**Supplementary data**

**Table S1.** Broken stick test of variability explained by different axes. Var. = variance; Cum. = cumulative.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Axis** | **Eigenvalue** | **% of Var.** | **Cum.% of Var.** | **Eigenvalue** |
| 1 | 1.975 | 32.921 | 32.921 | 2.45 |
| 2 | 1.226 | 20.433 | 53.354 | 1.45 |
| 3 | 1.014 | 16.908 | 70.262 | 0.95 |
| 4 | 0.865 | 14.416 | 84.678 | 0.617 |
| 5 | 0.543 | 9.045 | 93.723 | 0.367 |
| 6 | 0.377 | 6.277 | 100 | 0.167 |

**Table S2.** Eigenvectors lengths each scaled to its own standard deviation displayed by predictor variable and axis.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Predictor** | **Axis 1** | **Axis 2** | **Axis 3** | **Axis 4** | **Axis 5** | **Axis 6** |
| Aspect | 0.2002 | 0.8388 | -0.2259 | -0.238 | 0.359 | 0.1407 |
| Canopy cover | 0.029 | -0.4802 | -0.2716 | 0.0304 | -0.3941 | -0.6422 |
| Distance to live trees | 0.8343 | 0.06 | 0.181 | 0.209 | 0.2001 | -0.4288 |
| Elevation | -0.3606 | 0.7138 | 0.3583 | 0.2612 | -0.3876 | -0.117 |
| Herbivore use | -0.3895 | -0.0805 | 0.7542 | -0.4645 | 0.2334 | -0.0528 |
| Slope | -0.6472 | -0.0452 | 0.0544 | 0.6379 | 0.41 | 0.0347 |

**Table S3.** Results of the Monte Carlo permutation test (n = 999). P-value for an axis is (n+1)/(N+1), where n is the number of randomizations with an eigenvalue for that axis that is equal to or larger than the observed eigenvalue for that axis. N is the total number of randomizations.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Axis | Real data | Minimum | Average | Maximum | P-value |
| 1 | 1.9753 | 1.1706 | 1.3511 | 1.6664 | 0.001 |
| 2 | 1.226 | 1.0181 | 1.1748 | 1.3827 | 0.177 |
| 3 | 1.0145 | 0.91173 | 1.0462 | 1.2171 | 0.754 |
| 4 | 0.86494 | 0.77603 | 0.93134 | 1.0649 | 0.921 |
| 5 | 0.54267 | 0.6344 | 0.81407 | 0.95067 | 1 |
| 6 | 0.37665 | 0.51402 | 0.68251 | 0.83685 | 1 |