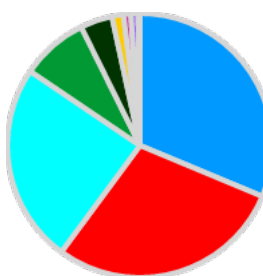


03/12/2021 Gruppo\_B\_BF

**Site conditions**

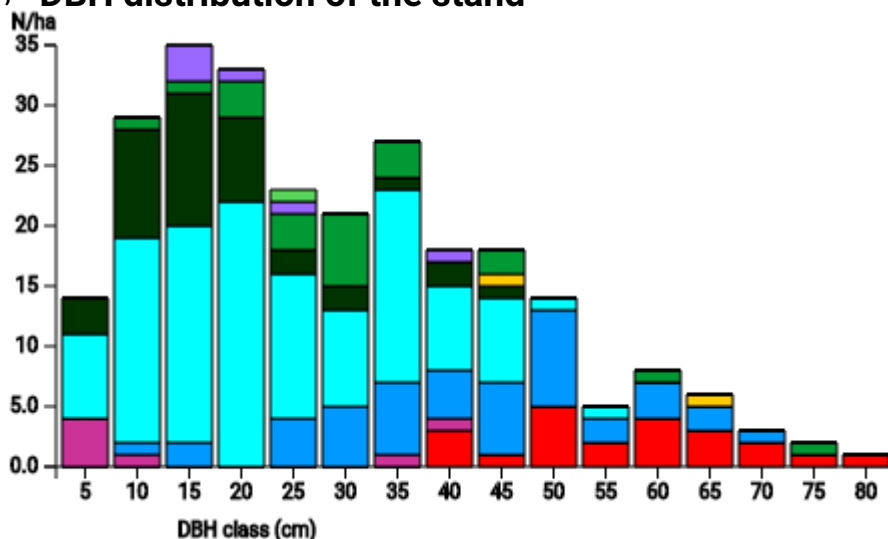
Altitude: 25 m.a.s.l.  
 Forest ecological region:  
 Lombardia  
 Geology / Bedrock: Medium  
 floodplain  
 Soil type: Haplic luvisols and  
 mollic gleysols  
 Natural forest community: Illyrian  
 oak-hornbeam forests  
 (Erythronio-Carpinion)  
 Mean annual temperature: 13.1 C;  
 Mean annual precipitation: 603  
 mm; Ownership: Carabinieri  
 Corps; Establishment: 2020

**Tree species distribution by volume (in %)**



- narrow-leafed ash: 31.3 %
- pedunculate oak: 28.8 %
- hornbeam: 24.4 %
- black alder: 8.2 %
- Field elm: 3.9 %
- wild cherry: 1.4 %
- field maple: 0.9 %
- black locust: 0.9 %
- London sycamore: 0.2 %

**DBH distribution of the stand**



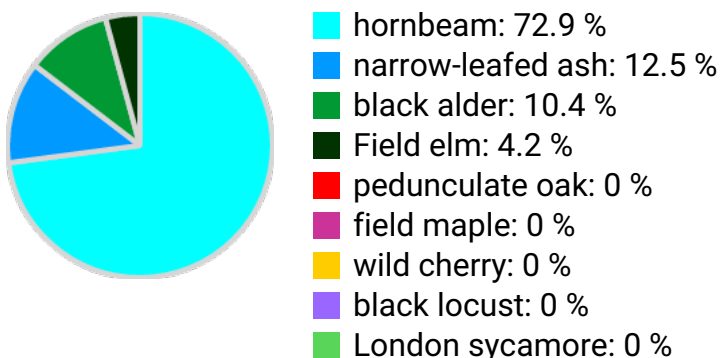
**Initial stand (details by tree species)**

Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	38	1.5	13.5	1276	756	49
London sycamore	1	0.1	0.7	70	24	1
black alder	21	2.2	28.2	2852	411	31
black locust	6	0.3	3	296	71	9
field maple	7	0.3	3	304	187	10
hornbeam	116	7.3	84.2	8312	3230	278
narrow-leafed ash	44	7.2	107.8	10961	1083	81
pedunculate oak	22	6.3	99.3	9868	557	49
wild cherry	2	0.5	4.7	473	127	7
<b>Total</b>	<b>257</b>	<b>25.7</b>	<b>344.3</b>	<b>34412</b>	<b>6446</b>	<b>515</b>

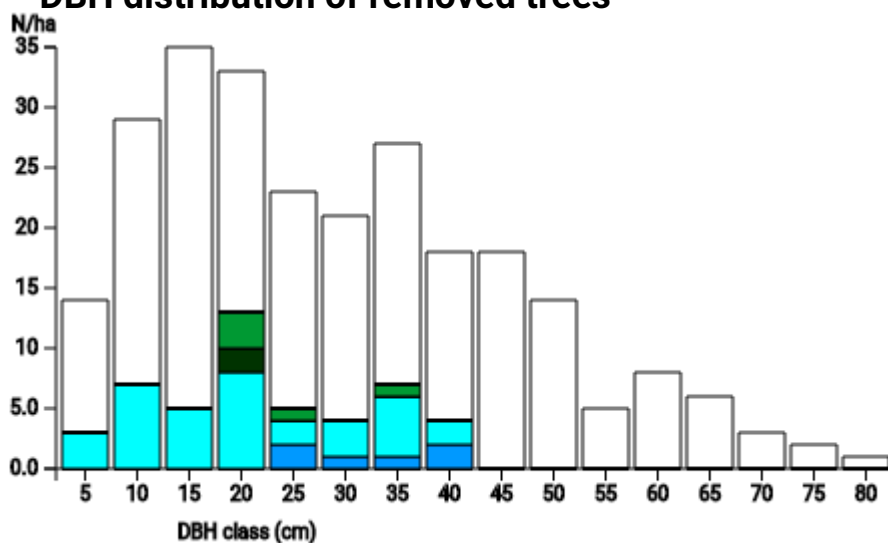
### Removed trees

Volume: 32.4 m<sup>3</sup>  
 Basal area: 2.7 m<sup>2</sup>  
 Economic value: 3271 €  
 Habitat value: 817 pts.

### Removed trees (N in %)



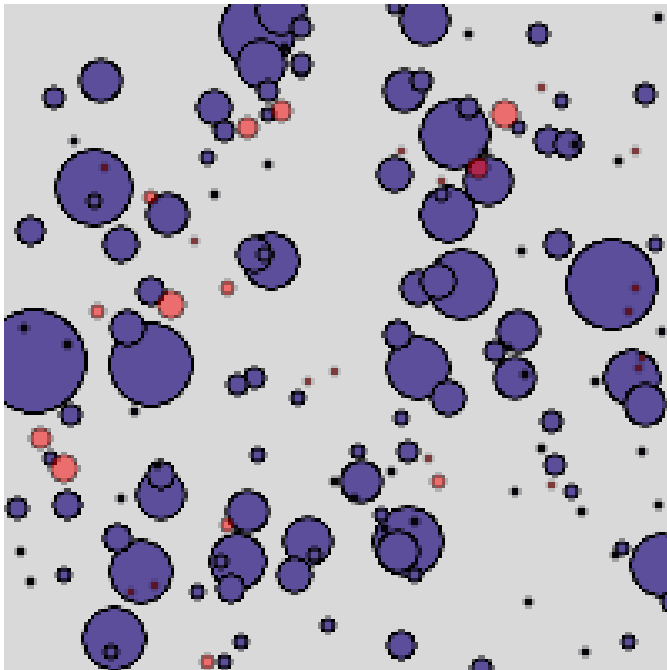
### DBH distribution of removed trees



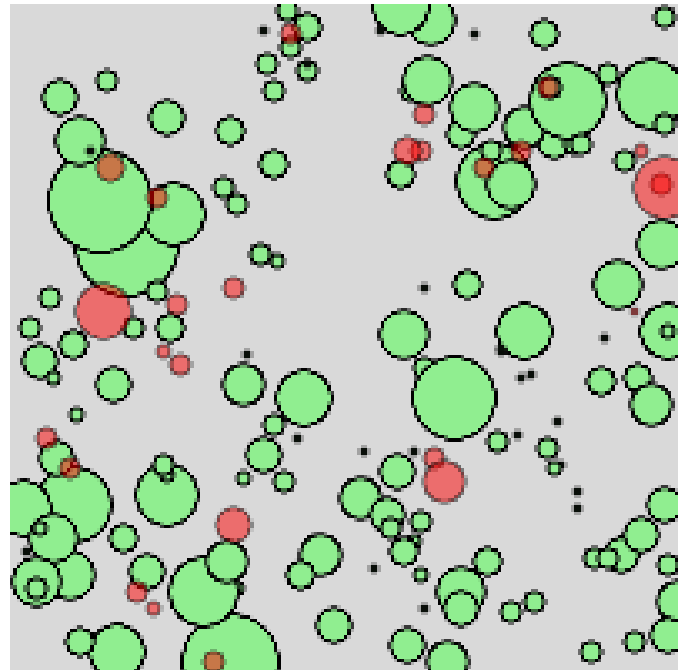
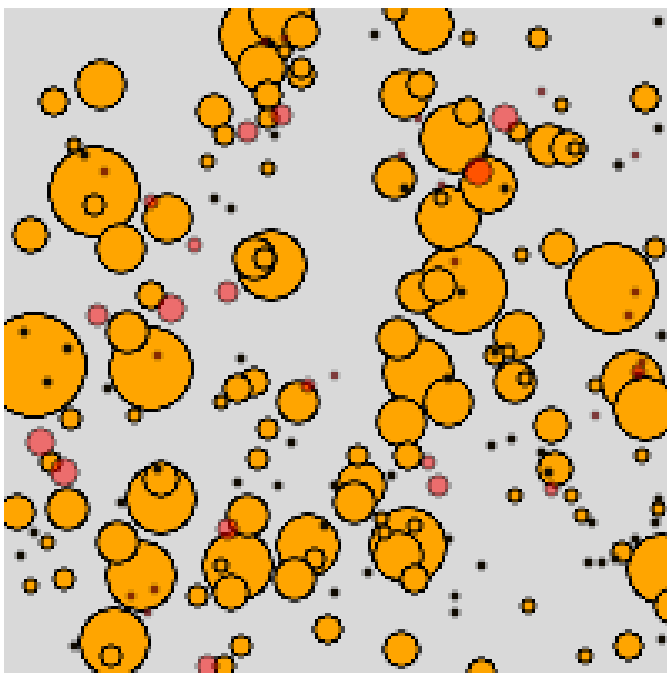
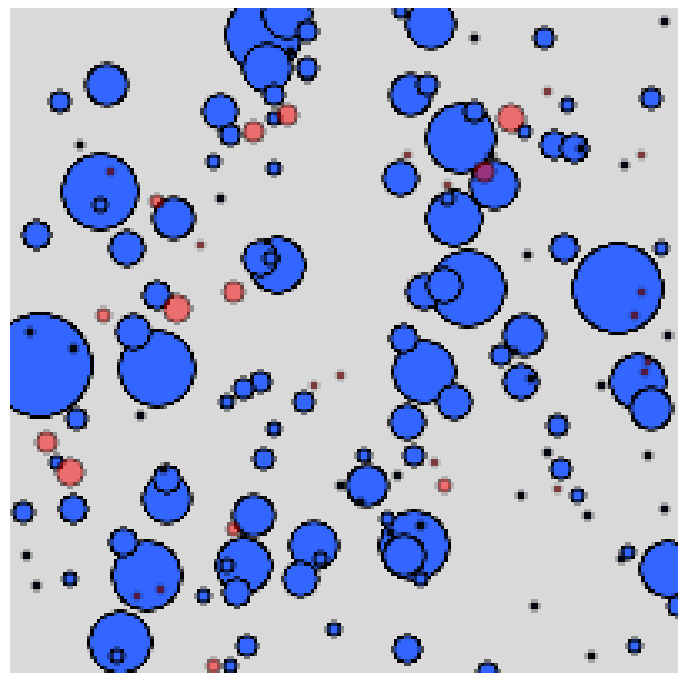
### Removed trees (details by tree species)

Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	2	0.1	0.7	65	36	1
London sycamore	0	0	0	0	0	0
black alder	5	0.3	3.6	362	62	6
black locust	0	0	0	0	0	0
field maple	0	0	0	0	0	0
hornbeam	35	1.7	20.2	2031	687	56
narrow-leaved ash	6	0.6	7.9	813	32	3
pedunculate oak	0	0	0	0	0	0
wild cherry	0	0	0	0	0	0
<b>Total</b>	<b>48</b>	<b>2.7</b>	<b>32.4</b>	<b>3271</b>	<b>817</b>	<b>66</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.

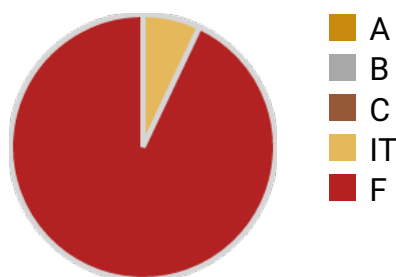
### Economic values

Total value of removed trees: 3271 €  
 Percentage of total stand value: 9.5 %  
 Stand value after harvest: 31141 €

### Economic value by tree species [€]

Tree species	Total	Per m <sup>3</sup>
pedunculate oak	0	0
field maple	0	0
narrow-leafed ash	813	102
hornbeam	2031	101
Field elm	65	100
wild cherry	0	0
black alder	362	102
black locust	0	0
London sycamore	0	0
Total	3271	101

### 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	2.3	7
Fuelwood	30.2	93

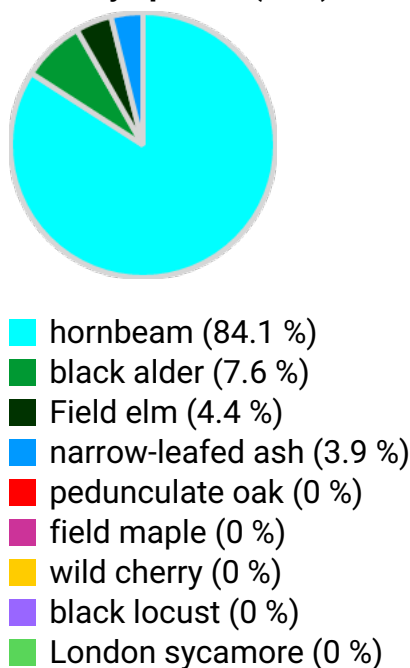
### Habitat values

Total habitat value of removed trees: 817 pts.  
 Percentage of total stand value: 12.7 %  
 Stand value after harvest: 5629 pts.

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

Tree species	Total	Per m <sup>3</sup>	Microhabitats [N]
pedunculate oak	0	0	0
field maple	0	0	0
narrow-leafed ash	32	4	3
hornbeam	687	34	56
Field elm	36	55.2	1
wild cherry	0	0	0
black alder	62	17.4	6
black locust	0	0	0
London sycamore	0	0	0
Total	817	25.2	66

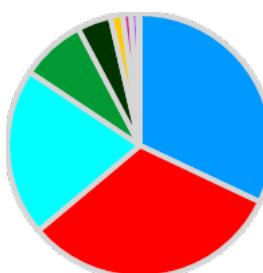
### Habitat value (points) of removed trees by species (in %)



### Remaining stand

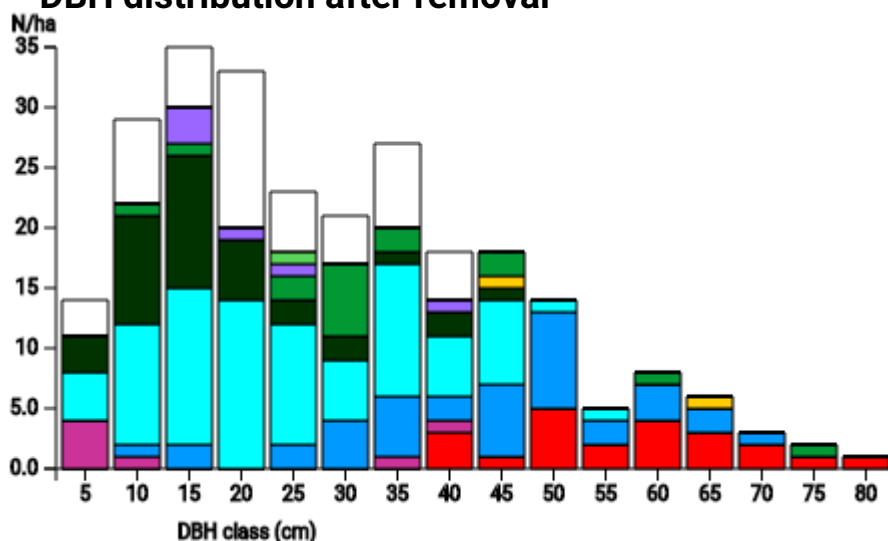
Volume: 312 m<sup>3</sup>  
 Basal area: 23.2 m<sup>2</sup>  
 Economic value: 31141 €  
 Habitat value: 5629 pts.

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



- narrow-leaved ash: 32 %
- pedunculate oak: 31.8 %
- hornbeam: 20.5 %
- black alder: 7.9 %
- Field elm: 4.1 %
- wild cherry: 1.5 %
- field maple: 1 %
- black locust: 0.9 %
- London sycamore: 0.2 %

### 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)
Field elm	36	1.4	12.9	1210	720	48
London sycamore	1	0.1	0.7	70	24	1
black alder	16	1.9	24.6	2490	349	25
black locust	6	0.3	3	296	71	9
field maple	7	0.3	3	304	187	10
hornbeam	81	5.5	64	6281	2543	222
narrow-leaved ash	38	6.7	99.8	10149	1051	78
pedunculate oak	22	6.3	99.3	9868	557	49
wild cherry	2	0.5	4.7	473	127	7
<b>Total</b>	<b>209</b>	<b>23</b>	<b>312</b>	<b>31141</b>	<b>5629</b>	<b>449</b>

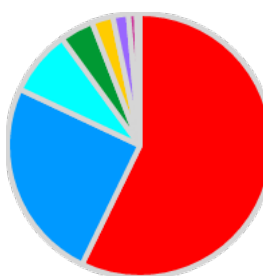
**Retention trees**Volume: 155.4 m<sup>3</sup>

Elite trees: 0

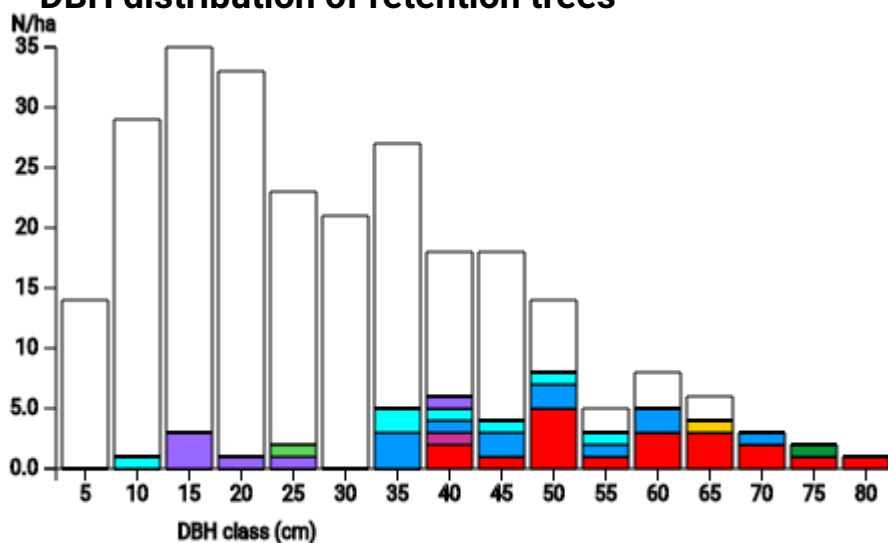
Habitat trees: 18

Economic value: 15463 €

Habitat value: 1626 pts.

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

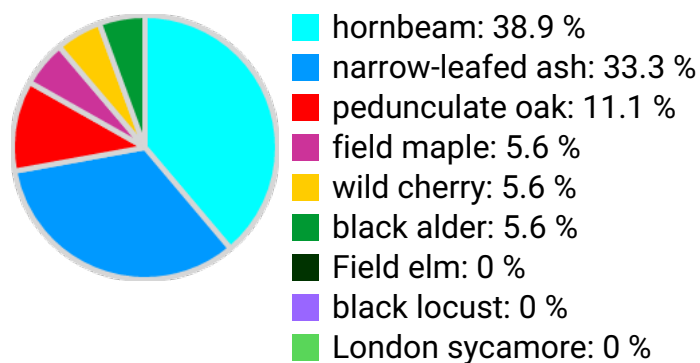
- pedunculate oak: 57.2 %
- narrow-leafed ash: 24.8 %
- hornbeam: 8 %
- black alder: 4.1 %
- wild cherry: 2.6 %
- black locust: 1.9 %
- field maple: 1 %
- London sycamore: 0.4 %
- Field elm: 0 %

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

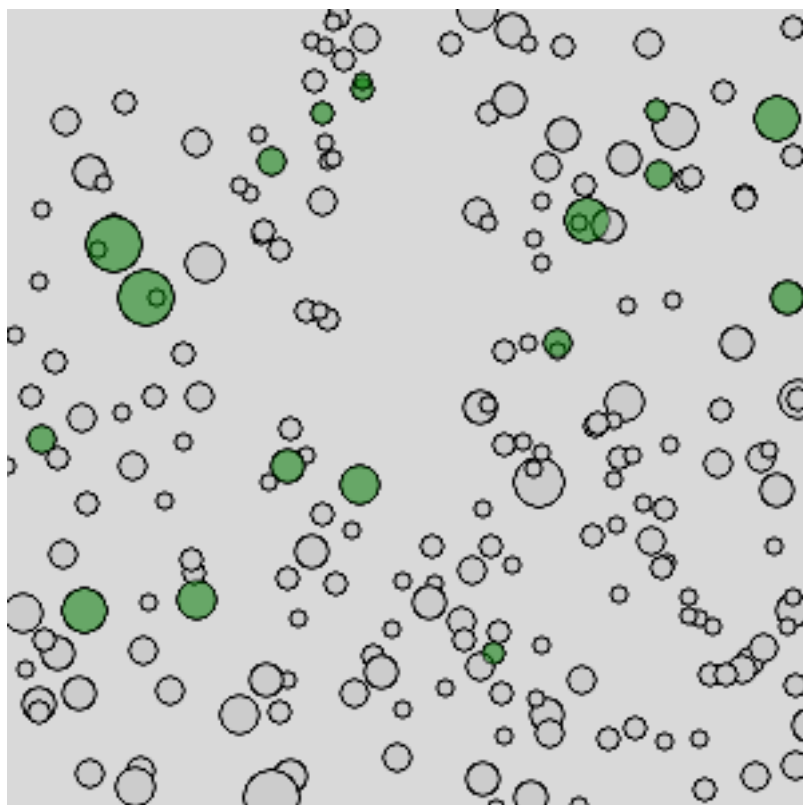
Tree species	N/ha	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	0	0	0	0	0	0
London sycamore	1	0.1	0.7	70	24	1
black alder	1	0.5	6.4	639	36	3
black locust	6	0.3	3	296	71	9
field maple	1	0.1	1.6	161	92	4
hornbeam	7	1	12.4	1158	536	37
narrow-leafed ash	12	2.5	38.5	3912	375	28
pedunculate oak	19	5.6	88.9	8829	415	41
wild cherry	1	0.3	4	398	77	5
<b>Total</b>	<b>48</b>	<b>10.4</b>	<b>155.4</b>	<b>15463</b>	<b>1626</b>	<b>128</b>

Number of habitat trees	[N]	18
Habitat value	pts.	1064
	[% of total]	16.5
Economic value	[€]	5278
	[% of total]	15.3
Number of microhabitats	[N]	72
	[% of total]	14

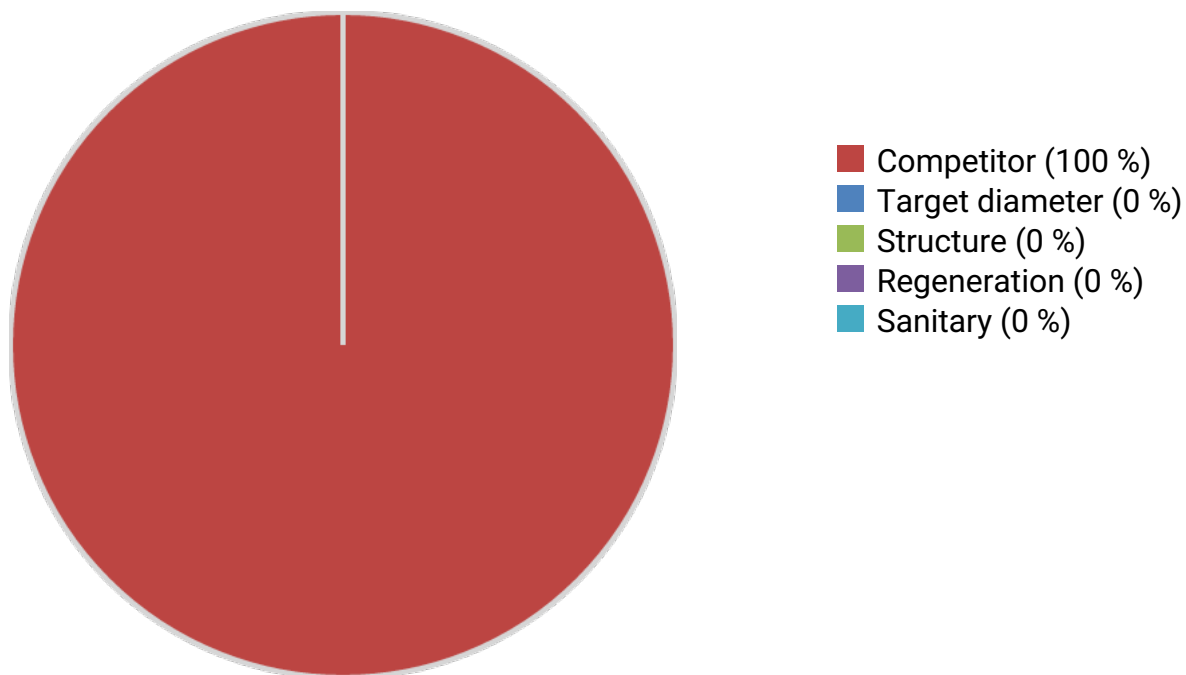
### Habitat tree distribution by species (N in %)



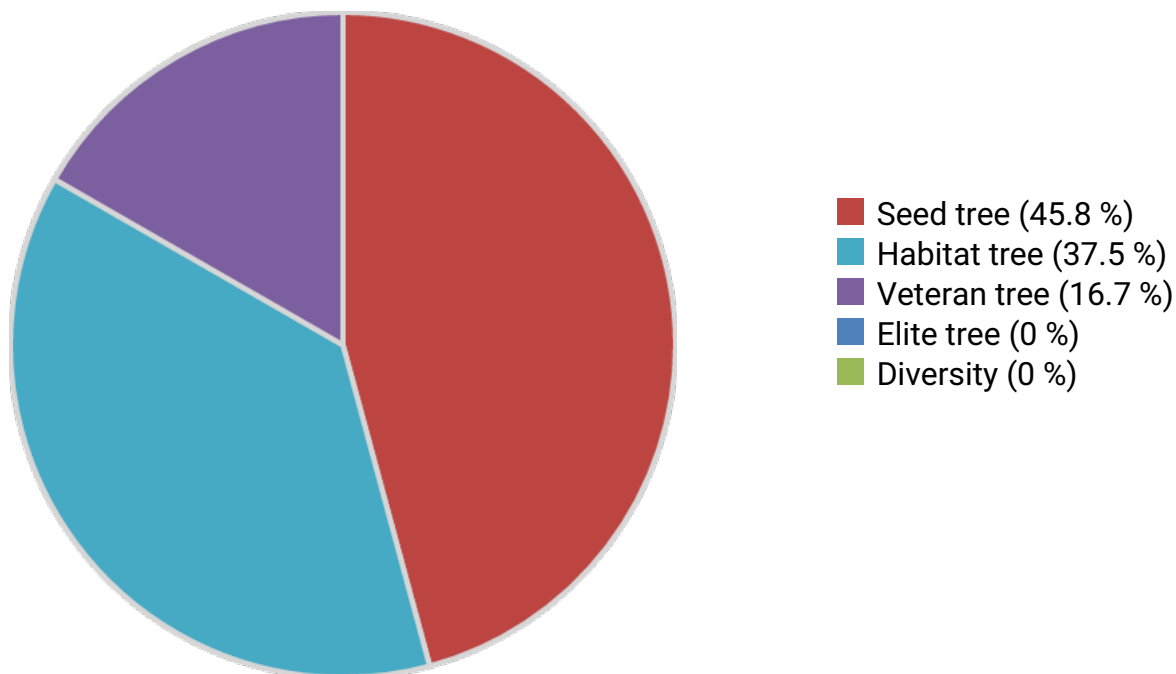
### Spatial distribution of habitat trees



### Reasons for removal

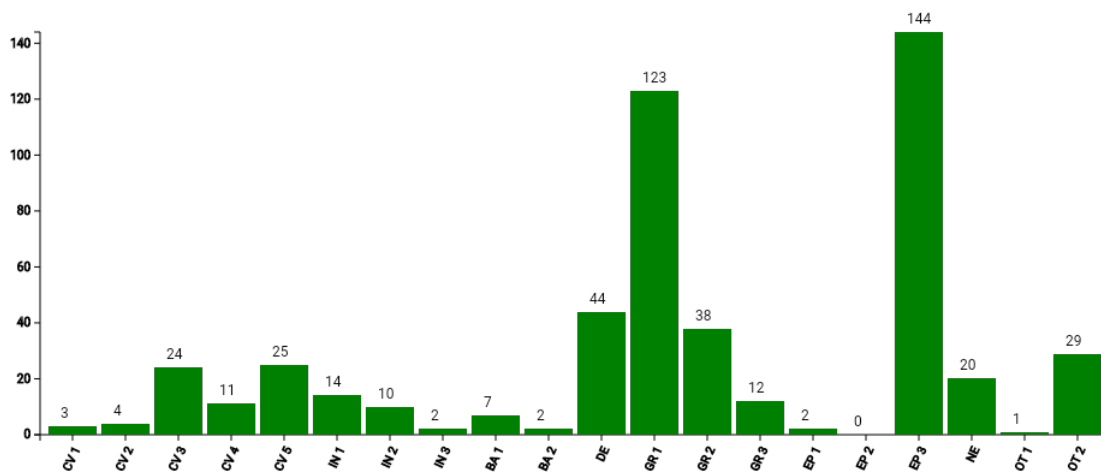


### Reasons for retention

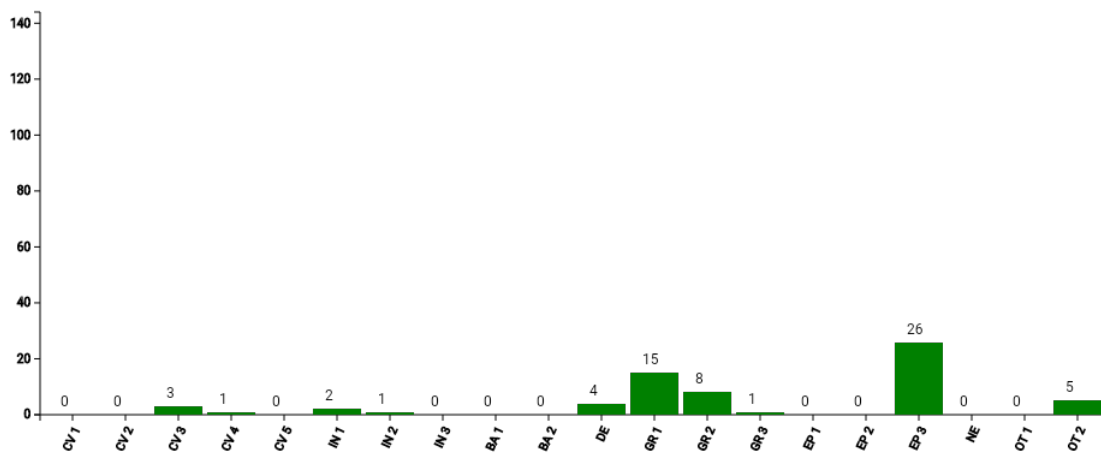




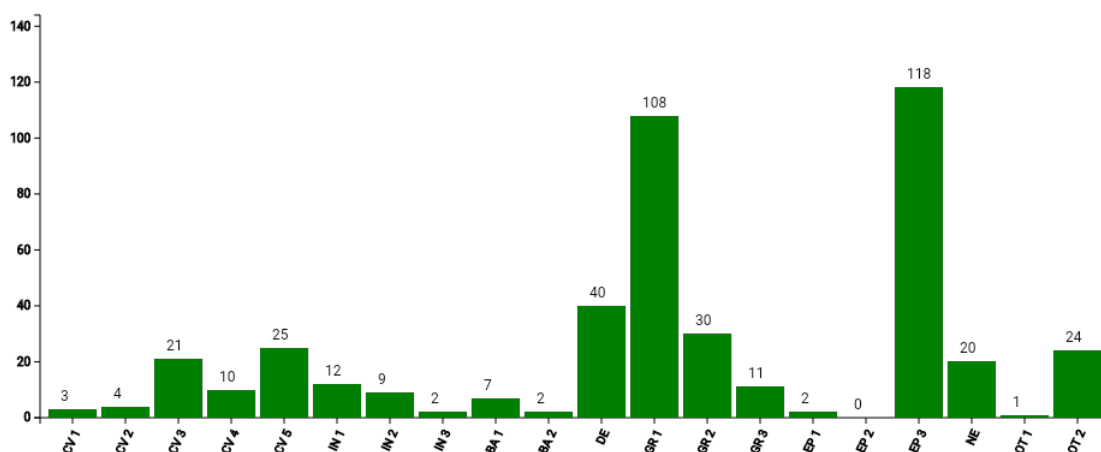
### Distribution of tree microhabitats by code (N total)



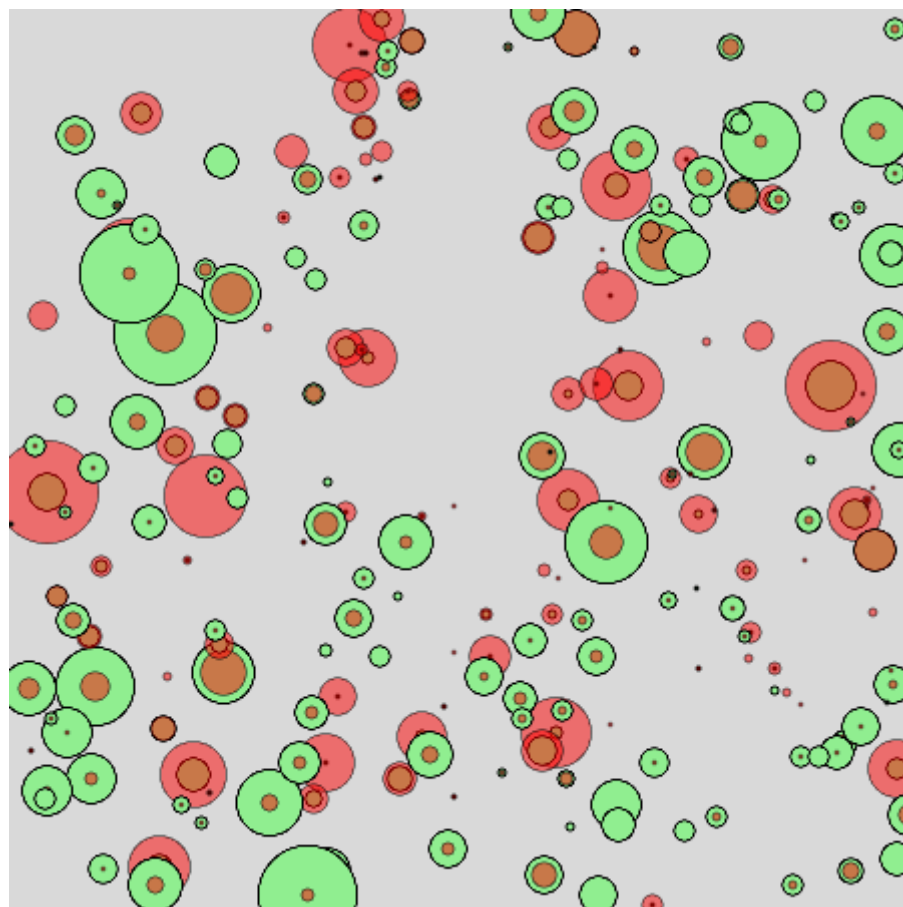
### Removed tree microhabitats by code (N removed)



### 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
hornbeam (109) Carpinus betulus	44	0.15	2.2	219	28	Competitor
narrow-leaved ash (48) Fraxinus angustifolia	43.5	0.15	2.3	238	4	Competitor
hornbeam (181) Carpinus betulus	43	0.15	2.1	215	24	Competitor
narrow-leaved ash (66) Fraxinus angustifolia	41	0.13	1.9	197	24	Competitor
hornbeam (179) Carpinus betulus	39.5	0.12	1.8	180	28	Competitor
hornbeam (256) Carpinus betulus	38.5	0.12	1.4	135	25	Competitor
black alder (32) Alnus glutinosa	38	0.11	1.7	177	3	Competitor
hornbeam (99) Carpinus betulus	37.5	0.11	1.5	152	28	Competitor
hornbeam (107) Carpinus betulus	36.5	0.11	1.3	130	67	Competitor
narrow-leaved ash (37) Fraxinus angustifolia	35.5	0.1	1.7	169	0	Competitor
hornbeam (195) Carpinus betulus	35	0.1	1.1	106	49	Competitor
hornbeam (186) Carpinus betulus	34	0.09	1	100	42	Competitor
hornbeam (74) Carpinus betulus	33	0.09	1	103	27	Competitor
hornbeam (82) Carpinus betulus	32	0.08	0.9	87	0	Competitor
narrow-leaved ash (197) Fraxinus angustifolia	30	0.07	0.8	83	0	Competitor
black alder (170) Alnus glutinosa	29.5	0.07	0.8	79	28	Competitor
narrow-leaved ash (120) Fraxinus angustifolia	28	0.06	0.7	73	4	Competitor
hornbeam (133) Carpinus betulus	27.5	0.06	0.8	77	3	Competitor
hornbeam (233) Carpinus betulus	25.5	0.05	0.5	45	22	Competitor
narrow-leaved ash (119) Fraxinus angustifolia	25	0.05	0.5	53	0	Competitor
black alder (67)	24	0.05	0.4	45	0	Competitor

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
Alnus glutinosa						
hornbeam (234) Carpinus betulus	24	0.05	0.5	47	4	Competitor
hornbeam (53) Carpinus betulus	23.5	0.04	0.5	53	18	Competitor
hornbeam (20) Carpinus betulus	23.5	0.04	0.4	45	30	Competitor
hornbeam (134) Carpinus betulus	23	0.04	0.5	46	0	Competitor
hornbeam (62) Carpinus betulus	22	0.04	0.3	35	32	Competitor
Field elm (162) Ulmus minor	22	0.04	0.3	30	0	Competitor
hornbeam (117) Carpinus betulus	22	0.04	0.4	37	11	Competitor
Field elm (73) Ulmus minor	22	0.04	0.4	35	36	Competitor
hornbeam (86) Carpinus betulus	21.5	0.04	0.3	35	0	Competitor
black alder (4) Alnus glutinosa	21	0.04	0.3	31	28	Competitor
hornbeam (6) Carpinus betulus	20.5	0.03	0.3	26	4	Competitor
black alder (92) Alnus glutinosa	20.5	0.03	0.3	31	3	Competitor
hornbeam (41) Carpinus betulus	18	0.03	0.2	17	24	Competitor
hornbeam (142) Carpinus betulus	18	0.03	0.2	22	20	Competitor
hornbeam (232) Carpinus betulus	17	0.02	0.2	23	18	Competitor
hornbeam (154) Carpinus betulus	16	0.02	0.2	23	0	Competitor
hornbeam (141) Carpinus betulus	16	0.02	0.2	18	24	Competitor
hornbeam (46) Carpinus betulus	14	0.02	0.1	11	0	Competitor
hornbeam (137) Carpinus betulus	14	0.02	0.1	8	0	Competitor
hornbeam (54) Carpinus betulus	13	0.01	0.1	6	78	Competitor

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
hornbeam (100) Carpinus betulus	12.5	0.01	0.1	7	0	Competitor
hornbeam (103) Carpinus betulus	11	0.01	0.1	6	0	Competitor
hornbeam (58) Carpinus betulus	10.5	0.01	0	5	24	Competitor
hornbeam (63) Carpinus betulus	10	0.01	0.1	6	24	Competitor
hornbeam (55) Carpinus betulus	8.5	0.01	0	3	30	Competitor
hornbeam (36) Carpinus betulus	8	0.01	0	3	3	Competitor
hornbeam (245) Carpinus betulus	8	0.01	0	2	0	Competitor

**Retention trees**

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
pedunculate oak (146) Quercus robur	80	0.5	8.9	913	46	Habitat tree
black alder (91) Alnus glutinosa	75.8	0.45	6.4	639	36	Habitat tree
pedunculate oak (88) Quercus robur	75.5	0.45	8	801	63	Seed tree
pedunculate oak (75) Quercus robur	74	0.43	6.7	667	30	Seed tree
pedunculate oak (140) Quercus robur	71.5	0.4	6.6	736	0	Seed tree
narrow-leaved ash (7) Fraxinus angustifolia	70	0.39	6.3	641	6	Seed tree
pedunculate oak (216) Quercus robur	69	0.37	6.3	631	15	Habitat tree
pedunculate oak (40) Quercus robur	67	0.35	6.1	613	34	Seed tree
wild cherry (184) Prunus avium	66	0.34	4	398	77	Habitat tree
pedunculate oak (98) Quercus robur	65	0.33	5	499	17	Seed tree
pedunculate oak (222) Quercus robur	64.5	0.33	5	508	4	Seed tree
pedunculate oak (224) Quercus robur	64	0.32	5.7	574	42	Seed tree
narrow-leaved ash (161) Fraxinus angustifolia	62	0.3	3.7	379	52	Seed tree
narrow-leaved ash (85) Fraxinus angustifolia	61	0.29	4.5	464	4	Seed tree
pedunculate oak (220) Quercus robur	60.5	0.29	4.3	440	16	Seed tree
narrow-leaved ash (56) Fraxinus angustifolia	59	0.27	4.1	412	95	Habitat tree
pedunculate oak (189) Quercus robur	55	0.24	3.4	348	6	Seed tree
hornbeam (101) Carpinus betulus	55	0.24	3.3	329	132	Habitat tree
pedunculate oak (215) Quercus robur	54.5	0.23	3.5	357	36	Seed tree
narrow-leaved ash (21) Fraxinus angustifolia	54	0.23	3.8	384	27	Seed tree

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
pedunculate oak (153) Quercus robur	53	0.22	3.3	114	0	Seed tree
narrow-leaved ash (28) Fraxinus angustifolia	53	0.22	3.6	362	24	Seed tree
pedunculate oak (217) Quercus robur	52.5	0.22	2.9	297	34	Veteran tree
pedunculate oak (187) Quercus robur	51	0.2	3.4	343	4	Seed tree
pedunculate oak (110) Quercus robur	51	0.2	3.2	318	28	Seed tree
hornbeam (182) Carpinus betulus	50	0.2	2.5	252	98	Habitat tree
hornbeam (152) Carpinus betulus	49	0.19	2.1	128	69	Habitat tree
narrow-leaved ash (45) Fraxinus angustifolia	49	0.19	2.5	254	40	Habitat tree
narrow-leaved ash (39) Fraxinus angustifolia	47	0.17	3	305	0	Seed tree
pedunculate oak (78) Quercus robur	46.5	0.17	2.5	259	0	Seed tree
pedunculate oak (111) Quercus robur	43.5	0.15	2.2	216	28	Seed tree
pedunculate oak (169) Quercus robur	43	0.15	2	195	12	Seed tree
narrow-leaved ash (26) Fraxinus angustifolia	42.5	0.14	2.1	214	24	Habitat tree
field maple (17) Acer campestre	42	0.14	1.6	161	92	Habitat tree
hornbeam (135) Carpinus betulus	42	0.14	2	203	55	Habitat tree
black locust (213) Robinia pseudoacacia	40	0.13	1.3	128	19	Veteran tree
hornbeam (24) Carpinus betulus	39.5	0.12	1.4	142	27	Habitat tree
narrow-leaved ash (23) Fraxinus angustifolia	38.5	0.12	2	200	7	Habitat tree
narrow-leaved ash (33) [REPLACE_DEAD]Fraxinus angustifolia	37.5	0.11	1.6	159	38	Habitat tree
narrow-leaved ash (87) Fraxinus angustifolia	36.8	0.11	1.4	138	58	Habitat tree

Tree	DBH (cm)	Basal area (m <sup>2</sup> )	Volume (m <sup>3</sup> )	Economic value (€)	Habitat value (pts.)	Reason
hornbeam (79) Carpinus betulus	35	0.1	1	97	128	Habitat tree
London sycamore (244) Platanus hybrida	29.5	0.07	0.7	70	24	Veteran tree
black locust (149) Robinia pseudoacacia	28.5	0.06	0.8	78	4	Veteran tree
black locust (237) Robinia pseudoacacia	21.1	0.04	0.2	23	4	Veteran tree
black locust (212) Robinia pseudoacacia	19.5	0.03	0.3	26	36	Veteran tree
black locust (214) Robinia pseudoacacia	18	0.03	0.2	25	0	Veteran tree
black locust (174) Robinia pseudoacacia	16.5	0.02	0.2	16	8	Veteran tree
hornbeam (19) Carpinus betulus	14	0.02	0.1	7	27	Habitat tree