**Appendix D, Table D1:** Ordinary Least Squares regression models for tree species richness predictions across BCI. Each OLS model is particular to the prediction map for the tree size class in Fig.6.

Small trees and shrubs (<10 cm)

| | Estimate | Std. Error | t value | Pr(>\|t\|) |
|---|---|---|---|---|
| (Intercept) | 109.6460 | 15.4984 | 7.0750 | 7.9e-09 *** |
| twi sd | 17.0827 | 6.0136 | 2.8410 | 0.00674 ** |
| mch sd | 3.6476 | 1.1447 | 3.1860 | 0.00262 ** |
| mch | -1.5906 | 0.3561 | -4.4670 | 5.3e-05 *** |
| curv sd | 1.0862 | 0.3923 | 2.7690 | 0.00814 ** |

Residual standard error: 7.541 on 45 degrees of freedom
Multiple R-squared: 0.5584
Adjusted R-squared: 0.5191
F-statistic: 14.23 on 4 and 45 DF
p-value: 1.40E-07

All Stems (>1 cm)

| | Estimate | Std. Error | t value | Pr(>\|t\|) |
|---|---|---|---|---|
| (Intercept) | 67.1419 | 26.5788 | 2.5260 | 0.0151 * |
| twi sd | 13.1195 | 9.5722 | 1.3710 | 0.1773 |
| curv | -16.2735 | 15.9501 | -1.0200 | 0.3130 |
| mch sd | 3.1779 | 1.2378 | 2.5670 | 0.0136 * |
| evi sd | 0.2843 | 0.1232 | 2.3080 | 0.0257 * |

Residual standard error: 8.433 on 45 degrees of freedom
Multiple R-squared: 0.4034
Adjusted R-squared: 0.3504
F-statistic: 7.606 on 4 and 45 DF
p-value: 9.05E-05
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

| code | variable |
|---|---|
| mch | mean canopy height |
| mch sd | mean canopy height sd |
| curv | curvature |
| curv sd | curvature sd |
| twi sd | Topographic Wetness Index sd |
| slp | Terrain slope |
| evi sd | Enhanced Vegetation Index sd |

Medium and large trees (>10 cm)

| | Estimate | Std. Error | t value | Pr(>\|t\|) |
|---|---|---|---|---|
| (Intercept) | 94.8818 | 19.8047 | 4.7910 | 1.77e-05 *** |
| mch | -1.1497 | 0.3225 | -3.5640 | 0.000863 *** |
| evi sd | 0.0757 | 0.0922 | 0.8210 | 0.4161 |
| slp | 0.8585 | 0.3328 | 2.5800 | 0.013143 * |

Residual standard error: 5.794 on 46 degrees of freedom
Multiple R-squared: 0.3011
Adjusted R-squared: 0.2555
F-statistic: 6.604 on 3 and 46 DF
p-value: 0.00083

Linear model equations for each tree size.

Small Trees (1-10 cm dbh)

Species/ha = 17.0827 (twi sd) + 3.6476 (mch sd) + -1.5906 (mch) + 1.0862 (curv sd)

All Stems (> 1 cm dbh)

Species/ha = 13.1195 (twi sd) + 3.1779 (mch sd) + 0.2843 (evi sd) + -16.2735 (curv)

Medium and Large Trees (>10 cm dbh)

Species/ha = -1.14969 (mch) + 0.07570 (evi sd) + 0.85846 (slope)