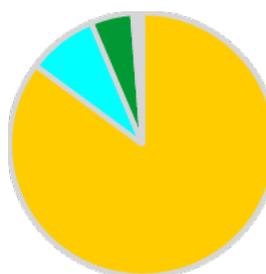


12/05/2021 Gruppo D 12 mag

## Site conditions

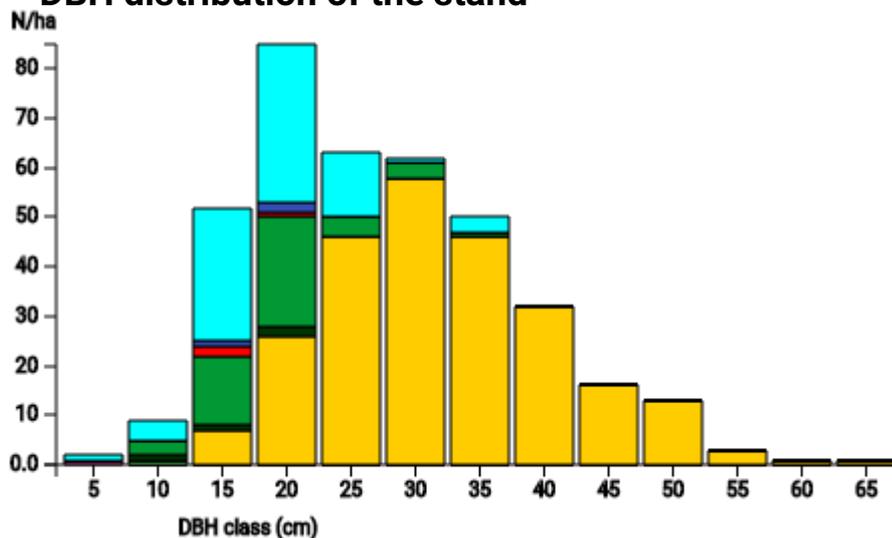
Altitude: 870 m.a.s.l.  
 Geology / Bedrock: Alluvial and mixed beds  
 Soil type: Cambisol – Leptosol with Luvisol of the Central Appenino Mountains.  
 Natural forest community: Aceri obtusati-Quercu cerridis sigmetum  
 Mean annual temperature: 12.4 C;  
 Mean annual precipitation: 1154 mm; Ownership: State-owned Agency "Sala"; Establishment: 2020

## Tree species distribution by volume (in %)



- Turkey oak: 85.1 %
- European hop-hornbeam: 8.5 %
- Italian maple: 5.1 %
- manna ash: 0.6 %
- field maple: 0.3 %
- hornbeam: 0.3 %
- common beech: 0 %
- downy oak: 0 %

## DBH distribution of the stand



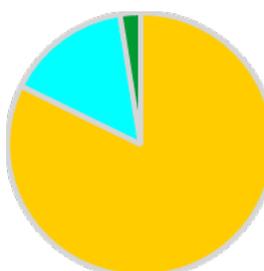
## Initial stand (details by tree species)

Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
European hop-hornbeam	81	3	34.6	2647	1669	101
Italian maple	47	1.8	20.8	1588	917	65
Turkey oak	249	24.7	346.4	26500	7807	401
common beech	1	0	0.2	16	0	0
downy oak	1	0	0.1	10	0	0
field maple	4	0.1	1.4	104	115	6
hornbeam	3	0.1	1.3	101	24	1
manna ash	3	0.1	2.3	174	38	4
<b>Total</b>	<b>389</b>	<b>29.9</b>	<b>407.1</b>	<b>31140</b>	<b>10570</b>	<b>578</b>

### Removed trees

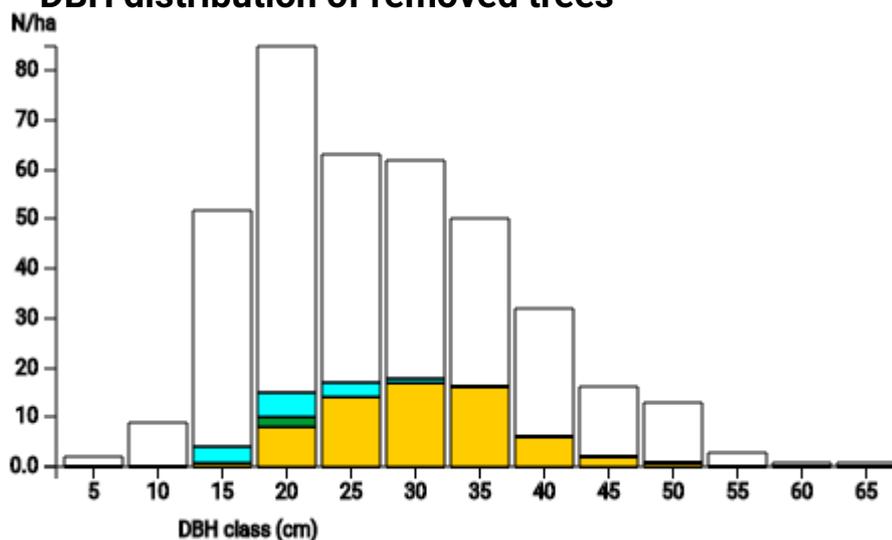
Volume: 82.8 m<sup>3</sup>  
 Basal area: 6.1 m<sup>2</sup>  
 Economic value: 6337 €  
 Habitat value: 1983 pts.

### Removed trees (N in %)



- Turkey oak: 82.3 %
- European hop-hornbeam: 15.2 %
- Italian maple: 2.5 %
- common beech: 0 %
- downy oak: 0 %
- field maple: 0 %
- manna ash: 0 %
- hornbeam: 0 %

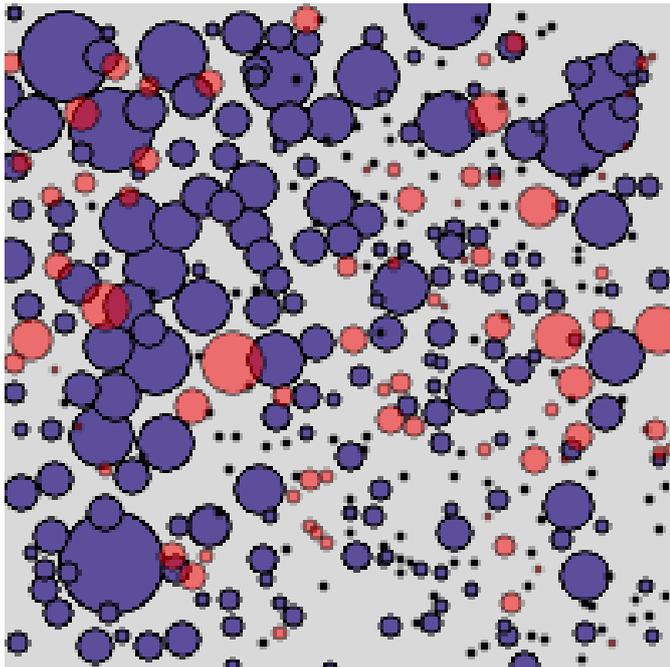
### DBH distribution of removed trees



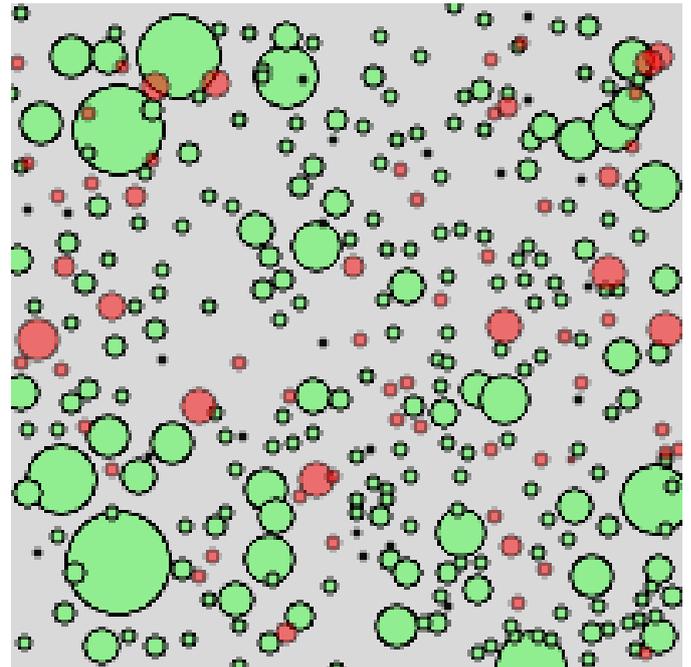
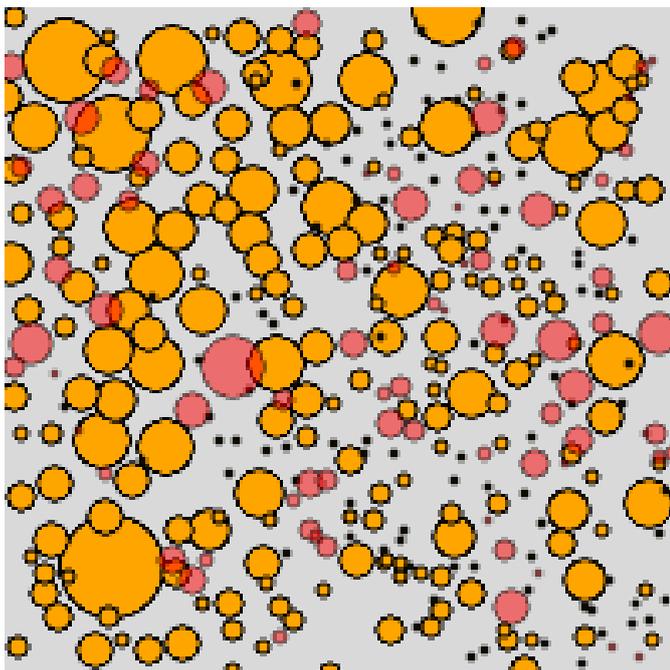
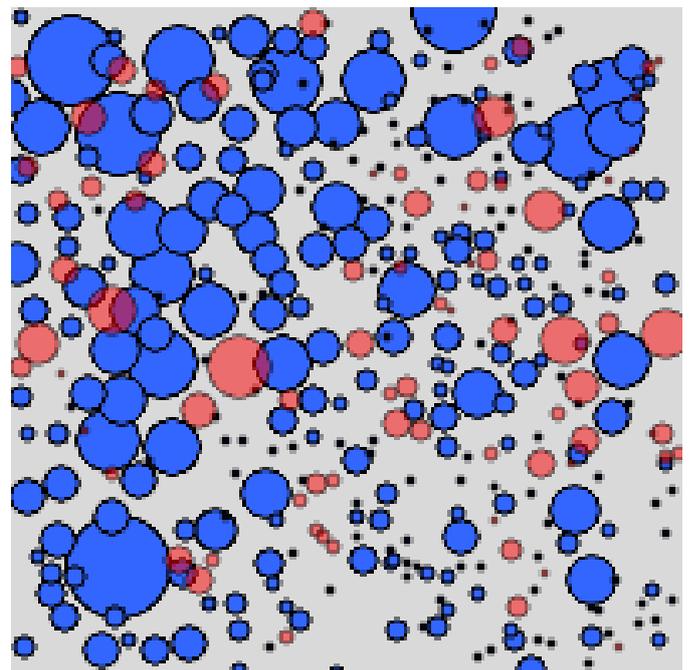
### Removed trees (details by tree species)

Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
European hop-hornbeam	12	0.5	5.6	431	322	19
Italian maple	2	0.1	0.9	66	44	3
Turkey oak	65	5.6	76.3	5840	1617	79
common beech	0	0	0	0	0	0
downy oak	0	0	0	0	0	0
field maple	0	0	0	0	0	0
hornbeam	0	0	0	0	0	0
manna ash	0	0	0	0	0	0
<b>Total</b>	<b>79</b>	<b>6.1</b>	<b>82.8</b>	<b>6337</b>	<b>1983</b>	<b>101</b>

Economic value [EUR]



Habitat value

Basal area [m<sup>2</sup>]Volume [m<sup>3</sup>]**Description:**

Red circles (removed trees); circle size according to numerical values (e.g. large circles mean high values); trees with very low values (e.g. habitat value "0") are not visible.

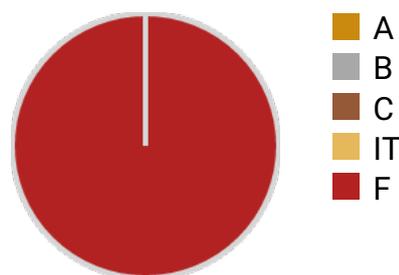
### Economic values

Total value of removed trees: 6337 €  
 Percentage of total stand value: 20.4 %  
 Stand value after harvest: 24802 €

### Economic value by tree species [€]

Tree species	Total	Per m <sup>3</sup>
common beech	0	0
downy oak	0	0
Turkey oak	5840	77
field maple	0	0
Italian maple	66	77
manna ash	0	0
hornbeam	0	0
European hop-hornbeam	431	77
Total	6337	77

### Wood quality distribution (m<sup>3</sup> in %)



Quality class	m <sup>3</sup>	%
A	0	0
B	0	0
C	0	0
Industrial Timber	0	0
Fuelwood	82.8	100

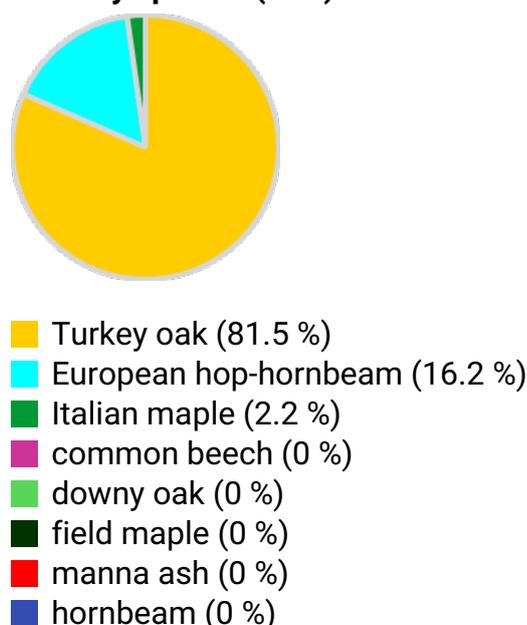
### Habitat values

Total habitat value of removed trees: 1983 pts.  
 Percentage of total stand value: 18.8 %  
 Stand value after harvest: 8587 pts.

### Habitat value by tree species [pts.]

Tree species	Total	Per m <sup>3</sup>	Microhabitats [N]
common beech	0	0	0
downy oak	0	0	0
Turkey oak	1617	21.2	79
field maple	0	0	0
Italian maple	44	51	3
manna ash	0	0	0
hornbeam	0	0	0
European hop-hornbeam	322	57.1	19
Total	1983	23.9	101

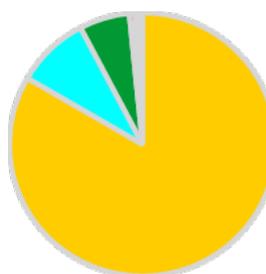
### Habitat value (points) of removed trees by species (in %)



### Remaining stand

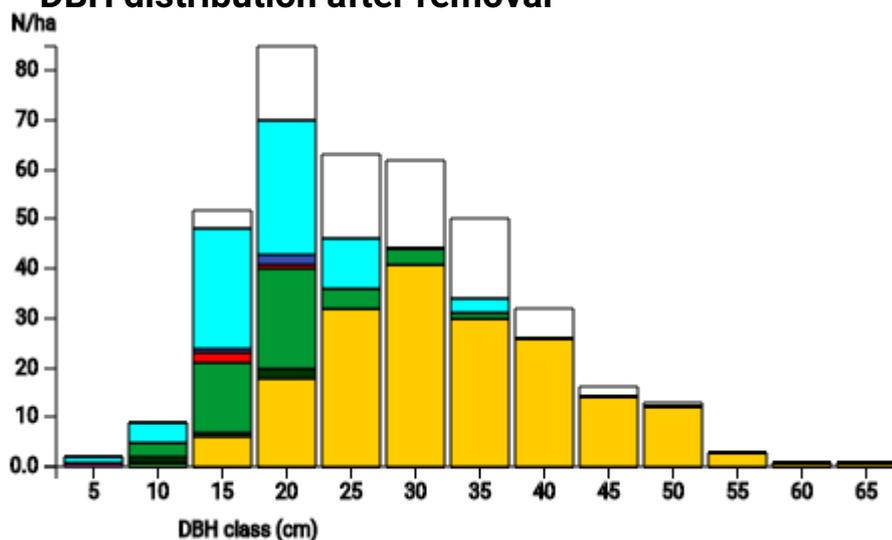
Volume: 324.2 m<sup>3</sup>  
 Basal area: 23.7 m<sup>2</sup>  
 Economic value: 24802 €  
 Habitat value: 8587 pts.

### Remaining trees by volume (m<sup>3</sup> in %)



- Turkey oak: 83.3 %
- European hop-hornbeam: 8.9 %
- Italian maple: 6.1 %
- manna ash: 0.7 %
- field maple: 0.4 %
- hornbeam: 0.4 %
- common beech: 0.1 %
- downy oak: 0 %

### DBH distribution after removal



### Remaining stand (details by tree species)

Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
European hop-hornbeam	69	2.5	29	2216	1347	82
Italian maple	45	1.8	19.9	1522	873	62
Turkey oak	184	19.1	270.1	20659	6190	322
common beech	1	0	0.2	16	0	0
downy oak	1	0	0.1	10	0	0
field maple	4	0.1	1.4	104	115	6
hornbeam	3	0.1	1.3	101	24	1
manna ash	3	0.1	2.3	174	38	4
<b>Total</b>	<b>310</b>	<b>23.7</b>	<b>324.2</b>	<b>24802</b>	<b>8587</b>	<b>477</b>

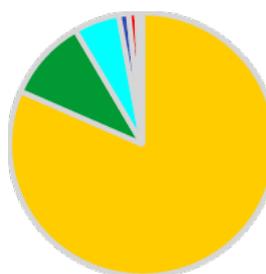
**Retention trees**Volume: 65.3 m<sup>3</sup>

Elite trees: 30

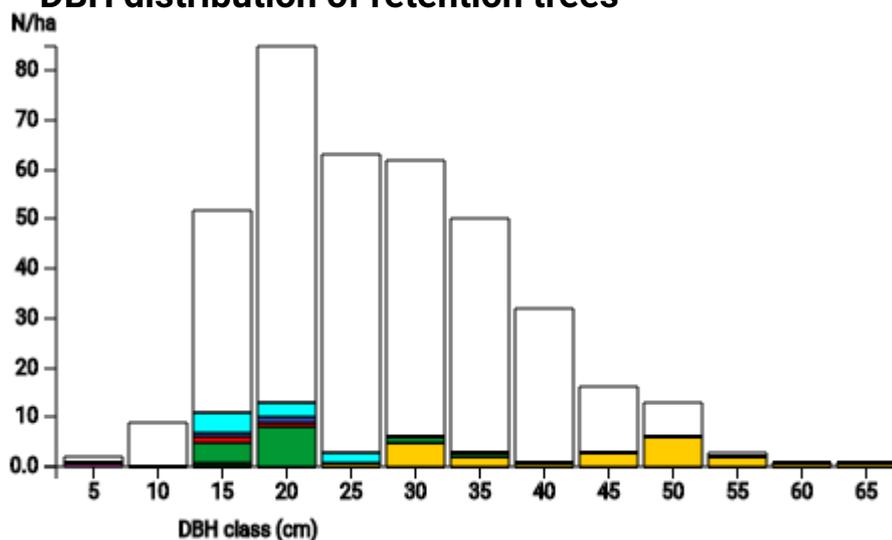
Habitat trees: 13

Economic value: 4995 €

Habitat value: 1845 pts.

**Retention trees by volume (m<sup>3</sup> in %)**

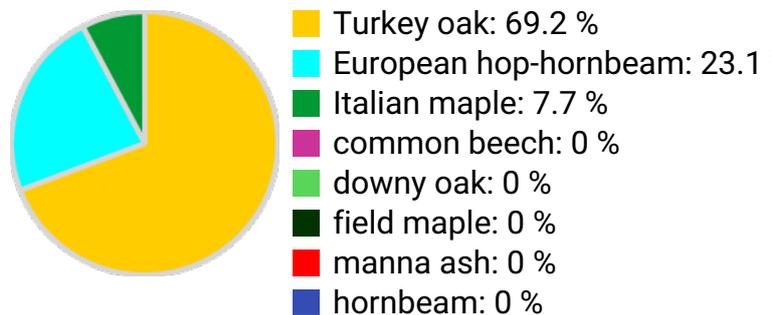
- Turkey oak: 81.6 %
- Italian maple: 10 %
- European hop-hornbeam: 5.5 %
- hornbeam: 1.2 %
- manna ash: 1 %
- field maple: 0.4 %
- common beech: 0.3 %
- downy oak: 0 %

**DBH distribution of retention trees****Retained trees (details by tree species)**

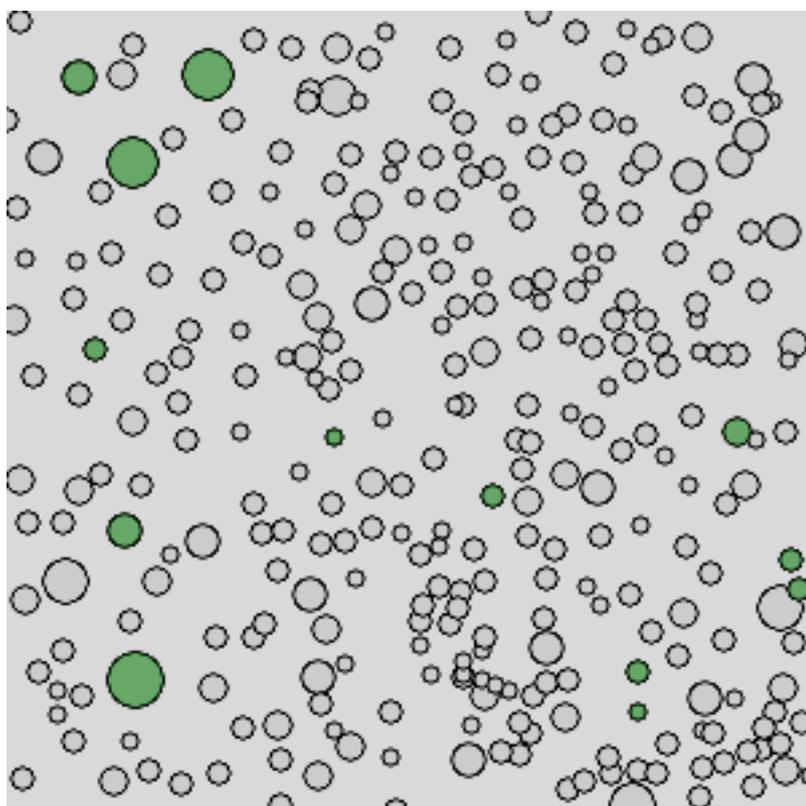
Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
European hop-hornbeam	9	0.3	3.6	275	193	13
Italian maple	14	0.6	6.5	500	231	18
Turkey oak	22	3.7	53.3	4077	1336	79
common beech	1	0	0.2	16	0	0
downy oak	0	0	0	0	0	0
field maple	1	0	0.2	19	27	2
hornbeam	2	0.1	0.8	60	24	1
manna ash	2	0.1	0.6	49	34	3
<b>Total</b>	<b>51</b>	<b>4.8</b>	<b>65.3</b>	<b>4995</b>	<b>1845</b>	<b>116</b>

Number of habitat trees	[N]	13
Habitat value	pts.	810
	[% of total]	7.7
Economic value	[€]	2438
	[% of total]	7.8
Number of microhabitats	[N]	55
	[% of total]	9.5

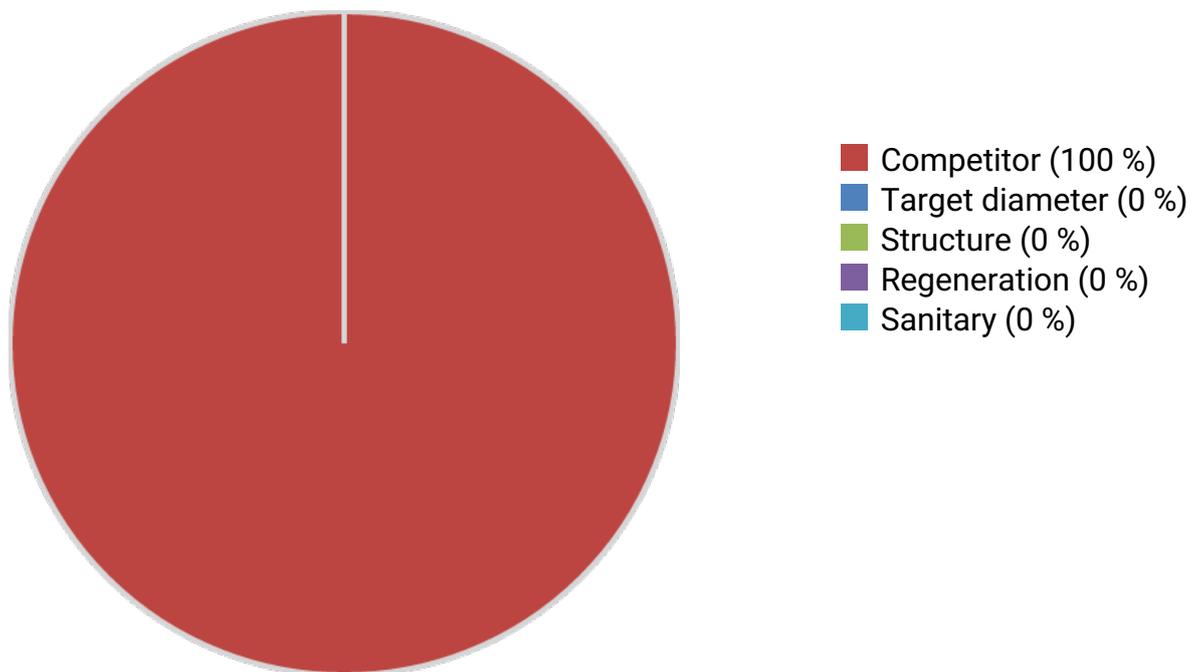
### Habitat tree distribution by species (N in %)



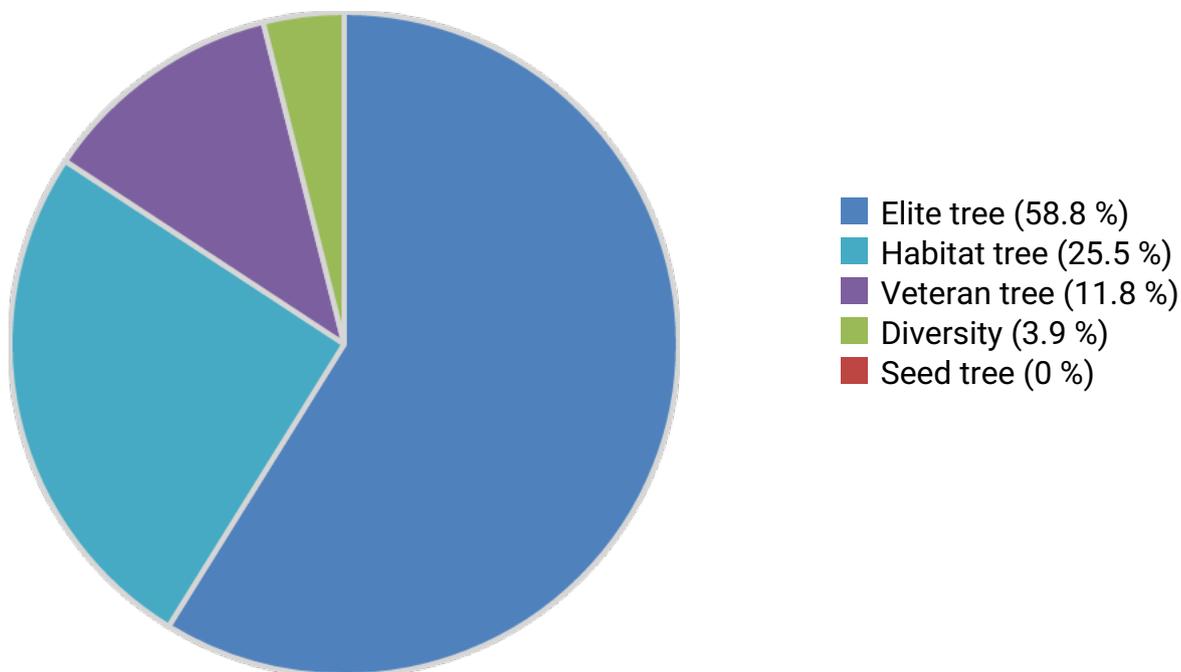
### Spatial distribution of habitat trees



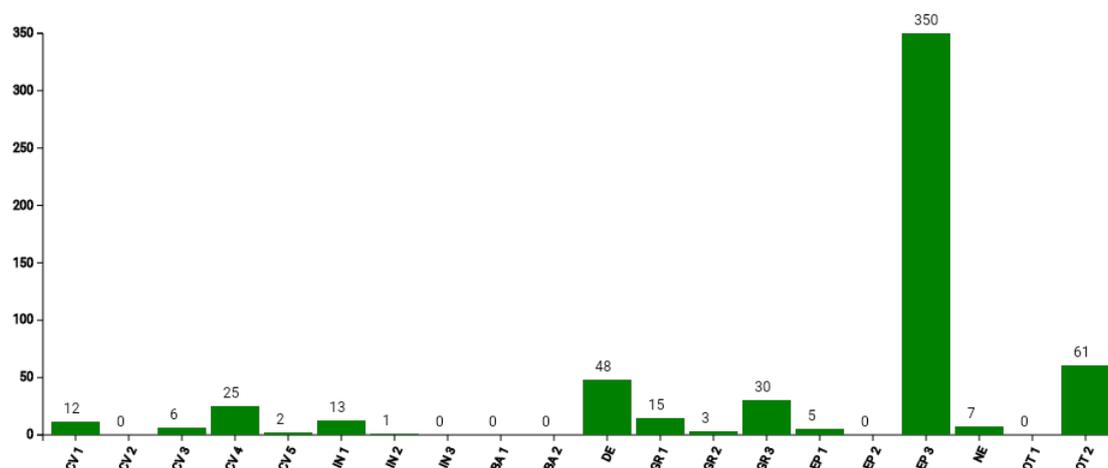
### Reasons for removal



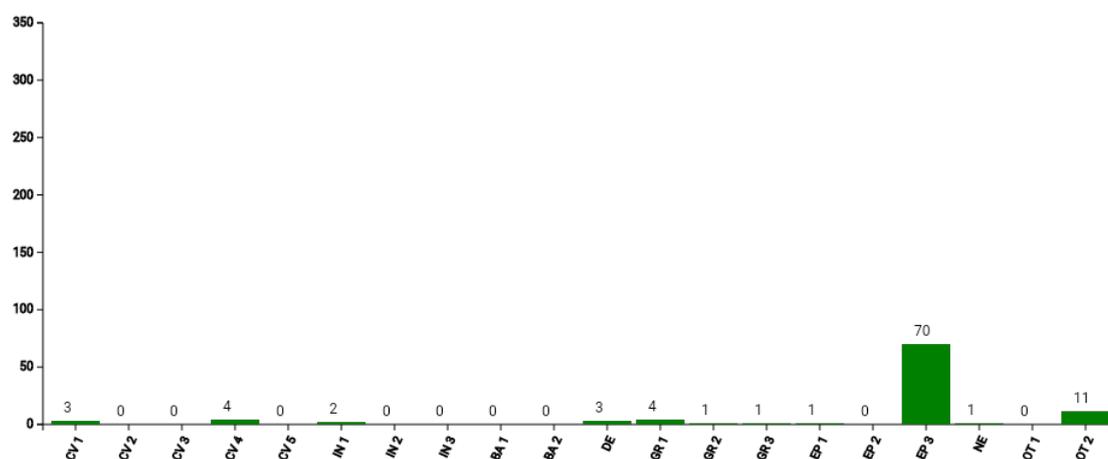
### Reasons for retention



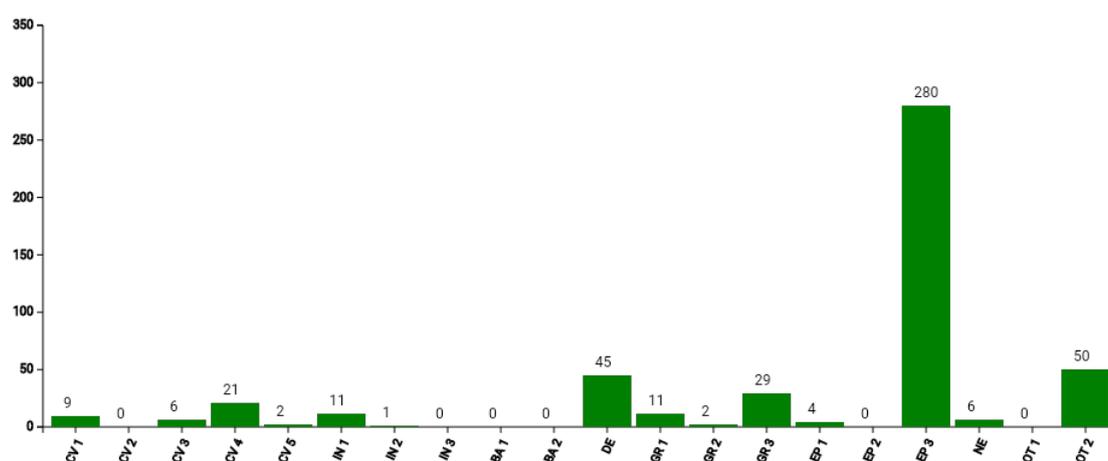
## Distribution of tree microhabitats by code (N total)



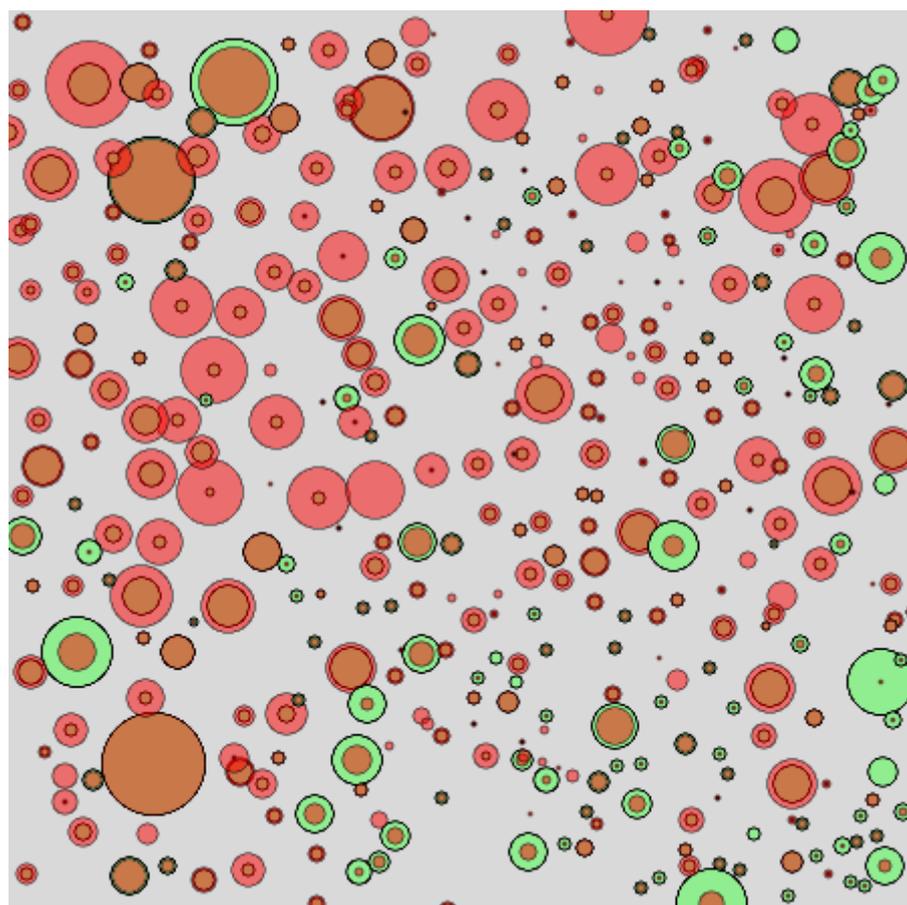
## Removed tree microhabitats by code (N removed)



## Remaining tree microhabitats by code (N after harvest)



For more details on codes consult the field guide "Catalogue of tree microhabitats" or the tree microhabitat app.

**Conflict trees (stand data)****Description:**

Overlay of economic and habitat value: red circles (economic value), green circles (habitat value); circle size according to numerical values (e.g. large circles mean high values); trees with very low values are not visible. Trees where both values overlap considerably represent so called "conflict trees".

## Removed trees

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Turkey oak (78) Quercus cerris	52	0.21	3.1	238	24	Competitor
Turkey oak (164) Quercus cerris	45	0.16	2.4	182	60	Competitor
Turkey oak (82) Quercus cerris	45	0.16	2.2	169	64	Competitor
Turkey oak (167) Quercus cerris	43.5	0.15	2.4	181	24	Competitor
Turkey oak (315) Quercus cerris	41	0.13	2	152	24	Competitor
Turkey oak (87) Quercus cerris	41	0.13	1.8	142	60	Competitor
Turkey oak (68) Quercus cerris	40.5	0.13	2.3	178	52	Competitor
Turkey oak (349) Quercus cerris	40.5	0.13	2	154	24	Competitor
Turkey oak (27) Quercus cerris	40	0.13	1.9	145	24	Competitor
Turkey oak (175) Quercus cerris	38.5	0.12	1.7	127	24	Competitor
Turkey oak (161) Quercus cerris	38	0.11	1.4	109	60	Competitor
Turkey oak (251) Quercus cerris	38	0.11	1.2	93	24	Competitor
Turkey oak (345) Quercus cerris	38	0.11	1.3	101	24	Competitor
Turkey oak (20) Quercus cerris	38	0.11	1.6	123	50	Competitor
Turkey oak (130) Quercus cerris	37	0.11	1.6	119	24	Competitor
Turkey oak (38) Quercus cerris	36	0.1	1.1	81	24	Competitor
Turkey oak (6) Quercus cerris	36	0.1	1.4	111	0	Competitor
Turkey oak (31) Quercus cerris	36	0.1	1.5	115	24	Competitor
Turkey oak (132) Quercus cerris	36	0.1	1.5	111	4	Competitor
Turkey oak (55) Quercus cerris	36	0.1	1.5	113	40	Competitor
Turkey oak (14)	35.5	0.1	1.6	122	24	Competitor

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Quercus cerris						
Turkey oak (203) Quercus cerris	35.5	0.1	1.4	105	28	Competitor
Turkey oak (39) Quercus cerris	35	0.1	1	78	18	Competitor
Turkey oak (169) Quercus cerris	35	0.1	1.6	122	24	Competitor
Turkey oak (195) Quercus cerris	35	0.1	1.4	109	0	Competitor
Turkey oak (188) Quercus cerris	34.5	0.09	1.4	109	24	Competitor
Turkey oak (112) Quercus cerris	34.5	0.09	1.2	95	60	Competitor
Turkey oak (337) Quercus cerris	34	0.09	1.1	87	0	Competitor
Turkey oak (17) Quercus cerris	34	0.09	1.2	90	24	Competitor
Turkey oak (362) Quercus cerris	33.5	0.09	1.1	87	40	Competitor
Turkey oak (293) Quercus cerris	33.5	0.09	1.2	89	24	Competitor
Turkey oak (163) Quercus cerris	33	0.09	1.2	89	24	Competitor
Turkey oak (19) Quercus cerris	33	0.09	1.2	93	50	Competitor
Turkey oak (83) Quercus cerris	32	0.08	1.1	87	24	Competitor
Turkey oak (29) Quercus cerris	32	0.08	1	79	24	Competitor
Turkey oak (197) Quercus cerris	32	0.08	1.2	90	24	Competitor
Turkey oak (235) Quercus cerris	32	0.08	1	74	36	Competitor
European hop-hornbeam (373) Ostrya carpinifolia	32	0.08	0.9	66	58	Competitor
Turkey oak (124) Quercus cerris	31.5	0.08	0.9	65	0	Competitor
Turkey oak (181) Quercus cerris	31	0.08	0.9	68	0	Competitor
Turkey oak (185) Quercus cerris	31	0.08	1	75	24	Competitor

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Turkey oak (126) Quercus cerris	30.5	0.07	0.8	60	24	Competitor
Turkey oak (190) Quercus cerris	30	0.07	1	78	24	Competitor
Turkey oak (111) Quercus cerris	29.5	0.07	0.8	63	24	Competitor
Turkey oak (369) Quercus cerris	29.5	0.07	1	79	24	Competitor
Turkey oak (91) Quercus cerris	29	0.07	1	74	24	Competitor
Turkey oak (44) Quercus cerris	29	0.07	0.9	73	32	Competitor
Turkey oak (339) Quercus cerris	28	0.06	0.8	60	24	Competitor
Turkey oak (114) Quercus cerris	28	0.06	0.9	66	19	Competitor
Turkey oak (204) Quercus cerris	28	0.06	0.8	58	24	Competitor
Turkey oak (385) Quercus cerris	28	0.06	0.8	62	24	Competitor
Turkey oak (129) Quercus cerris	27	0.06	0.7	52	24	Competitor
Turkey oak (154) Quercus cerris	27	0.06	0.6	49	36	Competitor
European hop-hornbeam (199) Ostrya carpinifolia	26.5	0.06	0.8	61	24	Competitor
Turkey oak (295) Quercus cerris	26	0.05	0.7	52	24	Competitor
Turkey oak (125) Quercus cerris	26	0.05	0.7	53	0	Competitor
Turkey oak (186) Quercus cerris	25	0.05	0.6	46	24	Competitor
European hop-hornbeam (309) Ostrya carpinifolia	25	0.05	0.7	53	51	Competitor
Turkey oak (107) Quercus cerris	25	0.05	0.6	47	24	Competitor
European hop-hornbeam (198) Ostrya carpinifolia	25	0.05	0.7	51	24	Competitor
Turkey oak (365) Quercus cerris	24.5	0.05	0.6	46	0	Competitor

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Acer opalus						
European hop-hornbeam (328) Ostrya carpinifolia	24	0.05	0.5	40	28	Competitor
Turkey oak (84) Quercus cerris	23	0.04	0.5	36	24	Competitor
Turkey oak (335) Quercus cerris	23	0.04	0.6	44	0	Competitor
Turkey oak (102) Quercus cerris	23	0.04	0.5	38	24	Competitor
Turkey oak (202) Quercus cerris	22.5	0.04	0.5	41	12	Competitor
Turkey oak (368) Quercus cerris	22	0.04	0.4	34	0	Competitor
Turkey oak (386) Quercus cerris	21	0.04	0.4	29	4	Competitor
Turkey oak (233) Quercus cerris	21	0.04	0.4	29	24	Competitor
European hop-hornbeam (308) Ostrya carpinifolia	21	0.04	0.4	33	48	Competitor
European hop-hornbeam (314) Ostrya carpinifolia	20.5	0.03	0.3	26	38	Competitor
European hop-hornbeam (341) Ostrya carpinifolia	20	0.03	0.3	27	3	Competitor
Italian maple (266) Acer opalus	20	0.03	0.4	27	4	Competitor
European hop-hornbeam (225) Ostrya carpinifolia	20	0.03	0.3	24	24	Competitor
Turkey oak (312) Quercus cerris	18	0.03	0.2	19	28	Competitor
European hop-hornbeam (346) Ostrya carpinifolia	17	0.02	0.2	17	0	Competitor
European hop-hornbeam (196) Ostrya carpinifolia	17	0.02	0.3	20	0	Competitor
European hop-hornbeam (269) Ostrya carpinifolia	17	0.02	0.2	14	24	Competitor

## Retention trees

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Turkey oak (133) Quercus cerris	68	0.36	5.4	409	174	Habitat tree
Turkey oak (16) Quercus cerris	60	0.28	4.6	351	72	Habitat tree
Turkey oak (26) Quercus cerris	57.5	0.26	4.3	329	148	Habitat tree
Turkey oak (13) Quercus cerris	56.5	0.25	3.7	281	144	Habitat tree
Turkey oak (10) Quercus cerris	54	0.23	3.5	269	106	Veteran tree
Turkey oak (101) Quercus cerris	51	0.2	3.3	253	66	Habitat tree
Turkey oak (384) Quercus cerris	51	0.2	3	229	60	Elite tree
Turkey oak (49) Quercus cerris	51	0.2	2.4	183	42	Veteran tree
Turkey oak (317) Quercus cerris	51	0.2	3.2	249	24	Elite tree
Turkey oak (77) Quercus cerris	50	0.2	3	232	0	Habitat tree
Turkey oak (176) Quercus cerris	49	0.19	3	232	60	Habitat tree
Turkey oak (213) [REPLACE_DEAD]Quercus cerris	47.5	0.18	0.3	22	114	Veteran tree
Turkey oak (351) Quercus cerris	47	0.17	2.9	224	24	Elite tree
Turkey oak (66) Quercus cerris	40	0.13	2	152	34	Habitat tree
Turkey oak (131) Quercus cerris	37	0.11	1.5	116	40	Elite tree
Turkey oak (104) Quercus cerris	36.5	0.11	1.2	94	60	Elite tree
Italian maple (313) Acer opalus	35	0.1	1.3	101	64	Elite tree
Turkey oak (74) Quercus cerris	32	0.08	1	73	24	Veteran tree
Turkey oak (264) Quercus cerris	31.5	0.08	1.1	80	36	Veteran tree
Turkey oak (189) Quercus cerris	31.5	0.08	1.1	81	36	Habitat tree
Turkey oak (194)	30	0.07	1.1	82	24	Elite tree

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Quercus cerris						
Turkey oak (30) Quercus cerris	30	0.07	0.9	69	24	Diversity
Italian maple (318) Acer opalus	30	0.07	0.9	71	27	Elite tree
Turkey oak (37) Quercus cerris	29	0.07	0.9	65	24	Elite tree
European hop-hornbeam (336) Ostrya carpinifolia	26.5	0.06	0.6	47	14	Elite tree
European hop-hornbeam (192) Ostrya carpinifolia	25	0.05	0.6	44	24	Elite tree
Italian maple (201) Acer opalus	24	0.05	0.5	37	28	Elite tree
Italian maple (311) Acer opalus	24	0.05	0.6	45	24	Elite tree
European hop-hornbeam (200) Ostrya carpinifolia	24	0.05	0.7	51	24	Habitat tree
European hop-hornbeam (340) Ostrya carpinifolia	23.5	0.04	0.5	38	24	Elite tree
Italian maple (316) Acer opalus	23	0.04	0.6	45	24	Elite tree
European hop-hornbeam (344) Ostrya carpinifolia	22.5	0.04	0.4	33	0	Elite tree
Italian maple (89) Acer opalus	22	0.04	0.3	23	4	Elite tree
Italian maple (193) Acer opalus	21.5	0.04	0.4	29	4	Elite tree
hornbeam (291) Carpinus betulus	21.5	0.04	0.5	35	24	Elite tree
Italian maple (157) Acer opalus	21.5	0.04	0.3	24	4	Elite tree
mannan ash (323) Fraxinus ornus	20.5	0.03	0.4	34	4	Elite tree
Italian maple (214) Acer opalus	20	0.03	0.3	23	24	Habitat tree
Italian maple (50) Acer opalus	20	0.03	0.4	29	16	Elite tree
Italian maple (113) Acer opalus	19.5	0.03	0.3	21	4	Elite tree
European hop-hornbeam (234) Ostrya carpinifolia	19	0.03	0.3	23	24	Habitat tree

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
European hop-hornbeam (245) Ostrya carpinifolia	18.5	0.03	0.3	19	4	Habitat tree
Italian maple (343) Acer opalus	18	0.03	0.3	20	4	Elite tree
hornbeam (292) Carpinus betulus	17.5	0.02	0.3	25	0	Elite tree
field maple (215) Acer campestre	17.5	0.02	0.2	19	27	Elite tree
Italian maple (162) Acer opalus	17	0.02	0.2	16	0	Elite tree
Italian maple (342) Acer opalus	17	0.02	0.2	17	4	Elite tree
European hop-hornbeam (353) Ostrya carpinifolia	16.5	0.02	0.2	15	31	Diversity
manna ash (43) Fraxinus ornus	15	0.02	0.2	16	30	Elite tree
European hop-hornbeam (227) [REPLACE_DEAD]Ostrya carpinifolia	15	0.02	0	4	48	Veteran tree
common beech (7) Fagus sylvatica	9	0.01	0.2	16	0	Elite tree