Supporting Information

Table S1. Proportions of tree basal area in each study plot from species associated with AM fungi, ECM fungi, and ericoid mycorrhizal (ERM) fungi.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Site | Plot Number | Proportion AM basal area | Proportion ECM basal area | Proportion ERM basal area |
| BART | 32 | 0.46550818 | 0.53449182 | 0 |
| BART | 33 | 0.54740373 | 0.45259627 | 0 |
| BART | 34 | 0.32112415 | 0.67887585 | 0 |
| BART | 36 | 0.26891211 | 0.73108789 | 0 |
| BART | 40 | 0.82277588 | 0.17722412 | 0 |
| BART | 42 | 0.48449001 | 0.51550999 | 0 |
| BART | 71 | 0.40867927 | 0.59132073 | 0 |
| DELA | 1 | 0.93239645 | 0.06713732 | 0 |
| DELA | 2 | 0.54484444 | 0.45515556 | 0 |
| DELA | 4 | 0.66027181 | 0.33972819 | 0 |
| DELA | 14 | 0.15904082 | 0.84095918 | 0 |
| DELA | 37 | 0.34375437 | 0.65624563 | 0 |
| DELA | 38 | 0.72826961 | 0.27173039 | 0 |
| DELA | 41 | 1 | 0 | 0 |
| HARV | 1 | 0.07042541 | 0.92957459 | 0 |
| HARV | 4 | 0.66070745 | 0.3388294 | 0.00046315 |
| HARV | 10 | 0.06708706 | 0.93291294 | 0 |
| HARV | 16 | 0.50744061 | 0.48710657 | 0.00545281 |
| HARV | 21 | 0.359281 | 0.64016435 | 0.00055465 |
| HARV | 33 | 0.24117398 | 0.75882602 | 0 |
| HARV | 37 | 0.14561608 | 0.85438392 | 0 |
| LENO | 2 | 0.19986999 | 0.80013001 | 0 |
| LENO | 3 | 0.03369556 | 0.96630444 | 0 |
| LENO | 5 | 0.98372682 | 0.01627318 | 0 |
| LENO | 6 | 0.03273843 | 0.96726157 | 0 |
| LENO | 62 | 0.38208535 | 0.61791465 | 0 |
| LENO | 63 | 0.91260772 | 0.08739228 | 0 |
| LENO | 64 | 0.59565253 | 0.40434747 | 0 |
| ORNL | 3 | 0.36012176 | 0.63987824 | 0 |
| ORNL | 21 | 1 | 0 | 0 |
| ORNL | 29 | 0.45991508 | 0.53947474 | 0.00061018 |
| ORNL | 37 | 0.1857673 | 0.8142327 | 0 |
| ORNL | 43 | 0.28020524 | 0.71962444 | 0.00017032 |
| ORNL | 46 | 0.65660068 | 0.34326773 | 0.00013159 |
| ORNL | 49 | 0.87531323 | 0.12468677 | 0 |
| SERC | 1 | 1 | 0 | 0 |
| SERC | 2 | 0.50699133 | 0.49300867 | 0 |
| SERC | 3 | 0.91163537 | 0.08836463 | 0 |
| SERC | 5 | 0.77561132 | 0.22438868 | 0 |
| SERC | 45 | 0.3535429 | 0.64237524 | 0.00408186 |
| SERC | 47 | 0.41573443 | 0.58421976 | 4.58E-05 |
| SERC | 49 | 0.24009567 | 0.75990433 | 0 |
| TREE | 1 | 0.00127899 | 0.99872101 | 0 |
| TREE | 2 | 0.00101021 | 0.99898979 | 0 |
| TREE | 3 | 0.99899725 | 0.00100275 | 0 |
| TREE | 6 | 0.31994426 | 0.68005574 | 0 |
| TREE | 14 | 0.90922087 | 0.09077913 | 0 |
| TREE | 41 | 0.96148262 | 0.03851738 | 0 |

Table S2. Random effects of Site from models presented in Table 2: the concentrations and proportions of C and N in fPOM, oPOM, and MAOM from plots located within seven forests in the National Ecological Observatory Network (NEON)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Proportion of C** | **Concentration of C** | **Proportion of N** | **Concentration of N** |
| σ2 | 0.00 | 36.91 | 0.00 | 0.13 |
| ICC | 0.05 | 0.43 | 0.00 | 0.26 |
| Marginal R2/Conditional R2 | 0.357/ 0.392 | 0.359/0.635 | 0.429/0.429 | 0.484/0.618 |

Table S3. Random effects of Site from models presented in Table 3: C:N in fPOM, oPOM, and MAOM from plots located within seven forests in the National Ecological Observatory Network (NEON)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **fPOM C:N** | **oPOM C:N** | **MAOM C:N** |
| σ2 | 25.801 | 39.696 | 4.909 |
| ICC | 0.133 | 0.215 | 0.347 |
| Marginal R2/Conditional R2 | 0.241/ 0.341 | 0.220/0.388 | 0.611/0.746 |

Table S4. Random effects of Site from models presented in Table 4: MAOM δ13C and Δ14C from plots located within seven forests in the National Ecological Observatory Network (NEON)

|  |  |  |
| --- | --- | --- |
|  | **MAOM δ13C** | **MAOM Δ14C** |
| σ2 | 0.16 | 584.64 |
| ICC | 0.02 | 0.73 |
| Marginal R2/Conditional R2 | 0.227/0.239 | 0.094/0.754 |

Figure S1. Trends in MAOM carbon isotope ratios with climate decomposition index (CDI), % ECM tree basal area, and oxalate-extractable iron content from soil samples collected within six forests in the National Ecological Observatory Network (NEON). Solid lines indicate significant relationships at α=0.05. See Tables 4 and S4 for results of statistical models. 