**Table 1.** Summaries of N pools across NEON sites. (site-specific summaries provided as supp. Material).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Pool or Flux | Mean | Standard Deviation | Average Sample Size | No. of Sites |
| % Total Soil N | 0.16 | 0.1 | 11 | 31 |
| % Inorganic Soil N | 0.48 | 0.28 | 11 | 27 |
| Soil C:N | 18 | 3.16 | 11 | 15 |
| % Root N | 0.9 | 0.24 | 22 | 24 |
| Root C:N | 59.86 | 15.84 | 22 | 24 |
| % Leaf N | 1.78 | 0.49 | 15 | 24 |
| Leaf C:N | 32.53 | 10.79 | 15 | 24 |
| N Resorption | 51.05 | 10.28 | 4 | 15 |
| % Litter N | 0.87 | 0.22 | 17 | 17 |
| Litter C:N | 64.52 | 23.49 | 17 | 17 |
| N Mineralization | 0.2 | 0.21 | 9 | 27 |

**Figure 1:** Conceptual figure

**Figure 2:** Map of sites



**Figure 3.** Distribution of key N pools across vegetation types and climate gradients. Considerable overlap in N pools among woody- and herbaceous-dominated ecosystems (A,C,E). For each pools, there was a weak, negative relationship between the long-term average vapor pressure deficit and %N, though VPD explained little variance in any of the pools (<5%).

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**Figure 4.** Stoichiometric relationships between soil, root, and foliar C:N. Linear fit indicates a significant relationship. Root-foliar C:N was not significant, but root-foliar %N was significant.



**Figure 5.** Plant feedbacks to soil C:N.