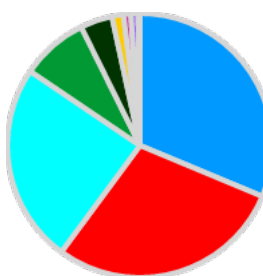


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Site conditions

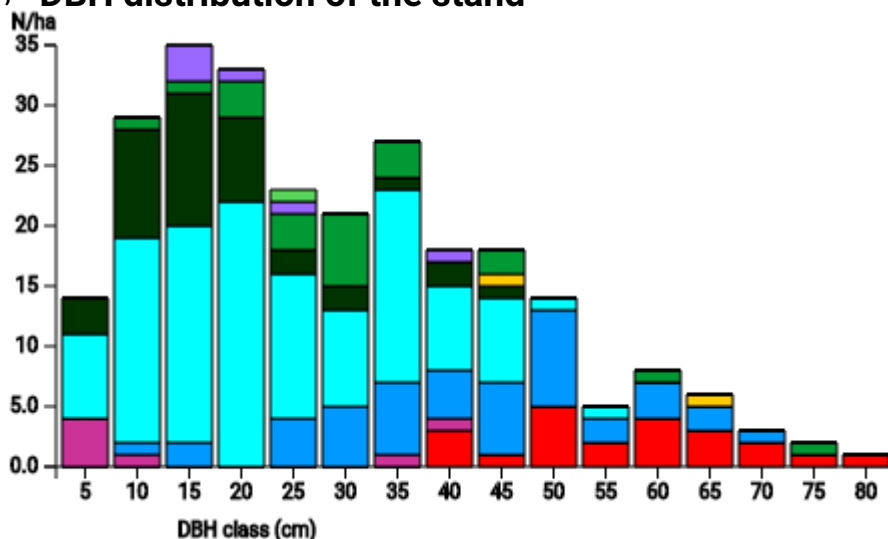
Altitude: 25 m.a.s.l.
 Forest ecological region: Lombardia
 Geology / Bedrock: Medium floodplain
 Soil type: Haplic luvisols and mollic gleysols
 Natural forest community: Illyrian oak-hornbeam forests (Erythronio-Carpinion)
 Mean annual temperature: 13.1 C;
 Mean annual precipitation: 603 mm;
 Ownership: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



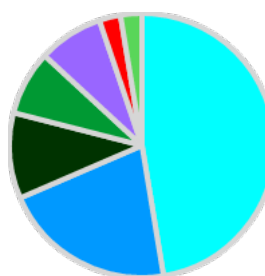
Initial stand (details by tree species)

Tree species	N/ha	Basal area (m ²)	Volume (m ³)	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
Total	257	25.7	344.3	34412	6446	515

Removed trees

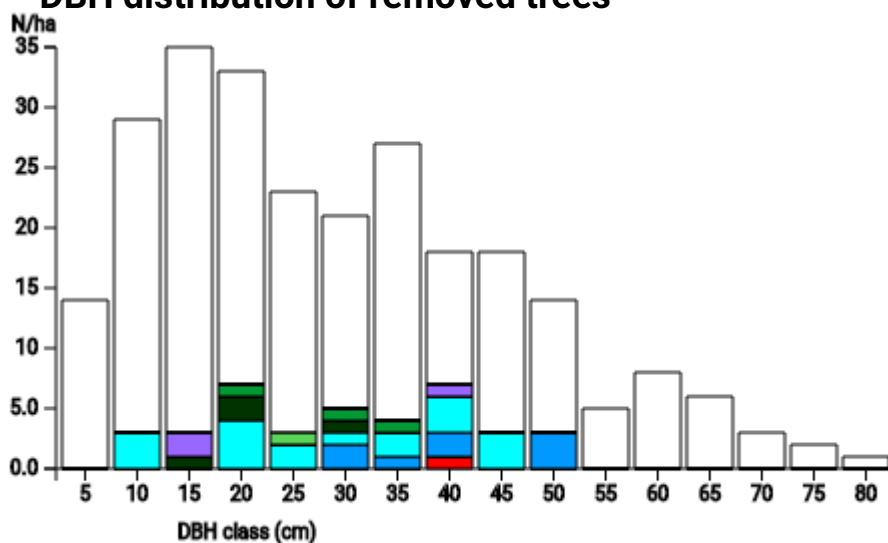
Volume: 46.5 m³
 Basal area: 3.5 m²
 Economic value: 4693 €
 Habitat value: 800 pts.

Removed trees (N in %)



- hornbeam: 47.4 %
- narrow-leaved ash: 21.1 %
- Field elm: 10.5 %
- black alder: 7.9 %
- black locust: 7.9 %
- pedunculate oak: 2.6 %
- London sycamore: 2.6 %
- field maple: 0 %
- wild cherry: 0 %

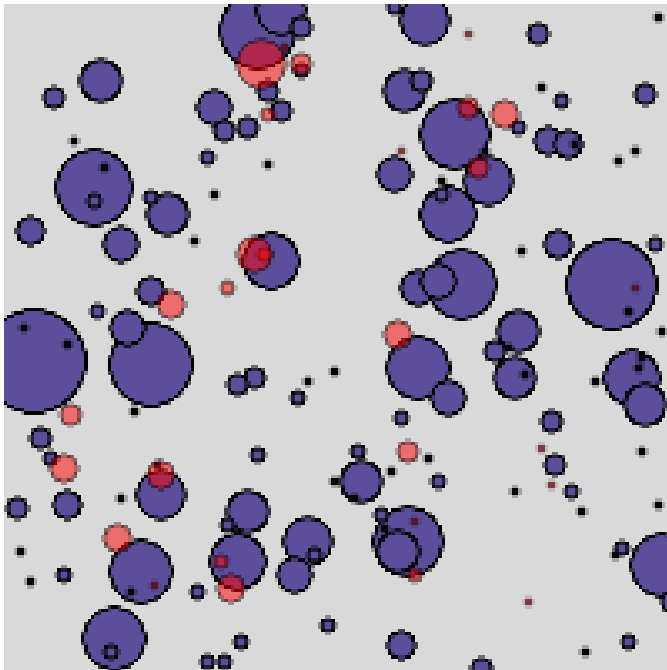
DBH distribution of removed trees



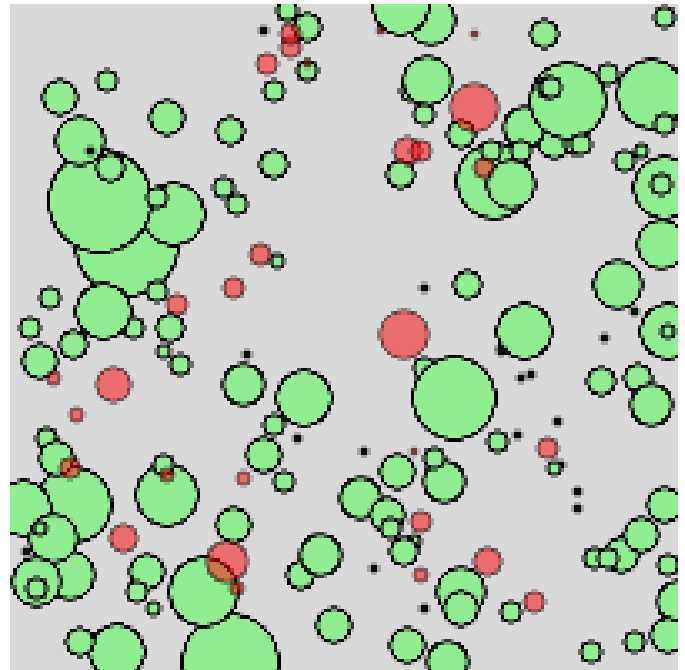
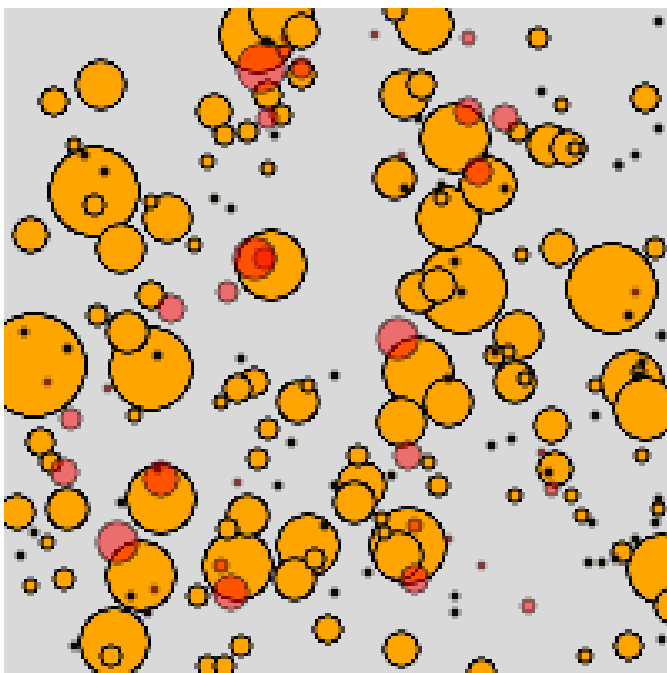
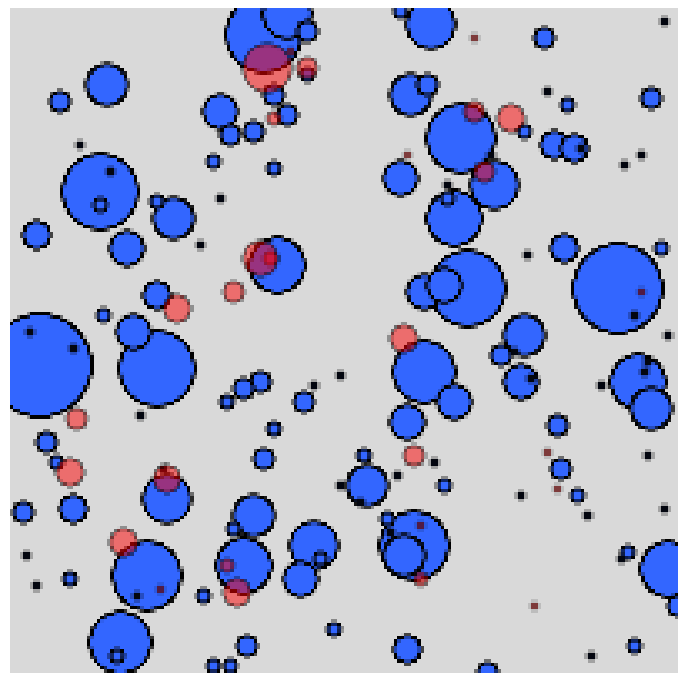
Removed trees (details by tree species)

Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	4	0.2	1.4	140	100	8
London sycamore	1	0.1	0.7	70	24	1
black alder	3	0.2	2.2	229	52	3
black locust	3	0.2	1.8	179	55	6
field maple	0	0	0	0	0	0
hornbeam	18	1.6	20.5	2052	403	47
narrow-leaved ash	8	1.2	18	1828	154	11
pedunculate oak	1	0.1	2	195	12	1
wild cherry	0	0	0	0	0	0
Total	38	3.5	46.5	4693	800	77

Economic value [EUR]



Habitat value

Basal area [m²]Volume [m³]**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.

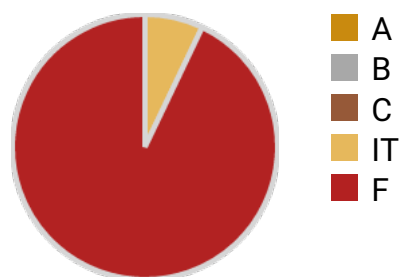
Economic values

Total value of removed trees: 4693 €
 Percentage of total stand value: 13.6 %
 Stand value after harvest: 29719 €

Economic value by tree species [€]

Tree species	Total	Per m ³
pedunculate oak	195	100
field maple	0	0
narrow-leafed ash	1828	102
hornbeam	2052	100
Field elm	140	100
wild cherry	0	0
black alder	229	102
black locust	179	100
London sycamore	70	100
Total	4693	101

Wood quality distribution (m³ in %)



Quality class	m ³	%
A	0	0
B	0	0
C	0	0
Industrial Timber	3.3	7.1
Fuelwood	43.2	92.9

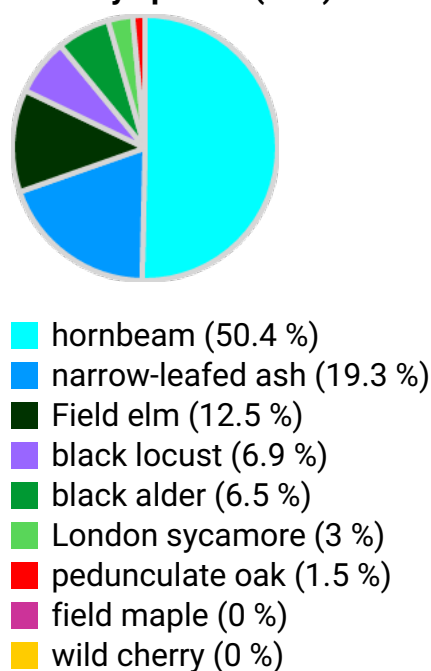
Habitat values

Total habitat value of removed trees: 800 pts.
 Percentage of total stand value: 12.4 %
 Stand value after harvest: 5646 pts.

Habitat value by tree species [pts.]

Tree species	Total	Per m ³	Microhabitats [N]
pedunculate oak	12	6.2	1
field maple	0	0	0
narrow-leafed ash	154	8.6	11
hornbeam	403	19.7	47
Field elm	100	71.4	8
wild cherry	0	0	0
black alder	52	23.2	3
black locust	55	30.8	6
London sycamore	24	34.3	1
Total	800	17.2	77

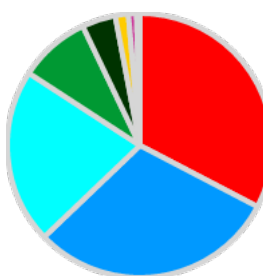
Habitat value (points) of removed trees by species (in %)



Remaining stand

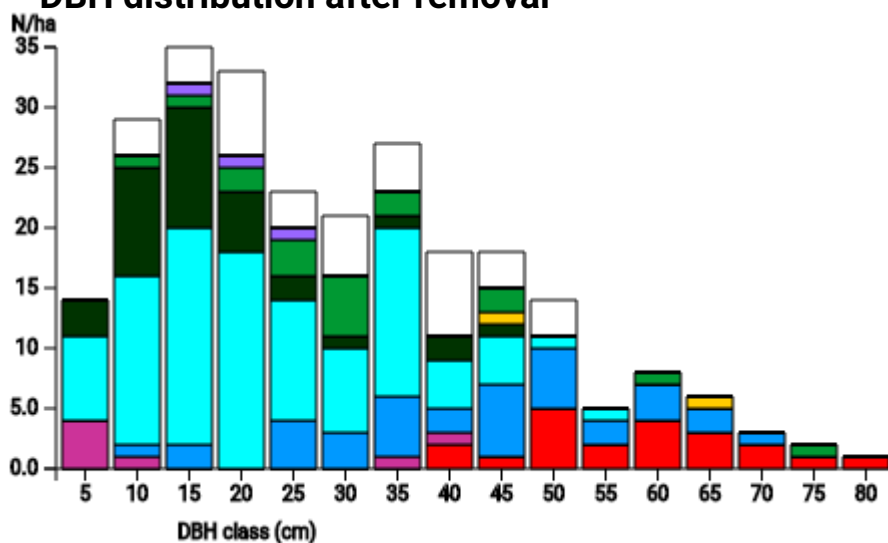
Volume: 297.9 m³
 Basal area: 22.4 m²
 Economic value: 29719 €
 Habitat value: 5646 pts.

Remaining trees by volume (m³ in %)



- pedunculate oak: 32.7 %
- narrow-leaved ash: 30.2 %
- hornbeam: 21.4 %
- black alder: 8.7 %
- Field elm: 4.1 %
- wild cherry: 1.6 %
- field maple: 1 %
- black locust: 0.4 %
- London sycamore: 0 %

DBH distribution after removal



Remaining stand (details by tree species)

Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	34	1.3	12.1	1136	656	41
London sycamore	0	0	0	0	0	0
black alder	18	2	25.9	2623	359	28
black locust	3	0.1	1.2	117	16	3
field maple	7	0.3	3	304	187	10
hornbeam	98	5.7	63.7	6259	2827	231
narrow-leaved ash	36	6.1	89.8	9134	929	70
pedunculate oak	21	6.1	97.3	9673	545	48
wild cherry	2	0.5	4.7	473	127	7
Total	219	22.2	297.8	29719	5646	438

Retention treesVolume: 154.3 m³

Elite trees: 0

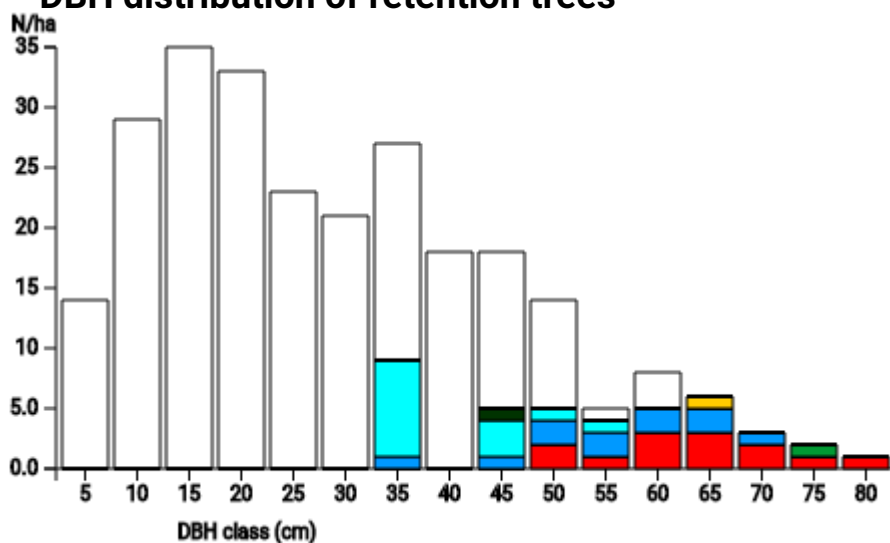
Habitat trees: 9

Economic value: 15348 €

Habitat value: 1891 pts.

Retention trees by volume (m³ in %)

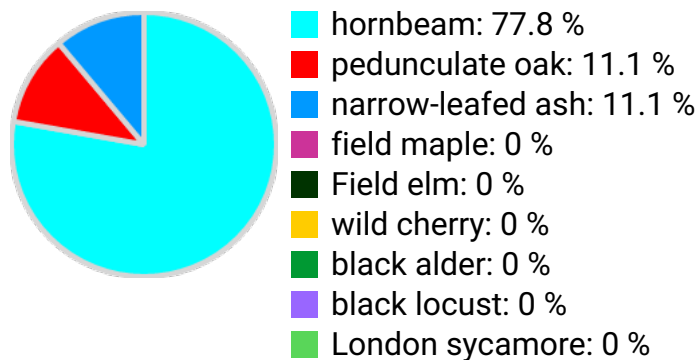
- pedunculate oak: 47.5 %
- narrow-leafed ash: 29.6 %
- hornbeam: 15 %
- black alder: 4.1 %
- wild cherry: 2.6 %
- Field elm: 1.1 %
- field maple: 0 %
- black locust: 0 %
- London sycamore: 0 %

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

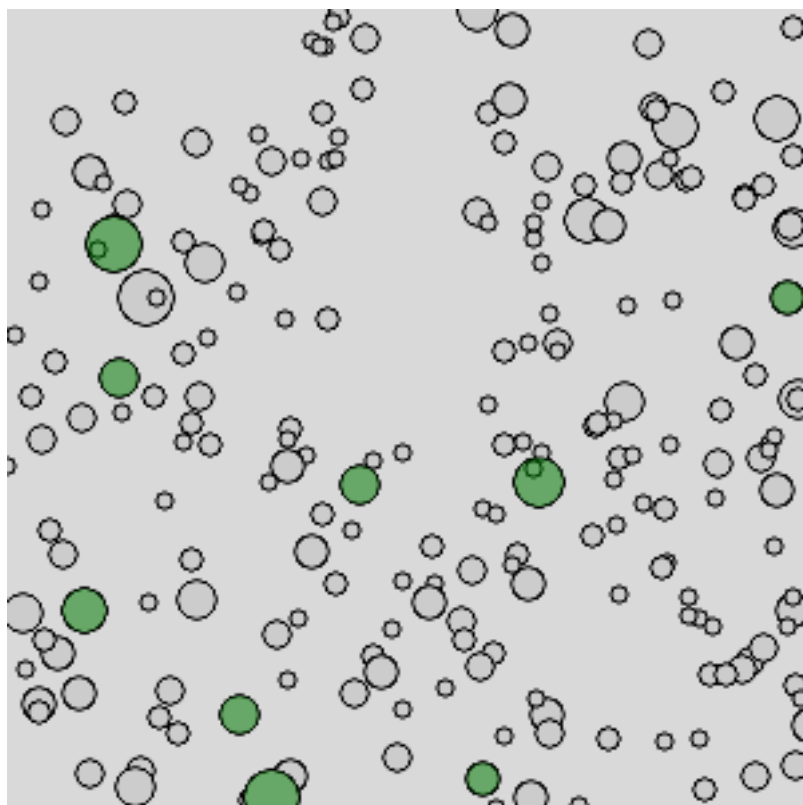
Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	1	0.2	1.8	178	6	1
London sycamore	0	0	0	0	0	0
black alder	1	0.5	6.4	639	36	3
black locust	0	0	0	0	0	0
field maple	0	0	0	0	0	0
hornbeam	13	1.9	23.1	2235	949	61
narrow-leafed ash	11	2.9	45.7	4657	406	28
pedunculate oak	13	4.5	73.3	7241	417	32
wild cherry	1	0.3	4	398	77	5
Total	40	10.2	154.3	15348	1891	130

Number of habitat trees	[N]	9
Habitat value	pts.	783
	[% of total]	12.1
Economic value	[€]	1520
	[% of total]	4.4
Number of microhabitats	[N]	46
	[% of total]	8.9

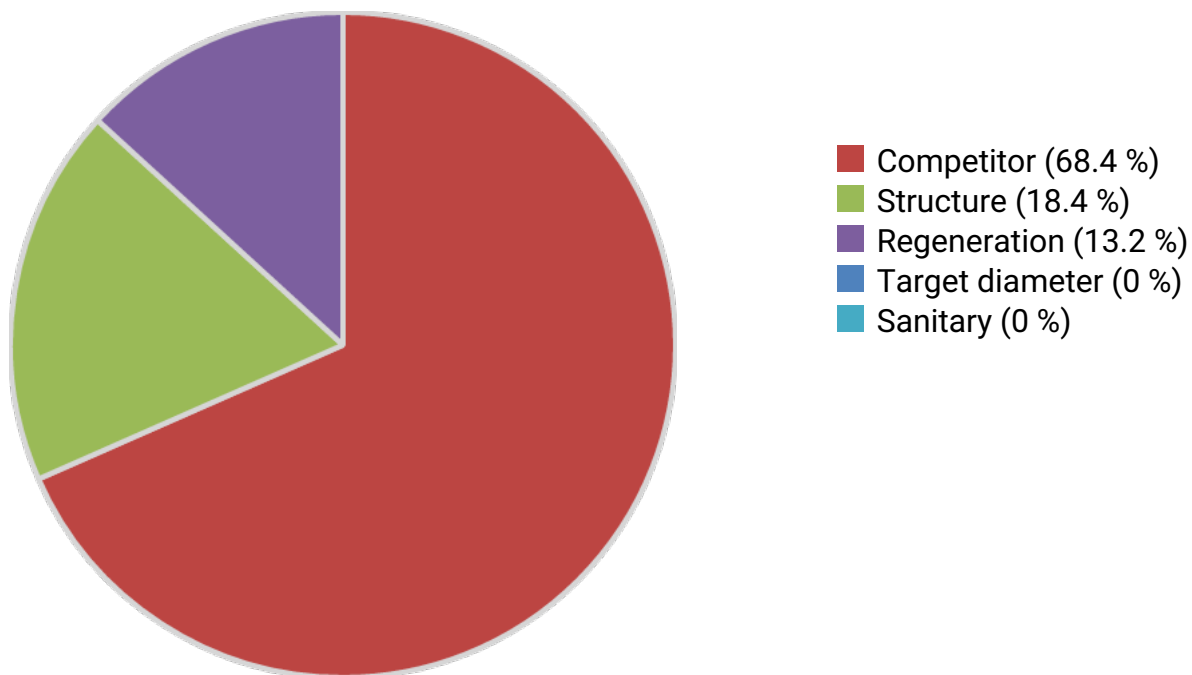
Habitat tree distribution by species (N in %)



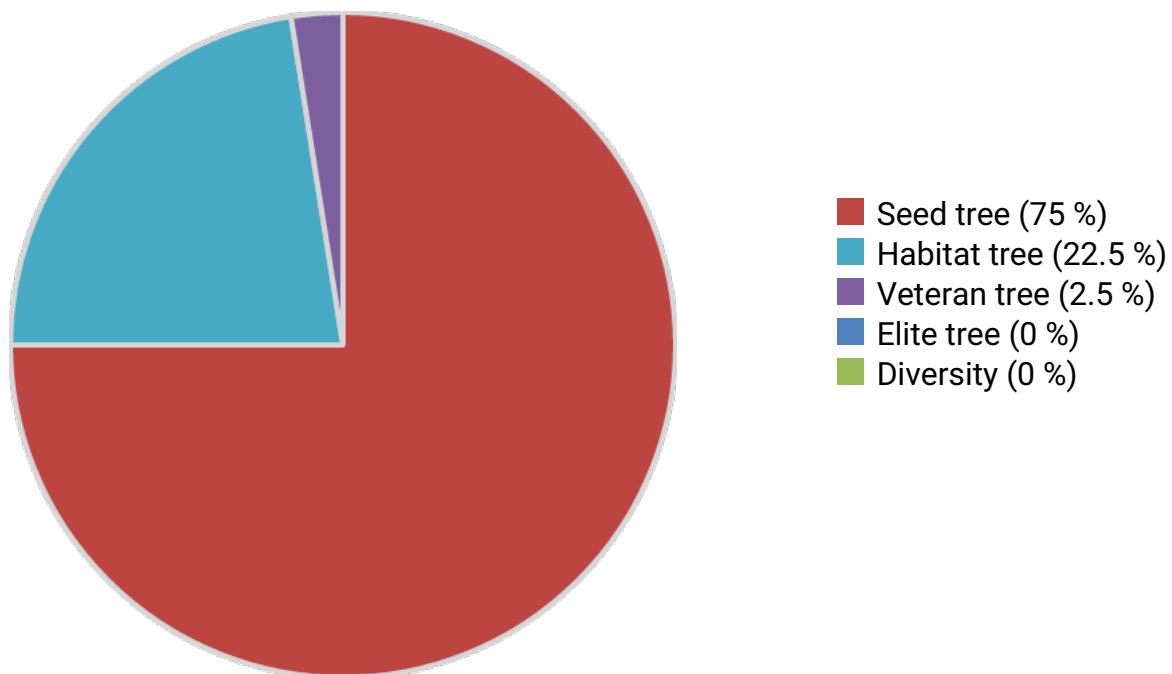
Spatial distribution of habitat trees



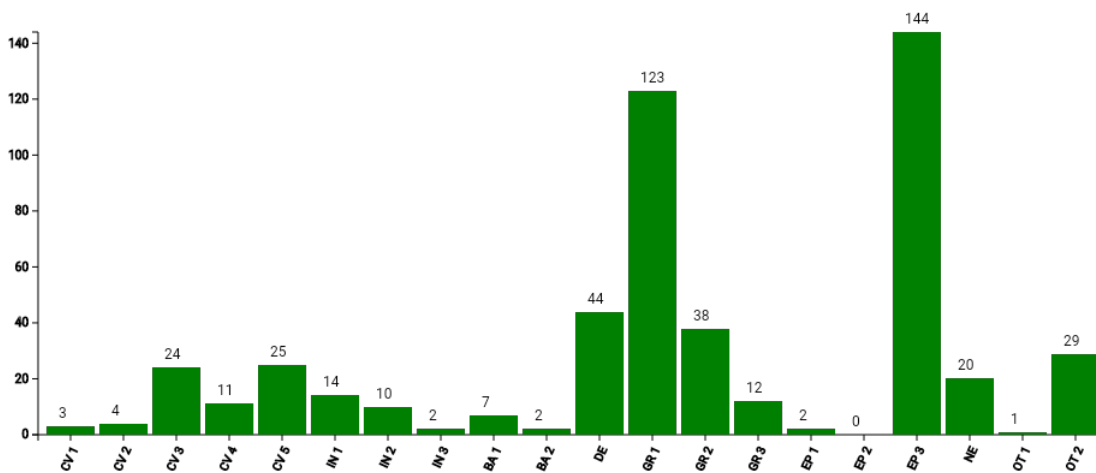
Reasons for removal



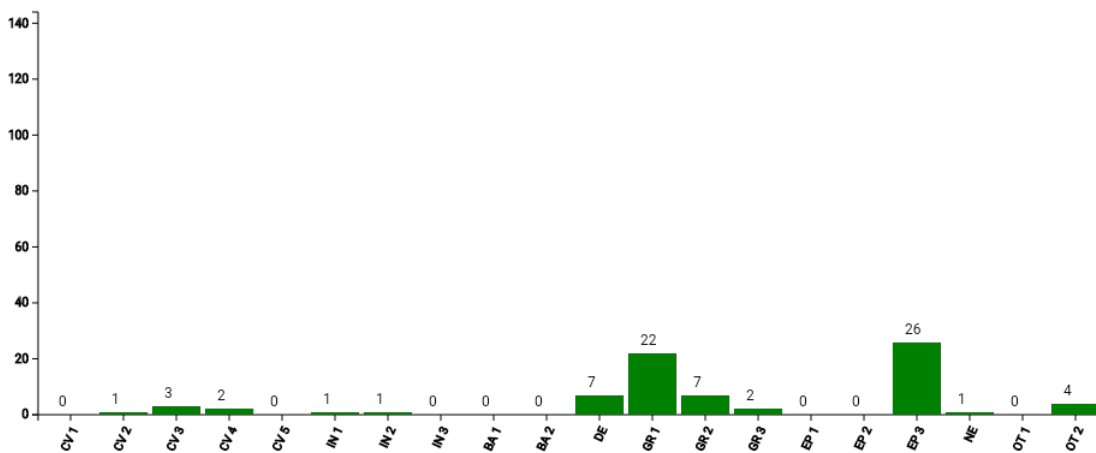
Reasons for retention



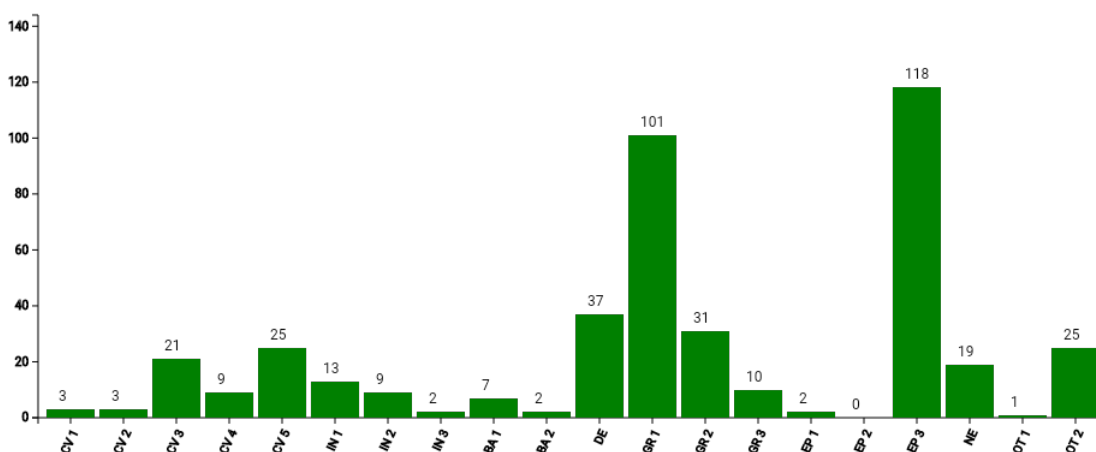
Distribution of tree microhabitats by code (N total)



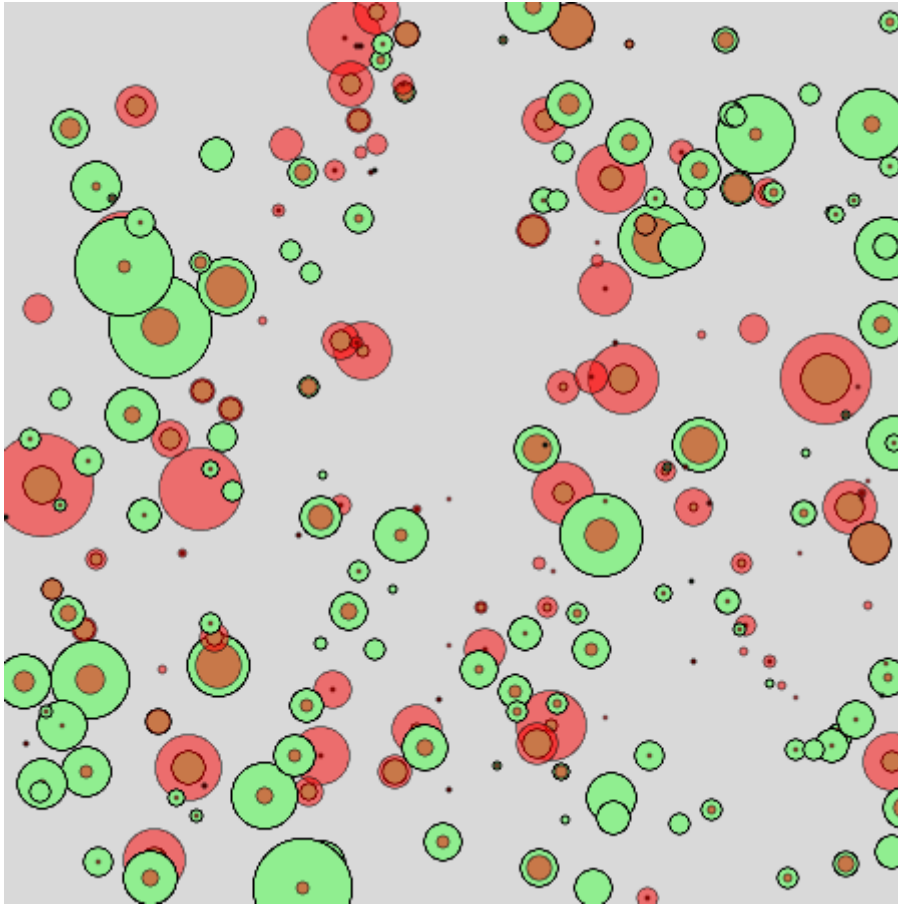
Removed tree microhabitats by code (N removed)



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 ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
narrow-leaved ash (25) Fraxinus angustifolia	54.5	0.23	4	401	27	Competitor
narrow-leaved ash (96) Fraxinus angustifolia	50	0.2	3.1	319	28	Competitor
narrow-leaved ash (113) Fraxinus angustifolia	50	0.2	2.6	263	60	Competitor
hornbeam (223) Carpinus betulus	49	0.19	2.3	230	34	Regeneration
hornbeam (177) Carpinus betulus	48	0.18	2.7	268	21	Competitor
hornbeam (236) Carpinus betulus	46	0.17	2.6	259	20	Competitor
hornbeam (109) Carpinus betulus	44	0.15	2.2	219	28	Regeneration
narrow-leaved ash (48) Fraxinus angustifolia	43.5	0.15	2.3	238	4	Competitor
pedunculate oak (169) Quercus robur	43	0.15	2	195	12	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 (42) Carpinus betulus	41	0.13	1.6	160	60	Competitor
black locust (213) Robinia pseudoacacia	40	0.13	1.3	128	19	Competitor
hornbeam (148) Carpinus betulus	39	0.12	1.7	166	18	Competitor
narrow-leaved ash (23) Fraxinus angustifolia	38.5	0.12	2	200	7	Competitor
hornbeam (99) Carpinus betulus	37.5	0.11	1.5	152	28	Regeneration
black alder (38) Alnus glutinosa	36	0.1	1.2	122	0	Competitor
narrow-leaved ash (97) Fraxinus angustifolia	33.5	0.09	1.3	127	4	Competitor
Field elm (194) Ulmus minor	32	0.08	0.7	73	28	Structure
hornbeam (221) Carpinus betulus	30.5	0.07	1	97	53	Regeneration
narrow-leaved ash (197)	30	0.07	0.8	83	0	Structure

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
Fraxinus angustifolia						
black alder (3) Alnus glutinosa	30	0.07	0.7	76	24	Competitor
London sycamore (244) Platanus hybrida	29.5	0.07	0.7	70	24	Competitor
hornbeam (11) Carpinus betulus	27.5	0.06	0.8	76	10	Competitor
hornbeam (166) Carpinus betulus	25.5	0.05	0.5	47	30	Structure
hornbeam (234) Carpinus betulus	24	0.05	0.5	47	4	Competitor
hornbeam (62) Carpinus betulus	22	0.04	0.3	35	32	Structure
hornbeam (10) Carpinus betulus	22	0.04	0.2	21	13	Competitor
Field elm (139) Ulmus minor	21.5	0.04	0.3	26	40	Competitor
hornbeam (86) Carpinus betulus	21.5	0.04	0.3	35	0	Structure
black alder (4) Alnus glutinosa	21	0.04	0.3	31	28	Competitor
Field elm (145) Ulmus minor	21	0.04	0.3	27	18	Competitor
black locust (212) Robinia pseudoacacia	19.5	0.03	0.3	26	36	Competitor
black locust (214) Robinia pseudoacacia	18	0.03	0.2	25	0	Structure
Field elm (176) Ulmus minor	16.5	0.02	0.1	14	14	Regeneration
hornbeam (12) Carpinus betulus	14	0.02	0.1	13	4	Competitor
hornbeam (65) Carpinus betulus	11	0.01	0.1	5	0	Competitor
hornbeam (63) Carpinus betulus	10	0.01	0.1	6	24	Structure

Retention trees

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
pedunculate oak (146) Quercus robur	80	0.5	8.9	913	46	Seed tree
black alder (91) Alnus glutinosa	75.8	0.45	6.4	639	36	Seed 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	Seed 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	Seed tree
narrow-leaved ash (130) Fraxinus angustifolia	66	0.34	5.3	551	27	Seed tree
narrow-leaved ash (206) Fraxinus angustifolia	65	0.33	5	519	25	Seed 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
pedunculate oak (259) Quercus robur	64	0.32	5.6	560	34	Seed tree
narrow-leaved ash (122) Fraxinus angustifolia	63	0.31	4.8	483	36	Seed tree
narrow-leaved ash (85) Fraxinus angustifolia	61	0.29	4.5	464	4	Seed tree
narrow-leaved ash (56) Fraxinus angustifolia	59	0.27	4.1	412	95	Veteran tree
narrow-leaved ash (13) Fraxinus angustifolia	57.5	0.26	4.2	420	60	Seed tree
hornbeam (101) Carpinus betulus	55	0.24	3.3	329	132	Seed tree
pedunculate oak (155)	55	0.24	3.1	309	104	Habitat tree

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
[REPLACE_DEAD]Quercus robur						
narrow-leafed ash (21) Fraxinus angustifolia	54	0.23	3.8	384	27	Seed tree
narrow-leafed ash (114) Fraxinus angustifolia	53.5	0.23	3.3	340	68	Seed tree
pedunculate oak (153) Quercus robur	53	0.22	3.3	114	0	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
hornbeam (254) Carpinus betulus	48	0.18	2.2	223	48	Habitat tree
hornbeam (247) Carpinus betulus	47.5	0.18	2	201	54	Seed tree
narrow-leafed ash (39) Fraxinus angustifolia	47	0.17	3	305	0	Seed tree
Field elm (164) Ulmus minor	46.5	0.17	1.8	178	6	Seed tree
hornbeam (179) Carpinus betulus	39.5	0.12	1.8	180	28	Seed tree
hornbeam (24) Carpinus betulus	39.5	0.12	1.4	142	27	Seed tree
hornbeam (257) Carpinus betulus	39	0.12	1.5	151	56	Seed tree
hornbeam (15) Carpinus betulus	38	0.11	1.6	159	31	Seed tree
narrow-leafed ash (87) Fraxinus angustifolia	36.8	0.11	1.4	138	58	Habitat tree
hornbeam (107) Carpinus betulus	36.5	0.11	1.3	130	67	Habitat tree
hornbeam (261) [REPLACE_DEAD]Carpinus betulus	35	0.1	1	100	127	Habitat tree
hornbeam (235) Carpinus betulus	35	0.1	1.4	143	84	Habitat tree
hornbeam (79) Carpinus betulus	35	0.1	1	97	128	Habitat tree