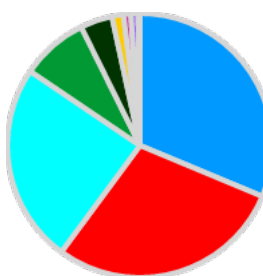


23/07/2021 BoscoFontana GruppoB 23lug

Site conditions

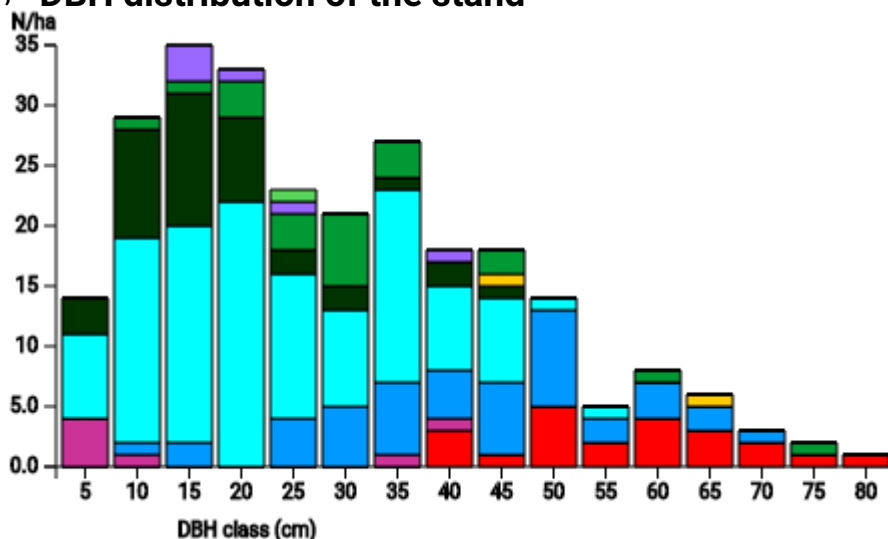
Altitude: 25 m.a.s.l.
 Forest ecological region:
 Lombardia
 Geology / Bedrock: Medium
 floodplain
 Soil type: Haplic luvisols and
 mollic gleysols
 Natural forest community: Illyrian
 oak-hornbeam forests
 (Erythronio-Carpinion)
 Mean annual temperature: 13.1 C;
 Mean annual precipitation: 603
 mm;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

Tree species distribution by volume (in %)



- narrow-leafed ash: 31.3 %
- pedunculate oak: 28.8 %
- hornbeam: 24.4 %
- 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



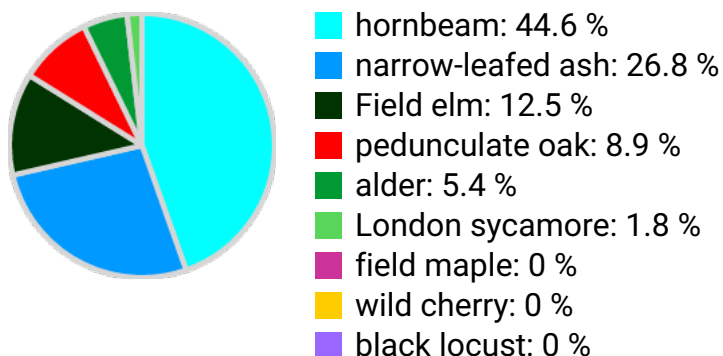
Initial stand (details by tree species)

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
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

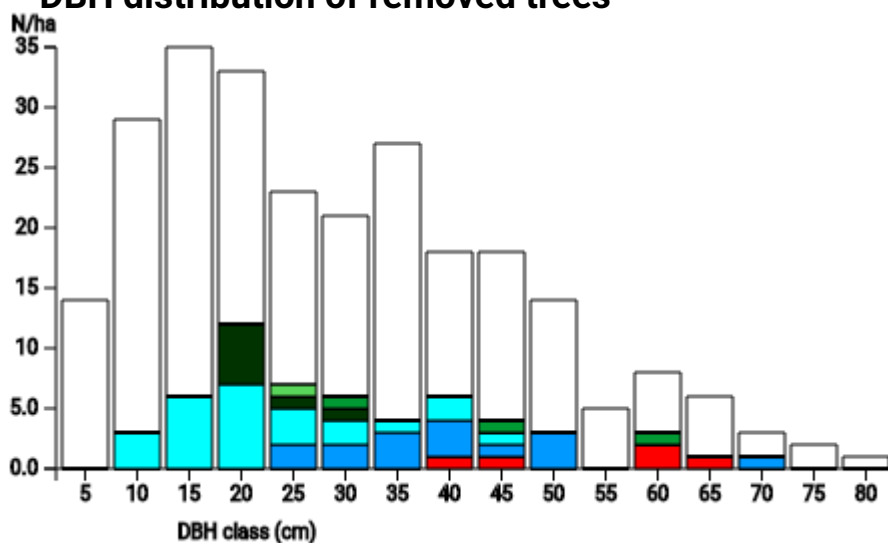
Removed trees

Volume: 78.1 m³
 Basal area: 5.8 m²
 Economic value: 7910 €
 Habitat value: 1064 pts.

Removed trees (N in %)



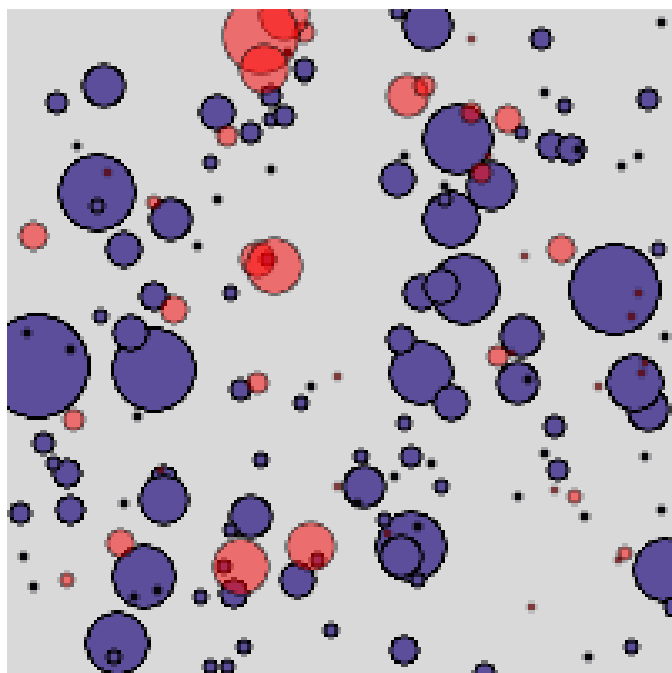
DBH distribution of removed trees



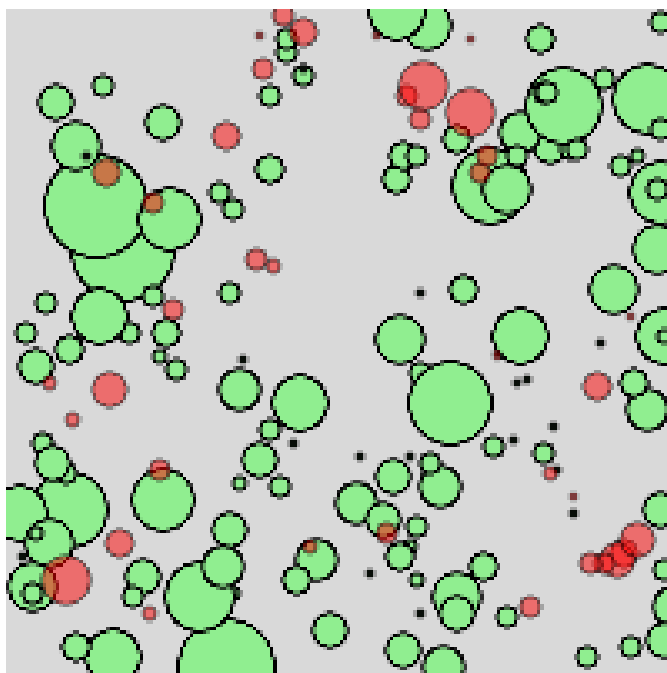
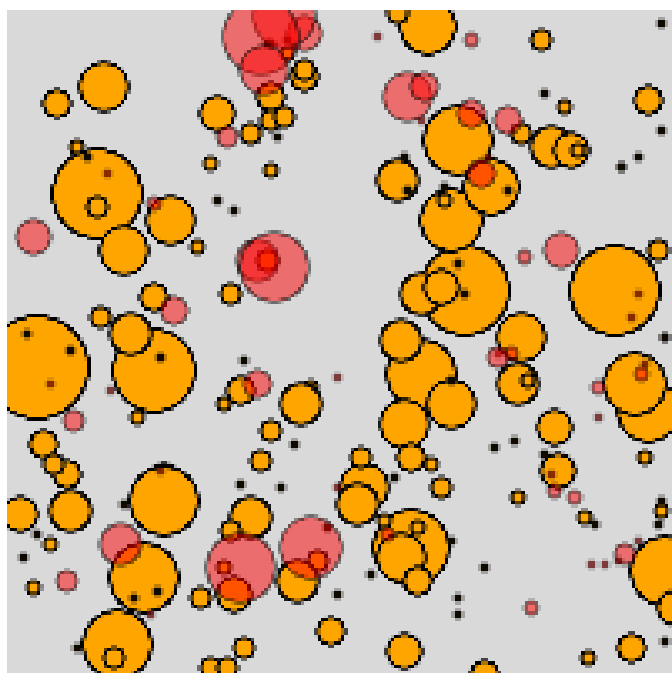
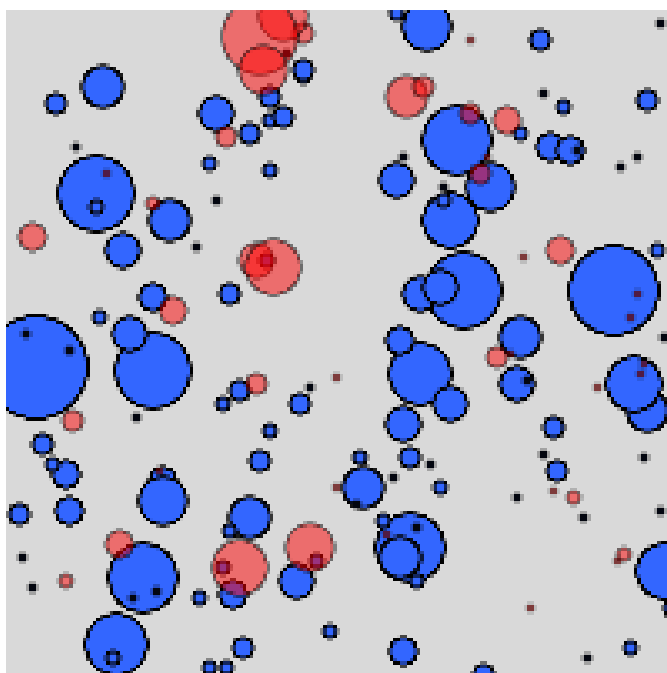
Removed trees (details by tree species)

Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	7	0.3	2.7	277	154	10
London sycamore	1	0.1	0.7	70	24	1
alder	3	0.5	6.9	704	53	5
black locust	0	0	0	0	0	0
field maple	0	0	0	0	0	0
hornbeam	25	1.4	15.6	1563	524	46
narrow-leafed ash	15	2.2	33.7	3419	268	22
pedunculate oak	5	1.3	18.5	1877	41	9
wild cherry	0	0	0	0	0	0
Total	56	5.8	78.2	7910	1064	93

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.

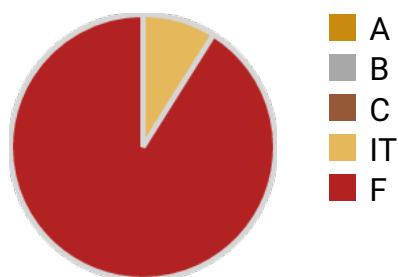
Economic values

Total value of removed trees: 7910 €
 Percentage of total stand value: 23 %
 Stand value after harvest: 26502 €

Economic value by tree species [€]

Tree species	Total	Per m ³
pedunculate oak	1877	101
field maple	0	0
narrow-leafed ash	3419	102
hornbeam	1563	100
Field elm	277	101
wild cherry	0	0
alder	704	102
black locust	0	0
London sycamore	70	100
Total	7910	101

Wood quality distribution (m³ in %)



Quality class	m ³	%
A	0	0
B	0	0
C	0	0
Industrial Timber	7	8.9
Fuelwood	71.2	91.1

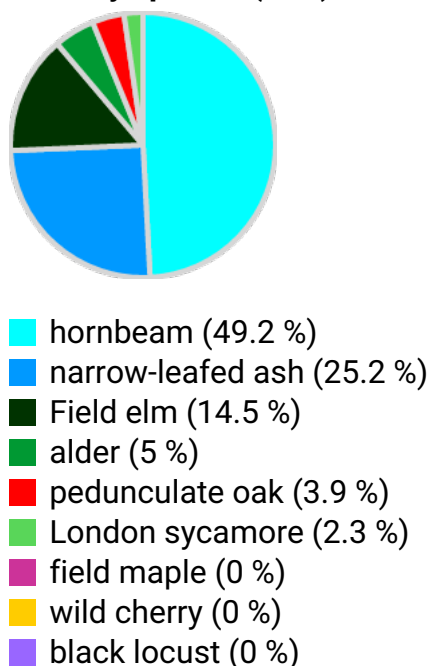
Habitat values

Total habitat value of removed trees: 1064 pts.
 Percentage of total stand value: 16.5 %
 Stand value after harvest: 5382 pts.

Habitat value by tree species [pts.]

Tree species	Total	Per m ³	Microhabitats [N]
pedunculate oak	41	2.2	9
field maple	0	0	0
narrow-leafed ash	268	8	22
hornbeam	524	33.6	46
Field elm	154	56.1	10
wild cherry	0	0	0
alder	53	7.7	5
black locust	0	0	0
London sycamore	24	34.3	1
Total	1064	13.6	93

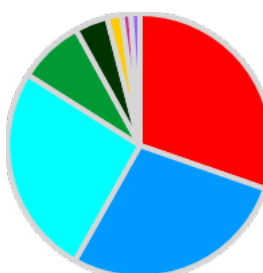
Habitat value (points) of removed trees by species (in %)



Remaining stand

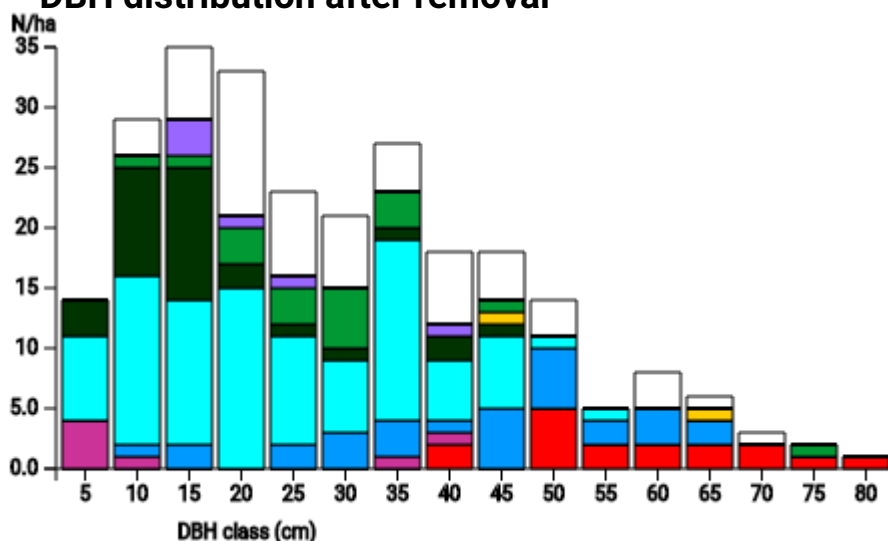
Volume: 266.2 m³
 Basal area: 19.9 m²
 Economic value: 26502 €
 Habitat value: 5382 pts.

Remaining trees by volume (m³ in %)



- pedunculate oak: 30.3 %
- narrow-leaved ash: 27.8 %
- hornbeam: 25.8 %
- alder: 8 %
- Field elm: 4 %
- wild cherry: 1.8 %
- field maple: 1.1 %
- black locust: 1.1 %
- 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	31	1.2	10.8	998	602	39
London sycamore	0	0	0	0	0	0
alder	18	1.7	21.3	2148	358	26
black locust	6	0.3	3	296	71	9
field maple	7	0.3	3	304	187	10
hornbeam	91	5.9	68.6	6749	2706	232
narrow-leaved ash	29	5	74.1	7542	815	59
pedunculate oak	17	5	80.7	7991	516	40
wild cherry	2	0.5	4.7	473	127	7
Total	201	19.9	266.2	26502	5382	422

Retention treesVolume: 112.2 m³

Elite trees: 0

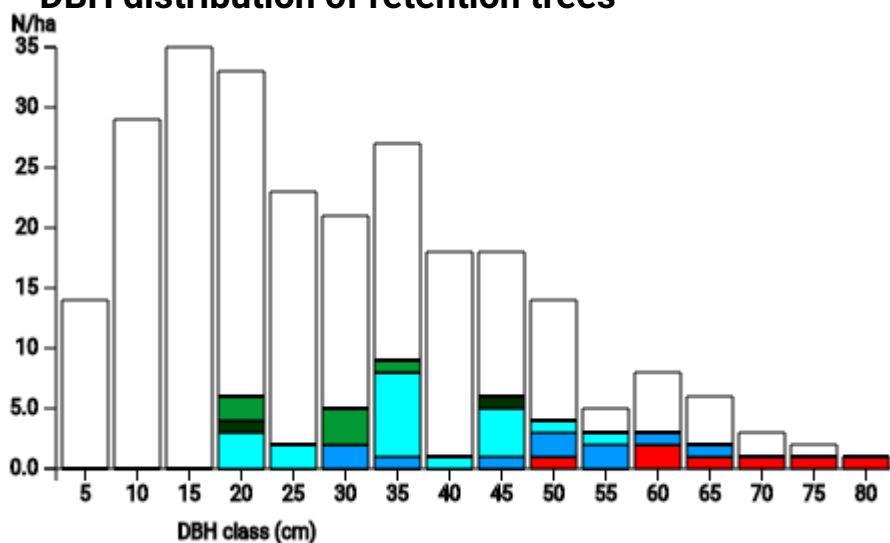
Habitat trees: 14

Economic value: 11224 €

Habitat value: 1828 pts.

Retention trees by volume (m³ in %)

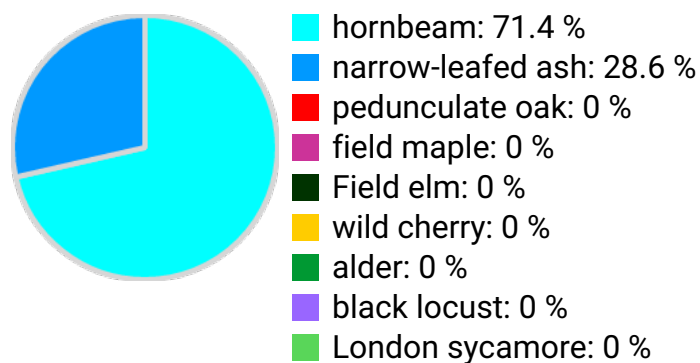
pedunculate oak: 39.3 %
narrow-leafed ash: 27.9 %
hornbeam: 26.3 %
alder: 4.5 %
Field elm: 2 %
field maple: 0 %
wild cherry: 0 %
black locust: 0 %
London sycamore: 0 %

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

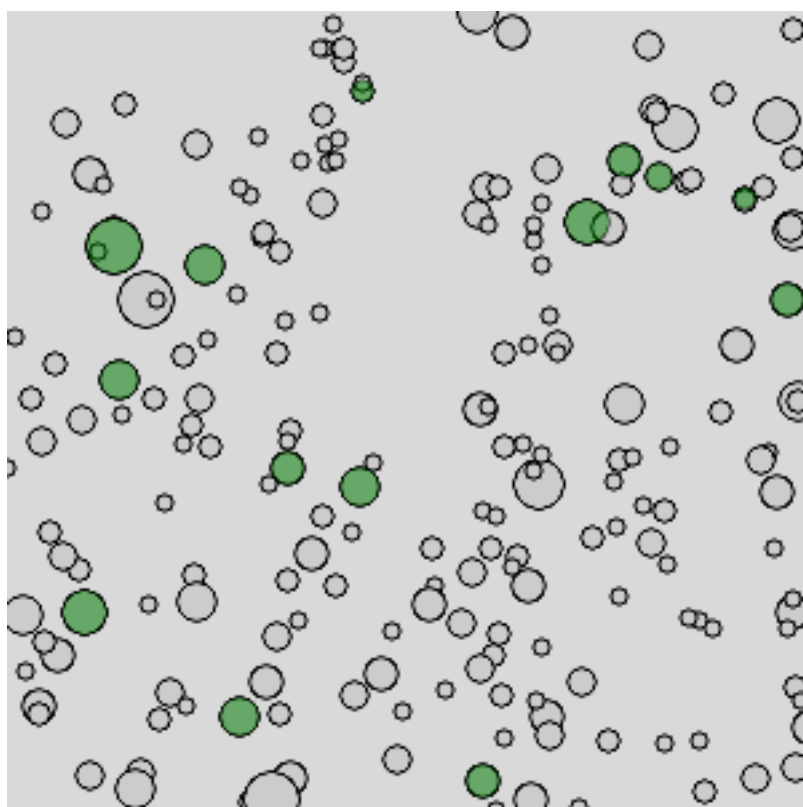
Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	2	0.2	2.2	227	34	3
London sycamore	0	0	0	0	0	0
alder	6	0.4	5.1	519	59	5
black locust	0	0	0	0	0	0
field maple	0	0	0	0	0	0
hornbeam	19	2.3	29.5	2879	952	72
narrow-leafed ash	10	2.1	31.3	3154	506	32
pedunculate oak	7	2.6	44.1	4446	277	20
wild cherry	0	0	0	0	0	0
Total	44	7.6	112.2	11224	1828	132

Number of habitat trees	[N]	14
Habitat value	pts.	917
	[% of total]	14.2
Economic value	[€]	2686
	[% of total]	7.8
Number of microhabitats	[N]	64
	[% of total]	12.4

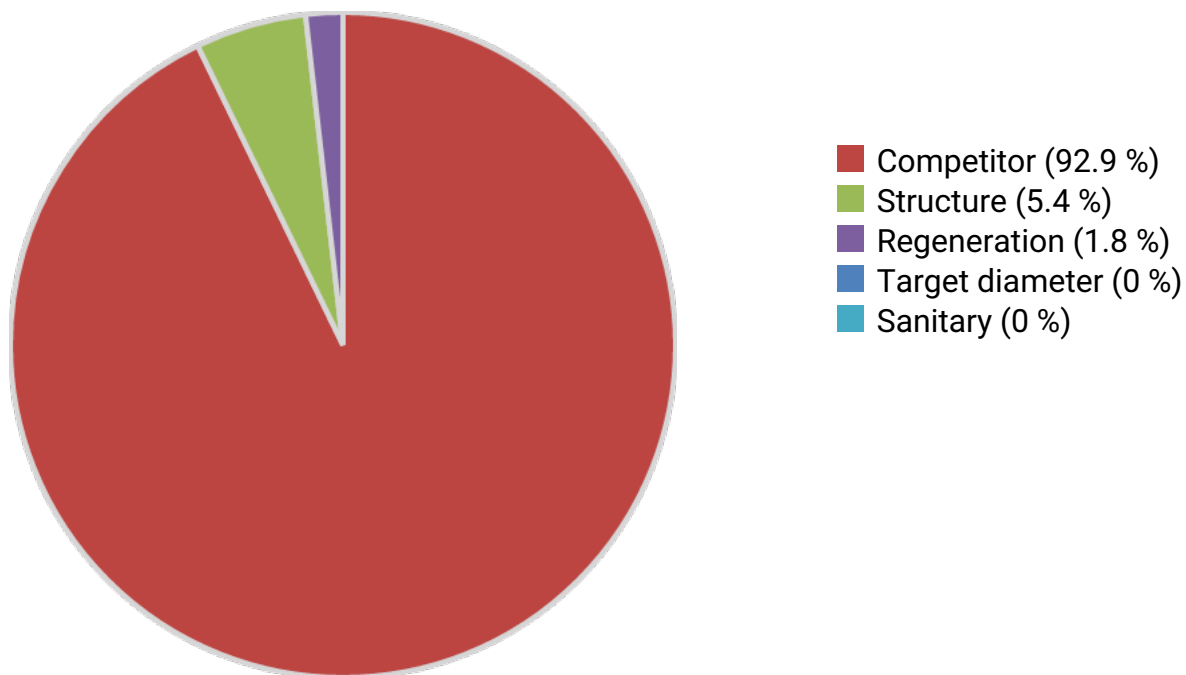
Habitat tree distribution by species (N in %)



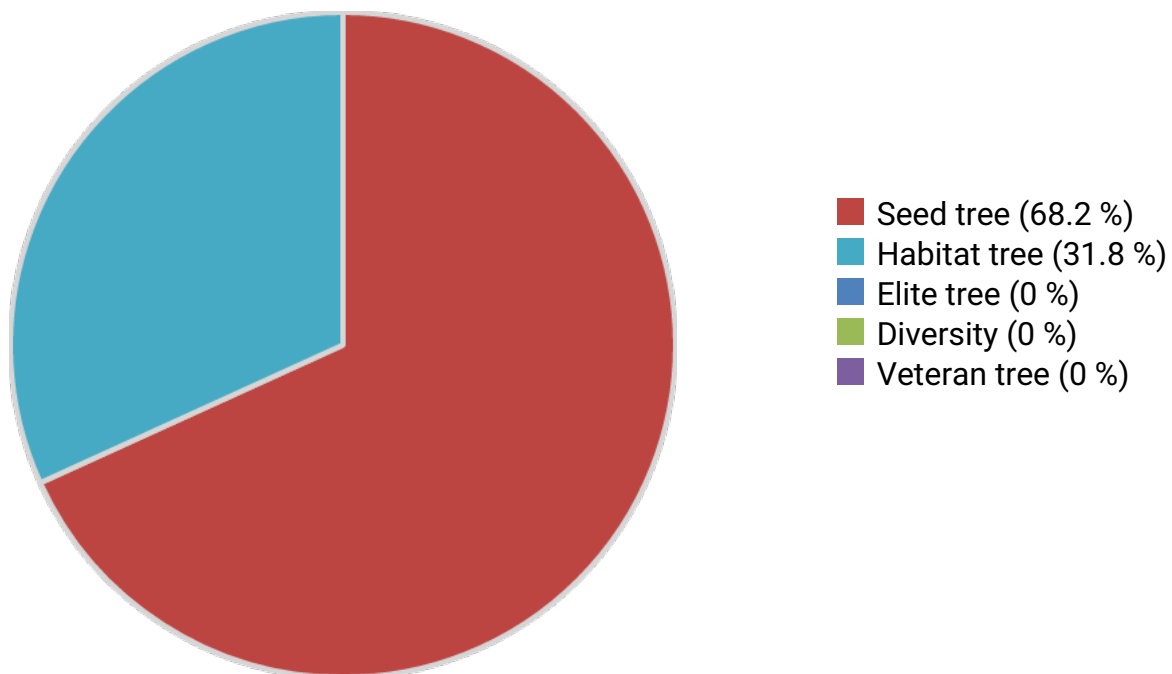
Spatial distribution of habitat trees



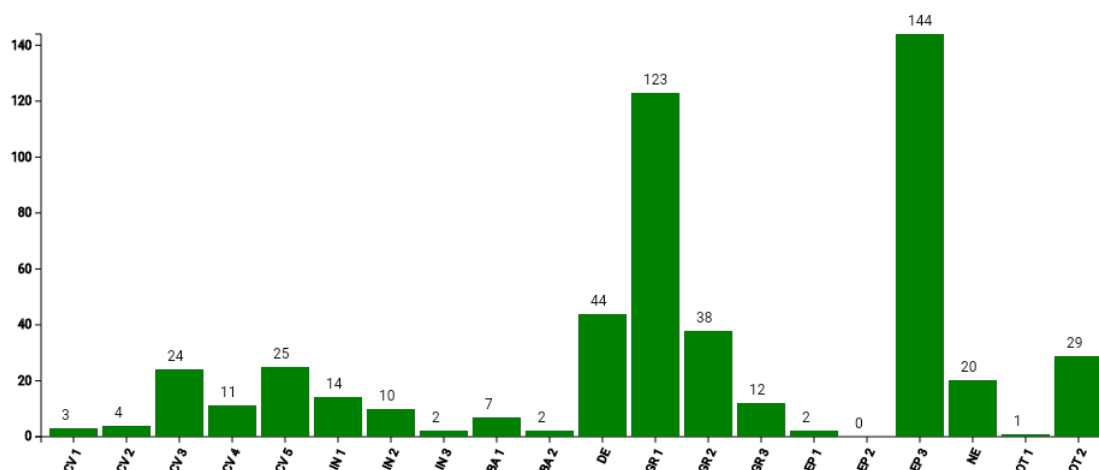
Reasons for removal



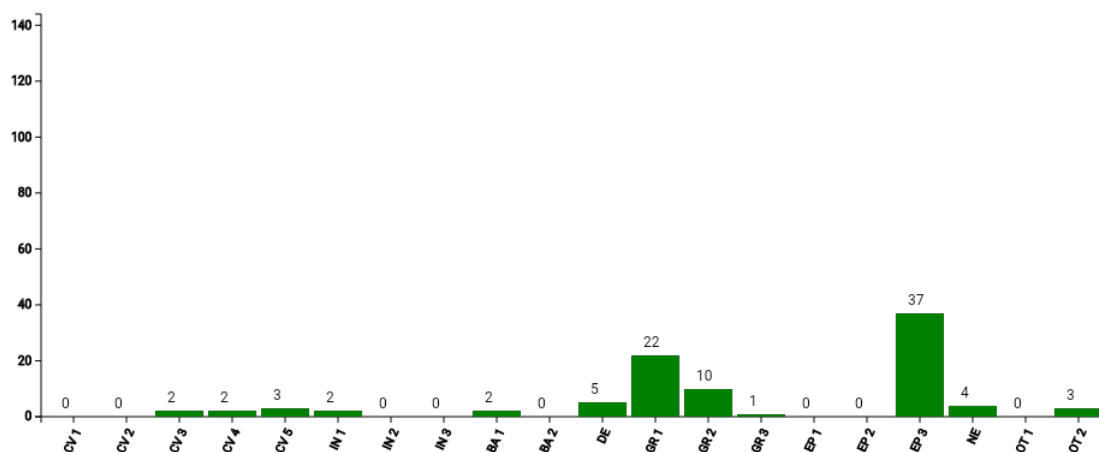
Reasons for retention



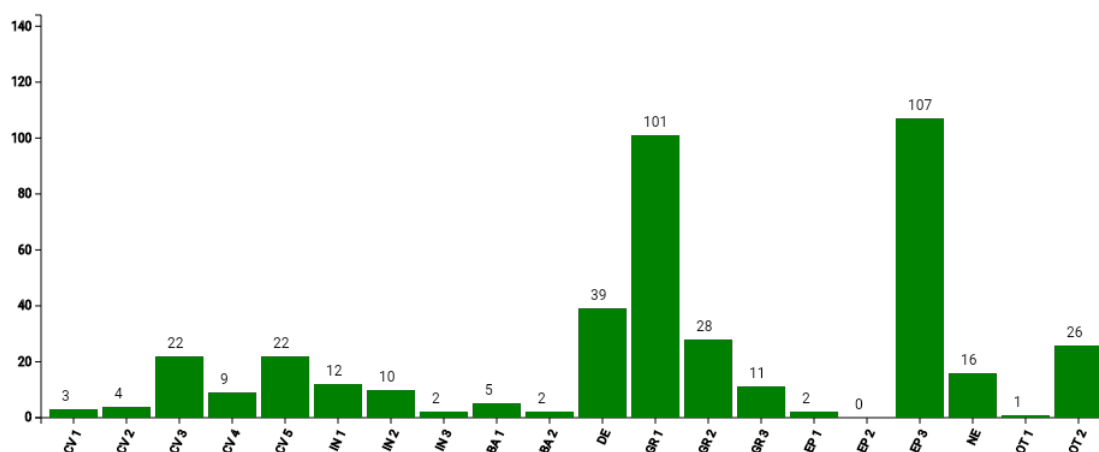
Distribution of tree microhabitats by code (N total)



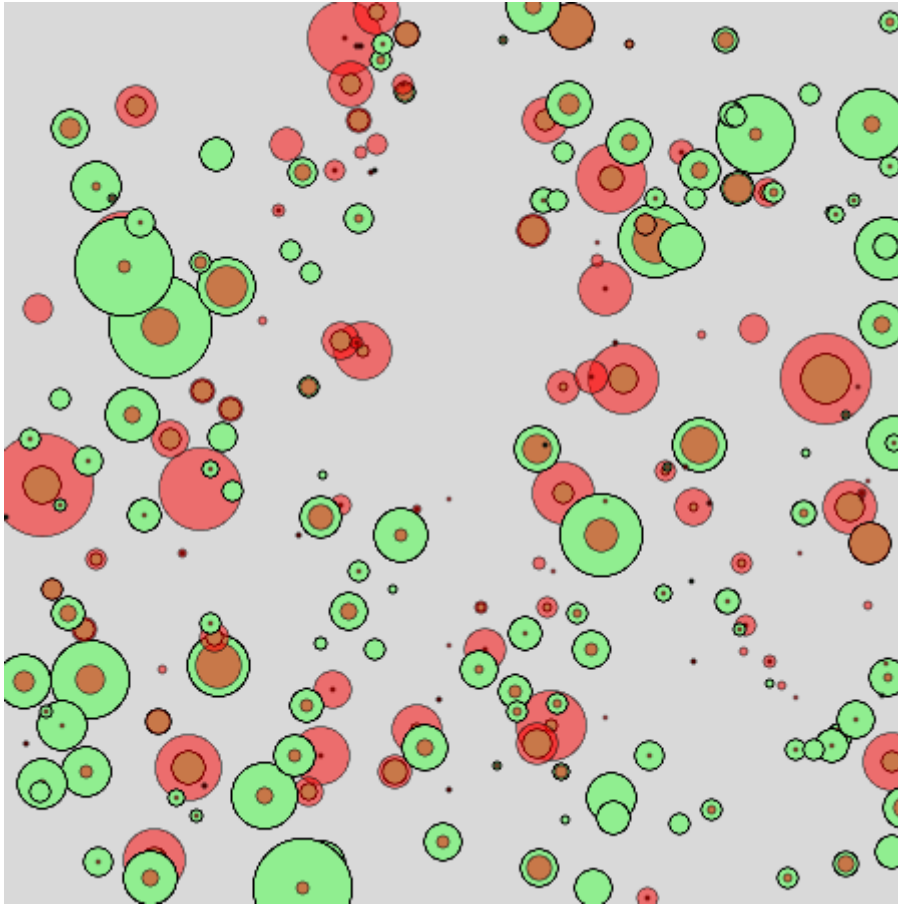
Removed tree microhabitats by code (N removed)



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-leafed ash (7) Fraxinus angustifolia	70	0.39	6.3	641	6	Competitor
pedunculate oak (98) Quercus robur	65	0.33	5	499	17	Competitor
pedunculate oak (222) Quercus robur	64.5	0.33	5	508	4	Competitor
alder (8) Alnus glutinosa	61	0.29	3.9	399	22	Competitor
pedunculate oak (220) Quercus robur	60.5	0.29	4.3	440	16	Structure
narrow-leafed ash (25) Fraxinus angustifolia	54.5	0.23	4	401	27	Competitor
narrow-leafed ash (21) Fraxinus angustifolia	54	0.23	3.8	384	27	Competitor
narrow-leafed ash (96) Fraxinus angustifolia	50	0.2	3.1	319	28	Competitor
hornbeam (223) Carpinus betulus	49	0.19	2.3	230	34	Competitor
narrow-leafed ash (89) Fraxinus angustifolia	47	0.17	2.6	263	0	Competitor
pedunculate oak (78) Quercus robur	46.5	0.17	2.5	259	0	Competitor
alder (2) Alnus glutinosa	45	0.16	2.1	213	31	Competitor
hornbeam (109) Carpinus betulus	44	0.15	2.2	219	28	Competitor
narrow-leafed ash (48) Fraxinus angustifolia	43.5	0.15	2.3	238	4	Competitor
pedunculate oak (136) Quercus robur	43	0.15	1.7	171	4	Competitor
narrow-leafed 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-leafed ash (22) Fraxinus angustifolia	40	0.13	2	199	58	Competitor
narrow-leafed ash (129) Fraxinus angustifolia	39	0.12	1.7	170	12	Competitor
hornbeam (148) Carpinus betulus	39	0.12	1.7	166	18	Competitor

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
narrow-leaved ash (33) [REPLACE_DEAD]Fraxinus angustifolia	37.5	0.11	1.6	159	38	Competitor
narrow-leaved ash (208) Fraxinus angustifolia	37	0.11	1.4	139	34	Competitor
hornbeam (225) Carpinus betulus	33.5	0.09	1	100	61	Competitor
narrow-leaved ash (198) Fraxinus angustifolia	33	0.09	1	100	6	Competitor
hornbeam (74) Carpinus betulus	33	0.09	1	103	27	Competitor
Field elm (123) Ulmus minor	32	0.08	0.7	67	32	Competitor
alder (90) Alnus glutinosa	31	0.08	0.9	91	0	Competitor
narrow-leaved ash (197) Fraxinus angustifolia	30	0.07	0.8	83	0	Competitor
London sycamore (244) Platanus hybrida	29.5	0.07	0.7	70	24	Regeneration
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
narrow-leaved ash (120) Fraxinus angustifolia	28	0.06	0.7	73	4	Competitor
hornbeam (11) Carpinus betulus	27.5	0.06	0.8	76	10	Competitor
hornbeam (178) Carpinus betulus	25.5	0.05	0.5	54	27	Competitor
narrow-leaved ash (119) Fraxinus angustifolia	25	0.05	0.5	53	0	Competitor
Field elm (59) Ulmus minor	24	0.05	0.4	41	24	Competitor
hornbeam (134) Carpinus betulus	23	0.04	0.5	46	0	Competitor
hornbeam (209) Carpinus betulus	22	0.04	0.3	33	42	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

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
Field elm (73) Ulmus minor	22	0.04	0.4	35	36	Competitor
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	Competitor
hornbeam (211) Carpinus betulus	21.3	0.04	0.3	27	24	Competitor
hornbeam (172) Carpinus betulus	21	0.04	0.3	34	0	Competitor
Field elm (145) Ulmus minor	21	0.04	0.3	27	18	Competitor
hornbeam (128) Carpinus betulus	19.5	0.03	0.3	27	10	Competitor
hornbeam (207) Carpinus betulus	19	0.03	0.2	22	47	Competitor
hornbeam (165) Carpinus betulus	19	0.03	0.2	21	18	Competitor
hornbeam (41) Carpinus betulus	18	0.03	0.2	17	24	Competitor
hornbeam (232) Carpinus betulus	17	0.02	0.2	23	18	Structure
hornbeam (210) Carpinus betulus	17	0.02	0.2	15	24	Competitor
hornbeam (46) Carpinus betulus	14	0.02	0.1	11	0	Structure
hornbeam (12) Carpinus betulus	14	0.02	0.1	13	4	Competitor
hornbeam (65) Carpinus betulus	11	0.01	0.1	5	0	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
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 (40) Quercus robur	67	0.35	6.1	613	34	Seed tree
narrow-leaved ash (206) Fraxinus angustifolia	65	0.33	5	519	25	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 (56) Fraxinus angustifolia	59	0.27	4.1	412	95	Habitat 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
narrow-leaved ash (81) Fraxinus angustifolia	54.5	0.23	3.6	360	76	Habitat tree
narrow-leaved ash (114) Fraxinus angustifolia	53.5	0.23	3.3	340	68	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
hornbeam (177) Carpinus betulus	48	0.18	2.7	268	21	Seed tree
hornbeam (254) Carpinus betulus	48	0.18	2.2	223	48	Habitat tree
Field elm (164) Ulmus minor	46.5	0.17	1.8	178	6	Seed tree
hornbeam (236)	46	0.17	2.6	259	20	Seed tree

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
Carpinus betulus						
hornbeam (135) Carpinus betulus	42	0.14	2	203	55	Habitat 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	Habitat tree
hornbeam (257) Carpinus betulus	39	0.12	1.5	151	56	Seed tree
hornbeam (47) Carpinus betulus	38.9	0.12	1.4	145	54	Habitat tree
alder (32) Alnus glutinosa	38	0.11	1.7	177	3	Seed tree
narrow-leaved 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 (235) Carpinus betulus	35	0.1	1.4	143	84	Habitat tree
hornbeam (79) Carpinus betulus	35	0.1	1	97	128	Habitat tree
narrow-leaved ash (97) Fraxinus angustifolia	33.5	0.09	1.3	127	4	Seed tree
narrow-leaved ash (193) Fraxinus angustifolia	32	0.08	1	102	44	Seed tree
alder (84) Alnus glutinosa	32	0.08	0.9	96	0	Seed tree
alder (71) Alnus glutinosa	31	0.08	0.9	94	4	Seed tree
alder (3) Alnus glutinosa	30	0.07	0.7	76	24	Seed tree
hornbeam (133) Carpinus betulus	27.5	0.06	0.8	77	3	Seed tree
hornbeam (51) Carpinus betulus	25	0.05	0.6	58	18	Habitat tree
Field elm (105) Ulmus minor	24.5	0.05	0.5	49	28	Seed tree
alder (67) Alnus glutinosa	24	0.05	0.4	45	0	Seed tree
hornbeam (5) Carpinus betulus	24	0.05	0.3	31	4	Seed tree

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
hornbeam (147) Carpinus betulus	21.5	0.04	0.4	37	36	Seed tree
alder (4) Alnus glutinosa	21	0.04	0.3	31	28	Seed tree
hornbeam (6) Carpinus betulus	20.5	0.03	0.3	26	4	Seed tree