**Table 1.** Mean topographic features for each site.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Site** | **Type** | **Latitude** | **Longitude** | **Elevation** | **Slope** | **Aspect** | **Compass** |
| Wonderland | Flat | 44.237 | -68.316 | 53.400 | 3.733 | 208.067 | S |
| Gorham Cliffs | Cliff | 44.328 | -68.185 | 100.867 | 31.867 | 151.467 | SE |
| St. Sauveur | Ledge | 44.311 | -68.326 | 597.133 | 13.333 | 262.600 | W |
| South Cadillac | Ledge | 44.333 | -68.224 | 930.733 | 9.400 | 138.133 | SE |

**Table 2.** Watson’s Two Sample Test of Homogeneity results for aspect at each site.\*

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Gorham Cliffs** | **St. Sauveur** | **South Cadillac** |
| **Wonderland** | t = 0.259 \* | t = 0.288 \*\* | t = 0.194 \* |
| **Gorham Cliffs** |  | t = 0.385 \*\* | t = 0.166 *ns* |
| **St. Sauveur** |  |  | t = 0.519 \*\*\* |

\*Key: t = test statistic, *ns* =not significant, \* = P < 0.05, \*\* = P < 0.01, \*\*\* = P < 0.001, P = P-value.

**Table 3.** Analysis of variance results for the linear models with tree height, canopy spread, diameter at breast height (DBH), and stand density.\*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Tree Height** | | | **Canopy Spread** | | | **DBH** | | | **Distance Between Neighbors** | | |
|  | **df** | **F** | **P** | **df** | **F** | **P** | **df** | **F** | **P** | **df** | **F** | **P** |
| Elevation | 1 | 2.220 | 0.145 | 1 | 8.335 | **0.007** | 1 | 10.084 | **0.003** | 1 | 9.926 | **0.003** |
| Fire | 1 | 0.512 | 0.479 | 1 | 0.242 | 0.626 | 1 | 3.419 | *0.073* | 1 | 1.481 | 0.229 |
| Elevation x Fire | 1 | 8.063 | **0.007** | 1 | 0.420 | 0.521 | 1 | 6.090 | **0.018** | 1 | 0.009 | 0.923 |
| *Residuals* | *36* |  |  | *36* |  |  | *36* |  |  | *56* |  |  |

\* P-values < 0.05 are bolded and < 0.1 are italicized. Sample size is 40 for tree height, canopy spread, and DBH and 60 for stand density. Key: df = degrees of freedom, F = F-value, P = P-value.

**Table 4.** Analysis of variance results for the linear models with foliar isotopes: δ13C and δ15N and foliar organic nutrients: carbon (C), nitrogen (N), and C/N.\*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **δ13C** | | **δ15N** | |  | **Foliar C** | |  | **Foliar N** | | **Foliar C/N** | |
|  | **df** | **F** | **P** | **F** | **P** | **df** | **F** | **P** | **df** | **F** | **P** | **F** | **P** |
| Elevation | 1 | 14.195 | **0.000** | 0.334 | 0.566 | 1 | 0.013 | 0.908 | 1 | 0.889 | 0.349 | 2.277 | 0.136 |
| Fire | 1 | 0.307 | 0.582 | 3.345 | *0.073* | 1 | 2.549 | 0.115 | 1 | 4.235 | **0.044** | 0.959 | 0.331 |
| Elevation x Fire | 1 | 1.120 | 0.295 | 1.153 | 0.288 | 1 | 0.044 | 0.834 | 1 | 0.594 | 0.444 | 0.437 | 0.511 |
| *Residuals* | *51* |  |  |  |  | *71* |  |  | *67* |  |  |  |  |

\* P-values < 0.05 are bolded and < 0.1 are italicized. Sample size is 55 for foliar isotopes and 75 for foliar organic nutrients. Key: df = degrees of freedom, F = F-value, P = P-value.

**Table 5.** Analysis of variance results for the linear models with foliar inorganic nutrients: calcium (Ca2+), phosphorus (P), potassium (K+), magnesium (Mg2+), aluminum (Al+), and zinc (Zn).\*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Foliar Ca2+** | | **Foliar P** | | **Foliar K+** | | **Foliar Mg2+** | | **Foliar Al+** | | **Foliar Zn** | |
|  | **df** | **F** | **P** | **F** | **P** | **F** | **P** | **F** | **P** | **F** | **P** | **F** | **P** |
| Elevation | 1 | 13.026 | **0.001** | 0.080 | 0.780 | 1.875 | 0.179 | 3.024 | *0.091* | 0.127 | 0.724 | 6.757 | **0.013** |
| Fire | 1 | 2.975 | *0.093* | 8.771 | **0.005** | 6.001 | **0.019** | 0.151 | 0.700 | 0.073 | 0.788 | 0.708 | 0.406 |
| Elevation x Fire | 1 | 1.007 | 0.322 | 0.138 | 0.712 | 6.483 | **0.015** | 0.001 | 0.973 | 0.371 | 0.546 | 4.029 | *0.052* |
| *Residuals* | *36* |  |  |  |  |  |  |  |  |  |  |  |  |

\* P-values < 0.05 are bolded and < 0.1 are italicized. Sample size is 40. Key: df = degrees of freedom, F = F-value, P = P-value.

**Table 6.** Analysis of variance results for the linear models with soil organic nutrients: carbon (C), nitrogen (N), and C/N and soil water retention (SWR), soil pH, and effective soil cation exchange capacity (CEC).\*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Soil C** | |  | **Soil N** | | **Soil C/N** | |  | **SWR** | |  | **Soil pH** | | | **CEC** | |
|  | **df** | **F** | **P** | **df** | **F** | **P** | **F** | **P** | **df** | **F** | **P** | **df** | **F** | **P** | **F** | | **P** |
| Elevation | 1 | 6.363 | **0.018** | 1 | 0.414 | 0.527 | 5.065 | **0.035** | 1 | 0.866 | 0.358 | 1 | 3.606 | 0.068 | 4.871 | | **0.036** |
| Fire | 1 | 4.766 | **0.038** | 1 | 0.359 | 0.555 | 2.607 | 0.121 | 1 | 11.149 | **0.002** | 1 | 0.027 | 0.870 | 0.011 | | 0.917 |
| Elevation x Fire | 1 | 0.049 | 0.827 | 1 | 1.386 | 0.252 | 2.196 | 0.153 | 1 | 17.012 | **0.000** | 1 | 0.715 | 0.405 | 0.443 | | 0.511 |
| *Residuals* | *27* |  |  | *22* |  |  |  |  | *36* |  |  | *27* |  |  |  | |  |

\* P-values < 0.05 are bolded. Sample size is 38 for soil organic nutrients, 40 for SWR, and 38 for pH and CEC. Key: df = degrees of freedom, F = F-value, P = P-value.

**Table 7.** Analysis of variance results for the linear models with soil inorganic nutrients: calcium (Ca2+), phosphorus (P), potassium (K+), magnesium (Mg2+), aluminum (Al+), and zinc (Zn).\*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Soil Ca2+** | | **Soil P** | | **Soil K+** | | **Soil Mg2+** | | **Soil Al+** | | **Soil Zn** | |
|  | **df** | **F** | **P** | **F** | **P** | **F** | **P** | **F** | **P** | **F** | **P** | **F** | **P** |
| Elevation | 1 | 7.482 | **0.011** | 3.295 | 0.081 | 2.794 | 0.106 | 2.921 | *0.099* | 0.544 | 0.467 | 1.053 | 0.314 |
| Fire | 1 | 0.587 | 0.450 | 1.958 | 0.173 | 8.906 | **0.006** | 0.735 | 0.399 | 0.006 | 0.937 | 0.001 | 0.979 |
| Elevation x Fire | 1 | 0.007 | 0.932 | 0.007 | 0.936 | 0.025 | 0.874 | 0.047 | 0.829 | 10.141 | **0.004** | 3.553 | *0.070* |
| *Residuals* | *27* |  |  |  |  |  |  |  |  |  |  |  |  |

\* P-values < 0.05 are bolded and < 0.1 are italicized. Sample size is 38. Key: df = degrees of freedom, F = F-value, P = P-value.