Principal Component Analyses on forest structure variables

We measured 8 variables in each plot (canopy cover, ground cover, numbers of palms, vine and trees, tree diameter, and two measures of understorey vegetation density). Each variable was measured in 4 sectors of the plot, such that the average (_m) and the standard deviation (_sd) could be computed for each plot, the latter indicating variability within the plot.

Variable loading

	PC1 = FS1	PC2 = FS2	PC3 = FS3	PC4	PC5	PC6	PC7	PC8	PC9	PC10	PC11	PC12	PC13	PC14	PC15	PC16
canopy_cover_m	-0.229	-0.034	-0.644	0.135	0.052	0.601	0.074	0.363	0.024	0.035	-0.014	0.067	-0.034	0.066	-0.021	0.005
ground_cover_m	0.33	-0.149	0.504	0.212	-0.647	0.143	-0.143	0.026	0.176	0.148	0.23	0.017	0.046	0.029	-0.028	-0.004
palms_m	0.207	0.726	-0.032	0.451	-0.155	0.145	-0.098	-0.297	-0.231	0.12	0.036	0.065	-0.066	0.059	0.034	0.006
vine_m	0.79	-0.225	-0.422	-0.14	0.159	-0.03	0.067	-0.188	0.021	-0.017	0.04	-0.201	-0.058	0.119	-0.01	-0.01
tree_m	-0.558	-0.607	-0.027	0.259	-0.029	-0.085	0.388	0.07	-0.032	-0.075	0.258	-0.107	0.046	0.028	0.043	0.004
tree_diam_m	0.214	0.707	-0.224	0.225	-0.015	-0.331	0.086	0.35	-0.211	0.168	0.072	-0.185	0.02	-0.044	-0.018	-0.002
stickmark_m	-0.705	0.37	-0.155	-0.313	-0.154	-0.237	0.157	0.094	0.198	0.266	-0.06	0.106	-0.02	0.061	0.029	-0.009
vegdist_m	-0.707	0.077	0.354	-0.375	0.25	0.007	0.22	-0.23	-0.066	0.201	0.107	-0.054	-0.058	0.018	-0.044	0.009
canopy_cover_sd	0.64	-0.501	0.086	-0.138	-0.073	-0.359	0.176	0.106	-0.269	0.064	-0.079	0.205	0.081	0.074	-0.012	0.005
ground_cover_sd	0.646	-0.343	0.483	0.204	0.141	-0.106	0.067	0.192	0.215	0.161	-0.112	-0.057	-0.171	-0.008	0.018	0.008
palms_sd	0.194	0.616	0.539	-0.071	-0.099	0.226	0.352	0.019	0.106	-0.106	-0.2	-0.134	0.137	0.052	0.005	0.004
vine_sd	0.702	-0.065	-0.453	-0.229	0.25	0.18	-0.003	-0.129	0.146	0.285	0.08	0.002	0.144	-0.061	0.02	0.005
tree_sd	-0.151	-0.2	0.326	0.677	0.521	0.145	0.204	-0.079	-0.03	0.138	-0.061	0.078	0.053	-0.009	-0.012	-0.012
tree_diam_sd	0.422	0.545	-0.311	0.196	0.06	-0.249	0.404	-0.093	0.257	-0.193	0.135	0.167	-0.042	-0.021	-0.02	0.002
stickmark_sd	0.526	0.142	0.374	-0.479	-0.003	0.39	0.305	0.114	-0.206	-0.031	0.134	0.075	-0.083	-0.051	0.018	-0.008
vegdist_sd	0.068	0.415	0.44	-0.127	0.592	-0.085	-0.39	0.207	0.067	-0.091	0.196	0.055	0.044	0.073	0.01	0.001
% of Variance	25.136	18.084	14.506	9.396	8.001	6.514	5.5	3.631	2.745	2.316	1.787	1.345	0.663	0.314	0.058	0.004
Cumulative %	25.136	43.22	57.726	67.122	75.123	81.637	87.137	90.768	93.513	95.829	97.616	98.962	99.624	99.938	99.996	100

We retained the three first components for the analyses (named FS1, FS2 and FS3 throuhgout the text):

FS1: dense understorey, abundance of vines

FS2: abundance of palms, absence of trees

FS3: open canopy, palms variable