

Supplementary Information for “Wood density variation in European forest species: drivers and implications for multiscale biomass and carbon assessment in France”

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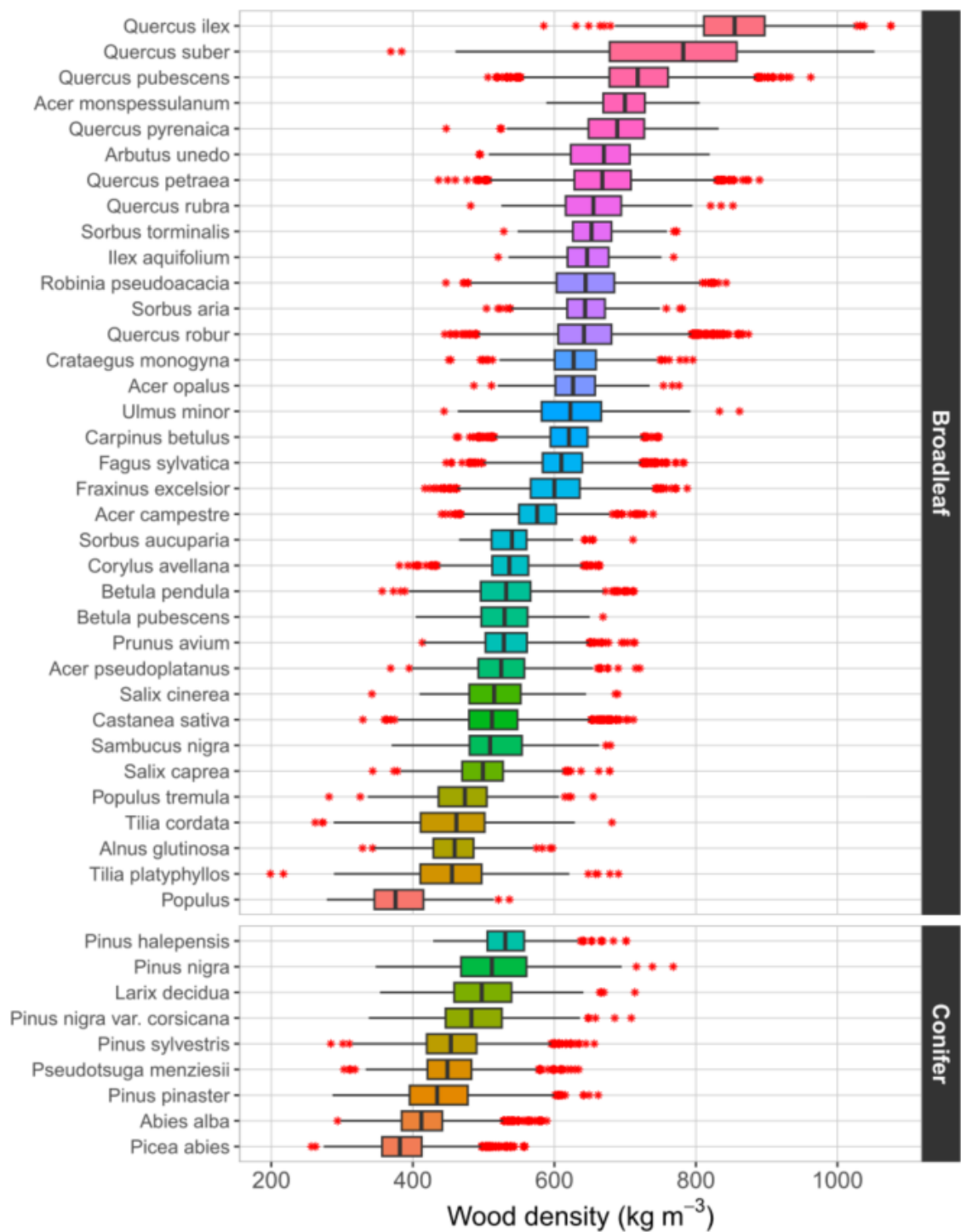
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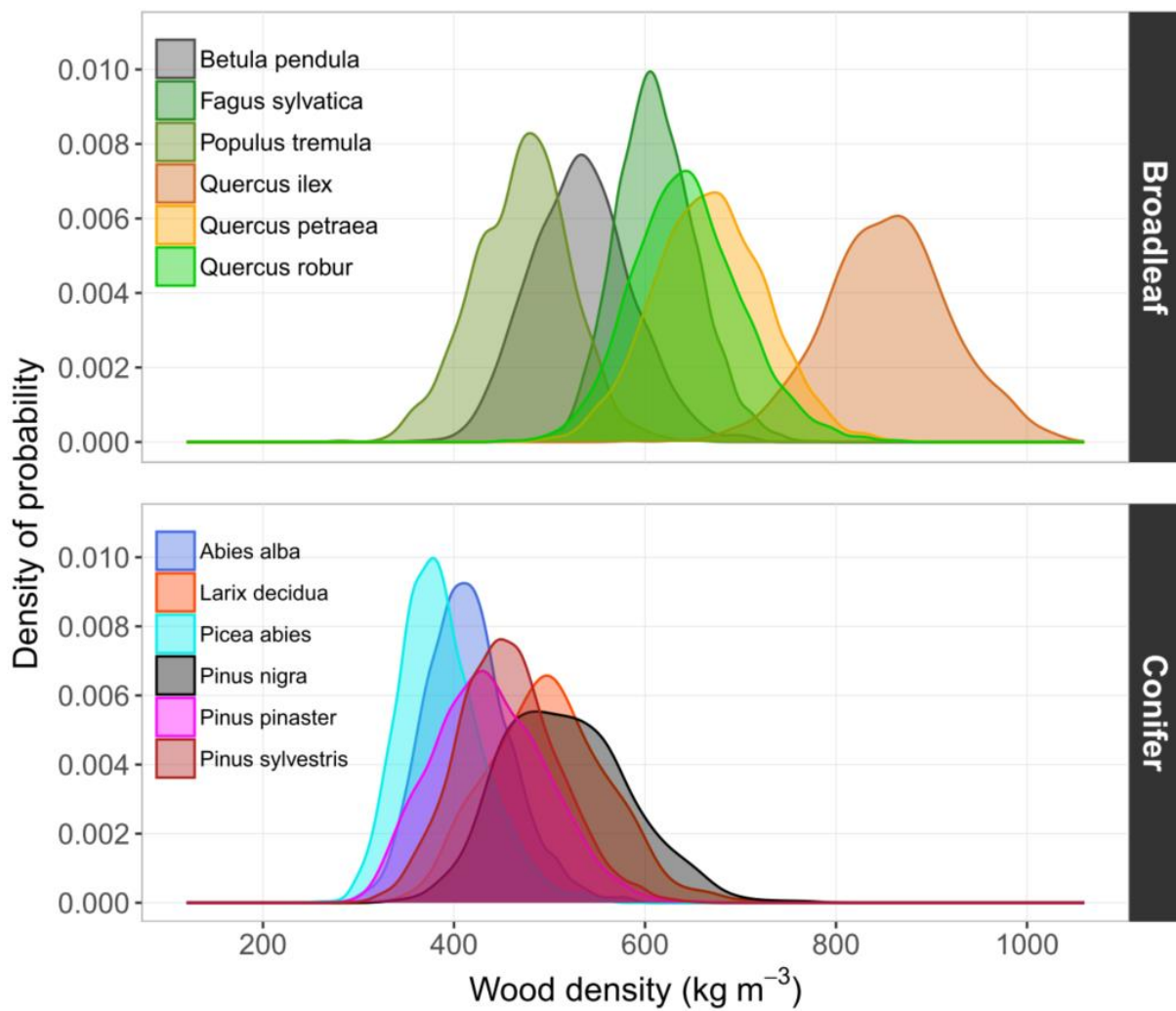
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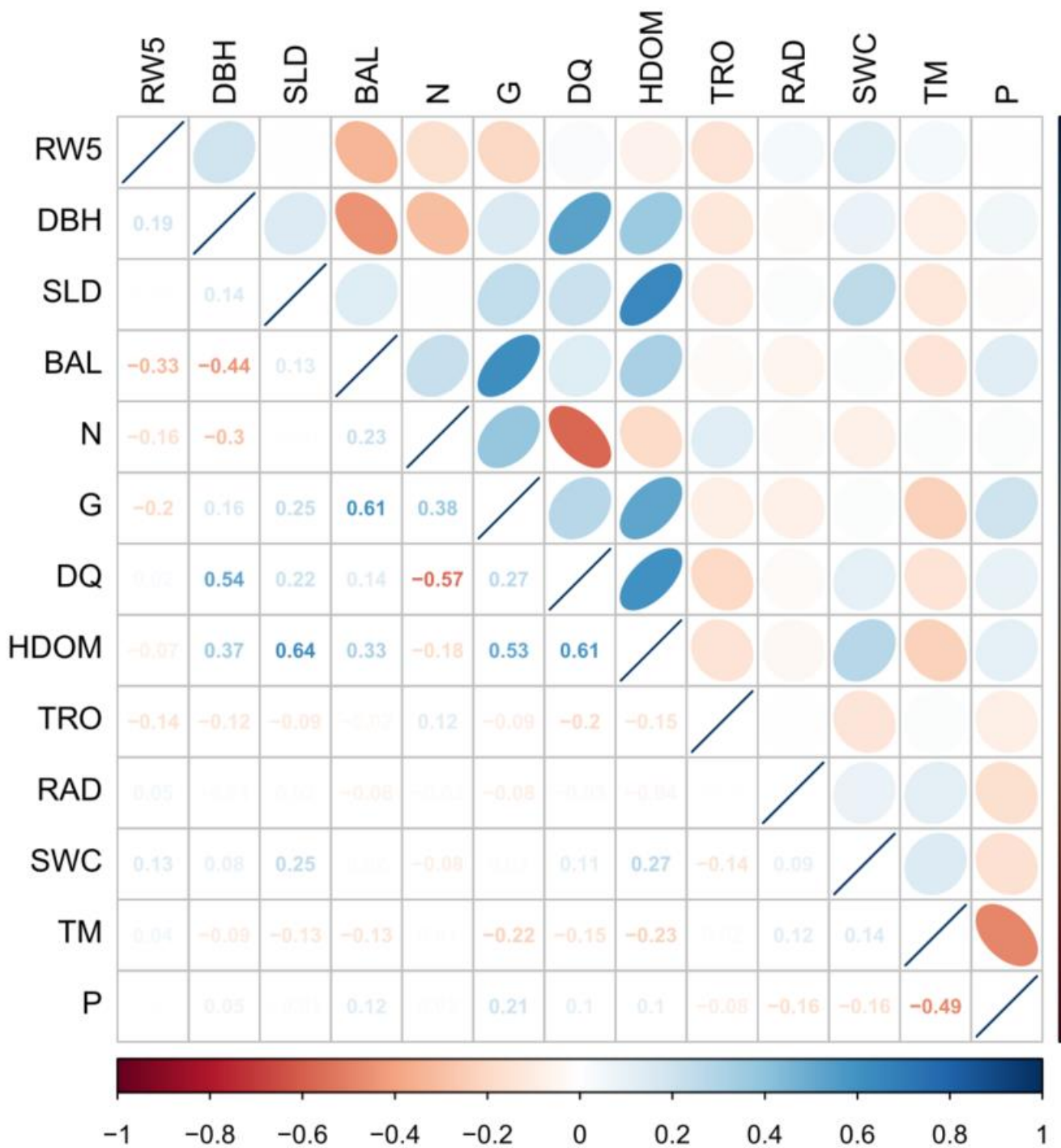
Supplementary Figures



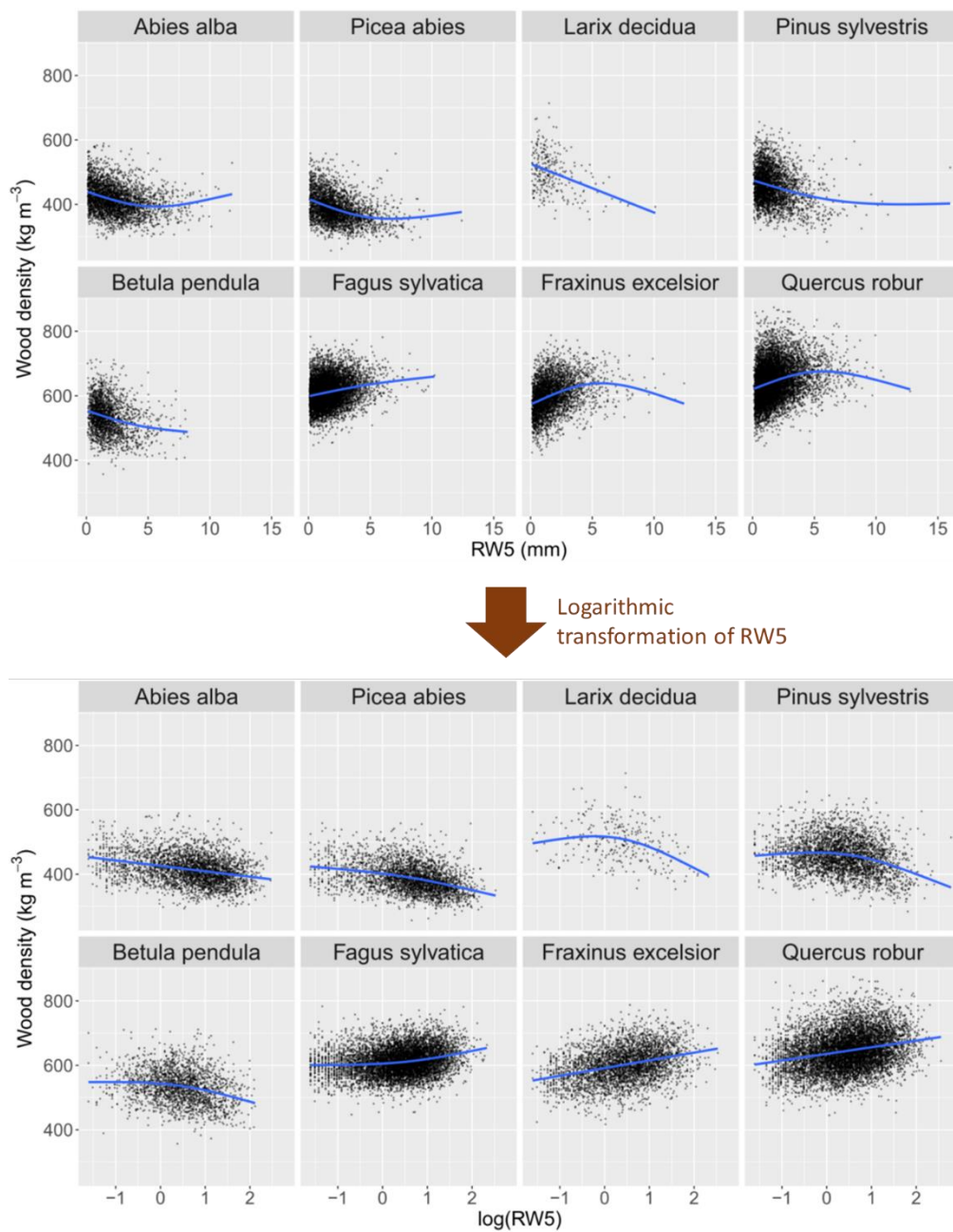
Supplementary Figure S1: Boxplots of wood density by species. The 44 species present in the subset of XyloDensMap data selected for wood density modelling are represented. Species are sorted by decreasing order of average wood density, with a distinction between broadleaf and conifer species.



20 **Supplementary Figure S2: Distribution of wood density values by species in the *XyloDensMap* data selected for wood density modelling. Results are shown for a subset of 6 conifer and 6 broadleaf species.**

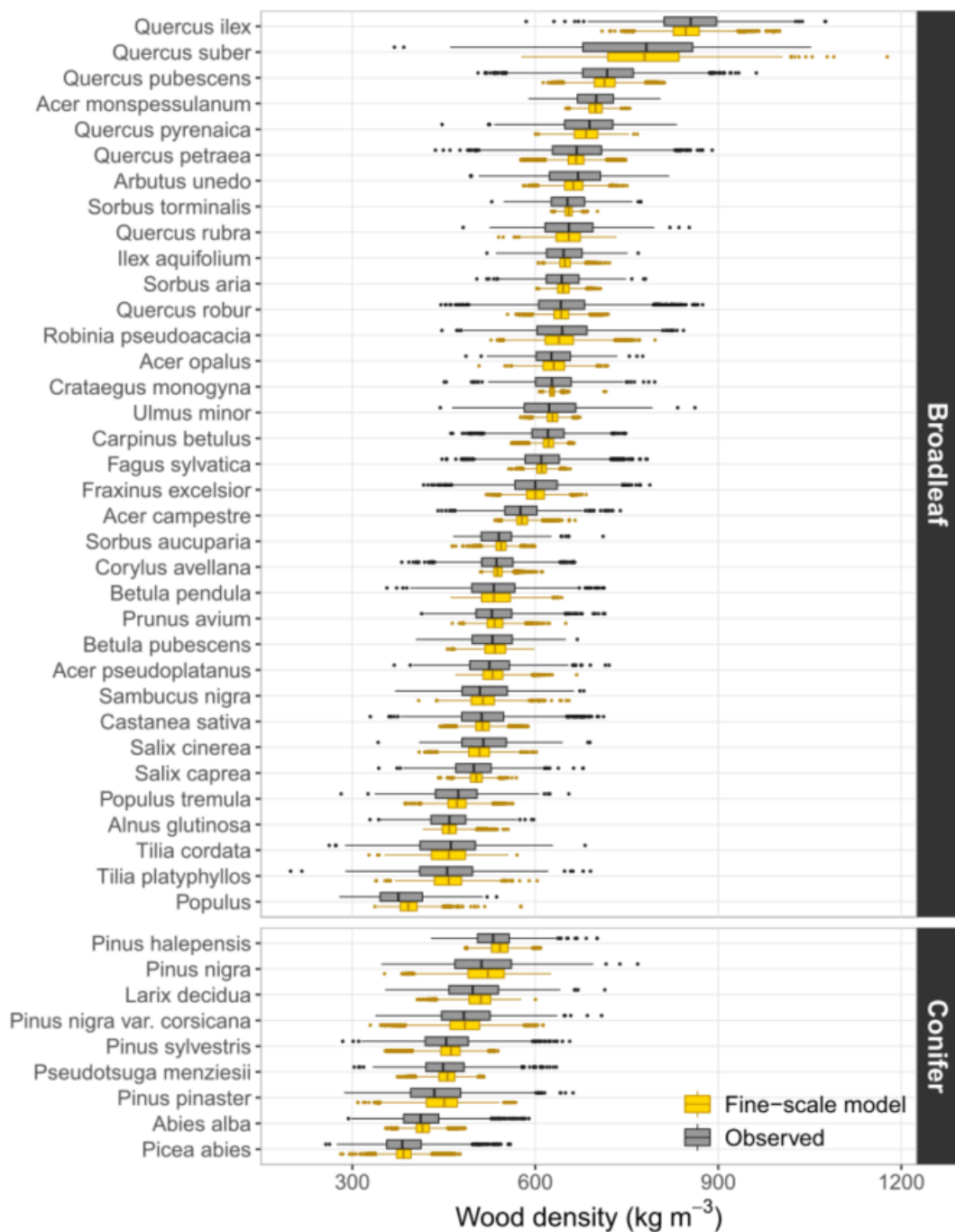


Supplementary Figure S3: Correlation matrix between the 13 continuous or discrete variables considered for modelling wood density.



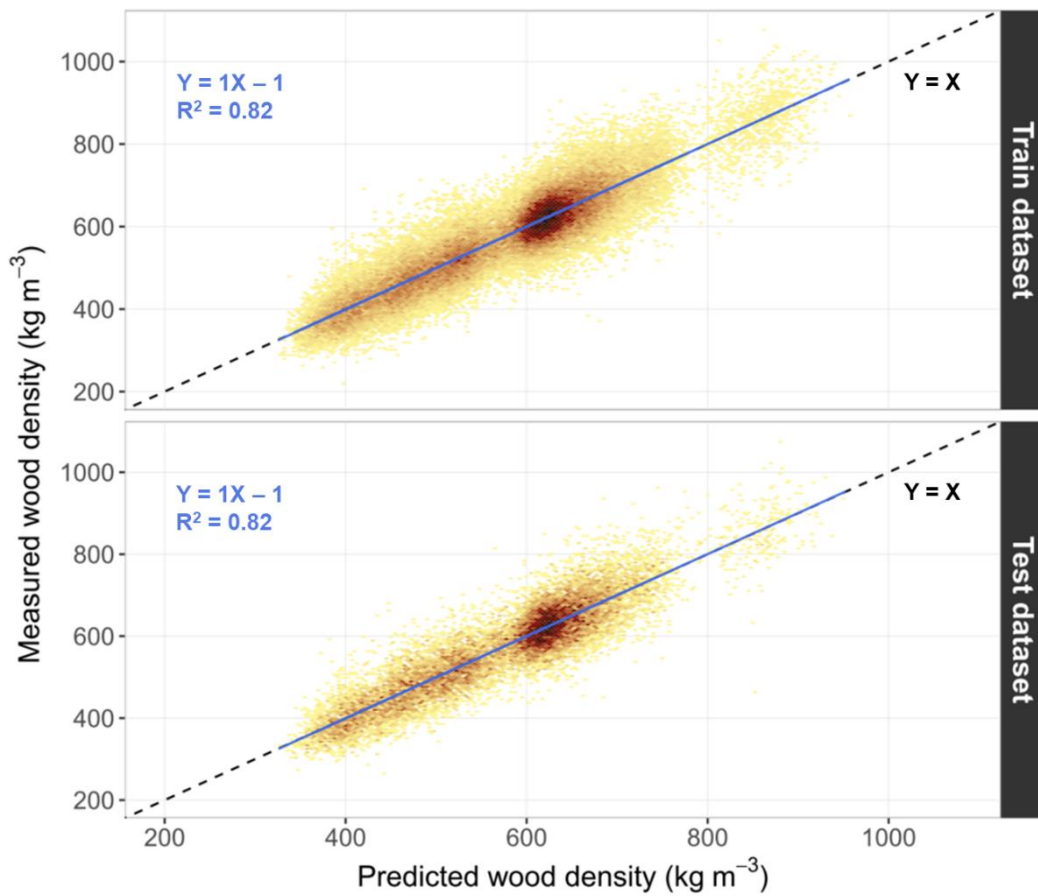
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Supplementary Figure S4: Relationship between wood density and the average width of the last five rings (RW5) in the *XyloDensMap* data selected for modelling. The relationship is shown for a subset of 4 conifer and 4 broadleaf species. The logarithmic transformation of RW5 generally helps having a more centred distribution and a more linear relationship, which varied between species.



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Supplementary Figure S5: Wood density values predicted on the French NFI dataset and values observed in the *XyloDensMap* data selected for modelling. Observed values correspond to measurements on wood increment cores, while predicted values were obtained from the “NFI-based model” developed on these measurements. Results are shown for the 44 species considered for modelling.



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Supplementary Figure S6: Measured vs. predicted values of wood density on train and test, using random forest models instead of a linear model (same input variables as the “NFI-based model”). Colour depends on the number of points (the darker the colour, the higher the number of points). Full blue line: OLS regression line between predicted and measured values, dashed black line: reference $Y = X$.

Supplementary Table S1: Overview of the 19 candidate variables considered for wood density modelling, including details on the calculation method for each variable.

Type of variable	Variable	Unit	Signification	Calculation
Species identity	Botanical class	-	Tree botanical class (broadleaf or conifer)	Determined by NFI field crews for each tree recorded during the inventory
	Genus	-	Tree genus	Determined by NFI field crews for each tree recorded during the inventory
	Species	-	Tree species	Determined by NFI field crews for each tree recorded during the inventory
Tree dimensions	RW5	mm	Average width of the last five tree rings	Estimated for each tree of the plot from field measurements of the width of the last five growth rings (excluding the current year's forming ring) using a binocular on wood increment cores extracted at breast height
	DBH	cm	Tree diameter at breast height	Calculated for each tree of the plot from the circumference at breast height (CBH) measured for each tree inventoried in the field by the French NFI, using a flexible diameter tape: $DBH_i = \frac{CBH_i}{\pi}$, where DBH_i is the diameter at breast height of the i^{th} tree and CBH_i its circumference
	SLD	-	Tree slenderness, as estimated by the ratio between the tree height (in m) and the square root of the diameter at breast height (in cm)	Calculated for each tree of the plot as the ration between tree height and the square root of its diameter at breast height (Vallet et al., 2006): $SLD_i = \frac{H_i}{\sqrt{DBH_i}}$, where SLD_i is the slenderness of the i^{th} tree, H_i its total height as measured in the field, and DBH_i its diameter at breast height
	BAL	m ²	Competition index calculated as the sum of the basal areas of all trees with a diameter at breast height (DBH) greater than that of the subject tree	Calculated for each tree in the plot by summing the basal areas of all trees with a diameter at breast height (DBH) greater than that of the subject tree (Wykoff, 1983): $BAL_i = \sum (g_{DBH > DBH_i} \times W_{DBH > DBH_i})$, where BAL is the competition index calculated for the i^{th} tree, and g and W are the basal areas and statistical weights of trees in the sampling plot with a DBH greater than that of the i^{th} tree
Stand attributes	N	trees ha ⁻¹	Number of trees per hectare in the stand	Calculated from NFI data by summing the statistical weights (variable 'W' in French NFI data) of all trees inventoried within the plot
	G	m ² ha ⁻¹	Basal area per hectare of the stand	Calculated from NFI data by summing the products of each tree's basal area and its corresponding statistical weight across all trees inventoried within the plot
	DQ	cm	Quadratic mean diameter of the stand	Calculated from NFI data according to the following formula: $DQ = \sqrt{\frac{\sum (W_i \times DBH_i^2)}{N}}$, where W_i and DBH_i are the statistical weight and diameter at breast height of the i^{th} tree on the plot, and N is the number of trees per hectare (Curtis and Marshall, 2000)
	HDOM	m	Dominant height of the stand (mean height of the 100 tallest trees per hectare)	Calculated from NFI data using tree heights measured on field plots and the statistical weight (W) assigned to each tree. For each plot, each tree is replicated according to its weight W; then, the heights of the 100 tallest trees in the resulting sample are extracted and averaged
	VSTR	-	Vertical structure of the stand	Estimated from various data collected on forest field plots by NFI field crews, including tree origin, crown exposure index, tree height, and basal area. It comprises four classes: regular forest, irregular forest, coppice, and forest–coppice mix
	COMP	-	Forest composition type	Extracted from the “BD Forêt” map”, an open access map based on aerial photograph analyses that classifies forest

			as estimated from the French “BD Forêt” map		cover into 32 forest types
Site characteristics	TRO	-	Trophic index	level	Estimated from indicator plant species recorded during the floristic survey at the NFI field plot; this index aims to indicate the overall nutrient richness of the soil
	RAD	-	Solar index	radiation	Estimated by the French NFI for each field plot using reference tables, based on latitude, slope, aspect, and the opposing topographic mask of the plot.
	SWC	mm	Soil capacity	water	Estimated by the French NFI using coarse fragment content, the depth of the first two soil horizons, and a texture-based coefficient for each horizon
	BSR	-	Biogeographical subregion		Defined by the French NFI as “sufficiently large geographical areas within which the combination of values taken by the factors determining forest production or the distribution of forest habitats is original” (Cavaignac, 2009, https://inventaire-forestier.ign.fr/spip.php?rubrique267)
Climate conditions	TM	°C	Mean temperature	annual	Assigned to each forest plot based on the spatialised climatic normal (over the 30-year period from 1991 to 2020) calculated at a one-kilometer resolution by Météo-France using the AURELHY model (Canellas et al., 2014)
	P	mm	Total precipitation	annual	Assigned to each forest plot based on the spatialised climatic normal (over the 30-year period from 1991 to 2020) calculated at a one-kilometer resolution by Météo-France using the AURELHY model (Canellas et al., 2014)

45 References

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60 **Supplementary Table S2: List of the 44 species present in the *XyloDensMap* data subset selected for wood density modelling, with for each the corresponding botanical class and wood structure, the number of wood density records in total (n), for model training (n train) and for model testing (n test), and the proportion it represents in the growing stock in mainland France.**

Botanical class	Wood structure	Species	n	n train	n test	Proportion in growing stock (%)
Broadleaf	Ring-porous	Quercus robur	7 879	6 304	1 575	12.51
		Quercus petraea	6 731	5 385	1 346	11.42
		Quercus pubescens	4 202	3 362	840	4.5
		Fraxinus excelsior	3 516	2 813	703	3.43
		Castanea sativa	3 453	2 763	690	5.79
		Robinia pseudoacacia	1 043	835	208	1.26
		Ulmus minor	561	449	112	0.17
		Quercus pyrenaica	266	213	53	0.29
		Quercus rubra	261	209	52	0.31
	Semi ring-porous	Fagus sylvatica	7 256	5 805	1 451	11.57
		Corylus avellana	1 317	1 054	263	0.32
		Prunus avium	1 308	1 047	261	0.9
		Quercus ilex	1 091	873	218	1.7
		Populus tremula	1 025	820	205	1.1
		Salix caprea	878	703	175	0.32
		Sorbus torminalis	722	578	144	0.2
		Sorbus aria	608	487	121	0.21
		Ilex aquifolium	390	312	78	0.09
		Salix cinerea	235	188	47	0.12
		Arbutus unedo	218	175	43	0.17
		Sorbus aucuparia	183	147	36	0.07
		Sambucus nigra	162	130	32	0.02
		Quercus suber	159	128	31	0.3
	Diffuse-porous	Carpinus betulus	6 006	4 805	1 201	4.79
		Betula pendula	1 980	1 584	396	1.44
		Acer campestre	1 645	1 316	329	0.93
		Acer pseudoplatanus	1 251	1 001	250	1.16
		Crataegus monogyna	998	799	199	0.18
		Alnus glutinosa	810	648	162	1.2
		Populus	597	478	119	1.06
		Tilia cordata	443	355	88	0.42
		Tilia platyphyllos	382	306	76	0.4
		Betula pubescens	364	292	72	0.31
		Acer monspessulanum	241	193	48	0.11
		Acer opalus	195	156	39	0.15
Conifer	Conifer	Pinus sylvestris	3 273	2 619	654	4.68
		Abies alba	3 202	2 562	640	6.47
		Picea abies	3 003	2 403	600	4.97
		Pinus pinaster	2 466	1 973	493	4.83
		Pseudotsuga menziesii	1 833	1 467	366	3.54
		Pinus nigra	600	480	120	1.28
		Pinus halepensis	562	450	112	0.77
		Pinus nigra var. corsicana	553	443	110	1.01
		Larix decidua	281	225	56	0.68
Total		74 149	59 335	14 814	97.2	

Supplementary Table S3: Correlation coefficients between wood density and the candidate variables for the 44 species present in the subset of *XyloDensMap* data selected for wood density modelling. For variables relative to ontogenetic tree traits (RW5, DBH, SLD and BAL), the logarithm instead of the raw value was used.

Botanical class	Wood structure	Species	RW5	DBH	SLD	BAL	N	G	DQ	HDOM	TRO	RAD	SWC	TM	P
Broadleaf	Ring-porous	<i>Castanea sativa</i>	0.05	-0.08	-0.19	-0.03	-0.07	-0.12	-0.04	-0.18	-0.08	0.07	-0.04	0.19	-0.04
		<i>Fraxinus excelsior</i>	0.33	0.08	-0.18	-0.27	-0.05	-0.21	-0.13	-0.31	0.01	0.02	-0.01	0.12	-0.02
		<i>Quercus petraea</i>	0.26	0.02	-0.09	-0.16	0.02	-0.11	-0.08	-0.18	0.09	0	-0.06	0.11	-0.05
		<i>Quercus pubescens</i>	0.3	0.28	0.05	-0.22	-0.06	-0.04	0.05	0.02	-0.01	0	0.06	0.17	-0.04
		<i>Quercus pyrenaica</i>	0.33	0.31	0.07	-0.31	-0.09	-0.13	0.04	-0.07	0.13	-0.05	0.14	0.02	0.06
		<i>Quercus robur</i>	0.25	0.04	-0.07	-0.1	-0.04	-0.08	-0.01	-0.14	-0.02	0	-0.02	0.2	0.03
		<i>Quercus rubra</i>	0.32	0.36	-0.13	-0.24	-0.14	-0.06	0.15	0.11	-0.14	0.04	0.19	0.09	0.02
		<i>Robinia pseudoacacia</i>	0.33	0.37	0.03	-0.31	-0.14	-0.1	0.06	-0.06	-0.02	0.02	0	0.13	0.09
		<i>Ulmus minor</i>	0.07	0	-0.06	-0.06	0.06	-0.05	-0.12	-0.19	0.07	0.03	-0.04	0.09	-0.01
	Semi ring-porous	<i>Arbutus unedo</i>	0.23	0.24	0.09	-0.03	0.09	0.03	-0.07	-0.03	-0.07	-0.06	0.09	0.07	-0.1
		<i>Corylus avellana</i>	0.06	0.23	-0.11	-0.05	0.03	0	-0.02	-0.05	-0.05	0.03	0.06	0.05	0.02
		<i>Fagus sylvatica</i>	0.19	-0.01	-0.07	-0.08	0.01	-0.12	-0.1	-0.12	0.08	0.01	0	0.08	-0.04
		<i>Ilex aquifolium</i>	-0.03	0.19	-0.12	-0.11	0.01	-0.08	-0.09	-0.07	0.02	0.03	-0.06	-0.07	-0.06
		<i>Populus tremula</i>	-0.06	0.29	-0.06	-0.11	-0.05	0.06	0.12	0.1	-0.07	0	-0.01	0.19	0.01
		<i>Prunus avium</i>	0.05	-0.11	-0.33	-0.1	-0.06	-0.15	-0.08	-0.29	0.04	0.07	-0.12	0.05	-0.08
		<i>Quercus ilex</i>	0.37	0.36	0	-0.11	0.04	0.08	0.08	0.01	-0.09	-0.04	0.06	-0.03	-0.09
		<i>Quercus suber</i>	-0.09	0.42	-0.1	-0.23	-0.05	0.02	0.19	-0.19	0.08	-0.01	-0.09	0.09	-0.17
		<i>Salix caprea</i>	0.03	-0.06	-0.14	-0.01	-0.02	-0.08	-0.03	-0.17	-0.01	-0.02	-0.11	0.07	0.04
		<i>Salix cinerea</i>	-0.05	-0.01	-0.13	-0.1	0.01	-0.06	-0.1	-0.17	-0.23	0.1	-0.03	0.2	0.07
		<i>Sambucus nigra</i>	0.26	0	0	-0.14	-0.21	-0.15	0.05	-0.08	-0.11	-0.18	0.11	-0.24	0.18
		<i>Sorbus aria</i>	0.17	0.07	-0.26	-0.19	-0.03	-0.11	-0.1	-0.23	-0.01	-0.06	-0.01	0.03	0.03
		<i>Sorbus aucuparia</i>	-0.04	-0.21	-0.14	-0.09	0.02	-0.12	-0.19	-0.14	0.03	0.04	-0.07	0.05	-0.05
		<i>Sorbus torminalis</i>	0.08	-0.06	-0.11	-0.06	-0.06	-0.09	-0.03	-0.07	-0.02	-0.04	0.02	0.06	-0.07
	Diffuse-porous	<i>Acer campestre</i>	-0.02	0.13	-0.17	-0.17	0.01	-0.07	-0.08	-0.17	0.11	-0.06	-0.03	0.05	0.02
		<i>Acer monspessulanum</i>	0.06	0.23	-0.22	-0.26	-0.15	-0.16	-0.02	-0.2	0.01	0.07	-0.13	0.01	0.04
		<i>Acer opalus</i>	0.03	0.14	-0.37	-0.26	-0.26	-0.25	-0.02	-0.28	0.05	0.06	-0.22	-0.07	-0.12
		<i>Acer pseudoplatanus</i>	-0.09	0.29	-0.22	-0.16	-0.02	0.02	0.04	-0.12	0.02	-0.06	-0.22	-0.19	0.19
		<i>Alnus glutinosa</i>	-0.07	0.18	-0.15	0.00	-0.02	0.1	0.1	-0.05	-0.1	-0.07	-0.03	0.18	0.09
		<i>Betula pendula</i>	-0.23	0.45	0	0.04	-0.09	0.22	0.3	0.27	0.02	-0.06	-0.02	0	0.05
		<i>Betula pubescens</i>	-0.12	0.41	0.02	-0.07	-0.06	0.11	0.14	0.15	-0.07	-0.05	-0.06	-0.03	0.05
		<i>Carpinus betulus</i>	-0.01	0.23	0.16	-0.07	0.03	0.01	0	0.03	0.09	0.02	-0.05	-0.01	-0.02
		<i>Crataegus monogyna</i>	0	0.02	-0.07	-0.03	-0.02	0.01	0.03	-0.03	0	0.04	-0.04	-0.04	0.02
		<i>Populus</i>	-0.25	-0.08	-0.17	0.05	0.08	0.07	-0.09	-0.1	-0.03	-0.05	-0.09	0.05	0.05
		<i>Tilia cordata</i>	-0.01	0.48	0.16	-0.29	0.01	-0.01	0.06	-0.09	0.05	0.01	-0.22	-0.06	0.07
		<i>Tilia platyphyllos</i>	-0.11	0.34	0	-0.19	-0.01	-0.03	0	-0.11	0.07	-0.05	-0.13	-0.01	0.02
Conifer	Conifer	<i>Abies alba</i>	-0.31	-0.15	-0.07	0.18	-0.09	0.03	0.09	0.09	-0.08	-0.04	-0.01	0.04	-0.02
		<i>Larix decidua</i>	-0.29	0.25	0.1	0.1	-0.11	0.18	0.28	0.23	0.06	-0.11	-0.19	-0.25	-0.11
		<i>Picea abies</i>	-0.37	-0.21	-0.07	0.2	0.02	-0.05	-0.06	0.01	0.09	-0.01	-0.1	0.07	0
		<i>Pinus halepensis</i>	-0.2	0.26	0.06	0.09	0.06	0.29	0.15	0.25	-0.15	0.07	0.02	0.07	0.04
		<i>Pinus nigra</i>	-0.25	0.47	0.38	-0.05	-0.02	0.3	0.36	0.49	0.01	-0.02	-0.04	0.02	-0.07
		<i>Pinus nigra</i> var. <i>corsicana</i>	-0.23	0.44	0.35	0.04	-0.03	0.25	0.27	0.48	-0.11	-0.18	-0.12	0.11	0.16
		<i>Pinus pinaster</i>	-0.44	0.56	0.44	0.05	-0.13	0.36	0.45	0.54	0.14	-0.09	0.08	-0.12	-0.01
		<i>Pinus sylvestris</i>	-0.21	0.28	0.26	0.02	-0.04	0.18	0.2	0.28	-0.05	0.02	0.04	0.19	-0.1
		<i>Pseudotsuga menziesii</i>	-0.07	0.18	0.26	0.08	-0.12	0.01	0.14	0.22	-0.06	0.02	0.11	0.29	-0.04

Supplementary Table S4: Results of the analysis of variance performed on the “taxonomic model” of wood density.

Variable type	Variable	Degree of freedom	Sum of squares	F value	p-value	Variance explained (%)
Tree identity	Botanical class	1	299090884	110821	<0.0001	40.1
	Genus	23	229712101	3701	<0.0001	30.8
	Species	19	56121292	1094	<0.0001	7.5
	Residuals	59 291	160018452	-	-	21.6

70 **Supplementary Table S5: Number of times variables are significant across the 44 species in the “NFI-based model” of wood density. For variables relative to tree dimensions (RW5, DBH, SLD, and BAL), a log-transformation was used.**

Variable	Broadleaf			Conifer	Total
	Ring-porous	Semi ring-porous	Diffuse-porous		
RW5	8	6	9	9	32
SLD	5	10	11	6	32
DBH	7	6	9	6	28
TM	7	6	4	7	24
SWC	6	4	5	6	21
TRO	4	4	5	5	18
DQ	5	3	3	2	13
P	4	6	2	1	13
BAL	2	1	4	5	12
G	2	3	1	6	12
RAD	1	4	2	2	9
N	2	1	1	2	6

Supplementary Table S6: Coefficients of the “NFI-based model” for the 44 species present in the subset of *XyloDensMap* data selected for wood density modelling. For variables relative to tree dimensions (RW5, DBH, SLD and BAL), a log-transformation was used. Significant parameters at the p-value threshold of 0.1 are symbolized by “*”.

Botanical class	Wood structure	Species	Intercept	RW5	DBH	SLD	BAL	N	G	DQ	TRO	RAD	SWC	TM	P
Broadleaf	Ring-porous	<i>Castanea sativa</i>	480.8*	4.1*	-6.2*	-36*	0.7	-0.007*	0.03	-0.23	-1.78*	0.245*	-0.07*	8.7*	-0.013*
		<i>Fraxinus excelsior</i>	574.1*	18.4*	4.8*	-23.2*	-3.5*	0.004	-0.37*	-0.55*	-0.09	-0.026	-0.022	4.9*	0.014*
		<i>Quercus petraea</i>	624.3*	26.5*	-3.6*	-16.8*	-2*	0.002	-0.02	-0.18*	2.53*	-0.033	-0.108*	6.7*	0.003
		<i>Quercus pubescens</i>	535.7*	21.5*	35.3*	-11.3*	0.5	0.002	-0.26*	-0.77*	1.14*	-0.042	-0.033	8.1*	0.008
		<i>Quercus pyrenaica</i>	596.7*	17.2*	27.6*	-0.3	-1.8	0.003	-0.71	0.1	4.44	-0.196	0.112	2	-0.009
		<i>Quercus robur</i>	529.9*	19*	2.1	-12.2*	0.1	-0.004*	0.04	-0.16*	0.05	0.02	-0.082*	9.4*	0.015*
		<i>Quercus rubra</i>	495.5	7.6	45.5*	3	4.7	0.005	-0.82	-0.2	-7.33*	-0.084	0.235*	4.8	-0.028
		<i>Robinia pseudoacacia</i>	409.9	19.6*	45.3*	-4.1	-4.5	0	-0.4	0.45	-0.14	0.166	-0.098*	8*	0.018*
		<i>Ulmus minor</i>	583.3*	5.7*	7.5	-8.1	-3.8	-0.003	0.35	-1.33*	2.7	0.101	-0.095*	4.5*	-0.015
	Semi ring-porous	<i>Arbutus unedo</i>	524.2	16.8*	78.8*	42.2*	9.4	0.001	-0.53	-1.26	-4.51*	0.129	0.148	-2.5	-0.026
		<i>Corylus avellana</i>	408.8	1	49.6*	-14.8*	3.3	0.003	-0.2	0.02	-1.31	0.132	0.049	1.6	0.001
		<i>Fagus sylvatica</i>	603.4*	12*	-1.7	-12.9*	1.5	0.001	-0.14*	-0.26*	1.26*	-0.017	0.001	2.2*	0.005*
		<i>Ilex aquifolium</i>	678.7*	-2.6	34*	-33.2*	-0.6	-0.009	0.13	-1.09	-0.33	-0.014	-0.047	-2.2	-0.017
		<i>Populus tremula</i>	278.1*	-14.2*	37.1*	-19.4*	2.7	0	-0.12	-0.39	-1.42	-0.002	-0.087*	11.1*	0.023*
		<i>Prunus avium</i>	617.2*	4	-7.9*	-52.9*	-1.5	0	-0.17	-0.14	0.93	0.205*	-0.079*	0.7	-0.012
		<i>Quercus ilex</i>	1003.9*	52.7*	21.8	-4.3	1.8	0.003	-0.16	-0.08	-3.2*	-0.133*	-0.086	-6*	-0.071*
		<i>Quercus suber</i>	515.7	-8.4	82*	-17.7	-30.4*	-0.003	2.38*	2.08*	-6.99	0.394*	-0.603*	3	-0.074*
		<i>Salix caprea</i>	468.7	2.7	-6.6	-31*	3.7	0.01*	-0.64*	0.6	0.58	-0.047	-0.112*	5.2*	0.022*
		<i>Salix cinerea</i>	455.1	-5.2	-4.9	-43.9*	-1.1	0.007	-0.84	-0.5	-7.74*	0.406	-0.094	10.3*	0.016
		<i>Sambucus nigra</i>	718.8*	19.6*	-15.5	1.8	-8.1	0.004	-0.3	1.64	1.91	-0.867*	0.137	-14.8*	0.052*
		<i>Sorbus aria</i>	675.7*	11.1*	7.9	-34.1*	-5.5	-0.002	0.34	-0.8	0.57	-0.087	-0.022	1.1	0.005
		<i>Sorbus aucuparia</i>	658.2*	-5.3	-12.8	-13.6	-1.9	-0.026	0.83	-3.23*	0.87	0.031	-0.104	1.9	-0.007
		<i>Sorbus torminalis</i>	720.4*	6.4	-9.5	-21.7*	0	-0.005	-0.04	-0.35	0.08	-0.056	0.012	1.1	-0.016
	Diffuse-porous	<i>Acer campestre</i>	539.8*	-6.9*	15.8*	-30.7*	-1.9	0	-0.01	-0.64	3.85*	-0.199*	0.012	3*	0.006
		<i>Acer monspessulanum</i>	640.2*	1.4	18.9	-28.9*	-1.8	-0.015	0.69	-2.12	2.34	0.175	-0.211	4.6	-0.008
		<i>Acer opalus</i>	757*	-3.1	26.6*	-55*	1.6	-0.03*	0.77	-3.73*	-0.74	0.018	-0.355*	-1	-0.026
		<i>Acer pseudoplatanus</i>	536.7*	-11.4*	29.7*	-46.3*	-0.2	0.003	-0.09	-0.44	0.28	-0.004	-0.114*	-2.1	0.012*
		<i>Alnus glutinosa</i>	379.2	-5.8*	22.7*	-28.7*	5.1*	-0.003	0.08	-0.61	-2.28*	-0.154	-0.015	6.5*	0.009
		<i>Betula pendula</i>	375.3	-15.1*	55*	-18.1*	6.4*	-0.006	0.19	-0.43	0.22	-0.067	-0.007	3.3*	0.002
		<i>Betula pubescens</i>	430.2	-13*	51.7*	9	7.5	0.001	-0.11	-0.35	-4.79*	-0.42	-0.073	0.9	-0.005
		<i>Carpinus betulus</i>	506.4*	-3.6*	26.6*	22.5*	3.8*	0.003	-0.16	-0.41*	1.26*	0.063	-0.03*	1	-0.008*
		<i>Crataegus monogyna</i>	639.4*	2.2	0.3	-16.2*	-6.5	0.003	0.29	0.66	0.35	0.059	-0.029	-0.5	-0.002
		<i>Populus</i>	470.6	-21.3*	-0.6	-64.5*	1.7	-0.001	0.34	-0.37	0.1	-0.267	-0.034	6.2*	0
		<i>Tilia cordata</i>	166.4*	-12.9*	63.7*	37.3*	5.6	0.016	-0.53	0.3	-4.82*	0.365*	-0.298*	4.5	0.02
		<i>Tilia platyphyllos</i>	286.9*	-23*	75.4*	-31.9*	15.9*	0.005	-0.91*	-1.63*	-0.64	-0.141	-0.221*	5.2	-0.012
Conifer	Conifer	<i>Abies alba</i>	415.2*	-17.2*	2	-4.7	3.6*	-0.01*	-0.16	0.13	-1.47*	-0.087*	-0.028	2.5*	0.003
		<i>Larix decidua</i>	506.9*	-18.4*	4.7	30*	-2.5	-0.01	0.11	0.57	-0.52	-0.023	-0.204*	-4.6*	-0.007
		<i>Picea abies</i>	381.8	-23*	3.5	-1.2	3.6*	-0.005	-0.32*	-0.39*	0.7	0.081	-0.072*	2.6*	-0.001
		<i>Pinus halepensis</i>	490.3	-11*	17.3*	-7.8	1.3	-0.013	1.23*	-0.14	-3.36*	0.146	0.059	0	0
		<i>Pinus nigra</i>	354.9	-18.4*	44.8*	54.4*	-3.1	-0.023*	0.76*	-0.87	1.61	-0.103	-0.171*	1.6	-0.016
		<i>Pinus nigra</i> var. <i>corsicana</i>	121.2*	-12.4*	55*	60.4*	7.4*	0.012	-0.73*	-0.24	-2.55*	-0.446*	-0.115*	14.3*	0.02*
		<i>Pinus pinaster</i>	251*	-23*	46.1*	28.5*	2.1	0.001	-0.25*	-0.01	0.75	-0.154	0.025	2.8*	0.011
		<i>Pinus sylvestris</i>	268.1*	-16.3*	28.3*	18.9*	3.6*	-0.004	0.12	0	0.61*	0.072	-0.053*	7.1*	-0.004
		<i>Pseudotsuga menziesii</i>	238.8*	-4.6*	25*	27.8*	8*	-0.007	-0.47*	-0.77*	-3.48*	0.114	0.06*	10.7*	0.006