European Forest Types: tree species matrix

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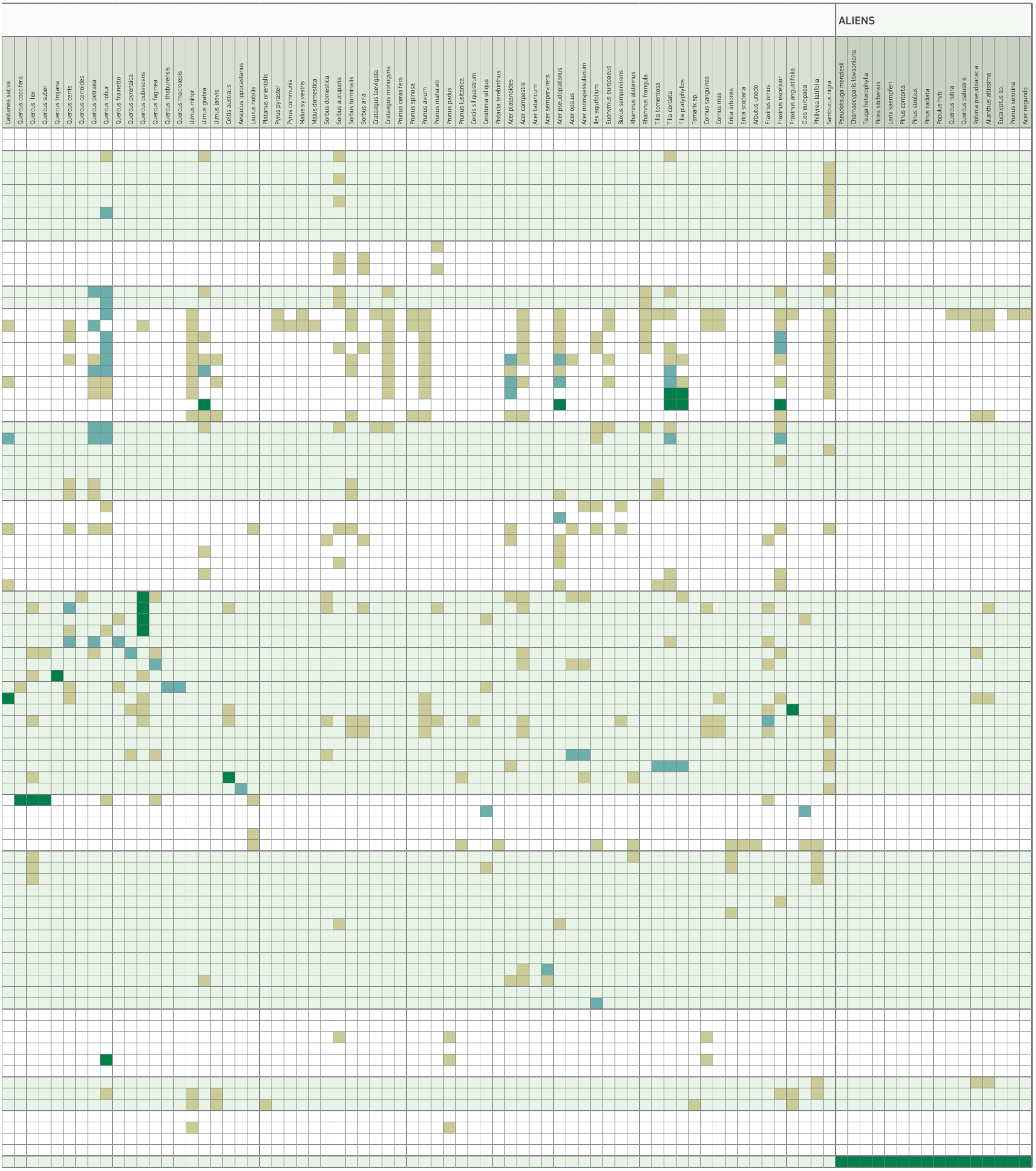
CATEGORY	FOREST TYPE	CONIFERS: Abies nordmanniana	Abies alba	Abies borisii-regi	Abies others	Picea abies	Picea omorika	Larix decidua	Pinus pinaster	Pinus nigra	Pinus sylvestris	Pinus mugo	Pinus halepensis	Pinus pinea	Pinus cembra	Pinus canariensis	Pinus heldreichii	Pinus peuce	Cupressus sempervirens	Cedrus libani	Cedrus brevifolia	Juniperus communis	Juniperus oxycedrus	Juniperus phoenicea	Juniperus thurifera	Juniperus sp.	Tetraclinis articulata	Taxus baccata	BROADLEAVES: Salix fragilis	Salix alba	Salix cinerea	Salix atrocinerea	Salix caprea	Salix eleagnos	Populus alba	Populus canescens	Populus tremula	Populus nigra	Myrica faya	Juglans regia	Betula pubescens	Betula pendula	Alnus viridis	Alnus glutinosa	Alnus incana	Alnus cordata	Alnus orientalis	Carpinus betulus	Carpinus orientalis	Ostrya carpinifolia	Corylus avellana	Fagus sylvatica	Fagus moesiaca	Fagus orientalis
1. Boreal forest	1.1 Spruce and spruce-birch boreal forest					■																																	■	■	■														
	1.2 Pine and pine-birch boreal forest										■																														■														
2. Hemiboreal forest and nemoral coniferous and mixed broadleaved-coniferous forest	2.1 Hemiboreal forest					■					■																												■	■	■														
	2.2 Nemoral Scots pine forest										■																																											
	2.3 Nemoral spruce forest					■																																																	
	2.4 Nemoral Black pine forest									■																																											
	2.5 Mixed Scots pine-birch forest										■																																■	■												
	2.6 Mixed Scots pine-pedunculate oak forest																																																			
	2.7 Atlantic maritime pine forest								■																																												
	2.8 Nemoral silver fir		■																																																		
3. Alpine coniferous forest	3.1 Subalpine larch-arolla pine and dwarf pine forest							■																																												
	3.2 Subalpine and mountainous spruce and mountainous mixed spruce-silver fir forest																																																			
	3.3 Alpine Scots pine and Black pine forest																																																		
	3.4 Mountainous birch forest																																																		
4. Acidophilous oak and oak-birch forest	4.1 Acidophilous oakwood																																																		
	4.2 Oak-birch forest																																																		
5. Mesophytic deciduous forest	5.1 Pedunculate oak–hornbeam forest																																																		
	5.2 Sessile oak–hornbeam forest																																																		
	5.3.1 Ashwood and oak-ash forest lowlands																																																		
	5.3.2 Ashwood and oak-ash forest uplands																																																		
	5.4 Maple-oak forest																																																		
	5.5 Lime-oak forest																																																		
	5.6 Maple-lime forest																																																		
	5.7 Lime forest																																																		
	5.8 Ravine and slope forest																																																		
	5.9 Other mesophytic deciduous forests																																																		
6. Beech forest	6.1 Lowland beech forest of southern Scandinavia and north central Europe																																																		
	6.2 Atlantic and subatlantic lowland beech forest																																																		
	6.3 Subatlantic submountainous beech forest		■																																																
	6.4 Central European submountainous beech forest																																																		
	6.5 Carpathian submountainous beech forest																																																		
	6.6 Illyrian submountainous beech forest																																																		
	6.7 Moesian submountainous beech forest																																																		
7. Mountainous beech forest	7.1 South western European mountainous beech forest		■																																																
	7.2 Central European mountainous beech forest																																																		
	7.3 Apennine-Corsican mountainous beech forest		■							■																																									
	7.4 Illyrian mountainous beech forest		■			■																																													
	7.5 Carpathian mountainous beech forest		■			■		■																																											
	7.6 Moesian mountainous beech forest		■	■		■	■		■	■																																									
	7.7 Crimean mountainous beech forest																																																		
	7.8 Oriental beech and hornbeam-oriental beech forest	■																																																
8. Thermophilous deciduous forest	8.1.1 Downy oak forest - western										■																																									
	8.1.2 Downy oak forest - Italian										■																																									
	8.1.3 Downy oak forest - Greek, Anatolian																																																	
	8.1.4 Downy oak forest - steppe																																																		
	8.2 Turkey oak, Hungarian oak and Sessile oak forest																																																	
	8.3 Pyrenean oak forest																																																	
	8.4 Portuguese oak and Mirbeck's oak Iberian forest																																																	
	8.5 Macedonian oak forest																																																	
	8.6 Valonia oak forest																			■																																
	8.7 Chestnut forest		■																																																
	8.8.1 Thermophilous ash forest																																																		
	8.8.2 Fraxinus ornus and Ostrya carpinifolia forest																																																	
	8.8.3 Hop-hornbeam (Ostrya carpinifolia) forest																																																	
	8.8.4 Oriental hornbeam (Carpinus orientalis) forest																																																	
	8.8.5 Thermophilous maple (Acer spp.) forest																																																	
	8.8.6 Mediterranean lime (Tilia spp.) forest																																																	
	8.8.7 Celtis australis forest																																																	
	8.8.8 Horse chestnut and walnut mixed woods																																																	
9. Broadleaved evergreen forest	9.1 Mediterranean evergreen oak forest																																																	
	9.2 Olive-carob forest																																																	
	9.3 Palm groves																																																	
	9.4 Macaronesian laurisilva																																																	
	9.5 Other sclerophyllous forests																																																	
10. Coniferous forests of the Mediterranean, Anatolian and Macaronesian regions	10.1.1 Mediterranean pine forest - Pinus pinaster								■																																										
	10.1.2 Mediterranean pine forest - Pinus halepensis												■																																							
	10.1.3 Mediterranean pine forest - Pinus pinea													■																																						
	10.2.1 Mediterranean Black pine forest		■							■																																									
	10.2.2 Anatolian Black pine forest			■						■																																									
	10.3 Canarian pine forest															■																																					
	10.4 Mediterranean and Anatolian Scots pine forest				■						■																																									
	10.5 Alti-Mediterranean pine forest																■	■																																	
	10.6 Mediterranean and Anatolian fir forest		■		■																																														
	10.7 Juniper forest																						■	■	■	■																									
	10.8 Cypress forest																		■	■																																
	10.9 Cedar forest														■					■	■																															
	10.10 Tetraclinis articulata stands																										■																									
	10.11 Mediterranean yew stands																											■																								
11. Mire and swamp forest	11.1 Spruce mire forest					■																																													
	11.2 Pine mire forest										■																																										
	11.3 Alder swamp forest																																																			
	11.4 Birch swamp forest																																																		
	11.5 Pedunculate oak swamp forest																																																	
	11.6 Aspen swamp forest																																																	
12. Floodplain forest	12.1 Riparian forest																																																	
	12.2 Fluvial forest																																																	
	12.3 Mediterranean and Macaronesian riparian forest																																																	
13. Non riverine alder, birch, or aspen forest	13.1 Alder forest																																																	
	13.2 Italian alder forest																																																	
	13.3 Birch forest																																																	
	13.4 Aspen forest																																																	
14. Introduced tree species forest																																																	

In this table the European Forest Types (EFTs) scheme is presented as proposed and revised by Barbati and colleagues[1-3], counting 14 broad categories which include 78 forest types, some of which are divided into sub-types. For every EFT the presence of the main tree and shrub species of forest interest in Europe has been evaluated, separated into three main groups: conifers, broadleaved and alien trees. The species presence in the EFTs is categorized in three classes: the species is abundant and dominant in the EFT; the species presence in the EFT is either secondary or predominant but in peculiar and not characteristic ecological conditions of the EFT; the presence in the EFT is both dominant and secondary in some cases. It has to be taken into account that

- Species is dominant in that forest type
- Species is present but not dominant
- Species is present in either category



in many cases the EFTs are wide forest communities having inner variability in their species composition and structure according to more local ecological conditions. For this reason the presence of some species can be both, dominant or secondary in some cases.

References

[1] A. Barbati, P. Corona, M. Marchetti, *Plant Biosystems - An International Journal Dealing with all Aspects of Plant Biology* **141**, 93 (2007).

[2] A. Barbati, P. Corona, M. Marchetti, *European forest types: Categories and types for sustainable forest management reporting and policy* (European Environment Agency, Copenhagen, 2007), second edn.

[3] A. Barbati, M. Marchetti, G. Chirici, P. Corona, *Forest Ecology and Management* **321**, 145 (2014).

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