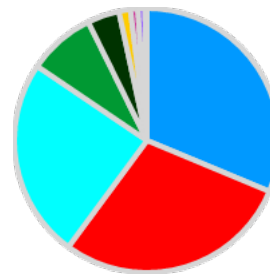


03/12/2021 GrD Bdf

Site conditions

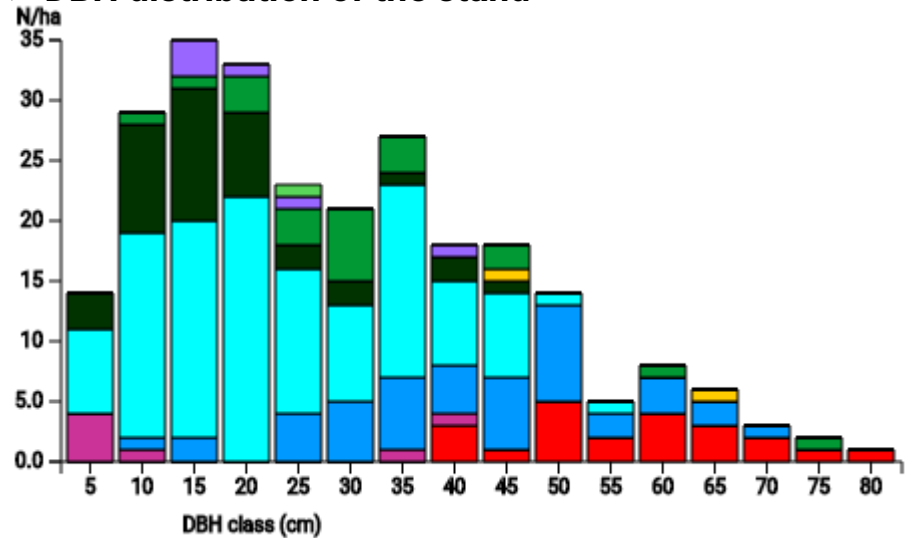
Altitude: 25 m.a.s.l.
 Forest ecological region:
 Lombardia
 Geology / Bedrock: Medium
 floodplain
 Soil type: Haplic luvisols and
 mollic gleysols
 Natural forest community: Illyrian
 oak-hornbeam forests
 (Erythronio-Carpinion)
 Mean annual temperature: 13.1 C;
 Mean annual precipitation: 603
 mm;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



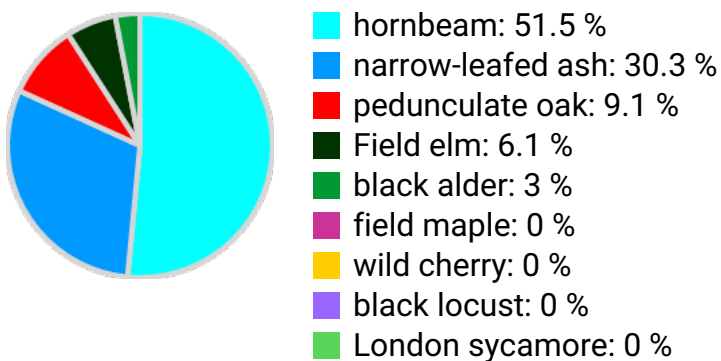
Initial stand (details by tree species)

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

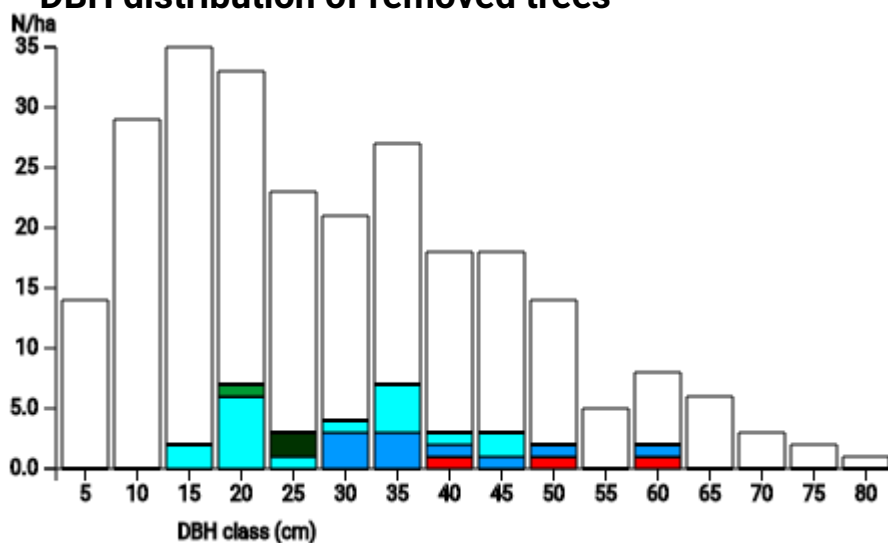
Removed trees

Volume: 49.2 m³
 Basal area: 3.6 m²
 Economic value: 4958 €
 Habitat value: 769 pts.

Removed trees (N in %)



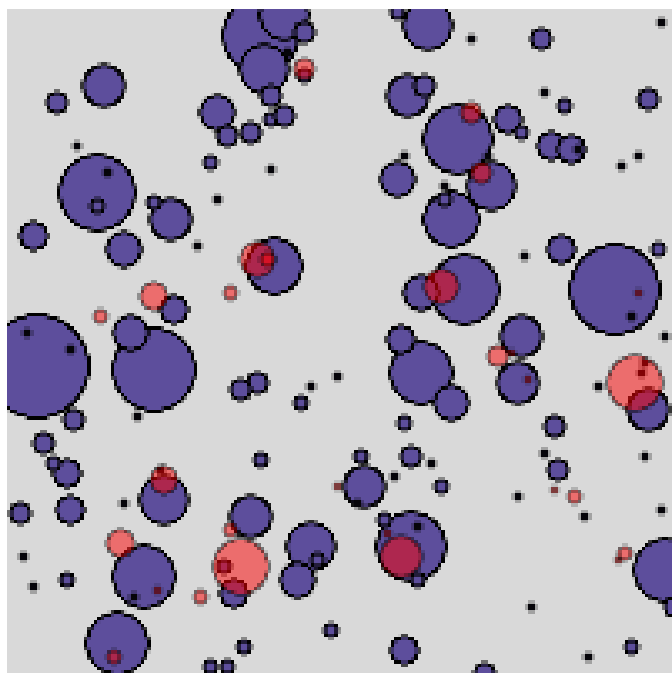
DBH distribution of removed trees



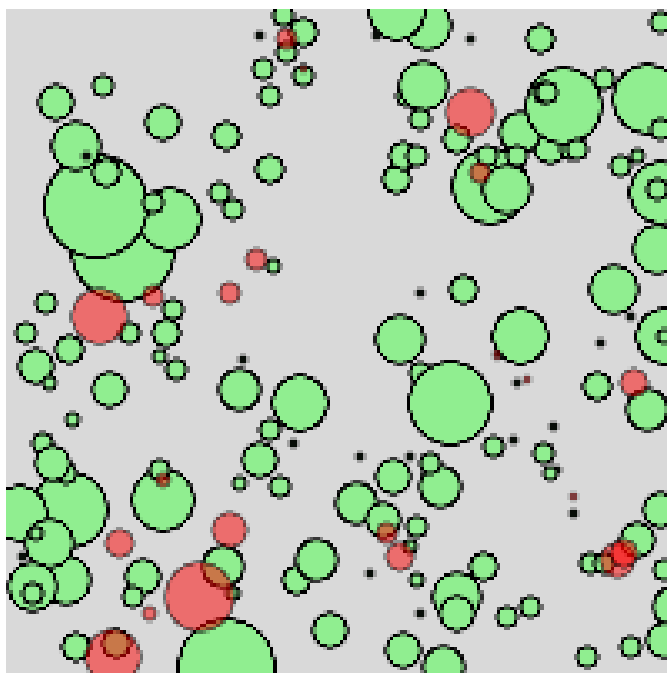
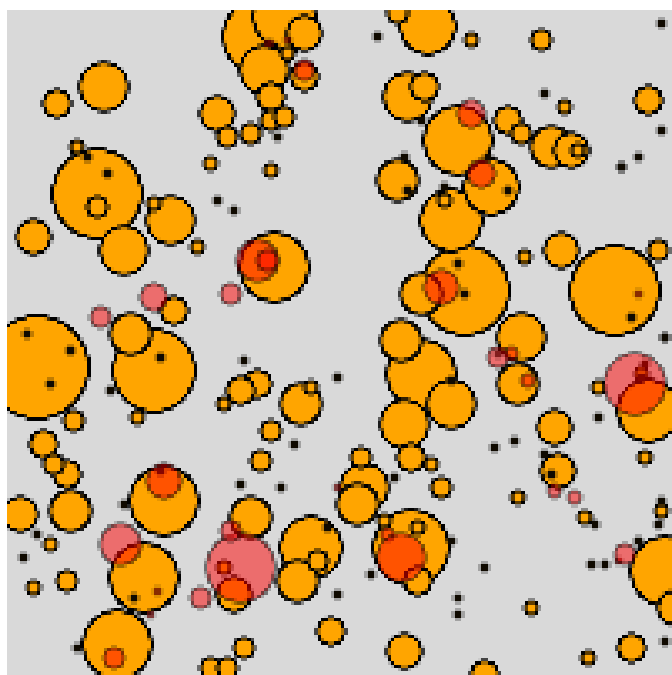
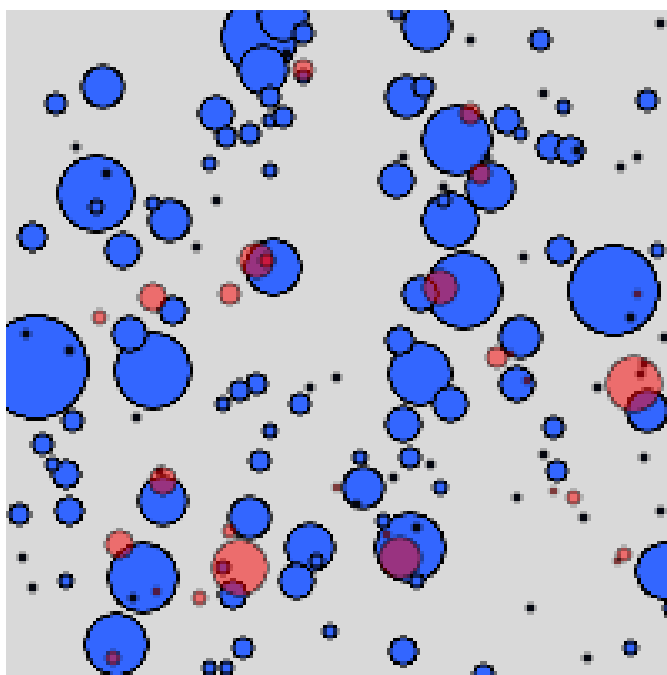
Removed trees (details by tree species)

Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	2	0.1	1	104	11	3
London sycamore	0	0	0	0	0	0
black alder	1	0	0.3	31	28	2
black locust	0	0	0	0	0	0
field maple	0	0	0	0	0	0
hornbeam	17	1.3	16.3	1637	508	46
narrow-leaved ash	10	1.4	20.9	2105	154	14
pedunculate oak	3	0.7	10.7	1081	68	7
wild cherry	0	0	0	0	0	0
Total	33	3.6	49.2	4958	769	72

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.

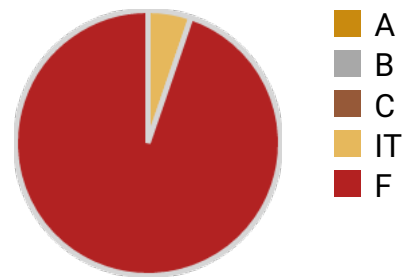
Economic values

Total value of removed trees: 4958 €
 Percentage of total stand value: 14.4 %
 Stand value after harvest: 29454 €

Economic value by tree species [€]

Tree species	Total	Per m ³
pedunculate oak	1081	101
field maple	0	0
narrow-leafed ash	2105	101
hornbeam	1637	100
Field elm	104	102
wild cherry	0	0
black alder	31	100
black locust	0	0
London sycamore	0	0
Total	4958	101

Wood quality distribution (m³ in %)



Quality class	m ³	%
A	0	0
B	0	0
C	0	0
Industrial Timber	2.6	5.3
Fuelwood	46.6	94.7

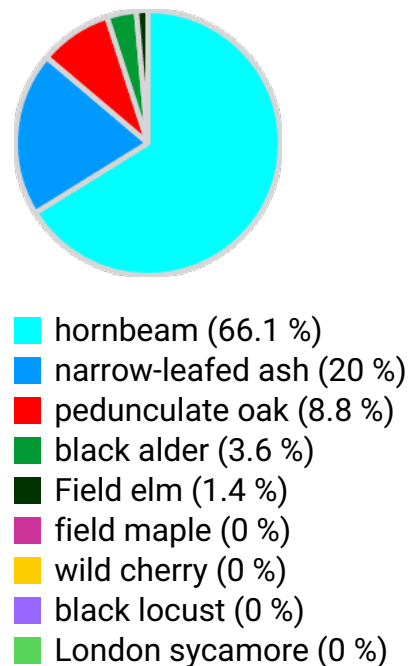
Habitat values

Total habitat value of removed trees: 769 pts.
 Percentage of total stand value: 11.9 %
 Stand value after harvest: 5677 pts.

Habitat value by tree species [pts.]

Tree species	Total	Per m ³	Microhabitats [N]
pedunculate oak	68	6.4	7
field maple	0	0	0
narrow-leafed ash	154	7.4	14
hornbeam	508	31.1	46
Field elm	11	10.8	3
wild cherry	0	0	0
black alder	28	91.4	2
black locust	0	0	0
London sycamore	0	0	0
Total	769	15.6	72

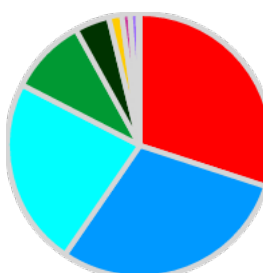
Habitat value (points) of removed trees by species (in %)



Remaining stand

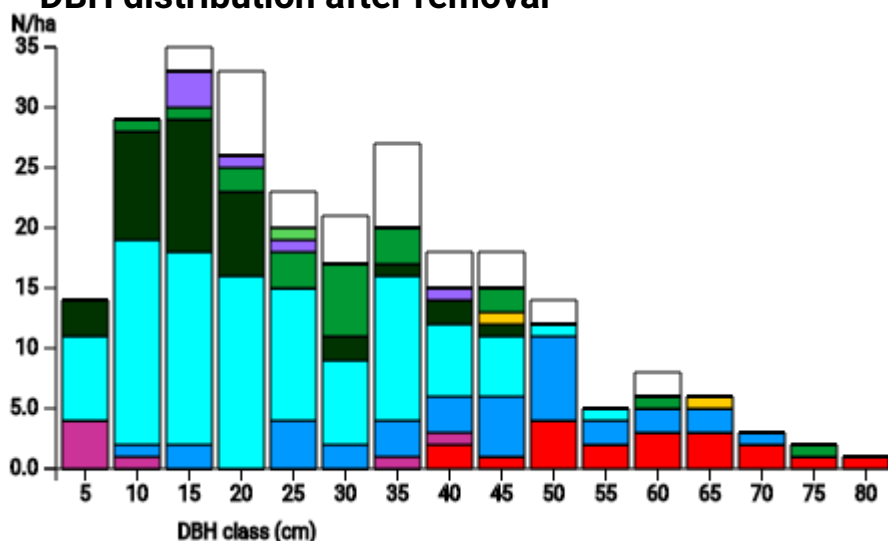
Volume: 295 m³
 Basal area: 22 m²
 Economic value: 29454 €
 Habitat value: 5677 pts.

Remaining trees by volume (m³ in %)



- pedunculate oak: 30 %
- narrow-leafed ash: 29.5 %
- hornbeam: 23 %
- black alder: 9.4 %
- Field elm: 4.2 %
- wild cherry: 1.6 %
- field maple: 1 %
- black locust: 1 %
- London sycamore: 0.2 %

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	36	1.4	12.5	1171	745	46
London sycamore	1	0.1	0.7	70	24	1
black alder	20	2.2	27.9	2821	383	29
black locust	6	0.3	3	296	71	9
field maple	7	0.3	3	304	187	10
hornbeam	99	5.9	67.8	6675	2722	232
narrow-leafed ash	34	5.8	86.9	8856	929	67
pedunculate oak	19	5.5	88.6	8787	489	42
wild cherry	2	0.5	4.7	473	127	7
Total	224	22	295.1	29454	5677	443

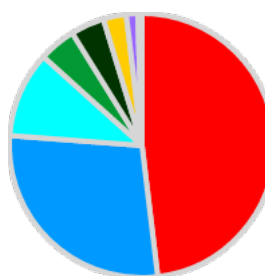
Retention treesVolume: 143.1 m³

Elite trees: 0

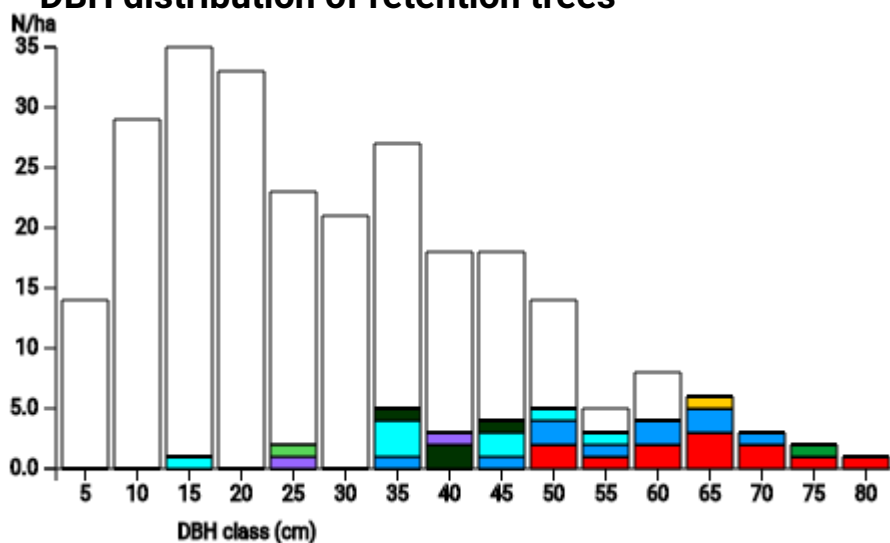
Habitat trees: 9

Economic value: 14227 €

Habitat value: 1339 pts.

Retention trees by volume (m³ in %)

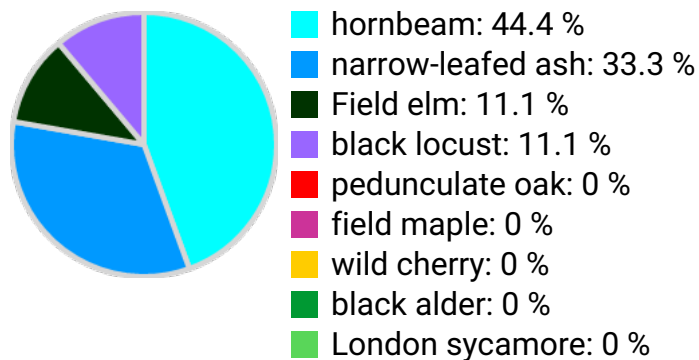
- pedunculate oak: 48.1 %
- narrow-leafed ash: 28.1 %
- hornbeam: 10.5 %
- black alder: 4.5 %
- Field elm: 4.1 %
- wild cherry: 2.8 %
- black locust: 1.4 %
- London sycamore: 0.5 %
- field maple: 0 %

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

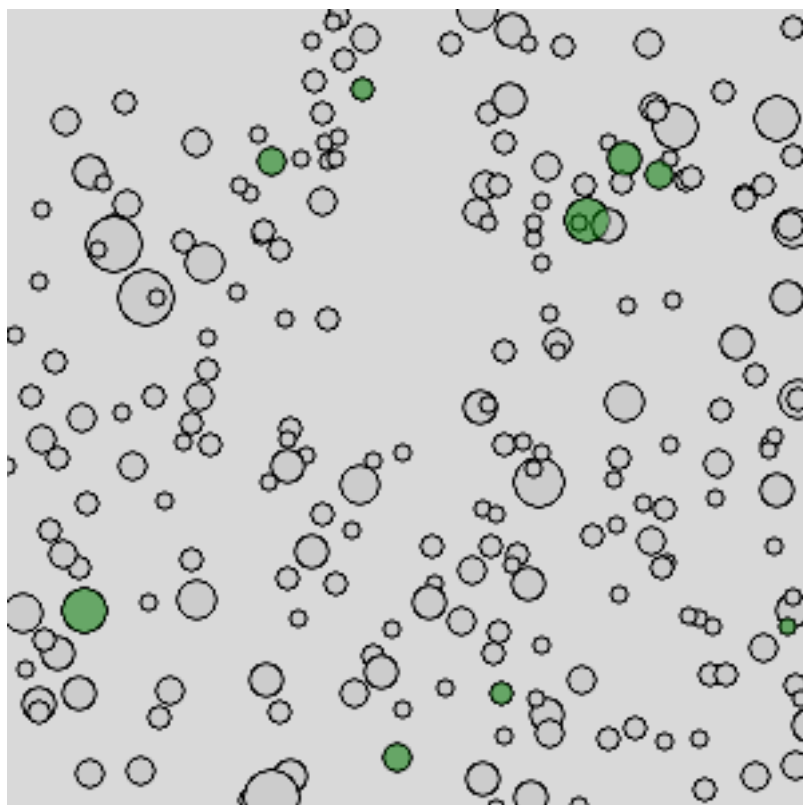
Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	4	0.6	5.9	513	86	7
London sycamore	1	0.1	0.7	70	24	1
black alder	1	0.5	6.4	639	36	3
black locust	2	0.2	2.1	206	23	4
field maple	0	0	0	0	0	0
hornbeam	8	1.2	15	1500	420	32
narrow-leafed ash	10	2.7	40.2	4103	382	31
pedunculate oak	12	4.1	68.9	6798	291	27
wild cherry	1	0.3	4	398	77	5
Total	39	9.6	143.1	14227	1339	110

Number of habitat trees	[N]	9
Habitat value	pts.	421
	[% of total]	6.5
Economic value	[€]	1632
	[% of total]	4.7
Number of microhabitats	[N]	30
	[% of total]	5.8

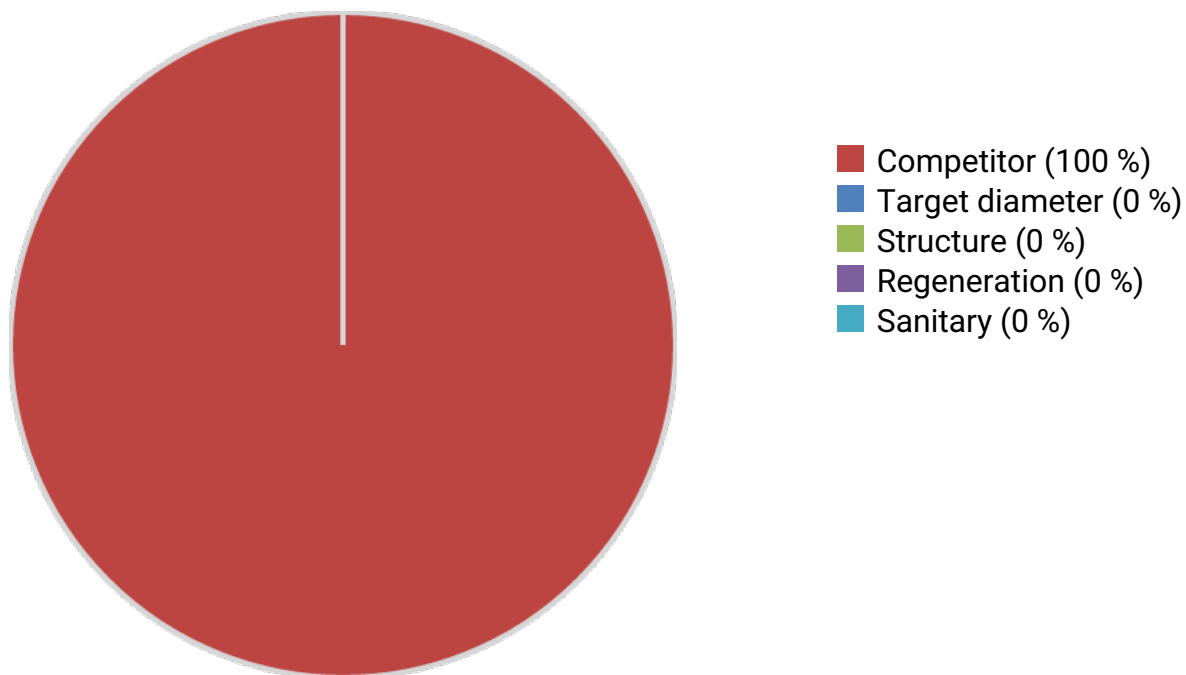
Habitat tree distribution by species (N in %)



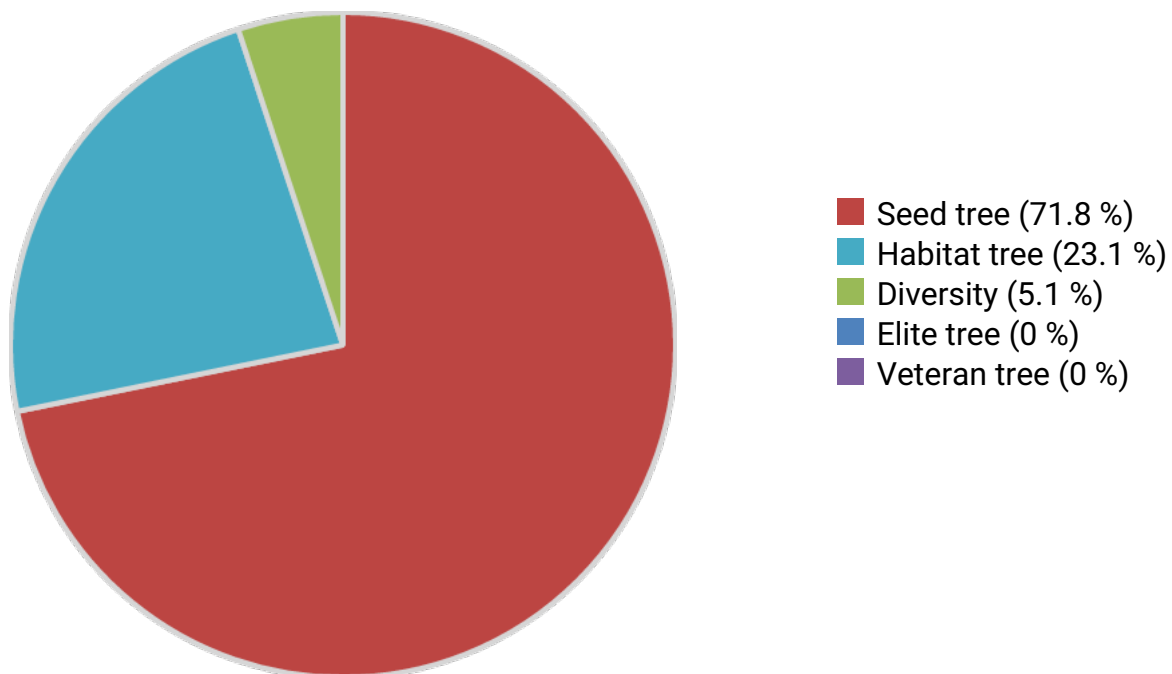
Spatial distribution of habitat trees



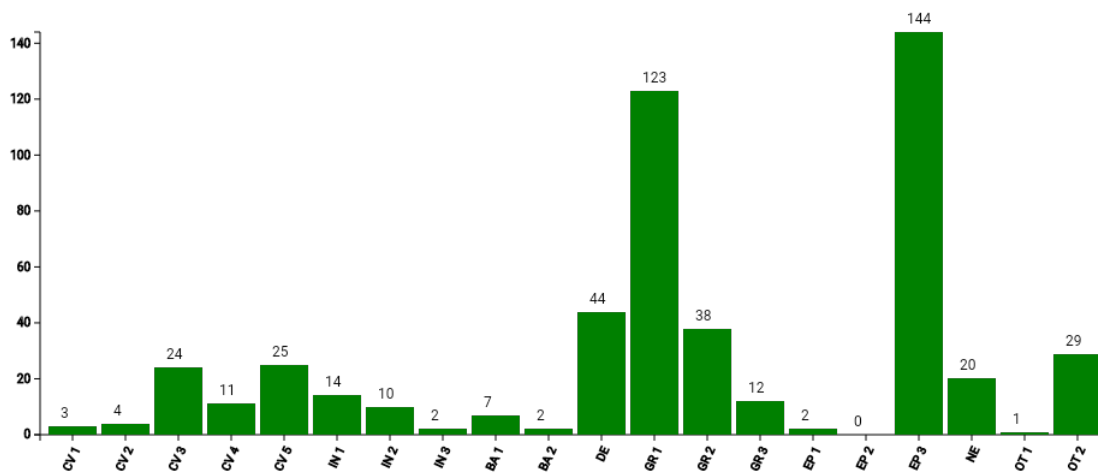
Reasons for removal



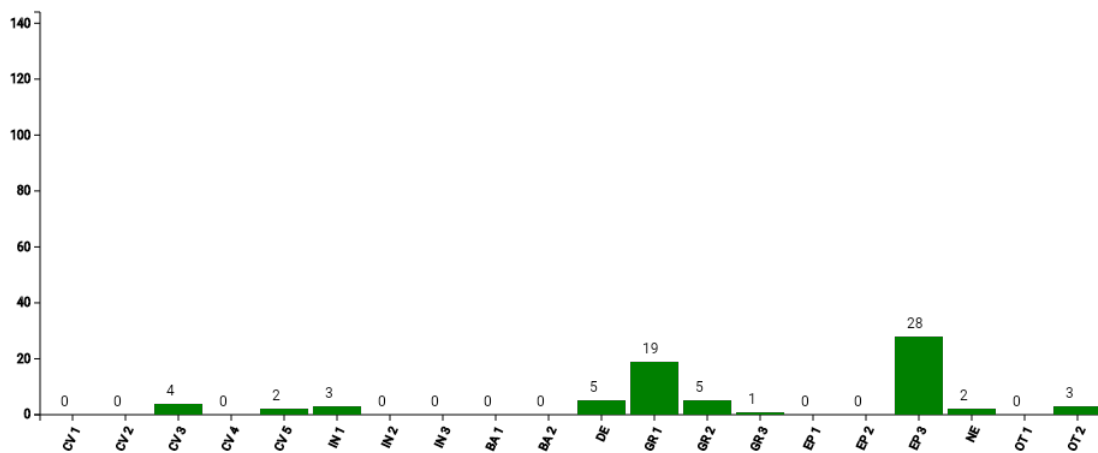
Reasons for retention



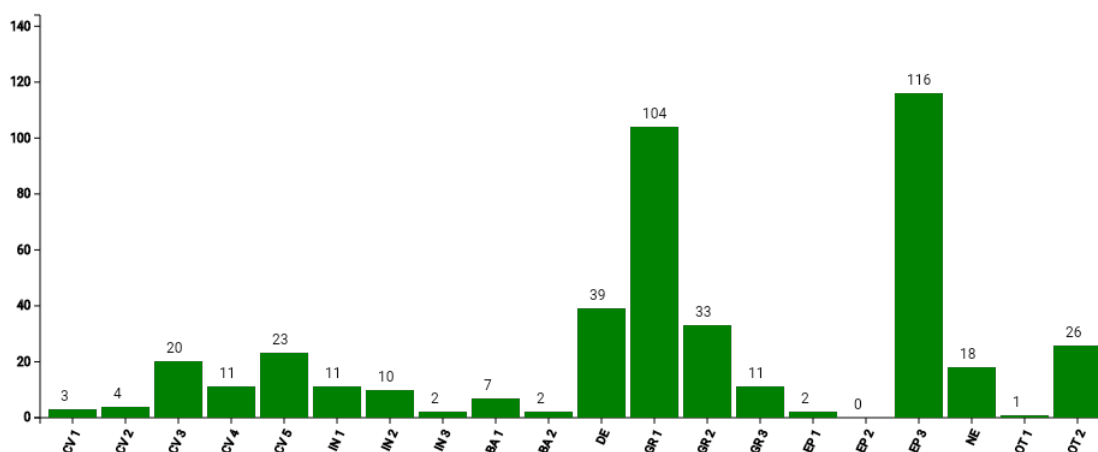
Distribution of tree microhabitats by code (N total)



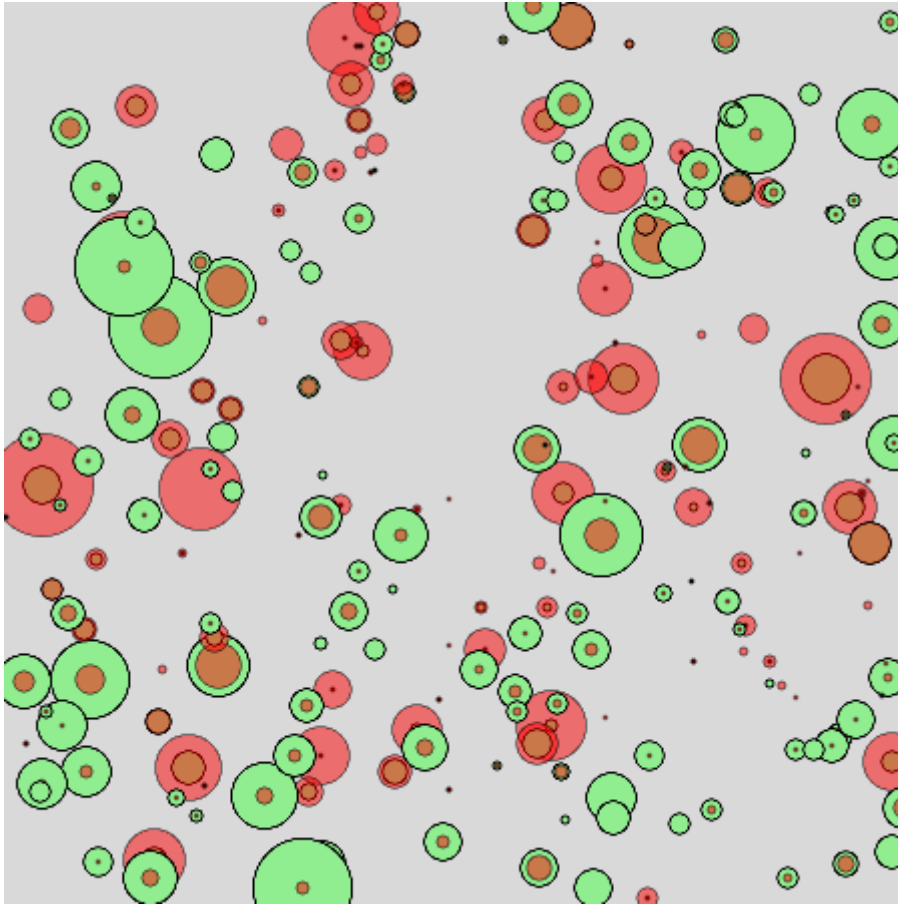
Removed tree microhabitats by code (N removed)



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
pedunculate oak (222) Quercus robur	64.5	0.33	5	508	4	Competitor
narrow-leaved ash (122) Fraxinus angustifolia	63	0.31	4.8	483	36	Competitor
pedunculate oak (215) Quercus robur	54.5	0.23	3.5	357	36	Competitor
narrow-leaved ash (96) Fraxinus angustifolia	50	0.2	3.1	319	28	Competitor
hornbeam (223) Carpinus betulus	49	0.19	2.3	230	34	Competitor
hornbeam (177) Carpinus betulus	48	0.18	2.7	268	21	Competitor
narrow-leaved ash (94) Fraxinus angustifolia	48	0.18	2.9	287	3	Competitor
pedunculate oak (111) Quercus robur	43.5	0.15	2.2	216	28	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
narrow-leaved ash (129) Fraxinus angustifolia	39	0.12	1.7	170	12	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	Competitor
narrow-leaved ash (208) Fraxinus angustifolia	37	0.11	1.4	139	34	Competitor
hornbeam (107) Carpinus betulus	36.5	0.11	1.3	130	67	Competitor
hornbeam (258) Carpinus betulus	35	0.1	1.3	133	66	Competitor
hornbeam (235) Carpinus betulus	35	0.1	1.4	143	84	Competitor
hornbeam (186) Carpinus betulus	34	0.09	1	100	42	Competitor
narrow-leaved ash (97) Fraxinus angustifolia	33.5	0.09	1.3	127	4	Competitor
narrow-leaved ash (198) Fraxinus angustifolia	33	0.09	1	100	6	Competitor
narrow-leaved ash (197)	30	0.07	0.8	83	0	Competitor

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
Fraxinus angustifolia						
Field elm (125) Ulmus minor	29.5	0.07	0.5	54	7	Competitor
Field elm (127) Ulmus minor	28	0.06	0.5	51	4	Competitor
hornbeam (191) Carpinus betulus	28	0.06	0.6	65	24	Competitor
hornbeam (5) Carpinus betulus	24	0.05	0.3	31	4	Competitor
hornbeam (234) Carpinus betulus	24	0.05	0.5	47	4	Competitor
hornbeam (209) Carpinus betulus	22	0.04	0.3	33	42	Competitor
hornbeam (86) Carpinus betulus	21.5	0.04	0.3	35	0	Competitor
hornbeam (172) Carpinus betulus	21	0.04	0.3	34	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
hornbeam (128) Carpinus betulus	19.5	0.03	0.3	27	10	Competitor
hornbeam (232) Carpinus betulus	17	0.02	0.2	23	18	Competitor

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 (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 (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
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	Seed tree
narrow-leaved ash (21) Fraxinus angustifolia	54	0.23	3.8	384	27	Seed tree

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
narrow-leaved 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 (187) Quercus robur	51	0.2	3.4	343	4	Seed tree
hornbeam (182) Carpinus betulus	50	0.2	2.5	252	98	Habitat tree
narrow-leaved ash (45) Fraxinus angustifolia	49	0.19	2.5	254	40	Habitat tree
hornbeam (247) Carpinus betulus	47.5	0.18	2	201	54	Seed tree
Field elm (164) Ulmus minor	46.5	0.17	1.8	178	6	Seed tree
hornbeam (236) Carpinus betulus	46	0.17	2.6	259	20	Seed tree
Field elm (158) Ulmus minor	44.5	0.16	1.7	176	10	Seed tree
black locust (213) Robinia pseudoacacia	40	0.13	1.3	128	19	Habitat tree
Field elm (255) Ulmus minor	40	0.13	1.3	128	46	Habitat tree
hornbeam (24) Carpinus betulus	39.5	0.12	1.4	142	27	Habitat tree
hornbeam (47) Carpinus betulus	38.9	0.12	1.4	145	54	Habitat tree
hornbeam (15) Carpinus betulus	38	0.11	1.6	159	31	Seed tree
narrow-leaved ash (33) [REPLACE_DEAD]Fraxinus angustifolia	37.5	0.11	1.6	159	38	Habitat tree
Field elm (150) Ulmus minor	36	0.1	1.2	31	24	Seed tree
London sycamore (244) Platanus hybrida	29.5	0.07	0.7	70	24	Diversity
black locust (149) Robinia pseudoacacia	28.5	0.06	0.8	78	4	Diversity
hornbeam (203) [REPLACE_DEAD]Carpinus betulus	19.5	0.03	0.1	12	4	Habitat tree