492 | 0.1542 |
| B11\_end | 0.0353 | 0.3071 |
| B11\_correlation\_end | -0.0644 | 0.0620 |
| B11\_dissimilarity\_end | 0.0529 | 0.1253 |
| B11\_entropy\_end | 0.1057 | 0.0021 |
| B11\_variance\_end | 0.0157 | 0.6492 |
| B12\_end | 0.0133 | 0.7008 |
| B12\_correlation\_end | 0.0174 | 0.6148 |
| B12\_dissimilarity\_end | -0.0115 | 0.7386 |
| B12\_entropy\_end | 0.0042 | 0.9027 |
| B12\_variance\_end | -0.0050 | 0.8848 |
| B2\_end | -0.0489 | 0.1564 |
| B2\_correlation\_end | -0.0967 | 0.0050 |
| B2\_dissimilarity\_end | 0.0556 | 0.1072 |
| B2\_entropy\_end | 0.1055 | 0.0022 |
| B2\_variance\_end | 0.0326 | 0.3445 |
| B3\_end | 0.0519 | 0.1329 |
| B3\_correlation\_end | -0.0796 | 0.0210 |
| B3\_dissimilarity\_end | 0.1747 | 0.0000 |
| B3\_entropy\_end | 0.2447 | 0.0000 |
| B3\_variance\_end | 0.1232 | 0.0003 |
| B4\_end | 0.0690 | 0.0454 |
| B4\_correlation\_end | -0.0855 | 0.0132 |
| B4\_dissimilarity\_end | 0.1774 | 0.0000 |
| B4\_entropy\_end | 0.2138 | 0.0000 |
| B4\_variance\_end | 0.1339 | 0.0001 |
| B5\_end | 0.0767 | 0.0262 |
| B5\_correlation\_end | -0.0770 | 0.0255 |
| B5\_dissimilarity\_end | 0.1602 | 0.0000 |
| B5\_entropy\_end | 0.1397 | 0.0001 |
| B5\_variance\_end | 0.1338 | 0.0001 |
| B6\_end | 0.0927 | 0.0072 |
| B6\_correlation\_end | -0.0697 | 0.0433 |
| B6\_dissimilarity\_end | 0.2146 | 0.0000 |
| B6\_entropy\_end | 0.1642 | 0.0000 |
| B6\_variance\_end | 0.1695 | 0.0000 |
| B7\_end | 0.1003 | 0.0036 |
| B7\_correlation\_end | -0.0037 | 0.9150 |
| B7\_dissimilarity\_end | 0.2024 | 0.0000 |
| B7\_entropy\_end | 0.0979 | 0.0045 |
| B7\_variance\_end | 0.1639 | 0.0000 |
| B8\_end | 0.1033 | 0.0027 |
| B8A\_end | 0.0995 | 0.0039 |
| B8A\_correlation\_end | -0.0492 | 0.1540 |
| B8A\_dissimilarity\_end | 0.1971 | 0.0000 |
| B8A\_entropy\_end | 0.0974 | 0.0047 |
| B8A\_variance\_end | 0.1525 | 0.0000 |
| B8\_correlation\_end | 0.0102 | 0.7668 |
| B8\_dissimilarity\_end | 0.2510 | 0.0000 |
| B8\_entropy\_end | 0.2280 | 0.0000 |
| B8\_variance\_end | 0.1910 | 0.0000 |
| CV\_B11B12\_end | 0.0177 | 0.6083 |
| CV\_B11B12red\_end | -0.0975 | 0.0046 |
| CV\_B2B3B4\_end | 0.0739 | 0.0320 |
| CV\_NIRRedRedEdgeGreen\_end | -0.0038 | 0.9135 |
| CV\_NirRedRedEdge\_end | -0.0309 | 0.3710 |
| EVI\_end | 0.0795 | 0.0212 |
| GRVI\_end | 0.0811 | 0.0186 |
| NDVI\_end | -0.0437 | 0.2058 |
| SD\_B11B12\_end | 0.0571 | 0.0978 |
| SD\_B11B12red\_end | 0.0207 | 0.5498 |
| SD\_B2B3B4\_end | 0.0997 | 0.0038 |
| SD\_NirRedRe\_end | 0.0989 | 0.0041 |
| SD\_NirRedReG\_end | 0.1019 | 0.0031 |
| SR\_end | -0.0749 | 0.0299 |
| VARI\_end | -0.1588 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.0077 | 0.8226 |
| scaled\_GRVI\_dissimilarity\_end | 0.1453 | 0.0000 |
| scaled\_GRVI\_entropy\_end | 0.1938 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.0951 | 0.0058 |
| scaled\_NDVI\_correlation\_end | 0.0204 | 0.5554 |
| scaled\_NDVI\_dissimilarity\_end | 0.1676 | 0.0000 |
| scaled\_NDVI\_entropy\_end | 0.1773 | 0.0000 |
| scaled\_NDVI\_variance\_end | 0.1187 | 0.0006 |
| scaled\_VARI\_correlation\_end | -0.0018 | 0.9587 |
| scaled\_VARI\_dissimilarity\_end | 0.2103 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.1492 | 0.0000 |
| scaled\_VARI\_variance\_end | 0.1720 | 0.0000 |
| CV\_11128\_end | 0.0233 | 0.4990 |
| SD\_11128\_end | 0.1136 | 0.0010 |
| winCVedge\_end | 0.0949 | 0.0059 |
| winCVgreen\_end | 0.1444 | 0.0000 |
| winCVnir\_end | 0.1749 | 0.0000 |
| winCVred\_end | 0.1460 | 0.0000 |
| winCV\_avg\_end | 0.1637 | 0.0000 |
| B11\_peak | 0.0426 | 0.2168 |
| B11\_correlation\_peak | -0.0287 | 0.4065 |
| B11\_dissimilarity\_peak | -0.0618 | 0.0732 |
| B11\_entropy\_peak | 0.0354 | 0.3059 |
| B11\_variance\_peak | -0.0250 | 0.4698 |
| B12\_peak | -0.0157 | 0.6486 |
| B12\_correlation\_peak | 0.0077 | 0.8227 |
| B12\_dissimilarity\_peak | -0.0561 | 0.1038 |
| B12\_entropy\_peak | -0.0165 | 0.6333 |
| B12\_variance\_peak | -0.0041 | 0.9050 |
| B2\_peak | -0.0544 | 0.1153 |
| B2\_correlation\_peak | -0.0322 | 0.3507 |
| B2\_dissimilarity\_peak | -0.0318 | 0.3576 |
| B2\_entropy\_peak | -0.0193 | 0.5763 |
| B2\_variance\_peak | -0.0262 | 0.4482 |
| B3\_peak | -0.0850 | 0.0137 |
| B3\_correlation\_peak | -0.0504 | 0.1446 |
| B3\_dissimilarity\_peak | -0.0354 | 0.3059 |
| B3\_entropy\_peak | -0.0272 | 0.4312 |
| B3\_variance\_peak | -0.0255 | 0.4606 |
| B4\_peak | -0.0846 | 0.0141 |
| B4\_correlation\_peak | 0.0175 | 0.6121 |
| B4\_dissimilarity\_peak | -0.0409 | 0.2365 |
| B4\_entropy\_peak | -0.0828 | 0.0163 |
| B4\_variance\_peak | -0.0232 | 0.5010 |
| B5\_peak | -0.0989 | 0.0041 |
| B5\_correlation\_peak | 0.0084 | 0.8071 |
| B5\_dissimilarity\_peak | -0.0555 | 0.1077 |
| B5\_entropy\_peak | -0.0368 | 0.2871 |
| B5\_variance\_peak | -0.0254 | 0.4624 |
| B6\_peak | 0.0802 | 0.0200 |
| B6\_correlation\_peak | -0.0341 | 0.3232 |
| B6\_dissimilarity\_peak | 0.0553 | 0.1090 |
| B6\_entropy\_peak | 0.1269 | 0.0002 |
| B6\_variance\_peak | -0.0013 | 0.9707 |
| B7\_peak | 0.0980 | 0.0044 |
| B7\_correlation\_peak | -0.0430 | 0.2127 |
| B7\_dissimilarity\_peak | 0.1060 | 0.0021 |
| B7\_entropy\_peak | 0.1486 | 0.0000 |
| B7\_variance\_peak | 0.0338 | 0.3272 |
| B8\_peak | 0.0991 | 0.0040 |
| B8A\_peak | 0.0984 | 0.0043 |
| B8A\_correlation\_peak | -0.0630 | 0.0678 |
| B8A\_dissimilarity\_peak | 0.0972 | 0.0048 |
| B8A\_entropy\_peak | 0.1693 | 0.0000 |
| B8A\_variance\_peak | 0.0328 | 0.3426 |
| B8\_correlation\_peak | -0.0133 | 0.7000 |
| B8\_dissimilarity\_peak | 0.1413 | 0.0000 |
| B8\_entropy\_peak | 0.2476 | 0.0000 |
| B8\_variance\_peak | 0.0369 | 0.2857 |
| CV\_B11B12\_peak | 0.1470 | 0.0000 |
| CV\_B11B12red\_peak | 0.1975 | 0.0000 |
| CV\_B2B3B4\_peak | 0.0598 | 0.0833 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.2316 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.2302 | 0.0000 |
| EVI\_peak | 0.0307 | 0.3744 |
| GRVI\_peak | 0.2274 | 0.0000 |
| NDVI\_peak | 0.1878 | 0.0000 |
| SD\_B11B12\_peak | 0.0929 | 0.0070 |
| SD\_B11B12red\_peak | 0.0868 | 0.0118 |
| SD\_B2B3B4\_peak | -0.0799 | 0.0205 |
| SD\_NirRedRe\_peak | 0.1231 | 0.0004 |
| SD\_NirRedReG\_peak | 0.1220 | 0.0004 |
| SR\_peak | 0.1718 | 0.0000 |
| VARI\_peak | 0.1008 | 0.0034 |
| scaled\_GRVI\_correlation\_peak | 0.0324 | 0.3480 |
| scaled\_GRVI\_dissimilarity\_peak | 0.0119 | 0.7304 |
| scaled\_GRVI\_entropy\_peak | 0.1401 | 0.0001 |
| scaled\_GRVI\_variance\_peak | -0.0185 | 0.5930 |
| scaled\_NDVI\_correlation\_peak | 0.0004 | 0.9910 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0098 | 0.7768 |
| scaled\_NDVI\_entropy\_peak | 0.0888 | 0.0100 |
| scaled\_NDVI\_variance\_peak | -0.0112 | 0.7463 |
| scaled\_VARI\_correlation\_peak | -0.0437 | 0.2053 |
| scaled\_VARI\_dissimilarity\_peak | 0.0502 | 0.1459 |
| scaled\_VARI\_entropy\_peak | 0.0982 | 0.0044 |
| scaled\_VARI\_variance\_peak | 0.0279 | 0.4193 |
| CV\_11128\_peak | 0.1315 | 0.0001 |
| SD\_11128\_peak | 0.1100 | 0.0014 |
| winCVedge\_peak | -0.0674 | 0.0509 |
| winCVgreen\_peak | -0.0253 | 0.4641 |
| winCVnir\_peak | 0.0713 | 0.0388 |
| winCVred\_peak | -0.0303 | 0.3803 |
| winCV\_avg\_peak | -0.0240 | 0.4869 |
| B11\_start | -0.0228 | 0.5093 |
| B11\_correlation\_start | -0.0647 | 0.0607 |
| B11\_dissimilarity\_start | 0.0199 | 0.5654 |
| B11\_entropy\_start | 0.0976 | 0.0046 |
| B11\_variance\_start | -0.0001 | 0.9971 |
| B12\_start | -0.0314 | 0.3627 |
| B12\_correlation\_start | 0.0012 | 0.9727 |
| B12\_dissimilarity\_start | -0.0123 | 0.7217 |
| B12\_entropy\_start | 0.0008 | 0.9807 |
| B12\_variance\_start | -0.0075 | 0.8272 |
| B2\_start | -0.1164 | 0.0007 |
| B2\_correlation\_start | -0.0644 | 0.0621 |
| B2\_dissimilarity\_start | 0.0027 | 0.9377 |
| B2\_entropy\_start | 0.0410 | 0.2349 |
| B2\_variance\_start | -0.0030 | 0.9315 |
| B3\_start | -0.0779 | 0.0239 |
| B3\_correlation\_start | -0.0800 | 0.0203 |
| B3\_dissimilarity\_start | 0.0299 | 0.3865 |
| B3\_entropy\_start | 0.0817 | 0.0178 |
| B3\_variance\_start | 0.0168 | 0.6262 |
| B4\_start | -0.0979 | 0.0045 |
| B4\_correlation\_start | -0.0571 | 0.0981 |
| B4\_dissimilarity\_start | -0.0007 | 0.9845 |
| B4\_entropy\_start | 0.0278 | 0.4206 |
| B4\_variance\_start | 0.0098 | 0.7757 |
| B5\_start | -0.0483 | 0.1614 |
| B5\_correlation\_start | -0.0693 | 0.0445 |
| B5\_dissimilarity\_start | 0.0208 | 0.5478 |
| B5\_entropy\_start | 0.0515 | 0.1357 |
| B5\_variance\_start | -0.0001 | 0.9989 |
| B6\_start | 0.0662 | 0.0551 |
| B6\_correlation\_start | -0.0728 | 0.0348 |
| B6\_dissimilarity\_start | 0.1769 | 0.0000 |
| B6\_entropy\_start | 0.1133 | 0.0010 |
| B6\_variance\_start | 0.1304 | 0.0002 |
| B7\_start | 0.0680 | 0.0487 |
| B7\_correlation\_start | -0.1155 | 0.0008 |
| B7\_dissimilarity\_start | 0.1646 | 0.0000 |
| B7\_entropy\_start | 0.1483 | 0.0000 |
| B7\_variance\_start | 0.1239 | 0.0003 |
| B8\_start | 0.0552 | 0.1095 |
| B8A\_start | 0.0635 | 0.0658 |
| B8A\_correlation\_start | 0.0028 | 0.9359 |
| B8A\_dissimilarity\_start | 0.1468 | 0.0000 |
| B8A\_entropy\_start | 0.0706 | 0.0408 |
| B8A\_variance\_start | 0.1124 | 0.0011 |
| B8\_correlation\_start | 0.0210 | 0.5430 |
| B8\_dissimilarity\_start | 0.2151 | 0.0000 |
| B8\_entropy\_start | 0.2577 | 0.0000 |
| B8\_variance\_start | 0.1590 | 0.0000 |
| CV\_B11B12\_start | 0.0119 | 0.7299 |
| CV\_B11B12red\_start | 0.1112 | 0.0012 |
| CV\_B2B3B4\_start | 0.0643 | 0.0624 |
| CV\_NIRRedRedEdgeGreen\_start | 0.1279 | 0.0002 |
| CV\_NirRedRedEdge\_start | 0.1178 | 0.0006 |
| EVI\_start | 0.0900 | 0.0090 |
| GRVI\_start | 0.1618 | 0.0000 |
| NDVI\_start | 0.1159 | 0.0008 |
| SD\_B11B12\_start | -0.0034 | 0.9210 |
| SD\_B11B12red\_start | 0.0075 | 0.8283 |
| SD\_B2B3B4\_start | -0.0260 | 0.4515 |
| SD\_NirRedRe\_start | 0.0810 | 0.0188 |
| SD\_NirRedReG\_start | 0.0782 | 0.0234 |
| SR\_start | 0.0870 | 0.0116 |
| VARI\_start | 0.0501 | 0.1463 |
| scaled\_GRVI\_correlation\_start | -0.0297 | 0.3898 |
| scaled\_GRVI\_dissimilarity\_start | 0.1120 | 0.0012 |
| scaled\_GRVI\_entropy\_start | 0.1558 | 0.0000 |
| scaled\_GRVI\_variance\_start | 0.0761 | 0.0273 |
| scaled\_NDVI\_correlation\_start | 0.0525 | 0.1279 |
| scaled\_NDVI\_dissimilarity\_start | 0.0541 | 0.1173 |
| scaled\_NDVI\_entropy\_start | 0.1306 | 0.0002 |
| scaled\_NDVI\_variance\_start | 0.0406 | 0.2395 |
| scaled\_VARI\_correlation\_start | 0.0156 | 0.6524 |
| scaled\_VARI\_dissimilarity\_start | 0.1143 | 0.0009 |
| scaled\_VARI\_entropy\_start | 0.0777 | 0.0243 |
| scaled\_VARI\_variance\_start | 0.0757 | 0.0282 |
| CV\_11128\_start | 0.0314 | 0.3639 |
| SD\_11128\_start | 0.0565 | 0.1018 |
| winCVedge\_start | 0.0357 | 0.3015 |
| winCVgreen\_start | 0.0560 | 0.1046 |
| winCVnir\_start | 0.1804 | 0.0000 |
| winCVred\_start | 0.0142 | 0.6808 |
| winCV\_avg\_start | 0.0701 | 0.0423 |
| bio01 | 0.0265 | 0.4425 |
| bio04 | -0.0034 | 0.9209 |
| bio12 | -0.0464 | 0.1794 |
| bio15 | 0.0096 | 0.7813 |
| carbon05 | 0.1929 | 0.0000 |
| carbon100200 | 0.1019 | 0.0031 |
| carbon1530 | 0.1673 | 0.0000 |
| carbon3060 | 0.1133 | 0.0010 |
| carbon515 | 0.2186 | 0.0000 |
| carbon60100 | 0.1016 | 0.0032 |
| cec05 | 0.0266 | 0.4420 |
| cec100200 | -0.0163 | 0.6367 |
| cec1530 | -0.0070 | 0.8401 |
| cec3060 | -0.0156 | 0.6526 |
| cec515 | 0.0251 | 0.4666 |
| cec60100 | -0.0163 | 0.6367 |
| clay05 | -0.0464 | 0.1792 |
| clay100200 | -0.0440 | 0.2027 |
| clay1530 | -0.0443 | 0.1993 |
| clay3060 | -0.0440 | 0.2020 |
| clay515 | -0.0465 | 0.1777 |
| clay60100 | -0.0440 | 0.2024 |
| elevation | 0.0003 | 0.9933 |
| pH05 | -0.1303 | 0.0002 |
| pH100200 | -0.1196 | 0.0005 |
| pH1530 | -0.0934 | 0.0067 |
| pH3060 | -0.1280 | 0.0002 |
| pH515 | -0.1323 | 0.0001 |
| pH60100 | -0.1191 | 0.0005 |
| sand05 | -0.0272 | 0.4316 |
| sand100200 | -0.0267 | 0.4396 |
| sand1530 | -0.0274 | 0.4272 |
| sand3060 | -0.0268 | 0.4377 |
| sand515 | -0.0258 | 0.4555 |
| sand60100 | -0.0268 | 0.4378 |
| silt05 | 0.1437 | 0.0000 |
| silt100200 | 0.1377 | 0.0001 |
| silt1530 | 0.1421 | 0.0000 |
| silt3060 | 0.1391 | 0.0001 |
| silt515 | 0.1423 | 0.0000 |
| silt60100 | 0.1375 | 0.0001 |
| fdis | 0.7841 | 0.0000 |
| Conifer\_Percentage | -0.2230 | 0.0000 |

**Table S16. Pearson’s correlation for functional dispersion in the mixed forest**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.5700 | 0.0000 |
| shannon | 0.7841 | 0.0000 |
| lat\_copy | -0.0718 | 0.0375 |
| lon\_copy | 0.0006 | 0.9861 |
| B11\_end | 0.1695 | 0.0000 |
| B11\_correlation\_end | -0.0740 | 0.0318 |
| B11\_dissimilarity\_end | 0.1131 | 0.0010 |
| B11\_entropy\_end | 0.1412 | 0.0000 |
| B11\_variance\_end | 0.0643 | 0.0625 |
| B12\_end | 0.1410 | 0.0000 |
| B12\_correlation\_end | -0.0082 | 0.8119 |
| B12\_dissimilarity\_end | 0.0159 | 0.6458 |
| B12\_entropy\_end | 0.0361 | 0.2958 |
| B12\_variance\_end | 0.0092 | 0.7895 |
| B2\_end | 0.0458 | 0.1851 |
| B2\_correlation\_end | -0.0733 | 0.0335 |
| B2\_dissimilarity\_end | 0.0721 | 0.0366 |
| B2\_entropy\_end | 0.1176 | 0.0006 |
| B2\_variance\_end | 0.0501 | 0.1467 |
| B3\_end | 0.1535 | 0.0000 |
| B3\_correlation\_end | -0.0970 | 0.0049 |
| B3\_dissimilarity\_end | 0.2321 | 0.0000 |
| B3\_entropy\_end | 0.2957 | 0.0000 |
| B3\_variance\_end | 0.1611 | 0.0000 |
| B4\_end | 0.1461 | 0.0000 |
| B4\_correlation\_end | -0.0798 | 0.0206 |
| B4\_dissimilarity\_end | 0.2160 | 0.0000 |
| B4\_entropy\_end | 0.2636 | 0.0000 |
| B4\_variance\_end | 0.1536 | 0.0000 |
| B5\_end | 0.1943 | 0.0000 |
| B5\_correlation\_end | -0.0691 | 0.0452 |
| B5\_dissimilarity\_end | 0.1990 | 0.0000 |
| B5\_entropy\_end | 0.1402 | 0.0001 |
| B5\_variance\_end | 0.1692 | 0.0000 |
| B6\_end | 0.1972 | 0.0000 |
| B6\_correlation\_end | -0.0601 | 0.0814 |
| B6\_dissimilarity\_end | 0.2371 | 0.0000 |
| B6\_entropy\_end | 0.1773 | 0.0000 |
| B6\_variance\_end | 0.1917 | 0.0000 |
| B7\_end | 0.2041 | 0.0000 |
| B7\_correlation\_end | -0.0110 | 0.7508 |
| B7\_dissimilarity\_end | 0.2226 | 0.0000 |
| B7\_entropy\_end | 0.1310 | 0.0001 |
| B7\_variance\_end | 0.1875 | 0.0000 |
| B8\_end | 0.2106 | 0.0000 |
| B8A\_end | 0.2167 | 0.0000 |
| B8A\_correlation\_end | -0.0216 | 0.5317 |
| B8A\_dissimilarity\_end | 0.2409 | 0.0000 |
| B8A\_entropy\_end | 0.1146 | 0.0009 |
| B8A\_variance\_end | 0.1997 | 0.0000 |
| B8\_correlation\_end | 0.0027 | 0.9384 |
| B8\_dissimilarity\_end | 0.3077 | 0.0000 |
| B8\_entropy\_end | 0.2483 | 0.0000 |
| B8\_variance\_end | 0.2493 | 0.0000 |
| CV\_B11B12\_end | -0.0151 | 0.6629 |
| CV\_B11B12red\_end | -0.0811 | 0.0187 |
| CV\_B2B3B4\_end | 0.0101 | 0.7711 |
| CV\_NIRRedRedEdgeGreen\_end | -0.0217 | 0.5307 |
| CV\_NirRedRedEdge\_end | -0.0586 | 0.0894 |
| EVI\_end | 0.1735 | 0.0000 |
| GRVI\_end | 0.0901 | 0.0090 |
| NDVI\_end | -0.0580 | 0.0926 |
| SD\_B11B12\_end | 0.1861 | 0.0000 |
| SD\_B11B12red\_end | 0.1668 | 0.0000 |
| SD\_B2B3B4\_end | 0.1619 | 0.0000 |
| SD\_NirRedRe\_end | 0.1952 | 0.0000 |
| SD\_NirRedReG\_end | 0.2020 | 0.0000 |
| SR\_end | -0.0911 | 0.0082 |
| VARI\_end | -0.1895 | 0.0000 |
| scaled\_GRVI\_correlation\_end | 0.0110 | 0.7494 |
| scaled\_GRVI\_dissimilarity\_end | 0.1334 | 0.0001 |
| scaled\_GRVI\_entropy\_end | 0.1753 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.0871 | 0.0115 |
| scaled\_NDVI\_correlation\_end | 0.0417 | 0.2269 |
| scaled\_NDVI\_dissimilarity\_end | 0.1677 | 0.0000 |
| scaled\_NDVI\_entropy\_end | 0.1915 | 0.0000 |
| scaled\_NDVI\_variance\_end | 0.1177 | 0.0006 |
| scaled\_VARI\_correlation\_end | 0.0185 | 0.5916 |
| scaled\_VARI\_dissimilarity\_end | 0.2244 | 0.0000 |
| scaled\_VARI\_entropy\_end | 0.1402 | 0.0000 |
| scaled\_VARI\_variance\_end | 0.1755 | 0.0000 |
| CV\_11128\_end | -0.0330 | 0.3393 |
| SD\_11128\_end | 0.1880 | 0.0000 |
| winCVedge\_end | 0.0864 | 0.0122 |
| winCVgreen\_end | 0.1424 | 0.0000 |
| winCVnir\_end | 0.1733 | 0.0000 |
| winCVred\_end | 0.1327 | 0.0001 |
| winCV\_avg\_end | 0.1560 | 0.0000 |
| B11\_peak | 0.1870 | 0.0000 |
| B11\_correlation\_peak | -0.0507 | 0.1422 |
| B11\_dissimilarity\_peak | -0.0330 | 0.3392 |
| B11\_entropy\_peak | 0.0732 | 0.0339 |
| B11\_variance\_peak | -0.0093 | 0.7888 |
| B12\_peak | 0.0742 | 0.0315 |
| B12\_correlation\_peak | 0.0186 | 0.5894 |
| B12\_dissimilarity\_peak | -0.0508 | 0.1414 |
| B12\_entropy\_peak | -0.0221 | 0.5213 |
| B12\_variance\_peak | -0.0129 | 0.7082 |
| B2\_peak | -0.0464 | 0.1791 |
| B2\_correlation\_peak | -0.0419 | 0.2251 |
| B2\_dissimilarity\_peak | -0.0196 | 0.5699 |
| B2\_entropy\_peak | -0.0156 | 0.6506 |
| B2\_variance\_peak | -0.0071 | 0.8381 |
| B3\_peak | -0.0483 | 0.1620 |
| B3\_correlation\_peak | -0.0865 | 0.0121 |
| B3\_dissimilarity\_peak | -0.0125 | 0.7177 |
| B3\_entropy\_peak | 0.0512 | 0.1379 |
| B3\_variance\_peak | -0.0096 | 0.7803 |
| B4\_peak | -0.0808 | 0.0191 |
| B4\_correlation\_peak | 0.0307 | 0.3734 |
| B4\_dissimilarity\_peak | -0.0373 | 0.2800 |
| B4\_entropy\_peak | -0.0877 | 0.0110 |
| B4\_variance\_peak | -0.0135 | 0.6965 |
| B5\_peak | -0.0279 | 0.4185 |
| B5\_correlation\_peak | -0.0229 | 0.5079 |
| B5\_dissimilarity\_peak | -0.0413 | 0.2318 |
| B5\_entropy\_peak | -0.0096 | 0.7809 |
| B5\_variance\_peak | -0.0141 | 0.6822 |
| B6\_peak | 0.2270 | 0.0000 |
| B6\_correlation\_peak | -0.0240 | 0.4864 |
| B6\_dissimilarity\_peak | 0.0938 | 0.0065 |
| B6\_entropy\_peak | 0.1196 | 0.0005 |
| B6\_variance\_peak | 0.0269 | 0.4358 |
| B7\_peak | 0.2430 | 0.0000 |
| B7\_correlation\_peak | -0.0562 | 0.1033 |
| B7\_dissimilarity\_peak | 0.1368 | 0.0001 |
| B7\_entropy\_peak | 0.1854 | 0.0000 |
| B7\_variance\_peak | 0.0590 | 0.0876 |
| B8\_peak | 0.2486 | 0.0000 |
| B8A\_peak | 0.2469 | 0.0000 |
| B8A\_correlation\_peak | -0.0645 | 0.0615 |
| B8A\_dissimilarity\_peak | 0.1390 | 0.0001 |
| B8A\_entropy\_peak | 0.1798 | 0.0000 |
| B8A\_variance\_peak | 0.0660 | 0.0556 |
| B8\_correlation\_peak | -0.0036 | 0.9162 |
| B8\_dissimilarity\_peak | 0.2193 | 0.0000 |
| B8\_entropy\_peak | 0.2261 | 0.0000 |
| B8\_variance\_peak | 0.1008 | 0.0034 |
| CV\_B11B12\_peak | 0.2075 | 0.0000 |
| CV\_B11B12red\_peak | 0.3112 | 0.0000 |
| CV\_B2B3B4\_peak | 0.1913 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.3292 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.3215 | 0.0000 |
| EVI\_peak | 0.0855 | 0.0131 |
| GRVI\_peak | 0.3134 | 0.0000 |
| NDVI\_peak | 0.2650 | 0.0000 |
| SD\_B11B12\_peak | 0.2496 | 0.0000 |
| SD\_B11B12red\_peak | 0.2478 | 0.0000 |
| SD\_B2B3B4\_peak | 0.0187 | 0.5873 |
| SD\_NirRedRe\_peak | 0.2689 | 0.0000 |
| SD\_NirRedReG\_peak | 0.2683 | 0.0000 |
| SR\_peak | 0.3102 | 0.0000 |
| VARI\_peak | 0.1643 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | 0.0166 | 0.6307 |
| scaled\_GRVI\_dissimilarity\_peak | -0.0272 | 0.4309 |
| scaled\_GRVI\_entropy\_peak | 0.0859 | 0.0127 |
| scaled\_GRVI\_variance\_peak | -0.0274 | 0.4279 |
| scaled\_NDVI\_correlation\_peak | -0.0118 | 0.7322 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0533 | 0.1223 |
| scaled\_NDVI\_entropy\_peak | 0.0046 | 0.8932 |
| scaled\_NDVI\_variance\_peak | -0.0279 | 0.4191 |
| scaled\_VARI\_correlation\_peak | -0.0336 | 0.3305 |
| scaled\_VARI\_dissimilarity\_peak | 0.0304 | 0.3785 |
| scaled\_VARI\_entropy\_peak | 0.0850 | 0.0137 |
| scaled\_VARI\_variance\_peak | -0.0048 | 0.8891 |
| CV\_11128\_peak | 0.1812 | 0.0000 |
| SD\_11128\_peak | 0.2490 | 0.0000 |
| winCVedge\_peak | -0.0589 | 0.0879 |
| winCVgreen\_peak | -0.0080 | 0.8178 |
| winCVnir\_peak | 0.0736 | 0.0327 |
| winCVred\_peak | -0.0224 | 0.5169 |
| winCV\_avg\_peak | -0.0131 | 0.7038 |
| B11\_start | 0.1364 | 0.0001 |
| B11\_correlation\_start | -0.0965 | 0.0051 |
| B11\_dissimilarity\_start | 0.0843 | 0.0145 |
| B11\_entropy\_start | 0.1536 | 0.0000 |
| B11\_variance\_start | 0.0289 | 0.4023 |
| B12\_start | 0.1113 | 0.0012 |
| B12\_correlation\_start | -0.0461 | 0.1821 |
| B12\_dissimilarity\_start | 0.0414 | 0.2300 |
| B12\_entropy\_start | 0.0680 | 0.0487 |
| B12\_variance\_start | 0.0085 | 0.8060 |
| B2\_start | -0.0111 | 0.7479 |
| B2\_correlation\_start | -0.0802 | 0.0200 |
| B2\_dissimilarity\_start | 0.0524 | 0.1289 |
| B2\_entropy\_start | 0.1168 | 0.0007 |
| B2\_variance\_start | 0.0002 | 0.9959 |
| B3\_start | 0.0584 | 0.0905 |
| B3\_correlation\_start | -0.1058 | 0.0021 |
| B3\_dissimilarity\_start | 0.1090 | 0.0016 |
| B3\_entropy\_start | 0.1600 | 0.0000 |
| B3\_variance\_start | 0.0362 | 0.2950 |
| B4\_start | 0.0183 | 0.5965 |
| B4\_correlation\_start | -0.0716 | 0.0379 |
| B4\_dissimilarity\_start | 0.0538 | 0.1188 |
| B4\_entropy\_start | 0.1016 | 0.0032 |
| B4\_variance\_start | 0.0126 | 0.7148 |
| B5\_start | 0.1008 | 0.0034 |
| B5\_correlation\_start | -0.0688 | 0.0462 |
| B5\_dissimilarity\_start | 0.0551 | 0.1107 |
| B5\_entropy\_start | 0.0555 | 0.1075 |
| B5\_variance\_start | 0.0174 | 0.6142 |
| B6\_start | 0.1327 | 0.0001 |
| B6\_correlation\_start | -0.0418 | 0.2259 |
| B6\_dissimilarity\_start | 0.1938 | 0.0000 |
| B6\_entropy\_start | 0.0972 | 0.0048 |
| B6\_variance\_start | 0.1400 | 0.0001 |
| B7\_start | 0.1220 | 0.0004 |
| B7\_correlation\_start | -0.0708 | 0.0401 |
| B7\_dissimilarity\_start | 0.1858 | 0.0000 |
| B7\_entropy\_start | 0.1304 | 0.0002 |
| B7\_variance\_start | 0.1382 | 0.0001 |
| B8\_start | 0.1171 | 0.0007 |
| B8A\_start | 0.1313 | 0.0001 |
| B8A\_correlation\_start | 0.0044 | 0.8993 |
| B8A\_dissimilarity\_start | 0.1646 | 0.0000 |
| B8A\_entropy\_start | 0.0920 | 0.0076 |
| B8A\_variance\_start | 0.1174 | 0.0006 |
| B8\_correlation\_start | 0.0013 | 0.9701 |
| B8\_dissimilarity\_start | 0.2559 | 0.0000 |
| B8\_entropy\_start | 0.2671 | 0.0000 |
| B8\_variance\_start | 0.1995 | 0.0000 |
| CV\_B11B12\_start | -0.0357 | 0.3010 |
| CV\_B11B12red\_start | 0.1093 | 0.0015 |
| CV\_B2B3B4\_start | 0.0647 | 0.0609 |
| CV\_NIRRedRedEdgeGreen\_start | 0.0408 | 0.2372 |
| CV\_NirRedRedEdge\_start | 0.0277 | 0.4226 |
| EVI\_start | 0.0992 | 0.0040 |
| GRVI\_start | 0.0856 | 0.0130 |
| NDVI\_start | 0.0386 | 0.2636 |
| SD\_B11B12\_start | 0.1498 | 0.0000 |
| SD\_B11B12red\_start | 0.1660 | 0.0000 |
| SD\_B2B3B4\_start | 0.0832 | 0.0158 |
| SD\_NirRedRe\_start | 0.1061 | 0.0021 |
| SD\_NirRedReG\_start | 0.1109 | 0.0013 |
| SR\_start | 0.0188 | 0.5858 |
| VARI\_start | -0.0167 | 0.6296 |
| scaled\_GRVI\_correlation\_start | -0.0379 | 0.2723 |
| scaled\_GRVI\_dissimilarity\_start | 0.1543 | 0.0000 |
| scaled\_GRVI\_entropy\_start | 0.1944 | 0.0000 |
| scaled\_GRVI\_variance\_start | 0.0755 | 0.0285 |
| scaled\_NDVI\_correlation\_start | 0.0299 | 0.3858 |
| scaled\_NDVI\_dissimilarity\_start | 0.0811 | 0.0186 |
| scaled\_NDVI\_entropy\_start | 0.1337 | 0.0001 |
| scaled\_NDVI\_variance\_start | 0.0382 | 0.2682 |
| scaled\_VARI\_correlation\_start | -0.0075 | 0.8289 |
| scaled\_VARI\_dissimilarity\_start | 0.1632 | 0.0000 |
| scaled\_VARI\_entropy\_start | 0.0866 | 0.0120 |
| scaled\_VARI\_variance\_start | 0.1245 | 0.0003 |
| CV\_11128\_start | -0.0874 | 0.0113 |
| SD\_11128\_start | 0.0435 | 0.2074 |
| winCVedge\_start | 0.0486 | 0.1593 |
| winCVgreen\_start | 0.0985 | 0.0043 |
| winCVnir\_start | 0.1953 | 0.0000 |
| winCVred\_start | 0.0429 | 0.2145 |
| winCV\_avg\_start | 0.1018 | 0.0031 |
| bio01 | -0.0114 | 0.7405 |
| bio04 | -0.0349 | 0.3115 |
| bio12 | 0.0474 | 0.1701 |
| bio15 | -0.0206 | 0.5504 |
| carbon05 | 0.1959 | 0.0000 |
| carbon100200 | 0.0905 | 0.0086 |
| carbon1530 | 0.2471 | 0.0000 |
| carbon3060 | 0.1142 | 0.0009 |
| carbon515 | 0.2595 | 0.0000 |
| carbon60100 | 0.0898 | 0.0092 |
| cec05 | 0.0267 | 0.4388 |
| cec100200 | -0.0259 | 0.4540 |
| cec1530 | -0.0140 | 0.6846 |
| cec3060 | -0.0246 | 0.4769 |
| cec515 | 0.0256 | 0.4589 |
| cec60100 | -0.0259 | 0.4540 |
| clay05 | -0.0572 | 0.0972 |
| clay100200 | -0.0550 | 0.1108 |
| clay1530 | -0.0530 | 0.1245 |
| clay3060 | -0.0535 | 0.1214 |
| clay515 | -0.0565 | 0.1016 |
| clay60100 | -0.0551 | 0.1106 |
| elevation | 0.0887 | 0.0101 |
| pH05 | -0.1225 | 0.0004 |
| pH100200 | -0.1370 | 0.0001 |
| pH1530 | -0.1087 | 0.0016 |
| pH3060 | -0.1491 | 0.0000 |
| pH515 | -0.1320 | 0.0001 |
| pH60100 | -0.1373 | 0.0001 |
| sand05 | 0.0002 | 0.9957 |
| sand100200 | 0.0032 | 0.9264 |
| sand1530 | -0.0022 | 0.9499 |
| sand3060 | 0.0005 | 0.9893 |
| sand515 | 0.0006 | 0.9853 |
| sand60100 | 0.0031 | 0.9287 |
| silt05 | 0.1002 | 0.0036 |
| silt100200 | 0.0888 | 0.0100 |
| silt1530 | 0.0995 | 0.0039 |
| silt3060 | 0.0933 | 0.0068 |
| silt515 | 0.0991 | 0.0040 |
| silt60100 | 0.0886 | 0.0101 |
| fdis | 1.0000 | 0.0000 |
| Conifer\_Percentage | -0.3275 | 0.0000 |

**Table S17. Pearson’s correlation for percent conifer in the mixed forest**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | -0.1228 | 0.0004 |
| shannon | -0.2230 | 0.0000 |
| lat\_copy | 0.0516 | 0.1346 |
| lon\_copy | -0.0992 | 0.0040 |
| B11\_end | -0.7406 | 0.0000 |
| B11\_correlation\_end | 0.0694 | 0.0441 |
| B11\_dissimilarity\_end | -0.0954 | 0.0056 |
| B11\_entropy\_end | -0.1208 | 0.0004 |
| B11\_variance\_end | -0.0449 | 0.1929 |
| B12\_end | -0.6690 | 0.0000 |
| B12\_correlation\_end | 0.1161 | 0.0007 |
| B12\_dissimilarity\_end | -0.0823 | 0.0170 |
| B12\_entropy\_end | -0.1527 | 0.0000 |
| B12\_variance\_end | -0.0144 | 0.6774 |
| B2\_end | -0.5567 | 0.0000 |
| B2\_correlation\_end | 0.0942 | 0.0063 |
| B2\_dissimilarity\_end | -0.1708 | 0.0000 |
| B2\_entropy\_end | -0.1876 | 0.0000 |
| B2\_variance\_end | -0.1366 | 0.0001 |
| B3\_end | -0.6399 | 0.0000 |
| B3\_correlation\_end | 0.0284 | 0.4105 |
| B3\_dissimilarity\_end | -0.2073 | 0.0000 |
| B3\_entropy\_end | -0.1916 | 0.0000 |
| B3\_variance\_end | -0.1951 | 0.0000 |
| B4\_end | -0.6932 | 0.0000 |
| B4\_correlation\_end | 0.0788 | 0.0223 |
| B4\_dissimilarity\_end | -0.3342 | 0.0000 |
| B4\_entropy\_end | -0.3612 | 0.0000 |
| B4\_variance\_end | -0.2419 | 0.0000 |
| B5\_end | -0.6997 | 0.0000 |
| B5\_correlation\_end | 0.0931 | 0.0069 |
| B5\_dissimilarity\_end | -0.1884 | 0.0000 |
| B5\_entropy\_end | -0.1142 | 0.0009 |
| B5\_variance\_end | -0.1483 | 0.0000 |
| B6\_end | -0.6176 | 0.0000 |
| B6\_correlation\_end | 0.0870 | 0.0116 |
| B6\_dissimilarity\_end | -0.2201 | 0.0000 |
| B6\_entropy\_end | -0.1372 | 0.0001 |
| B6\_variance\_end | -0.1982 | 0.0000 |
| B7\_end | -0.6009 | 0.0000 |
| B7\_correlation\_end | 0.0483 | 0.1616 |
| B7\_dissimilarity\_end | -0.1944 | 0.0000 |
| B7\_entropy\_end | -0.0829 | 0.0162 |
| B7\_variance\_end | -0.1747 | 0.0000 |
| B8\_end | -0.6208 | 0.0000 |
| B8A\_end | -0.6372 | 0.0000 |
| B8A\_correlation\_end | 0.0349 | 0.3124 |
| B8A\_dissimilarity\_end | -0.2218 | 0.0000 |
| B8A\_entropy\_end | -0.0885 | 0.0103 |
| B8A\_variance\_end | -0.1871 | 0.0000 |
| B8\_correlation\_end | -0.0428 | 0.2155 |
| B8\_dissimilarity\_end | -0.2478 | 0.0000 |
| B8\_entropy\_end | -0.1532 | 0.0000 |
| B8\_variance\_end | -0.2302 | 0.0000 |
| CV\_B11B12\_end | 0.1128 | 0.0011 |
| CV\_B11B12red\_end | 0.3097 | 0.0000 |
| CV\_B2B3B4\_end | 0.1463 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_end | 0.2575 | 0.0000 |
| CV\_NirRedRedEdge\_end | 0.3361 | 0.0000 |
| EVI\_end | -0.3976 | 0.0000 |
| GRVI\_end | 0.0172 | 0.6175 |
| NDVI\_end | 0.3877 | 0.0000 |
| SD\_B11B12\_end | -0.7517 | 0.0000 |
| SD\_B11B12red\_end | -0.6936 | 0.0000 |
| SD\_B2B3B4\_end | -0.5681 | 0.0000 |
| SD\_NirRedRe\_end | -0.5070 | 0.0000 |
| SD\_NirRedReG\_end | -0.5447 | 0.0000 |
| SR\_end | 0.3417 | 0.0000 |
| VARI\_end | 0.5561 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.0812 | 0.0185 |
| scaled\_GRVI\_dissimilarity\_end | -0.0474 | 0.1695 |
| scaled\_GRVI\_entropy\_end | -0.0299 | 0.3863 |
| scaled\_GRVI\_variance\_end | -0.0620 | 0.0723 |
| scaled\_NDVI\_correlation\_end | -0.0827 | 0.0165 |
| scaled\_NDVI\_dissimilarity\_end | -0.1745 | 0.0000 |
| scaled\_NDVI\_entropy\_end | -0.1766 | 0.0000 |
| scaled\_NDVI\_variance\_end | -0.1167 | 0.0007 |
| scaled\_VARI\_correlation\_end | -0.0846 | 0.0141 |
| scaled\_VARI\_dissimilarity\_end | -0.0347 | 0.3148 |
| scaled\_VARI\_entropy\_end | -0.0125 | 0.7181 |
| scaled\_VARI\_variance\_end | -0.0459 | 0.1835 |
| CV\_11128\_end | 0.2745 | 0.0000 |
| SD\_11128\_end | -0.4583 | 0.0000 |
| winCVedge\_end | 0.1377 | 0.0001 |
| winCVgreen\_end | 0.1072 | 0.0019 |
| winCVnir\_end | 0.0702 | 0.0418 |
| winCVred\_end | 0.1118 | 0.0012 |
| winCV\_avg\_end | 0.1227 | 0.0004 |
| B11\_peak | -0.6070 | 0.0000 |
| B11\_correlation\_peak | 0.0235 | 0.4965 |
| B11\_dissimilarity\_peak | 0.0239 | 0.4893 |
| B11\_entropy\_peak | -0.0182 | 0.5985 |
| B11\_variance\_peak | -0.0001 | 0.9982 |
| B12\_peak | -0.3332 | 0.0000 |
| B12\_correlation\_peak | -0.0308 | 0.3724 |
| B12\_dissimilarity\_peak | 0.0212 | 0.5384 |
| B12\_entropy\_peak | 0.0205 | 0.5535 |
| B12\_variance\_peak | 0.0037 | 0.9145 |
| B2\_peak | 0.0274 | 0.4267 |
| B2\_correlation\_peak | 0.0328 | 0.3416 |
| B2\_dissimilarity\_peak | -0.0223 | 0.5175 |
| B2\_entropy\_peak | -0.0167 | 0.6290 |
| B2\_variance\_peak | -0.0199 | 0.5650 |
| B3\_peak | -0.0412 | 0.2324 |
| B3\_correlation\_peak | -0.0072 | 0.8354 |
| B3\_dissimilarity\_peak | -0.0345 | 0.3175 |
| B3\_entropy\_peak | -0.0996 | 0.0038 |
| B3\_variance\_peak | -0.0227 | 0.5118 |
| B4\_peak | 0.0581 | 0.0925 |
| B4\_correlation\_peak | -0.0761 | 0.0273 |
| B4\_dissimilarity\_peak | -0.0044 | 0.8976 |
| B4\_entropy\_peak | 0.0826 | 0.0165 |
| B4\_variance\_peak | -0.0227 | 0.5118 |
| B5\_peak | -0.1768 | 0.0000 |
| B5\_correlation\_peak | 0.0583 | 0.0913 |
| B5\_dissimilarity\_peak | -0.0108 | 0.7553 |
| B5\_entropy\_peak | -0.0539 | 0.1184 |
| B5\_variance\_peak | -0.0201 | 0.5597 |
| B6\_peak | -0.6866 | 0.0000 |
| B6\_correlation\_peak | 0.0503 | 0.1447 |
| B6\_dissimilarity\_peak | -0.0195 | 0.5732 |
| B6\_entropy\_peak | -0.0558 | 0.1057 |
| B6\_variance\_peak | -0.0190 | 0.5814 |
| B7\_peak | -0.7117 | 0.0000 |
| B7\_correlation\_peak | 0.0460 | 0.1823 |
| B7\_dissimilarity\_peak | -0.0523 | 0.1299 |
| B7\_entropy\_peak | -0.1085 | 0.0016 |
| B7\_variance\_peak | -0.0356 | 0.3030 |
| B8\_peak | -0.7115 | 0.0000 |
| B8A\_peak | -0.7098 | 0.0000 |
| B8A\_correlation\_peak | 0.0135 | 0.6953 |
| B8A\_dissimilarity\_peak | -0.0381 | 0.2700 |
| B8A\_entropy\_peak | -0.0319 | 0.3560 |
| B8A\_variance\_peak | -0.0298 | 0.3878 |
| B8\_correlation\_peak | 0.0154 | 0.6553 |
| B8\_dissimilarity\_peak | -0.1342 | 0.0001 |
| B8\_entropy\_peak | -0.1557 | 0.0000 |
| B8\_variance\_peak | -0.0674 | 0.0506 |
| CV\_B11B12\_peak | -0.3550 | 0.0000 |
| CV\_B11B12red\_peak | -0.5409 | 0.0000 |
| CV\_B2B3B4\_peak | -0.4297 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_peak | -0.5622 | 0.0000 |
| CV\_NirRedRedEdge\_peak | -0.5290 | 0.0000 |
| EVI\_peak | -0.1860 | 0.0000 |
| GRVI\_peak | -0.5218 | 0.0000 |
| NDVI\_peak | -0.4160 | 0.0000 |
| SD\_B11B12\_peak | -0.7113 | 0.0000 |
| SD\_B11B12red\_peak | -0.6932 | 0.0000 |
| SD\_B2B3B4\_peak | -0.2514 | 0.0000 |
| SD\_NirRedRe\_peak | -0.7209 | 0.0000 |
| SD\_NirRedReG\_peak | -0.7235 | 0.0000 |
| SR\_peak | -0.6610 | 0.0000 |
| VARI\_peak | -0.3069 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | 0.0139 | 0.6863 |
| scaled\_GRVI\_dissimilarity\_peak | 0.1028 | 0.0028 |
| scaled\_GRVI\_entropy\_peak | 0.2468 | 0.0000 |
| scaled\_GRVI\_variance\_peak | -0.0126 | 0.7160 |
| scaled\_NDVI\_correlation\_peak | -0.0465 | 0.1780 |
| scaled\_NDVI\_dissimilarity\_peak | 0.1279 | 0.0002 |
| scaled\_NDVI\_entropy\_peak | 0.4360 | 0.0000 |
| scaled\_NDVI\_variance\_peak | -0.0055 | 0.8744 |
| scaled\_VARI\_correlation\_peak | 0.0571 | 0.0980 |
| scaled\_VARI\_dissimilarity\_peak | 0.0422 | 0.2215 |
| scaled\_VARI\_entropy\_peak | 0.0160 | 0.6426 |
| scaled\_VARI\_variance\_peak | 0.0155 | 0.6543 |
| CV\_11128\_peak | -0.3190 | 0.0000 |
| SD\_11128\_peak | -0.6873 | 0.0000 |
| winCVedge\_peak | 0.0349 | 0.3125 |
| winCVgreen\_peak | -0.0271 | 0.4318 |
| winCVnir\_peak | 0.1713 | 0.0000 |
| winCVred\_peak | 0.0091 | 0.7929 |
| winCV\_avg\_peak | 0.0357 | 0.3014 |
| B11\_start | -0.6808 | 0.0000 |
| B11\_correlation\_start | 0.0490 | 0.1561 |
| B11\_dissimilarity\_start | -0.0468 | 0.1749 |
| B11\_entropy\_start | -0.0966 | 0.0050 |
| B11\_variance\_start | -0.0164 | 0.6344 |
| B12\_start | -0.5860 | 0.0000 |
| B12\_correlation\_start | 0.1065 | 0.0020 |
| B12\_dissimilarity\_start | -0.0405 | 0.2407 |
| B12\_entropy\_start | -0.1103 | 0.0014 |
| B12\_variance\_start | -0.0100 | 0.7717 |
| B2\_start | -0.4748 | 0.0000 |
| B2\_correlation\_start | 0.1439 | 0.0000 |
| B2\_dissimilarity\_start | -0.0966 | 0.0051 |
| B2\_entropy\_start | -0.1824 | 0.0000 |
| B2\_variance\_start | -0.0120 | 0.7289 |
| B3\_start | -0.5779 | 0.0000 |
| B3\_correlation\_start | 0.0932 | 0.0069 |
| B3\_dissimilarity\_start | -0.1093 | 0.0015 |
| B3\_entropy\_start | -0.1563 | 0.0000 |
| B3\_variance\_start | -0.0335 | 0.3312 |
| B4\_start | -0.4135 | 0.0000 |
| B4\_correlation\_start | 0.0532 | 0.1229 |
| B4\_dissimilarity\_start | -0.0722 | 0.0363 |
| B4\_entropy\_start | -0.1108 | 0.0013 |
| B4\_variance\_start | -0.0165 | 0.6319 |
| B5\_start | -0.6343 | 0.0000 |
| B5\_correlation\_start | 0.0728 | 0.0349 |
| B5\_dissimilarity\_start | -0.0813 | 0.0183 |
| B5\_entropy\_start | -0.0975 | 0.0046 |
| B5\_variance\_start | -0.0115 | 0.7399 |
| B6\_start | -0.5334 | 0.0000 |
| B6\_correlation\_start | 0.0457 | 0.1856 |
| B6\_dissimilarity\_start | -0.1694 | 0.0000 |
| B6\_entropy\_start | -0.0804 | 0.0198 |
| B6\_variance\_start | -0.1258 | 0.0003 |
| B7\_start | -0.5036 | 0.0000 |
| B7\_correlation\_start | 0.0460 | 0.1828 |
| B7\_dissimilarity\_start | -0.1664 | 0.0000 |
| B7\_entropy\_start | -0.0810 | 0.0188 |
| B7\_variance\_start | -0.1288 | 0.0002 |
| B8\_start | -0.5171 | 0.0000 |
| B8A\_start | -0.5281 | 0.0000 |
| B8A\_correlation\_start | 0.0613 | 0.0755 |
| B8A\_dissimilarity\_start | -0.1384 | 0.0001 |
| B8A\_entropy\_start | -0.0876 | 0.0110 |
| B8A\_variance\_start | -0.1089 | 0.0016 |
| B8\_correlation\_start | -0.0727 | 0.0352 |
| B8\_dissimilarity\_start | -0.1893 | 0.0000 |
| B8\_entropy\_start | -0.1998 | 0.0000 |
| B8\_variance\_start | -0.1622 | 0.0000 |
| CV\_B11B12\_start | 0.0978 | 0.0045 |
| CV\_B11B12red\_start | -0.1826 | 0.0000 |
| CV\_B2B3B4\_start | -0.1537 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_start | 0.0792 | 0.0216 |
| CV\_NirRedRedEdge\_start | 0.1177 | 0.0006 |
| EVI\_start | -0.3280 | 0.0000 |
| GRVI\_start | 0.0291 | 0.3986 |
| NDVI\_start | 0.1289 | 0.0002 |
| SD\_B11B12\_start | -0.6959 | 0.0000 |
| SD\_B11B12red\_start | -0.7104 | 0.0000 |
| SD\_B2B3B4\_start | -0.5468 | 0.0000 |
| SD\_NirRedRe\_start | -0.3852 | 0.0000 |
| SD\_NirRedReG\_start | -0.4185 | 0.0000 |
| SR\_start | -0.0798 | 0.0206 |
| VARI\_start | 0.0783 | 0.0232 |
| scaled\_GRVI\_correlation\_start | -0.0193 | 0.5772 |
| scaled\_GRVI\_dissimilarity\_start | -0.0213 | 0.5377 |
| scaled\_GRVI\_entropy\_start | -0.0002 | 0.9948 |
| scaled\_GRVI\_variance\_start | -0.0132 | 0.7028 |
| scaled\_NDVI\_correlation\_start | -0.0539 | 0.1184 |
| scaled\_NDVI\_dissimilarity\_start | 0.0349 | 0.3127 |
| scaled\_NDVI\_entropy\_start | 0.0749 | 0.0298 |
| scaled\_NDVI\_variance\_start | 0.0120 | 0.7287 |
| scaled\_VARI\_correlation\_start | 0.0093 | 0.7870 |
| scaled\_VARI\_dissimilarity\_start | 0.0162 | 0.6397 |
| scaled\_VARI\_entropy\_start | 0.0030 | 0.9307 |
| scaled\_VARI\_variance\_start | -0.0121 | 0.7255 |
| CV\_11128\_start | 0.2689 | 0.0000 |
| SD\_11128\_start | -0.2350 | 0.0000 |
| winCVedge\_start | 0.0456 | 0.1868 |
| winCVgreen\_start | 0.0474 | 0.1700 |
| winCVnir\_start | -0.0023 | 0.9464 |
| winCVred\_start | 0.1004 | 0.0036 |
| winCV\_avg\_start | 0.0707 | 0.0403 |
| bio01 | -0.1093 | 0.0015 |
| bio04 | 0.1031 | 0.0028 |
| bio12 | -0.0675 | 0.0504 |
| bio15 | 0.1445 | 0.0000 |
| carbon05 | -0.0785 | 0.0227 |
| carbon100200 | -0.0199 | 0.5652 |
| carbon1530 | -0.2572 | 0.0000 |
| carbon3060 | -0.0630 | 0.0679 |
| carbon515 | -0.2042 | 0.0000 |
| carbon60100 | -0.0202 | 0.5582 |
| cec05 | -0.1040 | 0.0025 |
| cec100200 | -0.0885 | 0.0103 |
| cec1530 | -0.0900 | 0.0090 |
| cec3060 | -0.0878 | 0.0109 |
| cec515 | -0.1066 | 0.0020 |
| cec60100 | -0.0885 | 0.0103 |
| clay05 | -0.0608 | 0.0779 |
| clay100200 | -0.0654 | 0.0579 |
| clay1530 | -0.0671 | 0.0516 |
| clay3060 | -0.0672 | 0.0514 |
| clay515 | -0.0618 | 0.0732 |
| clay60100 | -0.0654 | 0.0578 |
| elevation | -0.0776 | 0.0245 |
| pH05 | -0.1124 | 0.0011 |
| pH100200 | -0.0280 | 0.4170 |
| pH1530 | -0.0874 | 0.0112 |
| pH3060 | -0.0213 | 0.5365 |
| pH515 | -0.0841 | 0.0147 |
| pH60100 | -0.0254 | 0.4623 |
| sand05 | 0.0852 | 0.0135 |
| sand100200 | 0.0848 | 0.0139 |
| sand1530 | 0.0904 | 0.0087 |
| sand3060 | 0.0872 | 0.0114 |
| sand515 | 0.0857 | 0.0129 |
| sand60100 | 0.0848 | 0.0138 |
| silt05 | -0.0893 | 0.0095 |
| silt100200 | -0.0810 | 0.0188 |
| silt1530 | -0.0902 | 0.0089 |
| silt3060 | -0.0828 | 0.0163 |
| silt515 | -0.0893 | 0.0096 |
| silt60100 | -0.0810 | 0.0188 |
| fdis | -0.3275 | 0.0000 |
| Conifer\_Percentage | 1.0000 | 0.0000 |

**Table S18. Pearson’s correlation for species richness in the boreal region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 1.0000 | 0.0000 |
| shannon | 0.8709 | 0.0000 |
| lat\_copy | -0.1142 | 0.0125 |
| lon\_copy | -0.0255 | 0.5789 |
| B11\_end | -0.0892 | 0.0512 |
| B11\_correlation\_end | 0.0206 | 0.6527 |
| B11\_dissimilarity\_end | -0.1050 | 0.0217 |
| B11\_entropy\_end | 0.0487 | 0.2876 |
| B11\_variance\_end | -0.1087 | 0.0175 |
| B12\_end | -0.1246 | 0.0064 |
| B12\_correlation\_end | 0.0191 | 0.6765 |
| B12\_dissimilarity\_end | -0.1379 | 0.0025 |
| B12\_entropy\_end | -0.0096 | 0.8341 |
| B12\_variance\_end | -0.1327 | 0.0037 |
| B2\_end | -0.1250 | 0.0062 |
| B2\_correlation\_end | -0.0123 | 0.7891 |
| B2\_dissimilarity\_end | -0.0166 | 0.7171 |
| B2\_entropy\_end | -0.0102 | 0.8247 |
| B2\_variance\_end | -0.0151 | 0.7420 |
| B3\_end | -0.0432 | 0.3457 |
| B3\_correlation\_end | -0.0717 | 0.1174 |
| B3\_dissimilarity\_end | 0.1485 | 0.0011 |
| B3\_entropy\_end | 0.2022 | 0.0000 |
| B3\_variance\_end | 0.0917 | 0.0451 |
| B4\_end | 0.0092 | 0.8406 |
| B4\_correlation\_end | -0.1801 | 0.0001 |
| B4\_dissimilarity\_end | 0.1088 | 0.0173 |
| B4\_entropy\_end | 0.1850 | 0.0001 |
| B4\_variance\_end | 0.0597 | 0.1925 |
| B5\_end | -0.0437 | 0.3401 |
| B5\_correlation\_end | -0.0380 | 0.4074 |
| B5\_dissimilarity\_end | -0.0269 | 0.5569 |
| B5\_entropy\_end | 0.1114 | 0.0148 |
| B5\_variance\_end | -0.0488 | 0.2867 |
| B6\_end | 0.0489 | 0.2861 |
| B6\_correlation\_end | -0.0903 | 0.0484 |
| B6\_dissimilarity\_end | 0.0420 | 0.3593 |
| B6\_entropy\_end | 0.1491 | 0.0011 |
| B6\_variance\_end | 0.0048 | 0.9175 |
| B7\_end | 0.0830 | 0.0697 |
| B7\_correlation\_end | -0.0292 | 0.5246 |
| B7\_dissimilarity\_end | 0.0519 | 0.2576 |
| B7\_entropy\_end | 0.1598 | 0.0005 |
| B7\_variance\_end | 0.0110 | 0.8100 |
| B8\_end | 0.0816 | 0.0746 |
| B8A\_end | 0.0810 | 0.0769 |
| B8A\_correlation\_end | 0.0102 | 0.8247 |
| B8A\_dissimilarity\_end | 0.0298 | 0.5163 |
| B8A\_entropy\_end | 0.1407 | 0.0020 |
| B8A\_variance\_end | -0.0013 | 0.9781 |
| B8\_correlation\_end | -0.0473 | 0.3020 |
| B8\_dissimilarity\_end | 0.1294 | 0.0046 |
| B8\_entropy\_end | 0.2287 | 0.0000 |
| B8\_variance\_end | 0.0690 | 0.1322 |
| CV\_B11B12\_end | 0.2110 | 0.0000 |
| CV\_B11B12red\_end | -0.0382 | 0.4052 |
| CV\_B2B3B4\_end | 0.1842 | 0.0001 |
| CV\_NIRRedRedEdgeGreen\_end | 0.1001 | 0.0286 |
| CV\_NirRedRedEdge\_end | 0.0771 | 0.0924 |
| EVI\_end | 0.0651 | 0.1556 |
| GRVI\_end | 0.1378 | 0.0025 |
| NDVI\_end | 0.0200 | 0.6631 |
| SD\_B11B12\_end | -0.0233 | 0.6119 |
| SD\_B11B12red\_end | -0.1162 | 0.0110 |
| SD\_B2B3B4\_end | 0.0696 | 0.1289 |
| SD\_NirRedRe\_end | 0.1000 | 0.0289 |
| SD\_NirRedReG\_end | 0.1000 | 0.0288 |
| SR\_end | 0.0455 | 0.3214 |
| VARI\_end | -0.1214 | 0.0079 |
| scaled\_GRVI\_correlation\_end | 0.1479 | 0.0012 |
| scaled\_GRVI\_dissimilarity\_end | 0.1054 | 0.0213 |
| scaled\_GRVI\_entropy\_end | 0.1905 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.0804 | 0.0791 |
| scaled\_NDVI\_correlation\_end | 0.0565 | 0.2177 |
| scaled\_NDVI\_dissimilarity\_end | 0.1341 | 0.0033 |
| scaled\_NDVI\_entropy\_end | 0.2652 | 0.0000 |
| scaled\_NDVI\_variance\_end | 0.0734 | 0.1089 |
| scaled\_VARI\_correlation\_end | 0.1087 | 0.0174 |
| scaled\_VARI\_dissimilarity\_end | 0.1606 | 0.0004 |
| scaled\_VARI\_entropy\_end | 0.1720 | 0.0002 |
| scaled\_VARI\_variance\_end | 0.1527 | 0.0008 |
| CV\_11128\_end | 0.1755 | 0.0001 |
| SD\_11128\_end | 0.1645 | 0.0003 |
| winCVedge\_end | 0.0263 | 0.5670 |
| winCVgreen\_end | 0.1744 | 0.0001 |
| winCVnir\_end | 0.0773 | 0.0913 |
| winCVred\_end | 0.1255 | 0.0060 |
| winCV\_avg\_end | 0.1191 | 0.0091 |
| B11\_peak | -0.1154 | 0.0116 |
| B11\_correlation\_peak | 0.0736 | 0.1080 |
| B11\_dissimilarity\_peak | -0.1734 | 0.0001 |
| B11\_entropy\_peak | -0.0359 | 0.4331 |
| B11\_variance\_peak | -0.1468 | 0.0013 |
| B12\_peak | -0.1562 | 0.0006 |
| B12\_correlation\_peak | 0.1601 | 0.0004 |
| B12\_dissimilarity\_peak | -0.2050 | 0.0000 |
| B12\_entropy\_peak | -0.1404 | 0.0021 |
| B12\_variance\_peak | -0.1465 | 0.0013 |
| B2\_peak | -0.1824 | 0.0001 |
| B2\_correlation\_peak | 0.0662 | 0.1484 |
| B2\_dissimilarity\_peak | -0.0857 | 0.0611 |
| B2\_entropy\_peak | -0.0905 | 0.0480 |
| B2\_variance\_peak | -0.0530 | 0.2474 |
| B3\_peak | -0.2981 | 0.0000 |
| B3\_correlation\_peak | -0.0327 | 0.4761 |
| B3\_dissimilarity\_peak | -0.1320 | 0.0039 |
| B3\_entropy\_peak | -0.0978 | 0.0325 |
| B3\_variance\_peak | -0.0837 | 0.0676 |
| B4\_peak | -0.1886 | 0.0000 |
| B4\_correlation\_peak | 0.0914 | 0.0458 |
| B4\_dissimilarity\_peak | -0.1070 | 0.0193 |
| B4\_entropy\_peak | -0.1509 | 0.0009 |
| B4\_variance\_peak | -0.0493 | 0.2819 |
| B5\_peak | -0.2907 | 0.0000 |
| B5\_correlation\_peak | 0.1494 | 0.0011 |
| B5\_dissimilarity\_peak | -0.2510 | 0.0000 |
| B5\_entropy\_peak | -0.1773 | 0.0001 |
| B5\_variance\_peak | -0.1921 | 0.0000 |
| B6\_peak | 0.0125 | 0.7851 |
| B6\_correlation\_peak | 0.0294 | 0.5221 |
| B6\_dissimilarity\_peak | -0.0046 | 0.9197 |
| B6\_entropy\_peak | 0.0850 | 0.0632 |
| B6\_variance\_peak | -0.0153 | 0.7392 |
| B7\_peak | 0.0540 | 0.2390 |
| B7\_correlation\_peak | -0.0238 | 0.6032 |
| B7\_dissimilarity\_peak | 0.0438 | 0.3392 |
| B7\_entropy\_peak | 0.1388 | 0.0024 |
| B7\_variance\_peak | 0.0333 | 0.4683 |
| B8\_peak | 0.0474 | 0.3015 |
| B8A\_peak | 0.0474 | 0.3015 |
| B8A\_correlation\_peak | 0.0000 | 0.9998 |
| B8A\_dissimilarity\_peak | 0.0244 | 0.5946 |
| B8A\_entropy\_peak | 0.1055 | 0.0210 |
| B8A\_variance\_peak | 0.0186 | 0.6853 |
| B8\_correlation\_peak | -0.0099 | 0.8286 |
| B8\_dissimilarity\_peak | 0.0822 | 0.0727 |
| B8\_entropy\_peak | 0.2446 | 0.0000 |
| B8\_variance\_peak | 0.0313 | 0.4954 |
| CV\_B11B12\_peak | 0.2490 | 0.0000 |
| CV\_B11B12red\_peak | 0.2407 | 0.0000 |
| CV\_B2B3B4\_peak | 0.0335 | 0.4644 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.2990 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.2905 | 0.0000 |
| EVI\_peak | 0.0991 | 0.0303 |
| GRVI\_peak | 0.3133 | 0.0000 |
| NDVI\_peak | 0.2316 | 0.0000 |
| SD\_B11B12\_peak | -0.0337 | 0.4626 |
| SD\_B11B12red\_peak | -0.0672 | 0.1424 |
| SD\_B2B3B4\_peak | -0.2699 | 0.0000 |
| SD\_NirRedRe\_peak | 0.0874 | 0.0563 |
| SD\_NirRedReG\_peak | 0.0865 | 0.0588 |
| SR\_peak | 0.2292 | 0.0000 |
| VARI\_peak | 0.1307 | 0.0042 |
| scaled\_GRVI\_correlation\_peak | 0.1421 | 0.0018 |
| scaled\_GRVI\_dissimilarity\_peak | -0.0259 | 0.5719 |
| scaled\_GRVI\_entropy\_peak | 0.1480 | 0.0012 |
| scaled\_GRVI\_variance\_peak | -0.0521 | 0.2557 |
| scaled\_NDVI\_correlation\_peak | 0.0626 | 0.1718 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0509 | 0.2671 |
| scaled\_NDVI\_entropy\_peak | 0.1258 | 0.0059 |
| scaled\_NDVI\_variance\_peak | -0.0628 | 0.1705 |
| scaled\_VARI\_correlation\_peak | 0.0589 | 0.1990 |
| scaled\_VARI\_dissimilarity\_peak | 0.0163 | 0.7226 |
| scaled\_VARI\_entropy\_peak | 0.2156 | 0.0000 |
| scaled\_VARI\_variance\_peak | -0.0362 | 0.4293 |
| CV\_11128\_peak | 0.2602 | 0.0000 |
| SD\_11128\_peak | 0.1035 | 0.0237 |
| winCVedge\_peak | -0.2242 | 0.0000 |
| winCVgreen\_peak | -0.1132 | 0.0133 |
| winCVnir\_peak | 0.0408 | 0.3736 |
| winCVred\_peak | -0.1270 | 0.0054 |
| winCV\_avg\_peak | -0.1257 | 0.0059 |
| B11\_start | -0.1595 | 0.0005 |
| B11\_correlation\_start | 0.0264 | 0.5649 |
| B11\_dissimilarity\_start | -0.1438 | 0.0016 |
| B11\_entropy\_start | 0.0120 | 0.7941 |
| B11\_variance\_start | -0.1392 | 0.0023 |
| B12\_start | -0.1512 | 0.0009 |
| B12\_correlation\_start | -0.0448 | 0.3286 |
| B12\_dissimilarity\_start | -0.1056 | 0.0209 |
| B12\_entropy\_start | 0.0707 | 0.1225 |
| B12\_variance\_start | -0.1310 | 0.0041 |
| B2\_start | -0.1755 | 0.0001 |
| B2\_correlation\_start | -0.0528 | 0.2489 |
| B2\_dissimilarity\_start | -0.1133 | 0.0132 |
| B2\_entropy\_start | -0.0330 | 0.4720 |
| B2\_variance\_start | -0.0772 | 0.0917 |
| B3\_start | -0.2109 | 0.0000 |
| B3\_correlation\_start | -0.0568 | 0.2154 |
| B3\_dissimilarity\_start | -0.0620 | 0.1757 |
| B3\_entropy\_start | 0.0634 | 0.1662 |
| B3\_variance\_start | -0.0641 | 0.1620 |
| B4\_start | -0.1962 | 0.0000 |
| B4\_correlation\_start | -0.0465 | 0.3101 |
| B4\_dissimilarity\_start | -0.1172 | 0.0104 |
| B4\_entropy\_start | -0.0073 | 0.8730 |
| B4\_variance\_start | -0.0912 | 0.0462 |
| B5\_start | -0.2508 | 0.0000 |
| B5\_correlation\_start | 0.0472 | 0.3035 |
| B5\_dissimilarity\_start | -0.2084 | 0.0000 |
| B5\_entropy\_start | -0.0329 | 0.4728 |
| B5\_variance\_start | -0.1880 | 0.0000 |
| B6\_start | -0.0448 | 0.3284 |
| B6\_correlation\_start | 0.0144 | 0.7539 |
| B6\_dissimilarity\_start | -0.0335 | 0.4653 |
| B6\_entropy\_start | 0.0690 | 0.1318 |
| B6\_variance\_start | -0.0704 | 0.1243 |
| B7\_start | -0.0076 | 0.8689 |
| B7\_correlation\_start | 0.0391 | 0.3937 |
| B7\_dissimilarity\_start | -0.0683 | 0.1358 |
| B7\_entropy\_start | 0.0843 | 0.0654 |
| B7\_variance\_start | -0.0993 | 0.0300 |
| B8\_start | -0.0005 | 0.9916 |
| B8A\_start | -0.0208 | 0.6496 |
| B8A\_correlation\_start | 0.1139 | 0.0127 |
| B8A\_dissimilarity\_start | -0.0908 | 0.0474 |
| B8A\_entropy\_start | 0.0124 | 0.7878 |
| B8A\_variance\_start | -0.1030 | 0.0244 |
| B8\_correlation\_start | 0.0323 | 0.4809 |
| B8\_dissimilarity\_start | -0.0602 | 0.1888 |
| B8\_entropy\_start | 0.0859 | 0.0605 |
| B8\_variance\_start | -0.0884 | 0.0535 |
| CV\_B11B12\_start | 0.0918 | 0.0450 |
| CV\_B11B12red\_start | 0.1429 | 0.0017 |
| CV\_B2B3B4\_start | 0.0329 | 0.4737 |
| CV\_NIRRedRedEdgeGreen\_start | 0.2627 | 0.0000 |
| CV\_NirRedRedEdge\_start | 0.2532 | 0.0000 |
| EVI\_start | 0.1344 | 0.0032 |
| GRVI\_start | 0.2572 | 0.0000 |
| NDVI\_start | 0.2120 | 0.0000 |
| SD\_B11B12\_start | -0.1622 | 0.0004 |
| SD\_B11B12red\_start | -0.1333 | 0.0035 |
| SD\_B2B3B4\_start | -0.1818 | 0.0001 |
| SD\_NirRedRe\_start | 0.1149 | 0.0120 |
| SD\_NirRedReG\_start | 0.0968 | 0.0344 |
| SR\_start | 0.2217 | 0.0000 |
| VARI\_start | 0.1378 | 0.0025 |
| scaled\_GRVI\_correlation\_start | 0.1081 | 0.0181 |
| scaled\_GRVI\_dissimilarity\_start | 0.0348 | 0.4480 |
| scaled\_GRVI\_entropy\_start | 0.1938 | 0.0000 |
| scaled\_GRVI\_variance\_start | -0.0151 | 0.7415 |
| scaled\_NDVI\_correlation\_start | 0.0742 | 0.1050 |
| scaled\_NDVI\_dissimilarity\_start | -0.0032 | 0.9451 |
| scaled\_NDVI\_entropy\_start | 0.1915 | 0.0000 |
| scaled\_NDVI\_variance\_start | -0.0547 | 0.2328 |
| scaled\_VARI\_correlation\_start | 0.0914 | 0.0458 |
| scaled\_VARI\_dissimilarity\_start | 0.1065 | 0.0199 |
| scaled\_VARI\_entropy\_start | 0.2050 | 0.0000 |
| scaled\_VARI\_variance\_start | 0.0772 | 0.0920 |
| CV\_11128\_start | 0.1392 | 0.0023 |
| SD\_11128\_start | 0.0901 | 0.0491 |
| winCVedge\_start | -0.1349 | 0.0031 |
| winCVgreen\_start | -0.0028 | 0.9513 |
| winCVnir\_start | -0.0475 | 0.2998 |
| winCVred\_start | -0.0422 | 0.3569 |
| winCV\_avg\_start | -0.0586 | 0.2013 |
| bio01 | 0.0843 | 0.0654 |
| bio04 | -0.0411 | 0.3704 |
| bio12 | 0.0036 | 0.9369 |
| bio15 | -0.0971 | 0.0337 |
| carbon05 | 0.3032 | 0.0000 |
| carbon100200 | 0.1714 | 0.0002 |
| carbon1530 | 0.2657 | 0.0000 |
| carbon3060 | 0.1855 | 0.0000 |
| carbon515 | 0.3328 | 0.0000 |
| carbon60100 | 0.1687 | 0.0002 |
| cec05 | -0.0630 | 0.1692 |
| cec100200 | -0.0692 | 0.1311 |
| cec1530 | -0.0686 | 0.1342 |
| cec3060 | -0.0693 | 0.1305 |
| cec515 | -0.0640 | 0.1624 |
| cec60100 | -0.0692 | 0.1311 |
| clay05 | -0.0561 | 0.2210 |
| clay100200 | -0.0570 | 0.2137 |
| clay1530 | -0.0551 | 0.2289 |
| clay3060 | -0.0559 | 0.2225 |
| clay515 | -0.0560 | 0.2219 |
| clay60100 | -0.0570 | 0.2136 |
| elevation | 0.0358 | 0.4356 |
| pH05 | -0.1532 | 0.0008 |
| pH100200 | -0.1145 | 0.0123 |
| pH1530 | -0.0887 | 0.0527 |
| pH3060 | -0.1129 | 0.0135 |
| pH515 | -0.1598 | 0.0005 |
| pH60100 | -0.1146 | 0.0121 |
| sand05 | 0.0410 | 0.3714 |
| sand100200 | 0.0465 | 0.3104 |
| sand1530 | 0.0419 | 0.3612 |
| sand3060 | 0.0439 | 0.3377 |
| sand515 | 0.0419 | 0.3608 |
| sand60100 | 0.0465 | 0.3108 |
| silt05 | 0.0613 | 0.1812 |
| silt100200 | 0.0482 | 0.2933 |
| silt1530 | 0.0574 | 0.2106 |
| silt3060 | 0.0528 | 0.2490 |
| silt515 | 0.0588 | 0.1994 |
| silt60100 | 0.0481 | 0.2945 |
| fdis | 0.7073 | 0.0000 |
| Conifer\_Percentage | -0.2194 | 0.0000 |

**Table S19. Pearson’s correlation for Shannon diversity in the boreal region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.8709 | 0.0000 |
| shannon | 1.0000 | 0.0000 |
| lat\_copy | -0.0564 | 0.2183 |
| lon\_copy | -0.0454 | 0.3224 |
| B11\_end | -0.0057 | 0.9018 |
| B11\_correlation\_end | -0.0532 | 0.2461 |
| B11\_dissimilarity\_end | -0.0242 | 0.5973 |
| B11\_entropy\_end | 0.1309 | 0.0042 |
| B11\_variance\_end | -0.0452 | 0.3245 |
| B12\_end | -0.0490 | 0.2846 |
| B12\_correlation\_end | -0.0832 | 0.0691 |
| B12\_dissimilarity\_end | -0.0768 | 0.0936 |
| B12\_entropy\_end | 0.0876 | 0.0558 |
| B12\_variance\_end | -0.1010 | 0.0272 |
| B2\_end | -0.0589 | 0.1985 |
| B2\_correlation\_end | -0.0621 | 0.1751 |
| B2\_dissimilarity\_end | 0.0515 | 0.2615 |
| B2\_entropy\_end | 0.0721 | 0.1153 |
| B2\_variance\_end | 0.0137 | 0.7651 |
| B3\_end | 0.0268 | 0.5587 |
| B3\_correlation\_end | -0.1196 | 0.0089 |
| B3\_dissimilarity\_end | 0.2010 | 0.0000 |
| B3\_entropy\_end | 0.2616 | 0.0000 |
| B3\_variance\_end | 0.1216 | 0.0078 |
| B4\_end | 0.0833 | 0.0688 |
| B4\_correlation\_end | -0.2020 | 0.0000 |
| B4\_dissimilarity\_end | 0.1662 | 0.0003 |
| B4\_entropy\_end | 0.2492 | 0.0000 |
| B4\_variance\_end | 0.1018 | 0.0260 |
| B5\_end | 0.0359 | 0.4338 |
| B5\_correlation\_end | -0.0931 | 0.0420 |
| B5\_dissimilarity\_end | 0.0168 | 0.7142 |
| B5\_entropy\_end | 0.1562 | 0.0006 |
| B5\_variance\_end | -0.0225 | 0.6235 |
| B6\_end | 0.1103 | 0.0158 |
| B6\_correlation\_end | -0.1194 | 0.0090 |
| B6\_dissimilarity\_end | 0.1021 | 0.0255 |
| B6\_entropy\_end | 0.1628 | 0.0004 |
| B6\_variance\_end | 0.0501 | 0.2746 |
| B7\_end | 0.1384 | 0.0024 |
| B7\_correlation\_end | -0.0611 | 0.1827 |
| B7\_dissimilarity\_end | 0.1113 | 0.0149 |
| B7\_entropy\_end | 0.1618 | 0.0004 |
| B7\_variance\_end | 0.0637 | 0.1644 |
| B8\_end | 0.1398 | 0.0022 |
| B8A\_end | 0.1443 | 0.0016 |
| B8A\_correlation\_end | -0.0412 | 0.3688 |
| B8A\_dissimilarity\_end | 0.0925 | 0.0432 |
| B8A\_entropy\_end | 0.1439 | 0.0016 |
| B8A\_variance\_end | 0.0533 | 0.2445 |
| B8\_correlation\_end | -0.0374 | 0.4142 |
| B8\_dissimilarity\_end | 0.1882 | 0.0000 |
| B8\_entropy\_end | 0.2377 | 0.0000 |
| B8\_variance\_end | 0.1280 | 0.0051 |
| CV\_B11B12\_end | 0.1578 | 0.0005 |
| CV\_B11B12red\_end | -0.0919 | 0.0447 |
| CV\_B2B3B4\_end | 0.1180 | 0.0098 |
| CV\_NIRRedRedEdgeGreen\_end | 0.0400 | 0.3828 |
| CV\_NirRedRedEdge\_end | 0.0132 | 0.7734 |
| EVI\_end | 0.0916 | 0.0454 |
| GRVI\_end | 0.1026 | 0.0248 |
| NDVI\_end | -0.0405 | 0.3774 |
| SD\_B11B12\_end | 0.0631 | 0.1681 |
| SD\_B11B12red\_end | -0.0341 | 0.4574 |
| SD\_B2B3B4\_end | 0.1271 | 0.0054 |
| SD\_NirRedRe\_end | 0.1352 | 0.0031 |
| SD\_NirRedReG\_end | 0.1413 | 0.0020 |
| SR\_end | -0.0365 | 0.4256 |
| VARI\_end | -0.1985 | 0.0000 |
| scaled\_GRVI\_correlation\_end | 0.1594 | 0.0005 |
| scaled\_GRVI\_dissimilarity\_end | 0.1342 | 0.0033 |
| scaled\_GRVI\_entropy\_end | 0.1875 | 0.0000 |
| scaled\_GRVI\_variance\_end | 0.0986 | 0.0311 |
| scaled\_NDVI\_correlation\_end | 0.0944 | 0.0391 |
| scaled\_NDVI\_dissimilarity\_end | 0.1656 | 0.0003 |
| scaled\_NDVI\_entropy\_end | 0.2710 | 0.0000 |
| scaled\_NDVI\_variance\_end | 0.0995 | 0.0296 |
| scaled\_VARI\_correlation\_end | 0.1477 | 0.0012 |
| scaled\_VARI\_dissimilarity\_end | 0.1655 | 0.0003 |
| scaled\_VARI\_entropy\_end | 0.1438 | 0.0016 |
| scaled\_VARI\_variance\_end | 0.1702 | 0.0002 |
| CV\_11128\_end | 0.1085 | 0.0176 |
| SD\_11128\_end | 0.1849 | 0.0001 |
| winCVedge\_end | 0.0480 | 0.2946 |
| winCVgreen\_end | 0.2084 | 0.0000 |
| winCVnir\_end | 0.1200 | 0.0086 |
| winCVred\_end | 0.1509 | 0.0009 |
| winCV\_avg\_end | 0.1533 | 0.0008 |
| B11\_peak | -0.0303 | 0.5086 |
| B11\_correlation\_peak | 0.0252 | 0.5820 |
| B11\_dissimilarity\_peak | -0.1000 | 0.0289 |
| B11\_entropy\_peak | 0.0133 | 0.7722 |
| B11\_variance\_peak | -0.0932 | 0.0418 |
| B12\_peak | -0.0948 | 0.0384 |
| B12\_correlation\_peak | 0.1086 | 0.0175 |
| B12\_dissimilarity\_peak | -0.1555 | 0.0007 |
| B12\_entropy\_peak | -0.0783 | 0.0872 |
| B12\_variance\_peak | -0.1276 | 0.0052 |
| B2\_peak | -0.1516 | 0.0009 |
| B2\_correlation\_peak | 0.0507 | 0.2691 |
| B2\_dissimilarity\_peak | -0.0543 | 0.2357 |
| B2\_entropy\_peak | -0.0717 | 0.1173 |
| B2\_variance\_peak | -0.0167 | 0.7158 |
| B3\_peak | -0.2301 | 0.0000 |
| B3\_correlation\_peak | -0.0886 | 0.0529 |
| B3\_dissimilarity\_peak | -0.0745 | 0.1039 |
| B3\_entropy\_peak | -0.0123 | 0.7880 |
| B3\_variance\_peak | -0.0514 | 0.2618 |
| B4\_peak | -0.1634 | 0.0003 |
| B4\_correlation\_peak | 0.0173 | 0.7063 |
| B4\_dissimilarity\_peak | -0.0789 | 0.0848 |
| B4\_entropy\_peak | -0.0804 | 0.0791 |
| B4\_variance\_peak | -0.0410 | 0.3710 |
| B5\_peak | -0.2118 | 0.0000 |
| B5\_correlation\_peak | 0.1099 | 0.0163 |
| B5\_dissimilarity\_peak | -0.1869 | 0.0000 |
| B5\_entropy\_peak | -0.1269 | 0.0055 |
| B5\_variance\_peak | -0.1441 | 0.0016 |
| B6\_peak | 0.1080 | 0.0182 |
| B6\_correlation\_peak | 0.0051 | 0.9109 |
| B6\_dissimilarity\_peak | 0.0626 | 0.1720 |
| B6\_entropy\_peak | 0.0989 | 0.0307 |
| B6\_variance\_peak | 0.0390 | 0.3946 |
| B7\_peak | 0.1410 | 0.0020 |
| B7\_correlation\_peak | -0.0297 | 0.5179 |
| B7\_dissimilarity\_peak | 0.1044 | 0.0224 |
| B7\_entropy\_peak | 0.1426 | 0.0018 |
| B7\_variance\_peak | 0.0808 | 0.0775 |
| B8\_peak | 0.1433 | 0.0017 |
| B8A\_peak | 0.1369 | 0.0027 |
| B8A\_correlation\_peak | -0.0108 | 0.8132 |
| B8A\_dissimilarity\_peak | 0.0982 | 0.0319 |
| B8A\_entropy\_peak | 0.1081 | 0.0181 |
| B8A\_variance\_peak | 0.0819 | 0.0735 |
| B8\_correlation\_peak | 0.0063 | 0.8900 |
| B8\_dissimilarity\_peak | 0.1615 | 0.0004 |
| B8\_entropy\_peak | 0.2552 | 0.0000 |
| B8\_variance\_peak | 0.0944 | 0.0391 |
| CV\_B11B12\_peak | 0.2470 | 0.0000 |
| CV\_B11B12red\_peak | 0.2832 | 0.0000 |
| CV\_B2B3B4\_peak | 0.1005 | 0.0281 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.3344 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.3223 | 0.0000 |
| EVI\_peak | 0.1872 | 0.0000 |
| GRVI\_peak | 0.3496 | 0.0000 |
| NDVI\_peak | 0.2613 | 0.0000 |
| SD\_B11B12\_peak | 0.0602 | 0.1891 |
| SD\_B11B12red\_peak | 0.0235 | 0.6077 |
| SD\_B2B3B4\_peak | -0.1675 | 0.0002 |
| SD\_NirRedRe\_peak | 0.1749 | 0.0001 |
| SD\_NirRedReG\_peak | 0.1745 | 0.0001 |
| SR\_peak | 0.2818 | 0.0000 |
| VARI\_peak | 0.1520 | 0.0009 |
| scaled\_GRVI\_correlation\_peak | 0.1367 | 0.0027 |
| scaled\_GRVI\_dissimilarity\_peak | -0.0179 | 0.6958 |
| scaled\_GRVI\_entropy\_peak | 0.1398 | 0.0022 |
| scaled\_GRVI\_variance\_peak | -0.0391 | 0.3943 |
| scaled\_NDVI\_correlation\_peak | 0.0923 | 0.0437 |
| scaled\_NDVI\_dissimilarity\_peak | -0.0509 | 0.2665 |
| scaled\_NDVI\_entropy\_peak | 0.0979 | 0.0324 |
| scaled\_NDVI\_variance\_peak | -0.0655 | 0.1529 |
| scaled\_VARI\_correlation\_peak | 0.0913 | 0.0461 |
| scaled\_VARI\_dissimilarity\_peak | 0.0224 | 0.6246 |
| scaled\_VARI\_entropy\_peak | 0.1855 | 0.0000 |
| scaled\_VARI\_variance\_peak | -0.0129 | 0.7791 |
| CV\_11128\_peak | 0.2660 | 0.0000 |
| SD\_11128\_peak | 0.1858 | 0.0000 |
| winCVedge\_peak | -0.1653 | 0.0003 |
| winCVgreen\_peak | -0.0529 | 0.2484 |
| winCVnir\_peak | 0.0745 | 0.1038 |
| winCVred\_peak | -0.0784 | 0.0871 |
| winCV\_avg\_peak | -0.0651 | 0.1554 |
| B11\_start | -0.0712 | 0.1201 |
| B11\_correlation\_start | -0.0517 | 0.2589 |
| B11\_dissimilarity\_start | -0.0404 | 0.3783 |
| B11\_entropy\_start | 0.1144 | 0.0123 |
| B11\_variance\_start | -0.0624 | 0.1733 |
| B12\_start | -0.0659 | 0.1504 |
| B12\_correlation\_start | -0.1117 | 0.0146 |
| B12\_dissimilarity\_start | -0.0133 | 0.7711 |
| B12\_entropy\_start | 0.1594 | 0.0005 |
| B12\_variance\_start | -0.0745 | 0.1037 |
| B2\_start | -0.0930 | 0.0422 |
| B2\_correlation\_start | -0.0805 | 0.0787 |
| B2\_dissimilarity\_start | -0.0404 | 0.3787 |
| B2\_entropy\_start | 0.0633 | 0.1673 |
| B2\_variance\_start | -0.0297 | 0.5170 |
| B3\_start | -0.1248 | 0.0063 |
| B3\_correlation\_start | -0.0695 | 0.1291 |
| B3\_dissimilarity\_start | 0.0063 | 0.8904 |
| B3\_entropy\_start | 0.1364 | 0.0028 |
| B3\_variance\_start | -0.0193 | 0.6743 |
| B4\_start | -0.1080 | 0.0182 |
| B4\_correlation\_start | -0.0757 | 0.0983 |
| B4\_dissimilarity\_start | -0.0295 | 0.5199 |
| B4\_entropy\_start | 0.0985 | 0.0313 |
| B4\_variance\_start | -0.0494 | 0.2812 |
| B5\_start | -0.1486 | 0.0011 |
| B5\_correlation\_start | -0.0174 | 0.7043 |
| B5\_dissimilarity\_start | -0.1180 | 0.0099 |
| B5\_entropy\_start | 0.0463 | 0.3125 |
| B5\_variance\_start | -0.1145 | 0.0123 |
| B6\_start | 0.0242 | 0.5978 |
| B6\_correlation\_start | -0.0324 | 0.4797 |
| B6\_dissimilarity\_start | 0.0320 | 0.4853 |
| B6\_entropy\_start | 0.1047 | 0.0221 |
| B6\_variance\_start | -0.0045 | 0.9219 |
| B7\_start | 0.0538 | 0.2406 |
| B7\_correlation\_start | 0.0078 | 0.8643 |
| B7\_dissimilarity\_start | 0.0051 | 0.9122 |
| B7\_entropy\_start | 0.1140 | 0.0127 |
| B7\_variance\_start | -0.0272 | 0.5537 |
| B8\_start | 0.0740 | 0.1062 |
| B8A\_start | 0.0523 | 0.2536 |
| B8A\_correlation\_start | 0.0850 | 0.0634 |
| B8A\_dissimilarity\_start | -0.0123 | 0.7886 |
| B8A\_entropy\_start | 0.0634 | 0.1661 |
| B8A\_variance\_start | -0.0367 | 0.4239 |
| B8\_correlation\_start | 0.0190 | 0.6784 |
| B8\_dissimilarity\_start | 0.0298 | 0.5163 |
| B8\_entropy\_start | 0.1058 | 0.0207 |
| B8\_variance\_start | -0.0041 | 0.9287 |
| CV\_B11B12\_start | 0.0159 | 0.7289 |
| CV\_B11B12red\_start | 0.0915 | 0.0456 |
| CV\_B2B3B4\_start | -0.0157 | 0.7322 |
| CV\_NIRRedRedEdgeGreen\_start | 0.1939 | 0.0000 |
| CV\_NirRedRedEdge\_start | 0.1811 | 0.0001 |
| EVI\_start | 0.1419 | 0.0019 |
| GRVI\_start | 0.2114 | 0.0000 |
| NDVI\_start | 0.1388 | 0.0024 |
| SD\_B11B12\_start | -0.0765 | 0.0948 |
| SD\_B11B12red\_start | -0.0508 | 0.2681 |
| SD\_B2B3B4\_start | -0.1330 | 0.0036 |
| SD\_NirRedRe\_start | 0.1413 | 0.0020 |
| SD\_NirRedReG\_start | 0.1343 | 0.0033 |
| SR\_start | 0.1430 | 0.0017 |
| VARI\_start | 0.0470 | 0.3048 |
| scaled\_GRVI\_correlation\_start | 0.1519 | 0.0009 |
| scaled\_GRVI\_dissimilarity\_start | 0.0885 | 0.0532 |
| scaled\_GRVI\_entropy\_start | 0.2277 | 0.0000 |
| scaled\_GRVI\_variance\_start | 0.0208 | 0.6510 |
| scaled\_NDVI\_correlation\_start | 0.0995 | 0.0296 |
| scaled\_NDVI\_dissimilarity\_start | 0.0768 | 0.0937 |
| scaled\_NDVI\_entropy\_start | 0.2183 | 0.0000 |
| scaled\_NDVI\_variance\_start | -0.0103 | 0.8215 |
| scaled\_VARI\_correlation\_start | 0.0900 | 0.0492 |
| scaled\_VARI\_dissimilarity\_start | 0.1702 | 0.0002 |
| scaled\_VARI\_entropy\_start | 0.1924 | 0.0000 |
| scaled\_VARI\_variance\_start | 0.1436 | 0.0016 |
| CV\_11128\_start | 0.0696 | 0.1289 |
| SD\_11128\_start | 0.0861 | 0.0600 |
| winCVedge\_start | -0.0546 | 0.2333 |
| winCVgreen\_start | 0.0665 | 0.1465 |
| winCVnir\_start | 0.0208 | 0.6497 |
| winCVred\_start | 0.0451 | 0.3248 |
| winCV\_avg\_start | 0.0320 | 0.4849 |
| bio01 | 0.0561 | 0.2209 |
| bio04 | -0.0090 | 0.8452 |
| bio12 | -0.0361 | 0.4316 |
| bio15 | -0.0510 | 0.2656 |
| carbon05 | 0.2364 | 0.0000 |
| carbon100200 | 0.1379 | 0.0025 |
| carbon1530 | 0.2154 | 0.0000 |
| carbon3060 | 0.1547 | 0.0007 |
| carbon515 | 0.2765 | 0.0000 |
| carbon60100 | 0.1354 | 0.0030 |
| cec05 | -0.0757 | 0.0983 |
| cec100200 | -0.0762 | 0.0961 |
| cec1530 | -0.0766 | 0.0942 |
| cec3060 | -0.0764 | 0.0952 |
| cec515 | -0.0765 | 0.0948 |
| cec60100 | -0.0762 | 0.0961 |
| clay05 | -0.0430 | 0.3485 |
| clay100200 | -0.0445 | 0.3320 |
| clay1530 | -0.0418 | 0.3623 |
| clay3060 | -0.0434 | 0.3437 |
| clay515 | -0.0425 | 0.3545 |
| clay60100 | -0.0445 | 0.3318 |
| elevation | -0.0063 | 0.8915 |
| pH05 | -0.1157 | 0.0114 |
| pH100200 | -0.0955 | 0.0368 |
| pH1530 | -0.0697 | 0.1280 |
| pH3060 | -0.0941 | 0.0397 |
| pH515 | -0.1193 | 0.0090 |
| pH60100 | -0.0959 | 0.0361 |
| sand05 | 0.0208 | 0.6499 |
| sand100200 | 0.0261 | 0.5694 |
| sand1530 | 0.0218 | 0.6342 |
| sand3060 | 0.0244 | 0.5944 |
| sand515 | 0.0214 | 0.6401 |
| sand60100 | 0.0260 | 0.5703 |
| silt05 | 0.0928 | 0.0426 |
| silt100200 | 0.0838 | 0.0672 |
| silt1530 | 0.0879 | 0.0548 |
| silt3060 | 0.0845 | 0.0649 |
| silt515 | 0.0900 | 0.0492 |
| silt60100 | 0.0836 | 0.0678 |
| fdis | 0.8664 | 0.0000 |
| Conifer\_Percentage | -0.2926 | 0.0000 |

**Table S20. Pearson's correlations for functional dispersion in the boreal region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | 0.70727 | 0.0000 |
| shannon | 0.86641 | 0.0000 |
| lat\_copy | -0.10641 | 0.0200 |
| lon\_copy | 0.04106 | 0.3704 |
| B11\_end | 0.05457 | 0.2337 |
| B11\_correlation\_end | -0.07697 | 0.0928 |
| B11\_dissimilarity\_end | 0.02085 | 0.6494 |
| B11\_entropy\_end | 0.124 | 0.0066 |
| B11\_variance\_end | -0.01171 | 0.7985 |
| B12\_end | 0.00352 | 0.9389 |
| B12\_correlation\_end | -0.06063 | 0.1858 |
| B12\_dissimilarity\_end | -0.04646 | 0.3108 |
| B12\_entropy\_end | 0.06752 | 0.1405 |
| B12\_variance\_end | -0.07928 | 0.0834 |
| B2\_end | -0.03246 | 0.4790 |
| B2\_correlation\_end | -0.04073 | 0.3743 |
| B2\_dissimilarity\_end | 0.05958 | 0.1935 |
| B2\_entropy\_end | 0.06793 | 0.1381 |
| B2\_variance\_end | 0.01873 | 0.6830 |
| B3\_end | 0.05338 | 0.2441 |
| B3\_correlation\_end | -0.11095 | 0.0152 |
| B3\_dissimilarity\_end | 0.20464 | 0.0000 |
| B3\_entropy\_end | 0.27165 | 0.0000 |
| B3\_variance\_end | 0.11988 | 0.0087 |
| B4\_end | 0.11414 | 0.0125 |
| B4\_correlation\_end | -0.21749 | 0.0000 |
| B4\_dissimilarity\_end | 0.19024 | 0.0000 |
| B4\_entropy\_end | 0.26655 | 0.0000 |
| B4\_variance\_end | 0.10822 | 0.0179 |
| B5\_end | 0.07263 | 0.1128 |
| B5\_correlation\_end | -0.09584 | 0.0362 |
| B5\_dissimilarity\_end | 0.02834 | 0.5366 |
| B5\_entropy\_end | 0.13571 | 0.0030 |
| B5\_variance\_end | -0.02097 | 0.6475 |
| B6\_end | 0.14336 | 0.0017 |
| B6\_correlation\_end | -0.15398 | 0.0007 |
| B6\_dissimilarity\_end | 0.10286 | 0.0245 |
| B6\_entropy\_end | 0.17332 | 0.0001 |
| B6\_variance\_end | 0.03578 | 0.4351 |
| B7\_end | 0.16959 | 0.0002 |
| B7\_correlation\_end | -0.08642 | 0.0590 |
| B7\_dissimilarity\_end | 0.11221 | 0.0141 |
| B7\_entropy\_end | 0.16388 | 0.0003 |
| B7\_variance\_end | 0.04105 | 0.3705 |
| B8\_end | 0.16639 | 0.0003 |
| B8A\_end | 0.18016 | 0.0001 |
| B8A\_correlation\_end | -0.10634 | 0.0200 |
| B8A\_dissimilarity\_end | 0.11015 | 0.0160 |
| B8A\_entropy\_end | 0.16079 | 0.0004 |
| B8A\_variance\_end | 0.05153 | 0.2608 |
| B8\_correlation\_end | -0.039 | 0.3949 |
| B8\_dissimilarity\_end | 0.19844 | 0.0000 |
| B8\_entropy\_end | 0.19688 | 0.0000 |
| B8\_variance\_end | 0.12558 | 0.0060 |
| CV\_B11B12\_end | 0.14418 | 0.0016 |
| CV\_B11B12red\_end | -0.08266 | 0.0710 |
| CV\_B2B3B4\_end | 0.09772 | 0.0327 |
| CV\_NIRRedRedEdgeGreen\_end | 0.01275 | 0.7809 |
| CV\_NirRedRedEdge\_end | -0.01676 | 0.7148 |
| EVI\_end | 0.1029 | 0.0245 |
| GRVI\_end | 0.08841 | 0.0534 |
| NDVI\_end | -0.06464 | 0.1583 |
| SD\_B11B12\_end | 0.12836 | 0.0049 |
| SD\_B11B12red\_end | 0.03577 | 0.4353 |
| SD\_B2B3B4\_end | 0.15118 | 0.0009 |
| SD\_NirRedRe\_end | 0.1522 | 0.0008 |
| SD\_NirRedReG\_end | 0.16134 | 0.0004 |
| SR\_end | -0.06655 | 0.1463 |
| VARI\_end | -0.22999 | 0.0000 |
| scaled\_GRVI\_correlation\_end | 0.12204 | 0.0076 |
| scaled\_GRVI\_dissimilarity\_end | 0.1522 | 0.0008 |
| scaled\_GRVI\_entropy\_end | 0.14392 | 0.0016 |
| scaled\_GRVI\_variance\_end | 0.10512 | 0.0215 |
| scaled\_NDVI\_correlation\_end | 0.0328 | 0.4744 |
| scaled\_NDVI\_dissimilarity\_end | 0.18287 | 0.0001 |
| scaled\_NDVI\_entropy\_end | 0.24925 | 0.0000 |
| scaled\_NDVI\_variance\_end | 0.10153 | 0.0264 |
| scaled\_VARI\_correlation\_end | 0.08603 | 0.0602 |
| scaled\_VARI\_dissimilarity\_end | 0.14742 | 0.0012 |
| scaled\_VARI\_entropy\_end | 0.07825 | 0.0875 |
| scaled\_VARI\_variance\_end | 0.13771 | 0.0026 |
| CV\_11128\_end | 0.06504 | 0.1557 |
| SD\_11128\_end | 0.18847 | 0.0000 |
| winCVedge\_end | 0.03082 | 0.5015 |
| winCVgreen\_end | 0.19308 | 0.0000 |
| winCVnir\_end | 0.11264 | 0.0137 |
| winCVred\_end | 0.15293 | 0.0008 |
| winCV\_avg\_end | 0.14357 | 0.0017 |
| B11\_peak | 0.03439 | 0.4532 |
| B11\_correlation\_peak | -0.01581 | 0.7302 |
| B11\_dissimilarity\_peak | -0.07963 | 0.0820 |
| B11\_entropy\_peak | 0.01473 | 0.7481 |
| B11\_variance\_peak | -0.08236 | 0.0720 |
| B12\_peak | -0.04823 | 0.2927 |
| B12\_correlation\_peak | 0.09357 | 0.0409 |
| B12\_dissimilarity\_peak | -0.14175 | 0.0019 |
| B12\_entropy\_peak | -0.09147 | 0.0456 |
| B12\_variance\_peak | -0.1252 | 0.0061 |
| B2\_peak | -0.14935 | 0.0011 |
| B2\_correlation\_peak | 0.05957 | 0.1936 |
| B2\_dissimilarity\_peak | -0.07163 | 0.1178 |
| B2\_entropy\_peak | -0.08857 | 0.0530 |
| B2\_variance\_peak | -0.03588 | 0.4339 |
| B3\_peak | -0.21302 | 0.0000 |
| B3\_correlation\_peak | -0.08788 | 0.0548 |
| B3\_dissimilarity\_peak | -0.08369 | 0.0675 |
| B3\_entropy\_peak | -0.03188 | 0.4868 |
| B3\_variance\_peak | -0.06852 | 0.1347 |
| B4\_peak | -0.15972 | 0.0005 |
| B4\_correlation\_peak | 0.02134 | 0.6417 |
| B4\_dissimilarity\_peak | -0.08621 | 0.0597 |
| B4\_entropy\_peak | -0.08793 | 0.0547 |
| B4\_variance\_peak | -0.05625 | 0.2196 |
| B5\_peak | -0.17045 | 0.0002 |
| B5\_correlation\_peak | 0.09734 | 0.0334 |
| B5\_dissimilarity\_peak | -0.16587 | 0.0003 |
| B5\_entropy\_peak | -0.15171 | 0.0009 |
| B5\_variance\_peak | -0.12952 | 0.0046 |
| B6\_peak | 0.17049 | 0.0002 |
| B6\_correlation\_peak | -0.04586 | 0.3171 |
| B6\_dissimilarity\_peak | 0.10333 | 0.0239 |
| B6\_entropy\_peak | 0.14162 | 0.0019 |
| B6\_variance\_peak | 0.05136 | 0.2624 |
| B7\_peak | 0.19437 | 0.0000 |
| B7\_correlation\_peak | -0.08519 | 0.0627 |
| B7\_dissimilarity\_peak | 0.12333 | 0.0069 |
| B7\_entropy\_peak | 0.16606 | 0.0003 |
| B7\_variance\_peak | 0.07579 | 0.0979 |
| B8\_peak | 0.20206 | 0.0000 |
| B8A\_peak | 0.19065 | 0.0000 |
| B8A\_correlation\_peak | -0.03931 | 0.3911 |
| B8A\_dissimilarity\_peak | 0.12752 | 0.0052 |
| B8A\_entropy\_peak | 0.09755 | 0.0330 |
| B8A\_variance\_peak | 0.08864 | 0.0528 |
| B8\_correlation\_peak | -0.01088 | 0.8125 |
| B8\_dissimilarity\_peak | 0.21005 | 0.0000 |
| B8\_entropy\_peak | 0.2244 | 0.0000 |
| B8\_variance\_peak | 0.13096 | 0.0041 |
| CV\_B11B12\_peak | 0.25538 | 0.0000 |
| CV\_B11B12red\_peak | 0.33016 | 0.0000 |
| CV\_B2B3B4\_peak | 0.13158 | 0.0040 |
| CV\_NIRRedRedEdgeGreen\_peak | 0.36218 | 0.0000 |
| CV\_NirRedRedEdge\_peak | 0.34568 | 0.0000 |
| EVI\_peak | 0.24044 | 0.0000 |
| GRVI\_peak | 0.38102 | 0.0000 |
| NDVI\_peak | 0.28424 | 0.0000 |
| SD\_B11B12\_peak | 0.13174 | 0.0039 |
| SD\_B11B12red\_peak | 0.0974 | 0.0333 |
| SD\_B2B3B4\_peak | -0.12419 | 0.0066 |
| SD\_NirRedRe\_peak | 0.23029 | 0.0000 |
| SD\_NirRedReG\_peak | 0.2309 | 0.0000 |
| SR\_peak | 0.32448 | 0.0000 |
| VARI\_peak | 0.17191 | 0.0002 |
| scaled\_GRVI\_correlation\_peak | 0.10434 | 0.0225 |
| scaled\_GRVI\_dissimilarity\_peak | -0.03891 | 0.3961 |
| scaled\_GRVI\_entropy\_peak | 0.09626 | 0.0354 |
| scaled\_GRVI\_variance\_peak | -0.05538 | 0.2268 |
| scaled\_NDVI\_correlation\_peak | 0.11108 | 0.0151 |
| scaled\_NDVI\_dissimilarity\_peak | -0.06185 | 0.1770 |
| scaled\_NDVI\_entropy\_peak | 0.03967 | 0.3868 |
| scaled\_NDVI\_variance\_peak | -0.07232 | 0.1143 |
| scaled\_VARI\_correlation\_peak | 0.03914 | 0.3932 |
| scaled\_VARI\_dissimilarity\_peak | 0.01948 | 0.6709 |
| scaled\_VARI\_entropy\_peak | 0.12044 | 0.0084 |
| scaled\_VARI\_variance\_peak | -0.02283 | 0.6186 |
| CV\_11128\_peak | 0.26188 | 0.0000 |
| SD\_11128\_peak | 0.23387 | 0.0000 |
| winCVedge\_peak | -0.16774 | 0.0002 |
| winCVgreen\_peak | -0.07294 | 0.1112 |
| winCVnir\_peak | 0.08921 | 0.0513 |
| winCVred\_peak | -0.0961 | 0.0357 |
| winCV\_avg\_peak | -0.07344 | 0.1088 |
| B11\_start | -0.01932 | 0.6736 |
| B11\_correlation\_start | -0.08423 | 0.0658 |
| B11\_dissimilarity\_start | -0.01311 | 0.7750 |
| B11\_entropy\_start | 0.1022 | 0.0255 |
| B11\_variance\_start | -0.04608 | 0.3148 |
| B12\_start | -0.01562 | 0.7334 |
| B12\_correlation\_start | -0.15181 | 0.0009 |
| B12\_dissimilarity\_start | 0.01959 | 0.6692 |
| B12\_entropy\_start | 0.14937 | 0.0011 |
| B12\_variance\_start | -0.04952 | 0.2799 |
| B2\_start | -0.05035 | 0.2719 |
| B2\_correlation\_start | -0.0667 | 0.1454 |
| B2\_dissimilarity\_start | -0.03696 | 0.4201 |
| B2\_entropy\_start | 0.07195 | 0.1162 |
| B2\_variance\_start | -0.04464 | 0.3301 |
| B3\_start | -0.08865 | 0.0528 |
| B3\_correlation\_start | -0.06983 | 0.1274 |
| B3\_dissimilarity\_start | 0.01113 | 0.8082 |
| B3\_entropy\_start | 0.14119 | 0.0020 |
| B3\_variance\_start | -0.03385 | 0.4603 |
| B4\_start | -0.05313 | 0.2463 |
| B4\_correlation\_start | -0.11146 | 0.0148 |
| B4\_dissimilarity\_start | -0.00187 | 0.9675 |
| B4\_entropy\_start | 0.11512 | 0.0118 |
| B4\_variance\_start | -0.05198 | 0.2567 |
| B5\_start | -0.09505 | 0.0378 |
| B5\_correlation\_start | -0.04615 | 0.3140 |
| B5\_dissimilarity\_start | -0.0814 | 0.0754 |
| B5\_entropy\_start | 0.05339 | 0.2440 |
| B5\_variance\_start | -0.09996 | 0.0289 |
| B6\_start | 0.05324 | 0.2453 |
| B6\_correlation\_start | -0.03394 | 0.4591 |
| B6\_dissimilarity\_start | 0.03525 | 0.4420 |
| B6\_entropy\_start | 0.0842 | 0.0659 |
| B6\_variance\_start | -0.01899 | 0.6788 |
| B7\_start | 0.08332 | 0.0687 |
| B7\_correlation\_start | -0.02613 | 0.5688 |
| B7\_dissimilarity\_start | 0.01086 | 0.8129 |
| B7\_entropy\_start | 0.10506 | 0.0216 |
| B7\_variance\_start | -0.04294 | 0.3489 |
| B8\_start | 0.1034 | 0.0238 |
| B8A\_start | 0.08668 | 0.0583 |
| B8A\_correlation\_start | 0.09933 | 0.0299 |
| B8A\_dissimilarity\_start | -0.01434 | 0.7544 |
| B8A\_entropy\_start | 0.01644 | 0.7200 |
| B8A\_variance\_start | -0.05576 | 0.2236 |
| B8\_correlation\_start | -0.01457 | 0.7507 |
| B8\_dissimilarity\_start | 0.06151 | 0.1794 |
| B8\_entropy\_start | 0.0792 | 0.0837 |
| B8\_variance\_start | 0.01427 | 0.7556 |
| CV\_B11B12\_start | -0.01496 | 0.7442 |
| CV\_B11B12red\_start | 0.06418 | 0.1612 |
| CV\_B2B3B4\_start | -0.016 | 0.7271 |
| CV\_NIRRedRedEdgeGreen\_start | 0.15546 | 0.0007 |
| CV\_NirRedRedEdge\_start | 0.13687 | 0.0027 |
| EVI\_start | 0.12906 | 0.0047 |
| GRVI\_start | 0.18651 | 0.0000 |
| NDVI\_start | 0.09224 | 0.0438 |
| SD\_B11B12\_start | -0.02632 | 0.5660 |
| SD\_B11B12red\_start | -0.00351 | 0.9389 |
| SD\_B2B3B4\_start | -0.08716 | 0.0569 |
| SD\_NirRedRe\_start | 0.1418 | 0.0019 |
| SD\_NirRedReG\_start | 0.14377 | 0.0016 |
| SR\_start | 0.11063 | 0.0155 |
| VARI\_start | -0.00648 | 0.8876 |
| scaled\_GRVI\_correlation\_start | 0.14654 | 0.0013 |
| scaled\_GRVI\_dissimilarity\_start | 0.08794 | 0.0547 |
| scaled\_GRVI\_entropy\_start | 0.1813 | 0.0001 |
| scaled\_GRVI\_variance\_start | 0.01499 | 0.7438 |
| scaled\_NDVI\_correlation\_start | 0.04893 | 0.2857 |
| scaled\_NDVI\_dissimilarity\_start | 0.08806 | 0.0544 |
| scaled\_NDVI\_entropy\_start | 0.17639 | 0.0001 |
| scaled\_NDVI\_variance\_start | -0.01114 | 0.8081 |
| scaled\_VARI\_correlation\_start | 0.02247 | 0.6240 |
| scaled\_VARI\_dissimilarity\_start | 0.18519 | 0.0001 |
| scaled\_VARI\_entropy\_start | 0.12861 | 0.0049 |
| scaled\_VARI\_variance\_start | 0.14545 | 0.0014 |
| CV\_11128\_start | 0.0441 | 0.3360 |
| SD\_11128\_start | 0.08812 | 0.0542 |
| winCVedge\_start | -0.03244 | 0.4792 |
| winCVgreen\_start | 0.07261 | 0.1129 |
| winCVnir\_start | 0.02387 | 0.6027 |
| winCVred\_start | 0.05468 | 0.2328 |
| winCV\_avg\_start | 0.04374 | 0.3400 |
| bio01 | 0.06852 | 0.1347 |
| bio04 | -0.09429 | 0.0393 |
| bio12 | 0.05109 | 0.2650 |
| bio15 | -0.13543 | 0.0030 |
| carbon05 | 0.2912 | 0.0000 |
| carbon100200 | 0.20717 | 0.0000 |
| carbon1530 | 0.28494 | 0.0000 |
| carbon3060 | 0.22523 | 0.0000 |
| carbon515 | 0.33197 | 0.0000 |
| carbon60100 | 0.20443 | 0.0000 |
| cec05 | -0.07897 | 0.0846 |
| cec100200 | -0.08983 | 0.0497 |
| cec1530 | -0.08928 | 0.0511 |
| cec3060 | -0.09021 | 0.0487 |
| cec515 | -0.08112 | 0.0764 |
| cec60100 | -0.08983 | 0.0497 |
| clay05 | -0.06748 | 0.1407 |
| clay100200 | -0.07041 | 0.1243 |
| clay1530 | -0.06711 | 0.1429 |
| clay3060 | -0.06873 | 0.1335 |
| clay515 | -0.06715 | 0.1427 |
| clay60100 | -0.07041 | 0.1242 |
| elevation | 0.08027 | 0.0796 |
| pH05 | -0.1957 | 0.0000 |
| pH100200 | -0.13999 | 0.0022 |
| pH1530 | -0.11804 | 0.0098 |
| pH3060 | -0.13915 | 0.0023 |
| pH515 | -0.19537 | 0.0000 |
| pH60100 | -0.14005 | 0.0022 |
| sand05 | 0.04324 | 0.3456 |
| sand100200 | 0.05181 | 0.2583 |
| sand1530 | 0.04568 | 0.3189 |
| sand3060 | 0.04874 | 0.2876 |
| sand515 | 0.04436 | 0.3331 |
| sand60100 | 0.05177 | 0.2586 |
| silt05 | 0.0996 | 0.0295 |
| silt100200 | 0.08446 | 0.0651 |
| silt1530 | 0.09318 | 0.0417 |
| silt3060 | 0.08827 | 0.0538 |
| silt515 | 0.09609 | 0.0357 |
| silt60100 | 0.08433 | 0.0655 |
| fdis | 1 | 0.0000 |
| Conifer\_Percentage | -0.34204 | 0.0000 |

**Table S21 Pearson’s correlation for percent conifer in the boreal region**

|  |  |  |
| --- | --- | --- |
| **Column** | **Correlation** | **P\_Value** |
| UNIQUE\_SPE | -0.21939 | 0.0000 |
| shannon | -0.292575 | 0.0000 |
| lat\_copy | -0.035147 | 0.4433 |
| lon\_copy | 0.123989 | 0.0066 |
| B11\_end | -0.535542 | 0.0000 |
| B11\_correlation\_end | 0.134209 | 0.0033 |
| B11\_dissimilarity\_end | -0.122929 | 0.0071 |
| B11\_entropy\_end | -0.224014 | 0.0000 |
| B11\_variance\_end | -0.047238 | 0.3027 |
| B12\_end | -0.485809 | 0.0000 |
| B12\_correlation\_end | 0.157271 | 0.0006 |
| B12\_dissimilarity\_end | -0.095978 | 0.0359 |
| B12\_entropy\_end | -0.206333 | 0.0000 |
| B12\_variance\_end | -0.022697 | 0.6206 |
| B2\_end | -0.350431 | 0.0000 |
| B2\_correlation\_end | 0.137332 | 0.0026 |
| B2\_dissimilarity\_end | -0.196446 | 0.0000 |
| B2\_entropy\_end | -0.261922 | 0.0000 |
| B2\_variance\_end | -0.069803 | 0.1275 |
| B3\_end | -0.520755 | 0.0000 |
| B3\_correlation\_end | 0.081493 | 0.0751 |
| B3\_dissimilarity\_end | -0.410686 | 0.0000 |
| B3\_entropy\_end | -0.401661 | 0.0000 |
| B3\_variance\_end | -0.331991 | 0.0000 |
| B4\_end | -0.573431 | 0.0000 |
| B4\_correlation\_end | 0.137649 | 0.0026 |
| B4\_dissimilarity\_end | -0.346533 | 0.0000 |
| B4\_entropy\_end | -0.43785 | 0.0000 |
| B4\_variance\_end | -0.200388 | 0.0000 |
| B5\_end | -0.569759 | 0.0000 |
| B5\_correlation\_end | 0.072008 | 0.1159 |
| B5\_dissimilarity\_end | -0.204918 | 0.0000 |
| B5\_entropy\_end | -0.169779 | 0.0002 |
| B5\_variance\_end | -0.174079 | 0.0001 |
| B6\_end | -0.307633 | 0.0000 |
| B6\_correlation\_end | 0.087263 | 0.0566 |
| B6\_dissimilarity\_end | -0.192949 | 0.0000 |
| B6\_entropy\_end | -0.123879 | 0.0067 |
| B6\_variance\_end | -0.133025 | 0.0036 |
| B7\_end | -0.290723 | 0.0000 |
| B7\_correlation\_end | 0.083384 | 0.0685 |
| B7\_dissimilarity\_end | -0.191015 | 0.0000 |
| B7\_entropy\_end | -0.149578 | 0.0010 |
| B7\_variance\_end | -0.114894 | 0.0119 |
| B8\_end | -0.337012 | 0.0000 |
| B8A\_end | -0.369781 | 0.0000 |
| B8A\_correlation\_end | 0.043057 | 0.3476 |
| B8A\_dissimilarity\_end | -0.167522 | 0.0002 |
| B8A\_entropy\_end | -0.147055 | 0.0013 |
| B8A\_variance\_end | -0.104448 | 0.0224 |
| B8\_correlation\_end | -0.027349 | 0.5509 |
| B8\_dissimilarity\_end | -0.294049 | 0.0000 |
| B8\_entropy\_end | -0.217299 | 0.0000 |
| B8\_variance\_end | -0.231167 | 0.0000 |
| CV\_B11B12\_end | 0.245609 | 0.0000 |
| CV\_B11B12red\_end | 0.386449 | 0.0000 |
| CV\_B2B3B4\_end | 0.040558 | 0.3763 |
| CV\_NIRRedRedEdgeGreen\_end | 0.445961 | 0.0000 |
| CV\_NirRedRedEdge\_end | 0.478083 | 0.0000 |
| EVI\_end | -0.0358 | 0.4349 |
| GRVI\_end | 0.332166 | 0.0000 |
| NDVI\_end | 0.484474 | 0.0000 |
| SD\_B11B12\_end | -0.550892 | 0.0000 |
| SD\_B11B12red\_end | -0.48162 | 0.0000 |
| SD\_B2B3B4\_end | -0.572904 | 0.0000 |
| SD\_NirRedRe\_end | -0.153611 | 0.0008 |
| SD\_NirRedReG\_end | -0.199024 | 0.0000 |
| SR\_end | 0.469975 | 0.0000 |
| VARI\_end | 0.545885 | 0.0000 |
| scaled\_GRVI\_correlation\_end | -0.135433 | 0.0030 |
| scaled\_GRVI\_dissimilarity\_end | -0.252203 | 0.0000 |
| scaled\_GRVI\_entropy\_end | -0.200656 | 0.0000 |
| scaled\_GRVI\_variance\_end | -0.166461 | 0.0003 |
| scaled\_NDVI\_correlation\_end | -0.110822 | 0.0153 |
| scaled\_NDVI\_dissimilarity\_end | -0.252997 | 0.0000 |
| scaled\_NDVI\_entropy\_end | -0.300483 | 0.0000 |
| scaled\_NDVI\_variance\_end | -0.096689 | 0.0346 |
| scaled\_VARI\_correlation\_end | -0.100597 | 0.0279 |
| scaled\_VARI\_dissimilarity\_end | -0.081754 | 0.0741 |
| scaled\_VARI\_entropy\_end | -0.069435 | 0.1295 |
| scaled\_VARI\_variance\_end | -0.074617 | 0.1032 |
| CV\_11128\_end | 0.409497 | 0.0000 |
| SD\_11128\_end | -0.072893 | 0.1115 |
| winCVedge\_end | -0.010142 | 0.8250 |
| winCVgreen\_end | -0.177952 | 0.0001 |
| winCVnir\_end | -0.14428 | 0.0016 |
| winCVred\_end | -0.029894 | 0.5144 |
| winCV\_avg\_end | -0.096886 | 0.0342 |
| B11\_peak | -0.375177 | 0.0000 |
| B11\_correlation\_peak | 0.07017 | 0.1255 |
| B11\_dissimilarity\_peak | 0.062248 | 0.1742 |
| B11\_entropy\_peak | -0.083281 | 0.0689 |
| B11\_variance\_peak | 0.091499 | 0.0456 |
| B12\_peak | -0.121937 | 0.0076 |
| B12\_correlation\_peak | -0.059666 | 0.1928 |
| B12\_dissimilarity\_peak | 0.112351 | 0.0140 |
| B12\_entropy\_peak | 0.04996 | 0.2757 |
| B12\_variance\_peak | 0.106071 | 0.0204 |
| B2\_peak | 0.135377 | 0.0030 |
| B2\_correlation\_peak | -0.012936 | 0.7779 |
| B2\_dissimilarity\_peak | 0.081238 | 0.0760 |
| B2\_entropy\_peak | 0.034259 | 0.4549 |
| B2\_variance\_peak | 0.06637 | 0.1474 |
| B3\_peak | 0.124155 | 0.0066 |
| B3\_correlation\_peak | 0.051724 | 0.2590 |
| B3\_dissimilarity\_peak | 0.055878 | 0.2227 |
| B3\_entropy\_peak | -0.03634 | 0.4280 |
| B3\_variance\_peak | 0.074291 | 0.1048 |
| B4\_peak | 0.190358 | 0.0000 |
| B4\_correlation\_peak | 0.017781 | 0.6982 |
| B4\_dissimilarity\_peak | 0.108058 | 0.0181 |
| B4\_entropy\_peak | 0.06276 | 0.1707 |
| B4\_variance\_peak | 0.084691 | 0.0643 |
| B5\_peak | 0.036741 | 0.4229 |
| B5\_correlation\_peak | -0.019339 | 0.6732 |
| B5\_dissimilarity\_peak | 0.112592 | 0.0138 |
| B5\_entropy\_peak | 0.017088 | 0.7094 |
| B5\_variance\_peak | 0.124186 | 0.0066 |
| B6\_peak | -0.641891 | 0.0000 |
| B6\_correlation\_peak | 0.10361 | 0.0235 |
| B6\_dissimilarity\_peak | -0.063515 | 0.1656 |
| B6\_entropy\_peak | -0.101608 | 0.0263 |
| B6\_variance\_peak | -0.006281 | 0.8911 |
| B7\_peak | -0.678249 | 0.0000 |
| B7\_correlation\_peak | 0.099681 | 0.0293 |
| B7\_dissimilarity\_peak | -0.09397 | 0.0400 |
| B7\_entropy\_peak | -0.118333 | 0.0096 |
| B7\_variance\_peak | -0.026853 | 0.5581 |
| B8\_peak | -0.68149 | 0.0000 |
| B8A\_peak | -0.675128 | 0.0000 |
| B8A\_correlation\_peak | 0.08107 | 0.0766 |
| B8A\_dissimilarity\_peak | -0.091348 | 0.0459 |
| B8A\_entropy\_peak | -0.093035 | 0.0420 |
| B8A\_variance\_peak | -0.036057 | 0.4316 |
| B8\_correlation\_peak | -0.022279 | 0.6271 |
| B8\_dissimilarity\_peak | -0.207217 | 0.0000 |
| B8\_entropy\_peak | -0.213279 | 0.0000 |
| B8\_variance\_peak | -0.111475 | 0.0148 |
| CV\_B11B12\_peak | -0.440594 | 0.0000 |
| CV\_B11B12red\_peak | -0.649398 | 0.0000 |
| CV\_B2B3B4\_peak | -0.296352 | 0.0000 |
| CV\_NIRRedRedEdgeGreen\_peak | -0.647359 | 0.0000 |
| CV\_NirRedRedEdge\_peak | -0.611656 | 0.0000 |
| EVI\_peak | -0.690268 | 0.0000 |
| GRVI\_peak | -0.646402 | 0.0000 |
| NDVI\_peak | -0.494008 | 0.0000 |
| SD\_B11B12\_peak | -0.605409 | 0.0000 |
| SD\_B11B12red\_peak | -0.513948 | 0.0000 |
| SD\_B2B3B4\_peak | -0.074807 | 0.1024 |
| SD\_NirRedRe\_peak | -0.705409 | 0.0000 |
| SD\_NirRedReG\_peak | -0.706437 | 0.0000 |
| SR\_peak | -0.693529 | 0.0000 |
| VARI\_peak | -0.310951 | 0.0000 |
| scaled\_GRVI\_correlation\_peak | -0.060417 | 0.1873 |
| scaled\_GRVI\_dissimilarity\_peak | 0.180988 | 0.0001 |
| scaled\_GRVI\_entropy\_peak | 0.128984 | 0.0047 |
| scaled\_GRVI\_variance\_peak | 0.105717 | 0.0208 |
| scaled\_NDVI\_correlation\_peak | -0.062985 | 0.1692 |
| scaled\_NDVI\_dissimilarity\_peak | 0.192812 | 0.0000 |
| scaled\_NDVI\_entropy\_peak | 0.297778 | 0.0000 |
| scaled\_NDVI\_variance\_peak | 0.10792 | 0.0183 |
| scaled\_VARI\_correlation\_peak | -0.036406 | 0.4271 |
| scaled\_VARI\_dissimilarity\_peak | 0.048545 | 0.2895 |
| scaled\_VARI\_entropy\_peak | -0.074833 | 0.1022 |
| scaled\_VARI\_variance\_peak | 0.060632 | 0.1857 |
| CV\_11128\_peak | -0.376725 | 0.0000 |
| SD\_11128\_peak | -0.682924 | 0.0000 |
| winCVedge\_peak | 0.104171 | 0.0227 |
| winCVgreen\_peak | 0.015589 | 0.7339 |
| winCVnir\_peak | 0.07592 | 0.0973 |
| winCVred\_peak | 0.080753 | 0.0778 |
| winCV\_avg\_peak | 0.085783 | 0.0609 |
| B11\_start | -0.480224 | 0.0000 |
| B11\_correlation\_start | 0.071526 | 0.1184 |
| B11\_dissimilarity\_start | -0.062434 | 0.1730 |
| B11\_entropy\_start | -0.116011 | 0.0111 |
| B11\_variance\_start | -0.012644 | 0.7828 |
| B12\_start | -0.468705 | 0.0000 |
| B12\_correlation\_start | 0.18196 | 0.0001 |
| B12\_dissimilarity\_start | -0.127011 | 0.0054 |
| B12\_entropy\_start | -0.203833 | 0.0000 |
| B12\_variance\_start | -0.039396 | 0.3901 |
| B2\_start | -0.157064 | 0.0006 |
| B2\_correlation\_start | 0.094344 | 0.0392 |
| B2\_dissimilarity\_start | 0.046584 | 0.3095 |
| B2\_entropy\_start | -0.101043 | 0.0272 |
| B2\_variance\_start | 0.07353 | 0.1084 |
| B3\_start | -0.181649 | 0.0001 |
| B3\_correlation\_start | 0.065261 | 0.1543 |
| B3\_dissimilarity\_start | 0.044533 | 0.3313 |
| B3\_entropy\_start | -0.089489 | 0.0505 |
| B3\_variance\_start | 0.071958 | 0.1161 |
| B4\_start | -0.239952 | 0.0000 |
| B4\_correlation\_start | 0.054514 | 0.2342 |
| B4\_dissimilarity\_start | -0.049449 | 0.2806 |
| B4\_entropy\_start | -0.213216 | 0.0000 |
| B4\_variance\_start | 0.038159 | 0.4052 |
| B5\_start | -0.234059 | 0.0000 |
| B5\_correlation\_start | 0.015115 | 0.7417 |
| B5\_dissimilarity\_start | 0.079131 | 0.0839 |
| B5\_entropy\_start | -0.007838 | 0.8643 |
| B5\_variance\_start | 0.101463 | 0.0265 |
| B6\_start | -0.222692 | 0.0000 |
| B6\_correlation\_start | 0.03922 | 0.3922 |
| B6\_dissimilarity\_start | -0.06032 | 0.1880 |
| B6\_entropy\_start | -0.083876 | 0.0669 |
| B6\_variance\_start | -0.010564 | 0.8178 |
| B7\_start | -0.211093 | 0.0000 |
| B7\_correlation\_start | 0.076716 | 0.0939 |
| B7\_dissimilarity\_start | -0.052409 | 0.2528 |
| B7\_entropy\_start | -0.089344 | 0.0509 |
| B7\_variance\_start | 0.007245 | 0.8745 |
| B8\_start | -0.263166 | 0.0000 |
| B8A\_start | -0.263834 | 0.0000 |
| B8A\_correlation\_start | 0.010403 | 0.8205 |
| B8A\_dissimilarity\_start | -0.003807 | 0.9338 |
| B8A\_entropy\_start | -0.048534 | 0.2896 |
| B8A\_variance\_start | 0.048882 | 0.2862 |
| B8\_correlation\_start | -0.053867 | 0.2398 |
| B8\_dissimilarity\_start | -0.06366 | 0.1647 |
| B8\_entropy\_start | -0.095656 | 0.0366 |
| B8\_variance\_start | -0.033288 | 0.4678 |
| CV\_B11B12\_start | 0.37725 | 0.0000 |
| CV\_B11B12red\_start | -0.12349 | 0.0069 |
| CV\_B2B3B4\_start | 0.025394 | 0.5797 |
| CV\_NIRRedRedEdgeGreen\_start | 0.123804 | 0.0067 |
| CV\_NirRedRedEdge\_start | 0.14803 | 0.0012 |
| EVI\_start | -0.053305 | 0.2448 |
| GRVI\_start | 0.040912 | 0.3721 |
| NDVI\_start | 0.181818 | 0.0001 |
| SD\_B11B12\_start | -0.455915 | 0.0000 |
| SD\_B11B12red\_start | -0.525083 | 0.0000 |
| SD\_B2B3B4\_start | -0.214984 | 0.0000 |
| SD\_NirRedRe\_start | -0.140982 | 0.0020 |
| SD\_NirRedReG\_start | -0.178608 | 0.0001 |
| SR\_start | 0.153614 | 0.0008 |
| VARI\_start | 0.275706 | 0.0000 |
| scaled\_GRVI\_correlation\_start | -0.147391 | 0.0012 |
| scaled\_GRVI\_dissimilarity\_start | 0.009227 | 0.8405 |
| scaled\_GRVI\_entropy\_start | -0.068356 | 0.1356 |
| scaled\_GRVI\_variance\_start | 0.046579 | 0.3095 |
| scaled\_NDVI\_correlation\_start | -0.134766 | 0.0032 |
| scaled\_NDVI\_dissimilarity\_start | -0.147674 | 0.0012 |
| scaled\_NDVI\_entropy\_start | -0.214096 | 0.0000 |
| scaled\_NDVI\_variance\_start | -0.03089 | 0.5005 |
| scaled\_VARI\_correlation\_start | -0.104779 | 0.0220 |
| scaled\_VARI\_dissimilarity\_start | -0.199493 | 0.0000 |
| scaled\_VARI\_entropy\_start | -0.087907 | 0.0548 |
| scaled\_VARI\_variance\_start | -0.181064 | 0.0001 |
| CV\_11128\_start | 0.387252 | 0.0000 |
| SD\_11128\_start | 0.144701 | 0.0015 |
| winCVedge\_start | 0.107707 | 0.0185 |
| winCVgreen\_start | 0.077697 | 0.0897 |
| winCVnir\_start | -0.010755 | 0.8146 |
| winCVred\_start | 0.023309 | 0.6112 |
| winCV\_avg\_start | 0.057463 | 0.2098 |
| bio01 | -0.099041 | 0.0304 |
| bio04 | -0.083035 | 0.0697 |
| bio12 | 0.138485 | 0.0024 |
| bio15 | 0.008618 | 0.8509 |
| carbon05 | -0.033643 | 0.4631 |
| carbon100200 | -0.02231 | 0.6266 |
| carbon1530 | -0.041613 | 0.3640 |
| carbon3060 | -0.041675 | 0.3633 |
| carbon515 | -0.083906 | 0.0668 |
| carbon60100 | -0.021685 | 0.6363 |
| cec05 | -0.178236 | 0.0001 |
| cec100200 | -0.187065 | 0.0000 |
| cec1530 | -0.184418 | 0.0001 |
| cec3060 | -0.186142 | 0.0000 |
| cec515 | -0.175789 | 0.0001 |
| cec60100 | -0.187065 | 0.0000 |
| clay05 | -0.195224 | 0.0000 |
| clay100200 | -0.196699 | 0.0000 |
| clay1530 | -0.199013 | 0.0000 |
| clay3060 | -0.198288 | 0.0000 |
| clay515 | -0.196626 | 0.0000 |
| clay60100 | -0.19669 | 0.0000 |
| elevation | 0.11396 | 0.0127 |
| pH05 | -0.127931 | 0.0051 |
| pH100200 | -0.160117 | 0.0004 |
| pH1530 | -0.177893 | 0.0001 |
| pH3060 | -0.15839 | 0.0005 |
| pH515 | -0.094132 | 0.0397 |
| pH60100 | -0.159428 | 0.0005 |
| sand05 | 0.208026 | 0.0000 |
| sand100200 | 0.207339 | 0.0000 |
| sand1530 | 0.209561 | 0.0000 |
| sand3060 | 0.208877 | 0.0000 |
| sand515 | 0.208591 | 0.0000 |
| sand60100 | 0.207359 | 0.0000 |
| silt05 | -0.072378 | 0.1140 |
| silt100200 | -0.049867 | 0.2766 |
| silt1530 | -0.058936 | 0.1983 |
| silt3060 | -0.053833 | 0.2401 |
| silt515 | -0.066857 | 0.1444 |
| silt60100 | -0.049796 | 0.2772 |
| fdis | -0.342039 | 0.0000 |
| Conifer\_Percentage | 1 | 0.0000 |

**Table S22. Description of variable codes**

|  |  |
| --- | --- |
| **Variable** | **Description** |
| lat\_copy | Latitude |
| lon\_copy | Longitude |
| B11\_end | Sentinel-2 band 11 at the end of the season |
| B11\_correlation\_end | GLCM texture (correlation) for B11 at the end of the season |
| B11\_dissimilarity\_end | GLCM texture (dissimilarity) for B11 at the end of the season |
| B11\_entropy\_end | GLCM texture (entropy) for B11 at the end of the season |
| B11\_variance\_end | GLCM texture (variance) for B11 at the end of the season |
| B12\_end | Sentinel-2 band 12 at the end of the season |
| B12\_correlation\_end | GLCM texture (correlation) for B12 at the end of the season |
| B12\_dissimilarity\_end | GLCM texture (dissimilarity) for B12 at the end of the season |
| B12\_entropy\_end | GLCM texture (entropy) for B12 at the end of the season |
| B12\_variance\_end | GLCM texture (variance) for B12 at the end of the season |
| B2\_end | Sentinel-2 band 2 at the end of the season |
| B2\_correlation\_end | GLCM texture (correlation) for B2 at the end of the season |
| B2\_dissimilarity\_end | GLCM texture (dissimilarity) for B2 at the end of the season |
| B2\_entropy\_end | GLCM texture (entropy) for B2 at the end of the season |
| B2\_variance\_end | GLCM texture (variance) for B2 at the end of the season |
| B3\_end | Sentinel-2 band 3 at the end of the season |
| B3\_correlation\_end | GLCM texture (correlation) for B3 at the end of the season |
| B3\_dissimilarity\_end | GLCM texture (dissimilarity) for B3 at the end of the season |
| B3\_entropy\_end | GLCM texture (entropy) for B3 at the end of the season |
| B3\_variance\_end | GLCM texture (variance) for B3 at the end of the season |
| B4\_end | Sentinel-2 band 4 at the end of the season |
| B4\_correlation\_end | GLCM texture (correlation) for B4 at the end of the season |
| B4\_dissimilarity\_end | GLCM texture (dissimilarity) for B4 at the end of the season |
| B4\_entropy\_end | GLCM texture (entropy) for B4 at the end of the season |
| B4\_variance\_end | GLCM texture (variance) for B4 at the end of the season |
| B5\_end | Sentinel-2 band 5 at the end of the season |
| B5\_correlation\_end | GLCM texture (correlation) for B5 at the end of the season |
| B5\_dissimilarity\_end | GLCM texture (dissimilarity) for B5 at the end of the season |
| B5\_entropy\_end | GLCM texture (entropy) for B5 at the end of the season |
| B5\_variance\_end | GLCM texture (variance) for B5 at the end of the season |
| B6\_end | Sentinel-2 band 6 at the end of the season |
| B6\_correlation\_end | GLCM texture (correlation) for B6 at the end of the season |
| B6\_dissimilarity\_end | GLCM texture (dissimilarity) for B6 at the end of the season |
| B6\_entropy\_end | GLCM texture (entropy) for B6 at the end of the season |
| B6\_variance\_end | GLCM texture (variance) for B6 at the end of the season |
| B7\_end | Sentinel-2 band 7 at the end of the season |
| B7\_correlation\_end | GLCM texture (correlation) for B7 at the end of the season |
| B7\_dissimilarity\_end | GLCM texture (dissimilarity) for B7 at the end of the season |
| B7\_entropy\_end | GLCM texture (entropy) for B7 at the end of the season |
| B7\_variance\_end | GLCM texture (variance) for B7 at the end of the season |
| B8\_end | Sentinel-2 band 8 at the end of the season |
| B8\_correlation\_end | GLCM texture (correlation) for B8 at the end of the season |
| B8\_dissimilarity\_end | GLCM texture (dissimilarity) for B8 at the end of the season |
| B8\_entropy\_end | GLCM texture (entropy) for B8 at the end of the season |
| B8\_variance\_end | GLCM texture (variance) for B8 at the end of the season |
| B8A\_end | Sentinel-2 band 8A at the end of the season |
| B8A\_correlation\_end | GLCM texture (correlation) for B8A at the end of the season |
| B8A\_dissimilarity\_end | GLCM texture (dissimilarity) for B8A at the end of the season |
| B8A\_entropy\_end | GLCM texture (entropy) for B8A at the end of the season |
| B8A\_variance\_end | GLCM texture (variance) for B8A at the end of the season |
| CV\_B11B12\_end | Coefficient of variation (pixel-based) for B11 and B12 at the end of the season |
| CV\_B11B12red\_end | Coefficient of variation (pixel-based) for B11, B12, and B4 at the end of the season |
| CV\_B2B3B4\_end | Coefficient of variation (pixel-based) for B2, B3, and B4 at the end of the season |
| CV\_NIRRedRedEdgeGreen\_end | Coefficient of variation (pixel-based) for B8, B4, B5, and B3 at the end of the season |
| CV\_NirRedRedEdge\_end | Coefficient of variation (pixel-based) for B8, B4, and B5 at the end of the season |
| EVI\_end | Enhanced vegetation index (EVI) at the end of the season |
| GRVI\_end | Green-red variation index (GRVI) at the end of the season |
| NDVI\_end | Normalized difference vegetation index (NDVI) at the end of the season |
| SD\_B11B12\_end | Standard deviation (pixel-based) for B11 and B12 at the end of the season |
| SD\_B11B12red\_end | Standard deviation (pixel-based) for B11 , B12, and B4 at the end of the season |
| SD\_B2B3B4\_end | Standard deviation (pixel-based) for B2,B3, and B4 at the end of the season |
| SD\_NirRedRe\_end | Standard deviation (pixel-based) for B8, B4, and B5 at the end of the season |
| SD\_NirRedReG\_end | Standard deviation (pixel-based) for B8, B4, B5, and B3 at the end of theseason |
| SR\_end | Simple ratio (SR) index at the end of the season |
| VARI\_end | Visible atmospherically resistant index (VARI) |
| scaled\_GRVI\_correlation\_end | GLCM texture (correlation) calculated on the scaled GRVI image at the end of the season |
| scaled\_GRVI\_dissimilarity\_end | GLCM texture (dissimilarity) calculated on the scaled GRVI image at the end of the season |
| scaled\_GRVI\_entropy\_end | GLCM texture (entropy) calculated on the scaled GRVI image at the end of the season |
| scaled\_GRVI\_variance\_end | GLCM texture (variance) calculated on the scaled GRVI image at the end of the season |
| scaled\_NDVI\_correlation\_end | GLCM texture (correlation) calculated on the scaled NDVI image at the end of the season |
| scaled\_NDVI\_dissimilarity\_end | GLCM texture (dissimilarity) calculated on the scaled NDVI image at the end of the season |
| scaled\_NDVI\_entropy\_end | GLCM texture (entropy) calculated on the scaled NDVI image at the end of the season |
| scaled\_NDVI\_variance\_end | GLCM texture (variance) calculated on the scaled NDVI image at the end of the season |
| scaled\_VARI\_correlation\_end | GLCM texture (correlation) calculated on the scaled VARI image at the end of the season |
| scaled\_VARI\_dissimilarity\_end | GLCM texture (dissimilarity) calculated on the scaled VARI image at the end of the season |
| scaled\_VARI\_entropy\_end | GLCM texture (entropy) calculated on the scaled VARI image at the end of the season |
| scaled\_VARI\_variance\_end | GLCM texture (variance) calculated on the scaled VARI image at the end of the season |
| CV\_11128\_end | Coefficient of variation (pixel-based) for B11, B12, and B8 at the end of the season |
| SD\_11128\_end | Standard deviation (pixel-based) for B11, B12, and B8 at the end of the season |
| winCVedge\_end | Single dimensional coefficient of variation (window-based) for B5 at the end of the season |
| winCVgreen\_end | Single dimensional coefficient of variation (window-based) for B3 at the end of the season |
| winCVnir\_end | Single dimensional coefficient of variation (window-based) for B8 at the end of the season |
| winCVred\_end | Single dimensional coefficient of variation (window-based) for B4 at the end of the season |
| winCV\_avg\_end | Multi-dimensional coefficient of variation (window-based) for B3, B4, B5, B8 |
| B11\_peak | Sentinel-2 band 11 at the peak of the season |
| B11\_correlation\_peak | GLCM texture (correlation) for B11 at the peak of the season |
| B11\_dissimilarity\_peak | GLCM texture (dissimilarity) for B11 at the peak of the season |
| B11\_entropy\_peak | GLCM texture (entropy) for B11 at the peak of the season |
| B11\_variance\_peak | GLCM texture (variance) for B11 at the peak of the season |
| B12\_peak | Sentinel-2 band 12 at the peak of the season |
| B12\_correlation\_peak | GLCM texture (correlation) for B12 at the peak of the season |
| B12\_dissimilarity\_peak | GLCM texture (dissimilarity) for B12 at the peak of the season |
| B12\_entropy\_peak | GLCM texture (entropy) for B12 at the peak of the season |
| B12\_variance\_peak | GLCM texture (variance) for B12 at the peak of the season |
| B2\_peak | Sentinel-2 band 2 at the peak of the season |
| B2\_correlation\_peak | GLCM texture (correlation) for B2 at the peak of the season |
| B2\_dissimilarity\_peak | GLCM texture (dissimilarity) for B2 at the peak of the season |
| B2\_entropy\_peak | GLCM texture (entropy) for B2 at the peak of the season |
| B2\_variance\_peak | GLCM texture (variance) for B2 at the peak of the season |
| B3\_peak | Sentinel-2 band 3 at the peak of the season |
| B3\_correlation\_peak | GLCM texture (correlation) for B3 at the peak of the season |
| B3\_dissimilarity\_peak | GLCM texture (dissimilarity) for B3 at the peak of the season |
| B3\_entropy\_peak | GLCM texture (entropy) for B3 at the peak of the season |
| B3\_variance\_peak | GLCM texture (variance) for B3 at the peak of the season |
| B4\_peak | Sentinel-2 band 4 at the peak of the season |
| B4\_correlation\_peak | GLCM texture (correlation) for B4 at the peak of the season |
| B4\_dissimilarity\_peak | GLCM texture (dissimilarity) for B4 at the peak of the season |
| B4\_entropy\_peak | GLCM texture (entropy) for B4 at the peak of the season |
| B4\_variance\_peak | GLCM texture (variance) for B4 at the peak of the season |
| B5\_peak | Sentinel-2 band 5 at the peak of the season |
| B5\_correlation\_peak | GLCM texture (correlation) for B5 at the peak of the season |
| B5\_dissimilarity\_peak | GLCM texture (dissimilarity) for B5 at the peak of the season |
| B5\_entropy\_peak | GLCM texture (entropy) for B5 at the peak of the season |
| B5\_variance\_peak | GLCM texture (variance) for B5 at the peak of the season |
| B6\_peak | Sentinel-2 band 6 at the peak of the season |
| B6\_correlation\_peak | GLCM texture (correlation) for B6 at the peak of the season |
| B6\_dissimilarity\_peak | GLCM texture (dissimilarity) for B6 at the peak of the season |
| B6\_entropy\_peak | GLCM texture (entropy) for B6 at the peak of the season |
| B6\_variance\_peak | GLCM texture (variance) for B6 at the peak of the season |
| B7\_peak | Sentinel-2 band 7 at the peak of the season |
| B7\_correlation\_peak | GLCM texture (correlation) for B7 at the peak of the season |
| B7\_dissimilarity\_peak | GLCM texture (dissimilarity) for B7 at the peak of the season |
| B7\_entropy\_peak | GLCM texture (entropy) for B7 at the peak of the season |
| B7\_variance\_peak | GLCM texture (variance) for B7 at the peak of the season |
| B8\_peak | Sentinel-2 band 8 at the end of the season |
| B8\_correlation\_peak | GLCM texture (correlation) for B8 at the peak of the season |
| B8\_dissimilarity\_peak | GLCM texture (dissimilarity) for B8 at the peak of the season |
| B8\_entropy\_peak | GLCM texture (entropy) for B8 at the peak of the season |
| B8\_variance\_peak | GLCM texture (variance) for B8 at the peak of the season |
| B8A\_peak | Sentinel-2 band 8A at the peak of the season |
| B8A\_correlation\_peak | GLCM texture (correlation) for B8A at the peak of the season |
| B8A\_dissimilarity\_peak | GLCM texture (dissimilarity) for B8A at the peak of the season |
| B8A\_entropy\_peak | GLCM texture (entropy) for B8A at the peak of the season |
| B8A\_variance\_peak | GLCM texture (variance) for B8A at the peak of the season |
| CV\_B11B12\_peak | Coefficient of variation (pixel-based) for B11 and B12 at the peak of the season |
| CV\_B11B12red\_peak | Coefficient of variation (pixel-based) for B11, B12, and B4 at the peak of the season |
| CV\_B2B3B4\_peak | Coefficient of variation (pixel-based) for B2, B3, and B4 at the peak of the season |
| CV\_NIRRedRedEdgeGreen\_peak | Coefficient of variation (pixel-based) for B8, B4, B5, and B3 at the peak of the season |
| CV\_NirRedRedEdge\_peak | Coefficient of variation (pixel-based) for B8, B4, and B5 at the peak of the season |
| EVI\_peak | Enhanced vegetation index (EVI) at the peak of the season |
| GRVI\_peak | Green-red variation index (GRVI) at the peak of the season |
| NDVI\_peak | Normalized difference vegetation index (NDVI) at the peak of the season |
| SD\_B11B12\_peak | Standard deviation (pixel-based) for B11 and B12 at the peak of the season |
| SD\_B11B12red\_peak | Standard deviation (pixel-based) for B11 , B12, and B4 at the peak of the season |
| SD\_B2B3B4\_peak | Standard deviation (pixel-based) for B2,B3, and B4 at the peak of the season |
| SD\_NirRedRe\_peak | Standard deviation (pixel-based) for B8, B4, and B5 at the peak of the season |
| SD\_NirRedReG\_peak | Standard deviation (pixel-based) for B8, B4, B5, and B3 at the peak of the season |
| SR\_peak | Simple ratio (SR) index at the peak of the season |
| VARI\_peak | Visible atmospherically resistant index (VARI) at the peak of the season |
| scaled\_GRVI\_correlation\_peak | GLCM texture (correlation) calculated on the scaled GRVI image at the peak of the season |
| scaled\_GRVI\_dissimilarity\_peak | GLCM texture (dissimilarity) calculated on the scaled GRVI image at the peak of the season |
| scaled\_GRVI\_entropy\_peak | GLCM texture (entropy) calculated on the scaled GRVI image at the peak of the season |
| scaled\_GRVI\_variance\_peak | GLCM texture (variance) calculated on the scaled GRVI image at the peak of the season |
| scaled\_NDVI\_correlation\_peak | GLCM texture (correlation) calculated on the scaled NDVI image at the peak of the season |
| scaled\_NDVI\_dissimilarity\_peak | GLCM texture (dissimilarity) calculated on the scaled NDVI image at the peak of the season |
| scaled\_NDVI\_entropy\_peak | GLCM texture (entropy) calculated on the scaled NDVI image at the peak of the season |
| scaled\_NDVI\_variance\_peak | GLCM texture (variance) calculated on the scaled NDVI image at the peak of the season |
| scaled\_VARI\_correlation\_peak | GLCM texture (correlation) calculated on the scaled VARI image at the peak of the season |
| scaled\_VARI\_dissimilarity\_peak | GLCM texture (dissimilarity) calculated on the scaled VARI image at the peak of the season |
| scaled\_VARI\_entropy\_peak | GLCM texture (entropy) calculated on the scaled VARI image at the peak of the season |
| scaled\_VARI\_variance\_peak | GLCM texture (variance) calculated on the scaled VARI image at the peak of the season |
| CV\_11128\_peak | Coefficient of variation (pixel-based) for B11, B12, and B8 at the peak of the season |
| SD\_11128\_peak | Standard deviation (pixel-based) for B11, B12, and B8 at the peak of the season |
| winCVedge\_peak | Single dimensional coefficient of variation (window-based) for B5 at the peak of the season |
| winCVgreen\_peak | Single dimensional coefficient of variation (window-based) for B3 at the peak of the season |
| winCVnir\_peak | Single dimensional coefficient of variation (window-based) for B8 at the peak of the season |
| winCVred\_peak | Single dimensional coefficient of variation (window-based) for B4 at the peak of the season |
| winCV\_avg\_peak | Multi-dimensional coefficient of variation (window-based) for B3, B4, B5, B8 at the peak of the season |
| B11\_start | Sentinel-2 band 11 at the start of the season |
| B11\_correlation\_start | GLCM texture (correlation) for B11 at the start of the season |
| B11\_dissimilarity\_start | GLCM texture (dissimilarity) for B11 at the start of the season |
| B11\_entropy\_start | GLCM texture (entropy) for B11 at the start of the season |
| B11\_variance\_start | GLCM texture (variance) for B11 at the start of the season |
| B12\_start | Sentinel-2 band 12 at the start of the season |
| B12\_correlation\_start | GLCM texture (correlation) for B12 at the start of the season |
| B12\_dissimilarity\_start | GLCM texture (dissimilarity) for B12 at the start of the season |
| B12\_entropy\_start | GLCM texture (entropy) for B12 at the start of the season |
| B12\_variance\_start | GLCM texture (variance) for B12 at the start of the season |
| B2\_start | Sentinel-2 band 2 at the start of the season |
| B2\_correlation\_start | GLCM texture (correlation) for B2 at the start of the season |
| B2\_dissimilarity\_start | GLCM texture (dissimilarity) for B2 at the start of the season |
| B2\_entropy\_start | GLCM texture (entropy) for B2 at the start of the season |
| B2\_variance\_start | GLCM texture (variance) for B2 at the start of the season |
| B3\_start | Sentinel-2 band 3 at the start of the season |
| B3\_correlation\_start | GLCM texture (correlation) for B3 at the start of the season |
| B3\_dissimilarity\_start | GLCM texture (dissimilarity) for B3 at the start of the season |
| B3\_entropy\_start | GLCM texture (entropy) for B3 at the start of the season |
| B3\_variance\_start | GLCM texture (variance) for B3 at the start of the season |
| B4\_start | Sentinel-2 band 4 at the start of the season |
| B4\_correlation\_start | GLCM texture (correlation) for B4 at the start of the season |
| B4\_dissimilarity\_start | GLCM texture (dissimilarity) for B4 at the start of the season |
| B4\_entropy\_start | GLCM texture (entropy) for B4 at the start of the season |
| B4\_variance\_start | GLCM texture (variance) for B4 at the start of the season |
| B5\_start | Sentinel-2 band 5 at the start of the season |
| B5\_correlation\_start | GLCM texture (correlation) for B5 at the start of the season |
| B5\_dissimilarity\_start | GLCM texture (dissimilarity) for B5 at the start of the season |
| B5\_entropy\_start | GLCM texture (entropy) for B5 at the start of the season |
| B5\_variance\_start | GLCM texture (variance) for B5 at the start of the season |
| B6\_start | Sentinel-2 band 6 at the start of the season |
| B6\_correlation\_start | GLCM texture (correlation) for B6 at the start of the season |
| B6\_dissimilarity\_start | GLCM texture (dissimilarity) for B6 at the start of the season |
| B6\_entropy\_start | GLCM texture (entropy) for B6 at the start of the season |
| B6\_variance\_start | GLCM texture (variance) for B6 at the start of the season |
| B7\_start | Sentinel-2 band 7 at the start of the season |
| B7\_correlation\_start | GLCM texture (correlation) for B7 at the start of the season |
| B7\_dissimilarity\_start | GLCM texture (dissimilarity) for B7 at the start of the season |
| B7\_entropy\_start | GLCM texture (entropy) for B7 at the start of the season |
| B7\_variance\_start | GLCM texture (variance) for B7 at the start of the season |
| B8\_start | Sentinel-2 band 8 at the start of the season |
| B8\_correlation\_start | GLCM texture (correlation) for B8 at the start of the season |
| B8\_dissimilarity\_start | GLCM texture (dissimilarity) for B8 at the start of the season |
| B8\_entropy\_start | GLCM texture (entropy) for B8 at the start of the season |
| B8\_variance\_start | GLCM texture (variance) for B8 at the start of the season |
| B8A\_start | Sentinel-2 band 8A at the start of the season |
| B8A\_correlation\_start | GLCM texture (correlation) for B8A at the start of the season |
| B8A\_dissimilarity\_start | GLCM texture (dissimilarity) for B8A at the start of the season |
| B8A\_entropy\_start | GLCM texture (entropy) for B8A at the start of the season |
| B8A\_variance\_start | GLCM texture (variance) for B8A at the start of the season |
| CV\_B11B12\_start | Coefficient of variation (pixel-based) for B11 and B12 at the start of the season |
| CV\_B11B12red\_start | Coefficient of variation (pixel-based) for B11, B12, and B4 at the start of the season |
| CV\_B2B3B4\_start | Coefficient of variation (pixel-based) for B2, B3, and B4 at the start of the season |
| CV\_NIRRedRedEdgeGreen\_start | Coefficient of variation (pixel-based) for B8, B4, B5, and B3 at the start of the season |
| CV\_NirRedRedEdge\_start | Coefficient of variation (pixel-based) for B8, B4, and B5 at the start of the season |
| EVI\_start | Enhanced vegetation index (EVI) at the start of the season |
| GRVI\_start | Green-red variation index (GRVI) at the start of the season |
| NDVI\_start | Normalized difference vegetation index (NDVI) at the start of the season |
| SD\_B11B12\_start | Standard deviation (pixel-based) for B11 and B12 at the start of the season |
| SD\_B11B12red\_start | Standard deviation (pixel-based) for B11 , B12, and B4 at the start of the season |
| SD\_B2B3B4\_start | Standard deviation (pixel-based) for B2,B3, and B4 at the start of the season |
| SD\_NirRedRe\_start | Standard deviation (pixel-based) for B8, B4, and B5 at the start of the season |
| SD\_NirRedReG\_start | Standard deviation (pixel-based) for B8, B4, B5, and B3 at the start of the season |
| SR\_start | Simple ratio (SR) index at the start of the season |
| VARI\_start | Visible atmospherically resistant index (VARI) at the start of the season |
| scaled\_GRVI\_correlation\_start | GLCM texture (correlation) calculated on the scaled GRVI image at the start of the season |
| scaled\_GRVI\_dissimilarity\_start | GLCM texture (dissimilarity) calculated on the scaled GRVI image at the start of the season |
| scaled\_GRVI\_entropy\_start | GLCM texture (entropy) calculated on the scaled GRVI image at the start of the season |
| scaled\_GRVI\_variance\_start | GLCM texture (variance) calculated on the scaled GRVI image at the start of the season |
| scaled\_NDVI\_correlation\_start | GLCM texture (correlation) calculated on the scaled NDVI image at the start of the season |
| scaled\_NDVI\_dissimilarity\_start | GLCM texture (dissimilarity) calculated on the scaled NDVI image at the start of the season |
| scaled\_NDVI\_entropy\_start | GLCM texture (entropy) calculated on the scaled NDVI image at the start of the season |
| scaled\_NDVI\_variance\_start | GLCM texture (variance) calculated on the scaled NDVI image at the start of the season |
| scaled\_VARI\_correlation\_start | GLCM texture (correlation) calculated on the scaled VARI image at the start of the season |
| scaled\_VARI\_dissimilarity\_start | GLCM texture (dissimilarity) calculated on the scaled VARI image at the start of the season |
| scaled\_VARI\_entropy\_start | GLCM texture (entropy) calculated on the scaled VARI image at the start of the season |
| scaled\_VARI\_variance\_start | GLCM texture (variance) calculated on the scaled VARI image at the start of the season |
| CV\_11128\_start | Coefficient of variation (pixel-based) for B11, B12, and B8 at the start of the season |
| SD\_11128\_start | Standard deviation (pixel-based) for B11, B12, and B8 at the start of the season |
| winCVedge\_start | Single dimensional coefficient of variation (window-based) for B5 at the start of the season |
| winCVgreen\_start | Single dimensional coefficient of variation (window-based) for B3 at the start of the season |
| winCVnir\_start | Single dimensional coefficient of variation (window-based) for B8 at the start of the season |
| winCVred\_start | Single dimensional coefficient of variation (window-based) for B4 at the start of the season |
| winCV\_avg\_start | Multi-dimensional coefficient of variation (window-based) for B3, B4, B5, B8 at the start of the season |
| bio01 | Annual mean temperature from the Worldclim bioclimatic variables |
| bio04 | Temperature seasonality from the Worldclim bioclimatic variables |
| bio12 | Annual precipitation from the Worldclim bioclimatic variables |
| bio15 | Precipitation seasonality from the Worldclim bioclimatic variables |
| carbon05 | Proportion of organic matter at 0-5 cm from the SIIGSOL dataset |
| carbon100200 | Proportion of organic matter at 100-200 cm from the SIIGSOL dataset |
| carbon1530 | Proportion of organic matter at 15-30 cm from the SIIGSOL dataset |
| carbon3060 | Proportion of organic matter at 30-60 cm from the SIIGSOL dataset |
| carbon515 | Proportion of organic matter at 5-15 cm from the SIIGSOL dataset |
| carbon60100 | Proportion of organic matter at 60-100 cm from the SIIGSOL dataset |
| cec05 | Cation exchange capacity (meq/100g) at 0-5 cm from the SIIGSOL dataset |
| cec100200 | Cation exchange capacity (meq/100g) at 100-200 cm from the SIIGSOL dataset |
| cec1530 | Cation exchange capacity (meq/100g) at 15-30 cm from the SIIGSOL dataset |
| cec3060 | Cation exchange capacity (meq/100g) at 30-60 cm from the SIIGSOL dataset |
| cec515 | Cation exchange capacity (meq/100g) at 5-15 cm from the SIIGSOL dataset |
| cec60100 | Cation exchange capacity (meq/100g) at 60-100 cm from the SIIGSOL dataset |
| clay05 | Proportion of clay at 0-5 cm from the SIIGSOL dataset |
| clay100200 | Proportion of clay at 100-200 cm from the SIIGSOL dataset |
| clay1530 | Proportion of clay at 15-30 cm from the SIIGSOL dataset |
| clay3060 | Proportion of clay at 30-60 cm from the SIIGSOL dataset |
| clay515 | Proportion of clay at 5-15 cm from the SIIGSOL dataset |
| clay60100 | Proportion of clay at 60-100 cm from the SIIGSOL dataset |
| elevation | Elevation from the Canadian digital elevation model (m) |
| pH05 | pH at 0-5 cm from the SIIGSOL dataset |
| pH100200 | pH at 100-200 cm from the SIIGSOL dataset |
| pH1530 | pH at 15-30 cm from the SIIGSOL dataset |
| pH3060 | pH at 30-60 cm from the SIIGSOL dataset |
| pH515 | pH at 5-15 cm from the SIIGSOL dataset |
| pH60100 | pH at 60-100 cm from the SIIGSOL dataset |
| sand05 | Proportion of sand at 0-5 cm from the SIIGSOL dataset |
| sand100200 | Proportion of sand at 100-200 cm from the SIIGSOL dataset |
| sand1530 | Proportion of sand at 15-30 cm from the SIIGSOL dataset |
| sand3060 | Proportion of sand at 30-60 cm from the SIIGSOL dataset |
| sand515 | Proportion of sand at 5-15 cm from the SIIGSOL dataset |
| sand60100 | Proportion of sand at 60-100 cm from the SIIGSOL dataset |
| silt05 | Proportion of silt at 0-5 cm from the SIIGSOL dataset |
| silt100200 | Proportion of silt at 100-200 cm from the SIIGSOL dataset |
| silt1530 | Proportion of silt at 15-30 cm from the SIIGSOL dataset |
| silt3060 | Proportion of silt at 30-60 cm from the SIIGSOL dataset |
| silt515 | Proportion of silt at 5-15 cm from the SIIGSOL dataset |
| silt60100 | Proportion of silt at 60-100 cm from the SIIGSOL dataset |

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