

Supplementary material

Table S1. Common groups of tree species in the Portuguese NFI (PTNFI) and Spanish NFI (SNFI).

Species in PTNFI	Species in SPNFI	Codes
<i>Quercus robur</i>	<i>Quercus robur</i>	Qr
<i>Quercus pyrenaica</i>	<i>Quercus pyrenaica</i>	Qp
<i>Quercus faginea</i>	<i>Quercus faginea</i>	Qf
<i>Quercus ilex</i> s.l.	<i>Quercus ilex</i> s.l.	Az
<i>Quercus suber</i>	<i>Quercus suber</i>	Sb
<i>Quercus</i> spp.	<i>Quercus canariensis</i> , <i>Quercus petraea</i> , <i>Quercus rubra</i>	Qx
<i>Castanea sativa</i> , <i>C. sativa</i> for fruit, <i>C. sativa</i> for wood	<i>Castanea sativa</i>	Ct
<i>Fagus sylvatica</i>	<i>Fagus sylvatica</i>	Fa
<i>Betula</i> spp., <i>Ceratonia siliqua</i> , Other broadleaves	<i>Betula</i> spp., <i>Platanus hispanica</i>	Fx
<i>Pinus pinaster</i>	<i>Pinus pinaster</i>	Pb
<i>Pinus halepensis</i>	<i>Pinus halepensis</i>	Pa
<i>Pinus pinea</i>	<i>Pinus pinea</i>	Pm
<i>Pinus sylvestris</i>	<i>Pinus sylvestris</i>	Py
<i>Pinus</i> spp.	<i>Pinus canariensis</i> , <i>Pinus nigra</i> , <i>Pinus radiata</i> , <i>Pinus uncinata</i> , <i>Pinus</i> spp.	Px
<i>Cupressus</i> spp., <i>Pseudotsuga menziesii</i> , Other coniferous	<i>Abies alba</i> , <i>Abies pinsapo</i> , <i>Chamaecyparis lawsoniana</i> , <i>Larix</i> spp., <i>Picea abies</i> , <i>Pseudotsuga menziesii</i>	Rx
<i>Eucalyptus</i> spp.	<i>Eucalyptus camaldulensis</i> , <i>Eucalyptus globulus</i> , <i>Eucalyptus nitens</i>	Ec
<i>Alnus glutinosa</i> , <i>Populus</i> spp., <i>Fraxinus</i> spp., <i>Salix</i> spp., <i>Ulmus</i> spp.	<i>Populus alba</i> , <i>Populus nigra</i>	Rpx
<i>Acacia</i> spp., <i>Hakea</i> spp., <i>Pittosporum undulatum</i>	<i>Robinia pseudacacia</i>	Ax

Table S2. Common groups of shrub formations in the Portuguese NFI (PTNFI) and Spanish NFI (SNFI). Codes of the formations according to SFM25 [35]. For each formation there are the corresponding species in Portugal and Spain NFIs.

Species in PTNFI	Species in SPNFI	Formations
Grasses	<i>Ampelodesmos mauritanica</i>	34
	<i>Paliurus spina-christi</i> , <i>Rhamnus lycioides</i> , <i>Rhamnus myrtifolius</i> , <i>Rhamnus oleoides</i> , <i>Rhamnus saxatiliss</i>	101
<i>Pyrus spp.</i> , <i>Rubus spp.</i> , <i>Ruscus aculeatus</i>	<i>Berberis vulgaris</i> , <i>Clematis flammula</i> , <i>Clematis spp.</i> , <i>Clematis vitalba</i> , <i>Coriaria myrtifolia</i> , <i>Cotoneaster spp.</i> , <i>Daphne laureola</i> , <i>Daphne mezereum</i> , <i>Hedera helix</i> , <i>Ligustrum vulgare</i> , <i>Lonicera implexa</i> , <i>Lonicera periclymenum</i> , <i>Lonicera pyrenaica</i> , <i>Lonicera spp.</i> , <i>Lonicera xylosteum</i> , <i>Prunus mahaleb</i> , <i>Prunus ramburii</i> , <i>Rhamnus alpinus</i> , <i>Ribes alpinum</i> , <i>Ribes rubrum</i> , <i>Ribes spp.</i> , <i>Rosa spp.</i> , <i>Rubus caesius</i> , <i>Rubus idaeus</i> , <i>Rubus ulmifolius</i> , <i>Ruscus aculeatus</i> , <i>Rubus spp.</i> , <i>Smilax aspera</i> , <i>Spiraea spp.</i>	110
<i>Arbutus unedo</i> , <i>Ilex aquifolium</i> , <i>Phillyrea angustifolia</i> , <i>Phillyrea latifolia</i> , <i>Rhamnus alaternus</i> , <i>Quercus lusitanica</i>	<i>Bupleurum fruticosum</i> , <i>Phillyrea angustifolia</i> , <i>Quercus lusitanica</i> , <i>Rhamnus spp.</i> , <i>Rhododendrom ponticum</i> , <i>Rhododendron spp.</i> , <i>Viburnum rigidum</i> , <i>Viburnum tinus</i> , <i>Viburnum spp.</i>	140
	<i>Euphorbia aphylla</i> , <i>Euphorbia handiensis</i> , <i>Euphorbia sp.</i> , <i>Kleinia neriifolia</i>	160
<i>Quercus coccifera</i>	<i>Quercus coccifera</i>	170
<i>Pistacia lentiscus</i>	<i>Pistacia lentiscus</i>	180
<i>Calluna spp.</i> , <i>Erica spp.</i>	<i>Arctostaphylos uva-ursi</i> , <i>Calluna vulgaris</i> , <i>Daboecia cantabrica</i> , <i>Erica arborea</i> , <i>Erica australis</i> , <i>Erica ciliaris</i> , <i>Erica cinerea</i> , <i>Erica erigena</i> , <i>Erica multiflora</i> , <i>Erica scoparia</i> , <i>Erica umbellata</i> , <i>Erica vagans</i> , <i>Erica spp.</i> , <i>Vaccinium myrtillus</i>	210
<i>Cistus ladanifer</i> , <i>Cistus salvifolius</i>	<i>Cistus albidus</i> , <i>Cistus clusii</i> , <i>Cistus crispus</i> , <i>Cistus ladanifer</i> , <i>Cistus laurifolius</i> , <i>Cistus monspeliensis</i> , <i>Cistus populifolius</i> , <i>Cistus salvifolius</i> , <i>Cistus symphytifolius</i> , <i>Cistus spp.</i> , <i>Halimium atripicifolium</i> , <i>Halimium halimifolium</i> , <i>Halimium lasianthum</i> , <i>Halimium spp.</i>	220
<i>Adenocarpus spp.</i> , <i>Cytisus spp.</i> , <i>Genista spp.</i> , <i>Pterospartum tridentatum</i>	<i>Adenocarpus decorticans</i> , <i>Adenocarpus spp.</i> , <i>Anagyris foetida</i> , <i>Chamaecytisus proliferus</i> , <i>Cytisophyllum sessilifolium</i> , <i>Cytisus grandifloras</i> , <i>Cytisus scoparius</i> , <i>Cytisus striatus</i> , <i>Cytisus villosus</i> , <i>Cytisus spp.</i> , <i>Genista balansae</i> , <i>Genista cinerea</i> , <i>Genista monspessulana</i> , <i>Genista patens</i> , <i>Genista triflora</i> , <i>Genista umbellata</i> , <i>Genista spp.</i> , <i>Genistella spp.</i> , other big size <i>Papilionoideae</i> , <i>Retama sphaerocarpa</i> , <i>Retama spp.</i> , <i>Sarothamnus scoparius</i> , <i>Sarothamnus vulgaris</i> , <i>Spartium</i>	230

	<i>junceum</i> , <i>Spartium</i> spp., <i>Teline</i> spp., <i>Pterospartum tridentatum</i>	
Ferns, <i>Ulex</i> spp.	<i>Astragalus</i> spp., <i>Bupleurum fruticosum</i> , <i>Bupleurum spinosum</i> , <i>Bupleurum</i> spp., <i>Calicotome villosa</i> , <i>Colutea arborescens</i> , <i>Echinopartum</i> spp., <i>Erinacea anthyllis</i> , <i>Erinacea</i> spp., <i>Genista scorpius</i> , other small size <i>Papilionoideae</i> , <i>Ulex baeticus</i> , <i>Ulex eriocladus</i> , <i>Ulex minor</i> , <i>Ulex parviflorus</i> , <i>Ulex</i> spp., <i>Vella spinosa</i> , <i>Vella</i> spp.	240
<i>Lavandula</i> spp., <i>Rosmarinus officinalis</i> , <i>Thymus vulgaris</i>	<i>Artemisia canariensis</i> , <i>Artemisia</i> spp., <i>Dorycnium hirsutum</i> , <i>Dorycnium pentaphyllum</i> , <i>Dorycnium</i> spp., <i>Helianthemum</i> spp., <i>Helichrysum stoechas</i> , <i>Helicrisum italicum</i> , <i>Lavandula lanata</i> , <i>Lavandula latifolia</i> , <i>Lavandula stoechas</i> , <i>Lavandula</i> spp., <i>Phlomis lychnitis</i> , <i>Phlomis purpurea</i> , <i>Phlomis</i> spp., <i>Rosmarinus officinalis</i> , <i>Santolina rosmarinifolia</i> , <i>Santolina</i> sp., <i>Teucrium fruticans</i> , <i>Teucrium</i> spp., <i>Thymus mastichina</i> , <i>Thymus zygis</i> , <i>Thymus</i> spp.	250
Other shrub species		270
<i>Daphne gnidium</i> , <i>Dittrichia viscosa</i> , Other herbaceous species; <i>Juniperus</i> spp.	<i>Anthyllis cytisoides</i> , <i>Asparagus</i> spp., <i>Atriplex</i> spp., <i>Calicotome spinosa</i> , <i>Corema album</i> , <i>Coronilla emerus</i> , <i>Coronilla glauca</i> , <i>Coronilla juncea</i> , <i>Coronilla</i> spp., <i>Daphne gnidium</i> , <i>Daphne</i> spp., <i>Echium</i> spp., <i>Ephedra fragilis</i> , <i>Ephedra</i> spp., <i>Globularia alypum</i> , <i>Hypericum canariensis</i> , <i>Jasminum fruticans</i> , <i>Lonicera etrusca</i> , <i>Maytenus canariensis</i> , <i>Medicago arborea</i> , <i>Nerium oleander</i> , <i>Ononis tridentata</i> , <i>Ononis</i> spp., <i>Osyris alba</i> , <i>Osyris quadripartita</i> , <i>Osyris</i> spp., <i>Rumex lunaria</i> , <i>Thymelaea</i> spp., <i>Zizyphus lotus</i> ; <i>Juniperus sabina</i>	280

Table S3. Original vertical structure used in the SNFI3 (h represents the height).

Life forms	Code
Small trees, shrubs and maquis (3.00 m < h < 5.00 m)	
Tall shrubs (1.50 m < h < 3.00 m)	
Shrubs (0.50 m < h < 1.50 m)	
Small shrubs (0.05 m < h < 0.50 m)	
Continuous dwarf shrubs (0.02 m < h < 0.50 m)	
Megaforbs (herbaceous h > 1.00 m)	
Ferns	
Herbaceous grasses	
Herbaceous legume	
Other herbaceous	

1. Small number of plants (coverage > 1% and ≤ 5%); 2. intermediate number of plants (coverage > 5% and ≤ 10%); 3. abundant number of plants (coverage: > 10% and ≤ 25%); 4. coverage > 25% and ≤ 50%; 5. coverage: > 50% and ≤ 75%; 6. coverage > 75%; 7. rare species (almost zero coverage); 8. Scattered plants (coverage less than or equal to 1%).

Table S4. Characteristics of the sample trees used in the development of the crown length equations [2].

Species /groups	Sample size	Density (N.ha ⁻¹)				Tree height (m)				Crown length (m)			
		Min	Max	Mean	St.dev.	Min	Max	Mean	St.dev.	Min	Max	Mean	St.dev.
<i>Pinus pinaster</i>	4,382	32	3,823	626	521	2.5	17.0	5.6	1.3	0.1	15.1	3.9	1.1
<i>Pinus pinea</i>	1,273	14	3,965	475	453	2.5	10.0	4.9	1.0	0.6	8.4	3.2	1.0
<i>Pinus halepensis</i>	5,662	14	3,226	486	410	2.5	14.0	5.8	1.2	1.0	12.8	4.4	1.2
<i>Pinus sylvestris</i>	4,657	14	4,202	774	583	2.3	15.0	5.7	1.2	0.1	11.0	4.4	1.2
Other conifers	4,956	14	5,217	651	519	2.5	19.5	5.5	1.3	0.1	19.4	4.4	1.3
Eucalypts	1,263	32	2,737	484	313	4.5	17.0	8.9	1.7	0.5	13.8	5.8	1.9
<i>Quercus suber</i>	46	32	2,033	599	523	2.0	15.5	5.7	2.2	0.5	12.8	3.8	1.9
<i>Quercus ilex</i>	621	32	3,820	791	627	2.5	12.0	5.5	1.6	1.1	10.5	4.1	1.3
<i>Quercus pyrenaica</i>	1,204	14	3,310	750	567	2.5	13.0	6.4	1.4	1.5	11.0	4.8	1.4
Other oaks	1,431	32	3,820	692	572	2.5	20.0	6.2	1.5	0.9	13.7	4.6	1.4
<i>Castanea sativa</i>	122	32	2,546	624	529	4.5	19.5	8.0	2.0	3.2	17.2	6.0	2.0
Other broadleaves	302	32	2,886	631	532	4.5	18.5	8.2	2.0	2.3	13.7	6.6	2.0

Table S5. Characteristics of the sample trees used in the development of the crown diameter equations [2].

Species /groups	Sample size	Density (N.ha ⁻¹)				Diameter at breast height (cm)				Crown diameter (m)			
		Min	Max	Mean	St.dev.	Min	Max	Mean	St.dev.	Min	Max	Mean	St.dev.
<i>Pinus pinaster</i>	38,311	5	4,916	554	497	7.5	114.6	26.6	11.4	0.2	16.0	4.2	1.8
<i>Pinus pinea</i>	9,147	5	3,965	386	398	7.5	130.5	27.5	12.7	0.9	23.6	5.1	2.3
<i>Pinus halepensis</i>	35,194	5	4,676	439	400	7.5	102.8	21.5	8.6	0.5	16.2	4.3	1.5
<i>Pinus sylvestris</i>	27,961	5	5,317	759	589	7.5	128.3	24.0	11.0	0.5	15.2	4.4	1.7
Other conifers	35,542	5	5,217	593	527	7.5	174.0	26.6	14.2	0.5	23.6	4.4	2.0
Eucalypts	9,359	5	3,151	661	517	7.5	136.5	21.4	13.1	0.4	22.7	3.8	2.2
<i>Quercus suber</i>	8,715	5	3,070	352	418	7.5	149.6	34.3	17.1	0.8	22.9	6.2	3.2
<i>Quercus ilex</i>	38,424	5	4,576	391	518	7.5	152.2	27.7	17.7	0.5	24.9	5.5	3.0
<i>Quercus pyrenaica</i>	11,660	5	4,170	681	644	7.5	172.4	23.8	15.8	0.5	40.7	4.7	2.5
Other oaks	19,904	5	4,576	584	526	7.5	203.8	29.0	19.2	0.3	23.0	5.8	3.1
<i>Castanea sativa</i>	4,563	5	3,947	649	602	7.5	222.9	35.8	28.1	0.4	21.5	6.6	3.1
Other broadleaves	12,336	5	4,870	622	534	7.5	176.7	33.1	18.6	0.4	25.4	6.9	3.4

Table S6. Parameter estimates and coefficient of determination for the species or groups of species obtained fitting equation 2.

Species/groups	Sample size	a ₀	a ₁	R ²
<i>Pinus pinaster</i>	4,382	0.589	0.051	0.377
<i>Pinus pinea</i>	1,273	0.626	0.024	0.416
<i>Pinus halepensis</i>	5,662	0.455	0.059	0.588
<i>Pinus sylvestris</i>	4,657	0.451	0.090	0.489
Other conifers	4,956	0.369	0.061	0.556
Eucalypts	1,263	0.662	0.039	0.258
<i>Quercus suber</i>	46	0.490	0.014	0.874
<i>Quercus ilex</i> s.l.	621	0.478	0.064	0.724
<i>Quercus pyrenaica</i>	1,204	0.379	0.034	0.691
Other oaks	1,431	0.384	0.026	0.724
<i>Castanea sativa</i>	122	0.357	0.027	0.798
Other broadleaves	302	0.267	0.026	0.742

Table S7. Parameter estimates and coefficient of determination for the species or groups of species obtained fitting equation 4.

Species/groups	Sample size	b ₀	b ₁	b ₂	R ²
<i>Pinus pinaster</i>	38,311	0.225	0.851	0.078	0.725
<i>Pinus pinea</i>	9,147	0.277	0.859	0.043	0.808
<i>Pinus halepensis</i>	35,194	0.421	0.731	0.052	0.675
<i>Pinus sylvestris</i>	27,961	0.527	0.650	0.047	0.627
Other conifers	35,542	0.416	0.705	0.035	0.649
Eucalypts	9,359	0.256	0.843	0.078	0.719
<i>Quercus suber</i>	8,715	0.362	0.758	0.088	0.700
<i>Quercus ilex</i>	38,424	0.579	0.640	0.078	0.742
<i>Quercus pyrenaica</i>	11,660	0.608	0.638	0.039	0.629
Other oaks	19,904	0.679	0.634	0.036	0.651
<i>Castanea sativa</i>	4,563	1.236	0.455	0.060	0.592
Other broadleaves	12,336	0.585	0.690	0.051	0.644

Table S8. Correspondence among forest types (FTs) and European Forest Types (EFTs).

FTs codes	FTs	EFTs–Category level ²	EFTs–Type level ²
c.T.Rpx	Closed riparian forests	12. Floodplain forest	12.1 Riparian forest
c.T.Fa	Closed <i>Fagus sylvatica</i> forests	6. Beech forest 7. Mountainous beech forest	6.2 Atlantic and subatlantic lowland beech forest 7.1 South western European mountainous beech forest
T.Qf	<i>Quercus faginea</i> forests	8. Thermophilous deciduous forest	8.4 Portuguese oak and Mirbeck's oak Iberian forest
T.Az	<i>Quercus ilex</i> forests	9. Broadleaved evergreen forest	9.1 Mediterranean evergreen oak forest
o.M.Az	Open <i>Quercus ilex</i> forests with low understory	9. Broadleaved evergreen forest	9.1 Mediterranean evergreen oak forest
T.Qr	<i>Quercus robur</i> forests	4. Acidophilous oak and oak-birch forest	4.1 Acidophilous oakwood
T.Qp	<i>Quercus pyrenaica</i> forests	8. Thermophilous deciduous forest	8.3 Pyrenean oak forest
T.Qx	Other deciduous oaks forests	nc	
c.T.Ct	Closed <i>Castanea sativa</i> forests	8. Thermophilous deciduous forest	8.7 Chestnut forest
M.Sb	<i>Quercus suber</i> forests with understory	9. Broadleaved evergreen forest	9.1 Mediterranean evergreen oak forest
T.Rx	Other conifer forests	nc	
T.Py	<i>Pinus sylvestris</i> forests	10. Coniferous forests of the Mediterranean, Anatolian and Macaronesian regions	10.4 Mediterranean and Anatolian Scots pine forest
o.M.Pm	Open <i>Pinus pinea</i> forests with understory	10. Coniferous forests of the Mediterranean, Anatolian and Macaronesian regions	10.1 Mediterranean pine forest
o.M.Px,Py	Open <i>Pinus sylvestris</i> and other pines forests with understory	nc	
T.Px	Other pines forests	nc	
c.M.Pa	Closed <i>Pinus halepensis</i> forests with understory	10. Coniferous forests of the Mediterranean, Anatolian and Macaronesian regions	10.1 Mediterranean pine forest
M.Pb	<i>Pinus pinaster</i> forests with understory	2. Hemiboreal and nemoral coniferous and mixed broadleaved-coniferous forest	2.7 Atlantic Maritime pine forest 10.1 Mediterranean pine forest

		10. Coniferous forests of the Mediterranean, Anatolian and Macaronesian regions	
M.Ec	<i>Eucalyptus</i> forests with understory	14. Introduced tree species forest	
T.Pb	<i>Pinus pinaster</i> forests	2. Hemiboreal and nemoral coniferous and mixed broadleaved-coniferous forest 10. Coniferous forests of the Mediterranean, Anatolian and Macaronesian regions	2.7 Atlantic Maritime pine forest 10.1 Mediterranean pine forest
o.M.mix	Open forests of pines, eucalypts or other species	nc	
S.280	Xerophyllous shrubs with evergreen oaks	nc	
c.S.110	Dense xerophyllous shrubs with various tree species	nc	
S.220	<i>Cistus</i> with <i>Quercus ilex</i>	nc	
S.250	Dense mediterranean shrubs with <i>Pinus halepensis</i>	nc	
c.S.210	Dense <i>Ericaceae</i> shrubs with pines	nc	
S.230	<i>Cytisus</i> dominated shrubs with various tree species	nc	
c.S.240	Dense <i>Ulex</i> shrubs with pine or eucalypts	nc	
T.Ax	Invasive species forests	14. Introduced tree species forest	

² nc: not categorized



Figure S1. Frequency distribution of latitude classes gradient for of the plots of each forest type (bars) in comparison with the average for all plots (line) total values. Latitude values are presented in 16 classes, with 0.5° each, starting at 36° until 44°.

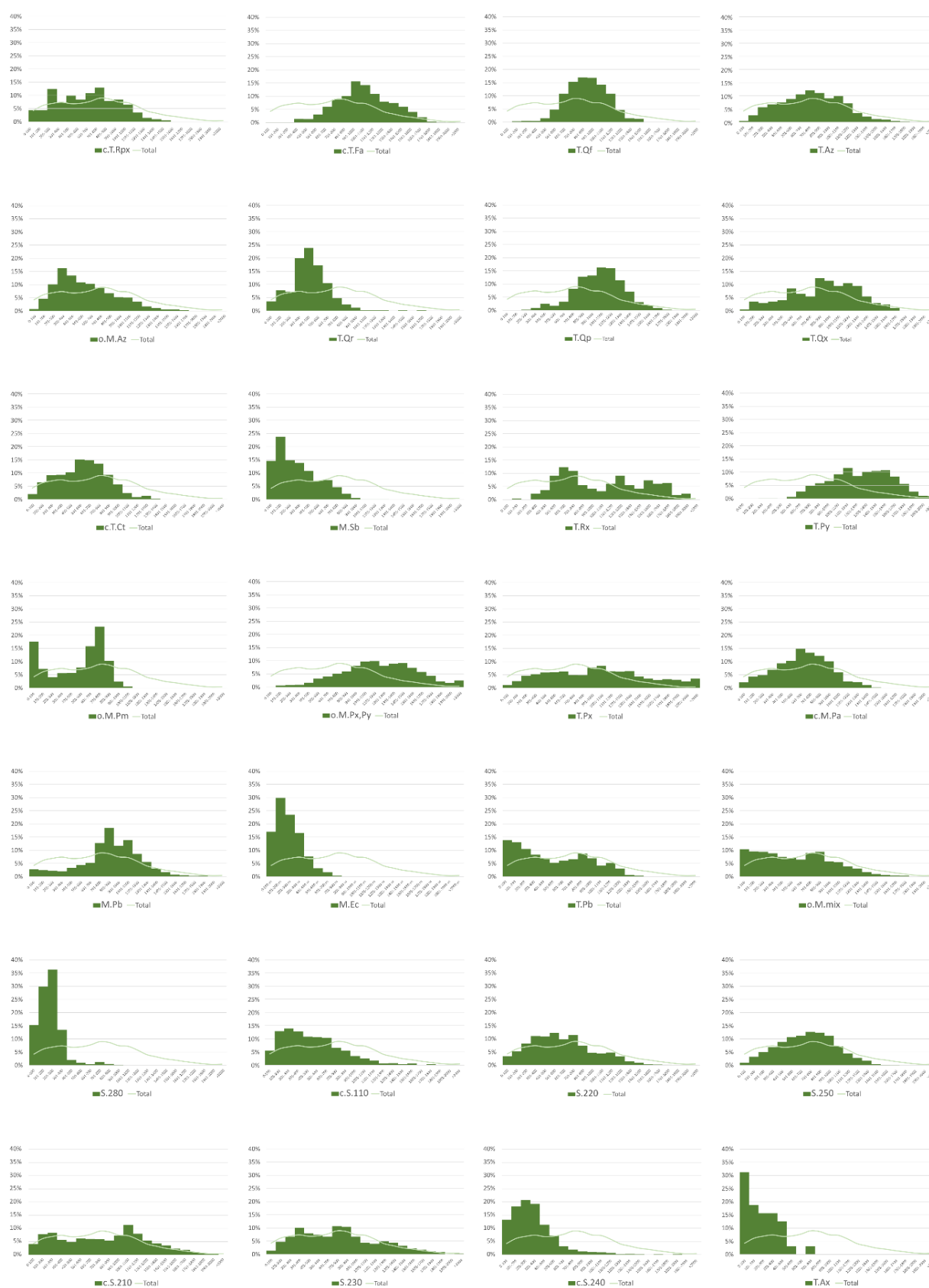


Figure S2. Frequency distribution of elevation classes gradient of the plots of each forest type (bars) in comparison with the average for all plots (line) total values. Elevation values are presented in 21 classes, each with 100 m interval, being the upper one with > 2000 m.

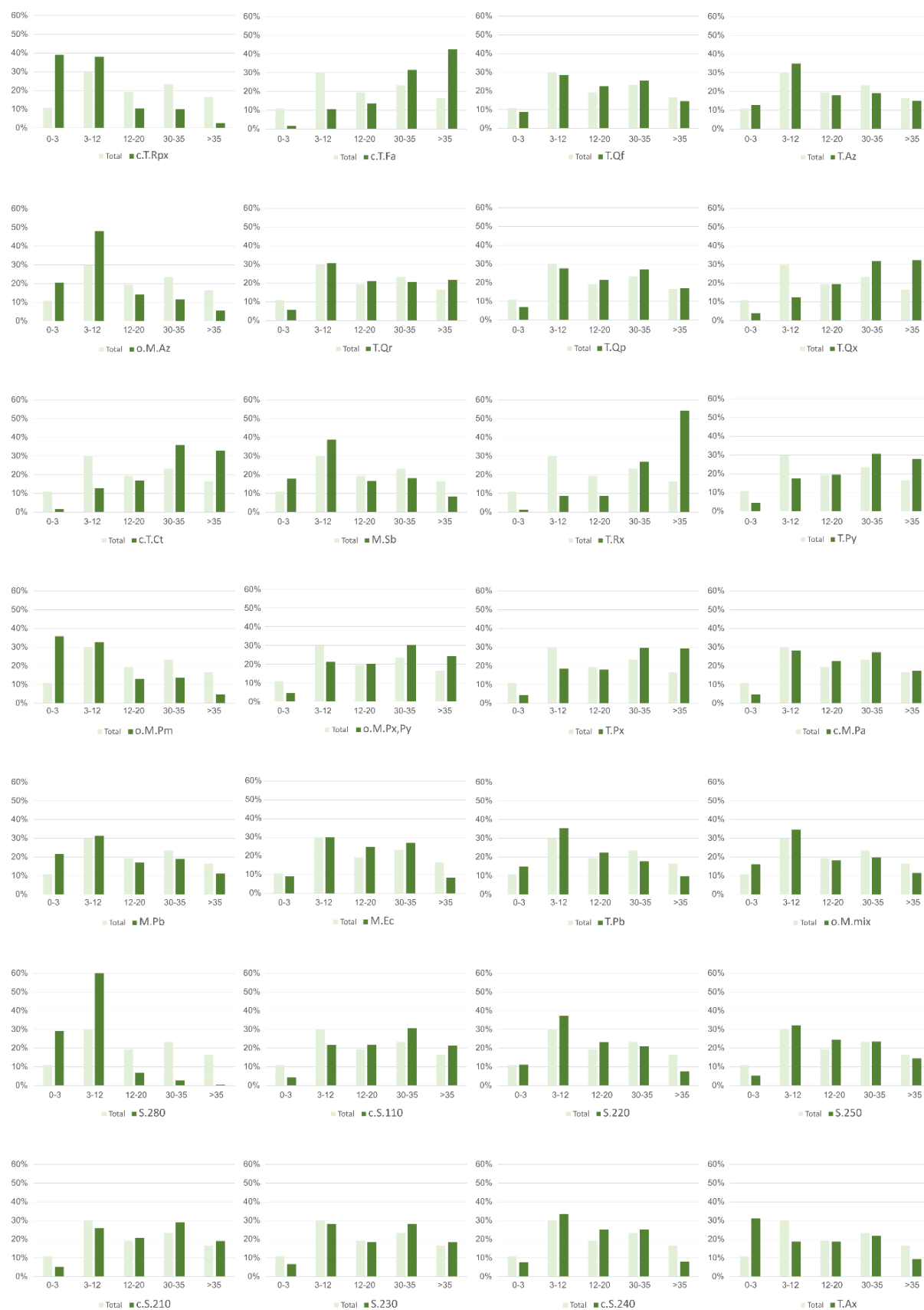


Figure S3. Frequency distribution of slope position classes of the plots of each forest type (dark colour bars) in comparison with the average for all plots (light colour bars). Slope values are presented in five classes of percentage (0–3; 3–12; 12–20; 20–35; > 35).

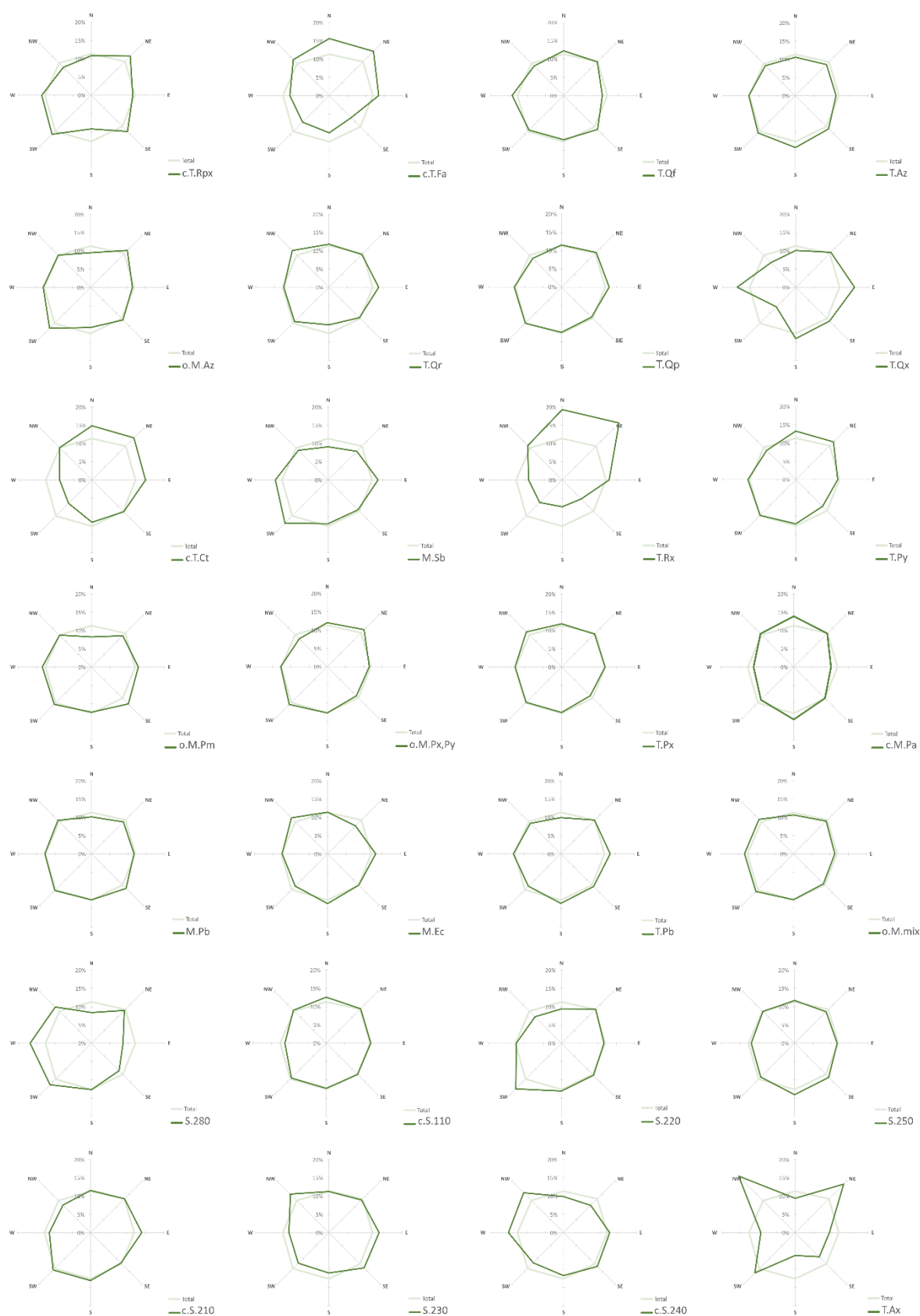


Figure S4. Wind rose representation of the frequency distribution of slope aspect classes of the plots of each forest type (dark colour line) in comparison with the average for all plots (light colour lines). Slope aspect values are presented in eight classes with 45° each, facing north (N), northeast (NE), east (E), southeast (SE), south (S), southwest (SW), west (W) and northwest (NW).

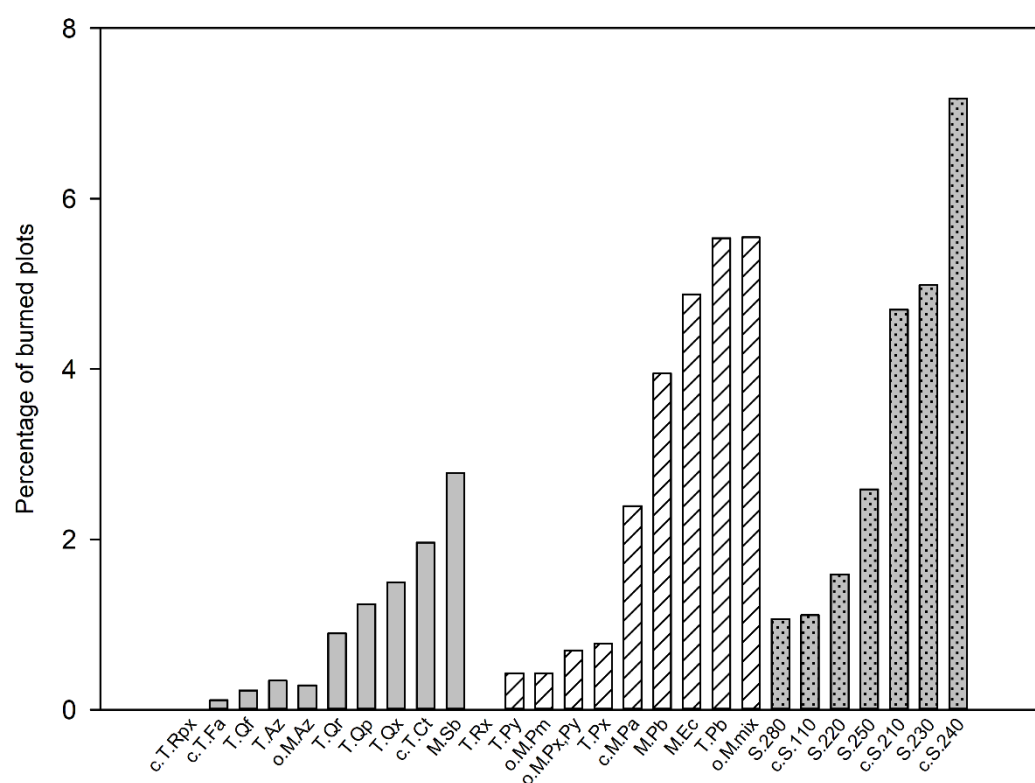


Figure S5. Percentage of burned plots in each forest type. The forest types are organized in three groups: (i) first related with oaks (evergreen and deciduous broadleaves) and other broadleaves (grey colour), (ii) second with pines and eucalypts (white colour with lines pattern), (iii) third dominated by shrubs with other species (grey colour with dots). Within these groups the forest types are organized by increasing percentage of burned plots.