

Supplemental Information for:

Root water-uptake depth and leaf trait adjustments along a water table gradient: trade-offs among trees and shrubs in a tropical coastal forest

Antunes et al. *Plant and Soil*

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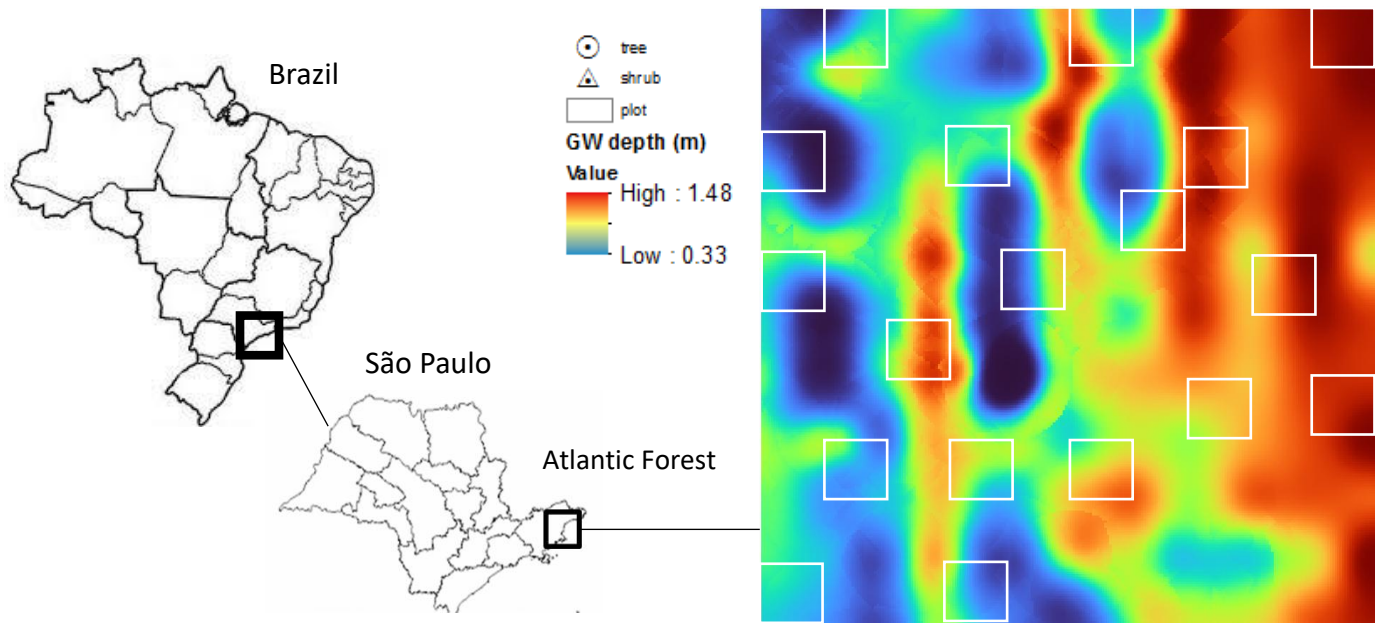


Fig. S1 Study site and sampling plots within the study area (permanent plot of 1 ha, ForestPlot.net), over a water-table depth map (GW depth, i.e. distance from the surface soil to water table, in m). The spatial explicit map of water-table depth was created following the methodology of Antunes et al. 2018b (in ArcMap 10.4.1®), using piezometric data collected in the period of sampling (November 2013).

Table S1. Tree species occurring within the study area and their respective count, ordered by increasing number of occurrences. The most common tree species (top 25) are marked in grey and the sampled ones in bold. Within the study area (Fig. S1 and S2), there are 86 species and a total of 1689 individuals.

Species	Count
<i>Bactris setosa</i>	1
<i>Balizia pedicellaris</i>	1
<i>Calyptranthes lucida</i>	1
<i>Campomanesia guaviroba</i>	1
<i>Clusia criuva</i> subsp. <i>parviflora</i>	1
<i>Eugenia monosperma</i>	1
<i>Ficus insipida</i>	1
<i>Miconia cinnamomifolia</i>	1
<i>Myrcia insulares</i>	1
<i>Myrcia pubipetala</i>	1
Myrtaceae sp. 10	1
<i>Nectandra psammophila</i>	1
<i>Ocotea rariflora</i>	1
<i>Oreopanax capitatus</i>	1
<i>Prunus myrtifolia</i>	1
<i>Sloanea hirsuta</i>	1
<i>Tabernaemontana laeta</i>	1
<i>Tachigali denudata</i>	1
<i>Tibouchina pulchra</i>	1
<i>tomentosa</i> Cambess.	1
<i>Virola bicuhyba</i>	1
<i>Vitex cymosa</i>	1
<i>Couepia venosa</i>	2
<i>Hirtella hebeclada</i>	2
<i>Inga edulis</i>	2
<i>Psidium cattleianum</i>	2
<i>Sorocea jureiana</i>	2
<i>Abarema brachystachya</i>	3
<i>Cecropia glaziovii</i>	3
<i>Coccoloba glaziovii</i>	3
<i>Cupania oblongifolia</i>	3
<i>Ilex dumosa</i>	3
<i>Margaritaria nobilis</i>	3
<i>Marlierea obscura</i>	3
<i>Matayba elaeagnoides</i>	3
<i>Roupala montana</i> var. <i>brasiliensis</i>	3
<i>Astrocaryum aculeatissimum</i>	4
<i>Coussapoa microcarpa</i>	4
<i>Endlicheria paniculata</i>	4
<i>Eugenia fusca</i>	4

<i>Eugenia handroana</i>	4
<i>Hieronyma alchorneoides</i>	4
<i>Ormosia arborea</i>	4
<i>Swartzia simplex</i> var. <i>grandiflora</i>	4
<i>Byrsonima ligustrifolia</i>	5
<i>Genipa infundibuliformis</i>	5
<i>Ilex theezans</i>	5
<i>Miconia dodecandra</i>	5
<i>Syzygium jambos</i>	5
<i>Indeterminada</i>	6
<i>Rapanea ferruginea</i>	6
<i>Eugenia speciosa</i>	7
<i>Myrcia splendens</i>	7
<i>Sloanea guianensis</i>	7
<i>Lacistema pubescens</i>	8
<i>Calophyllum brasiliense</i>	9
<i>Ilex integerrima</i>	10
<i>Tapirira guianensis</i>	10
<i>Eugenia brasiliensis</i>	11
<i>Amaioua intermedia</i>	12
<i>Calyptranthes concinna</i>	12
<i>Eugenia umbelliflora</i>	12
<i>Miconia prasina</i>	12
<i>Miconia rigidiuscula</i>	13
<i>Faramea pachyantha</i>	14
<i>Euplassa cantareirae</i>	22
<i>Inga subnuda</i>	22
<i>Kielmeyera petiolaris</i>	27
<i>Andira fraxinifolia</i>	28
<i>Nectandra oppositifolia</i>	28
<i>Guapira opposita</i>	29
<i>Marlierea tomentosa</i>	32
<i>Rapanea venosa</i>	33
<i>Eugenia schuechiana</i>	34
<i>Garcinia gardneriana</i>	34
<i>Schefflera angustissima</i>	36
<i>Maytenus littoralis</i>	53
<i>Guarea macrophylla</i> subsp. <i>tuberculata</i>	64
<i>Myrcia multiflora</i>	66
<i>Guatteria</i> sp. 4	71
<i>Alchornea triplinervia</i>	77
<i>Jacaranda puberula</i>	87
<i>Myrcia brasiliensis</i>	87
<i>Myrcia racemosa</i>	145
<i>Euterpe edulis</i>	197
<i>Pera glabrata</i>	245

Total 1689

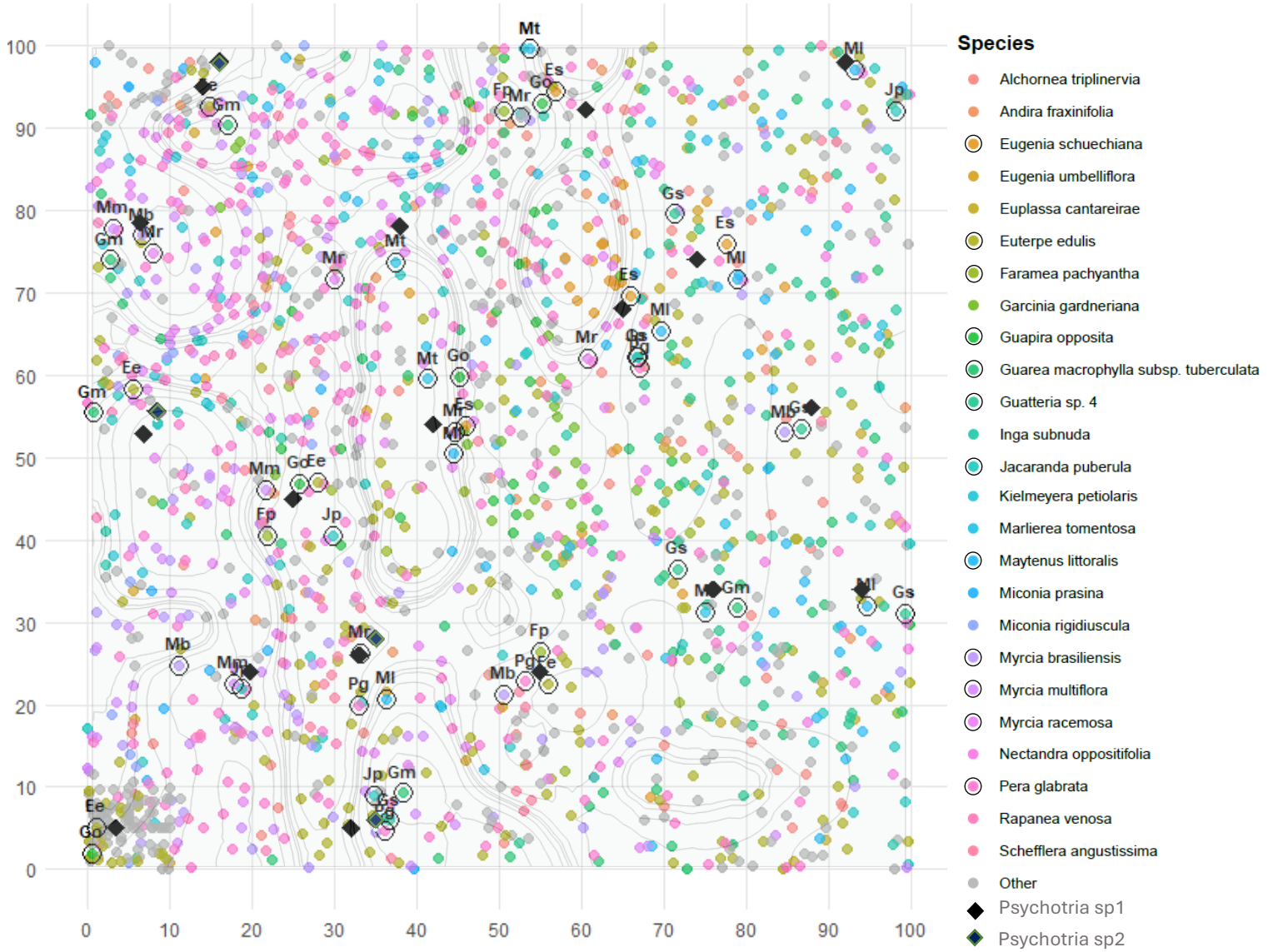


Fig. S2 Distribution of the trees in the study area. Top 25 Species are colored and legends provided. Sampled trees are circled, with a black circle and a species label ($n=58$), and the shrubs sampled are represented by a diamond shape ($n=22$). Full list of tree species in the study area is presented in Table S1.

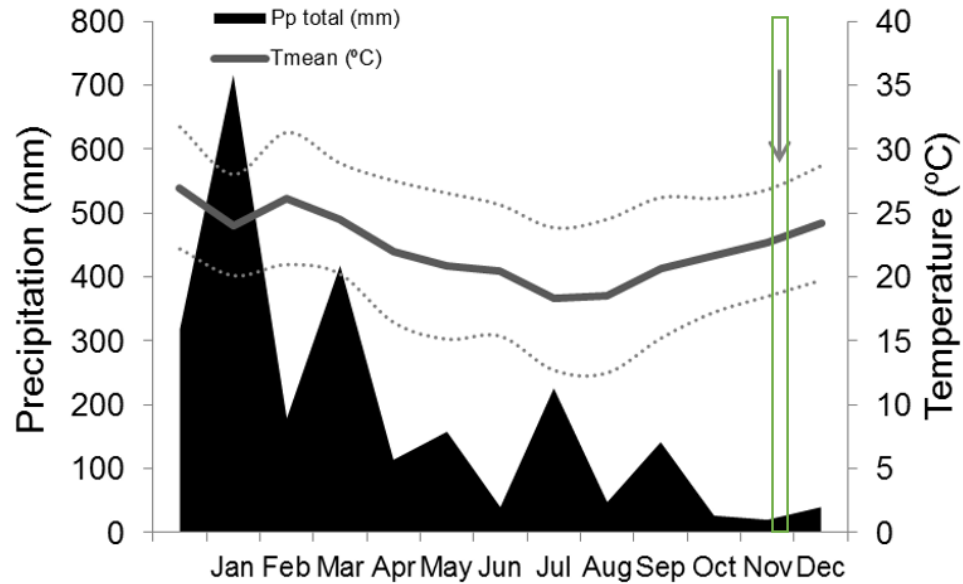


Fig. S3. Meteorological conditions of the studied restinga forest in the sampling year: Monthly total precipitation (total pp, left y-axis, mm), Monthly mean temperature (Tmean, grey line, right y-axis, °C), Monthly mean of maximum and minimum temperature (Tmin and Tmax, dashed grey line, right y-axis, °C), from January to December 2013 (sampling year) (data from Ubatuba climatic station, CIIAGRO online). Sampling campaign marked as down arrow and green bar (20-25/Nov).

Table S2. Spearman correlations (ρ coefficients) between the PCA axes (PC1 and PC2) and the leaf-level physiological variables. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

variable	PC1 (37%)		PC2 (18%)	
$\delta^{13}\text{C}$	0.59	***	-0.53	***
$\delta^{15}\text{N}$	-0.55	***	0.58	***
C(%)	0.67	***	-0.17	**
N(%)	ns		0.31	**
NDVI	0.81	***	0.26	**
PRI	0.69	***	0.39	***
CHL	0.85	***	0.35	***
WI	ns		0.58	***

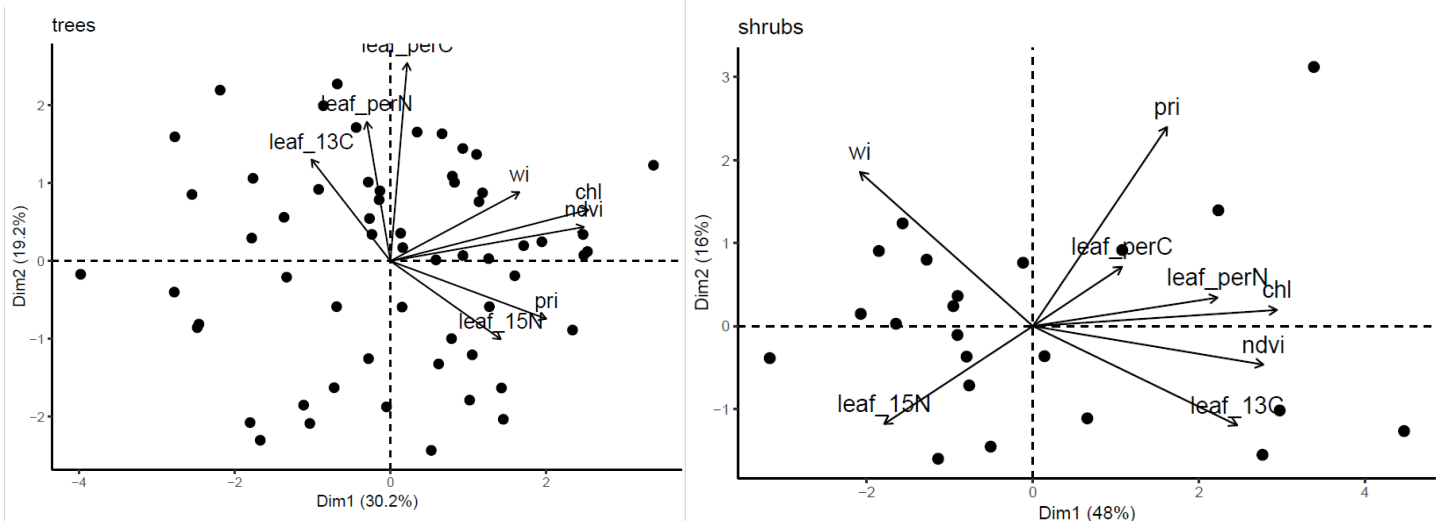


Figure S4. Principal component analysis of physiological traits of each functional type (life-form): (a) trees (n=58) and (b) shrubs (n=22). Physiological parameters considered: leaf carbon and nitrogen isotope composition (leaf_13C and leaf_15N), chlorophyll index (chl), photochemical index (pri), water index (wi), normalized difference vegetation index (ndvi), leaf C and N concentrations (leaf_perC, leaf_perN).