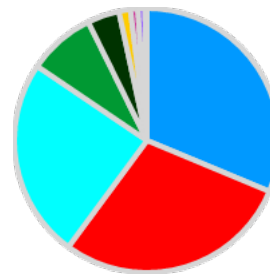


23/07/2021 BoscoFontana_Gruppo D 23 lug

Site conditions

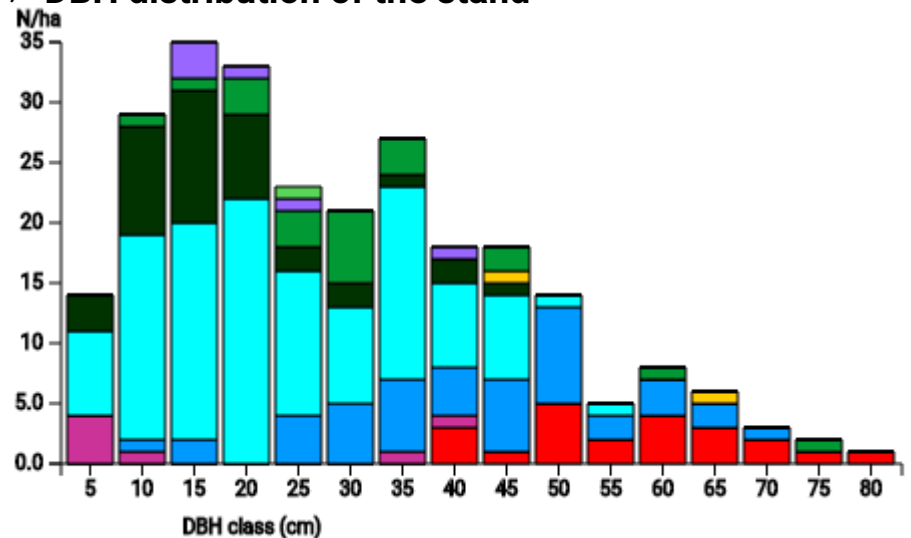
Altitude: 25 m.a.s.l.
 Forest ecological region:
 Lombardia
 Geology / Bedrock: Medium
 floodplain
 Soil type: Haplic luvisols and
 mollic gleysols
 Natural forest community: Illyrian
 oak-hornbeam forests
 (Erythronio-Carpinion)
 Mean annual temperature: 13.1 C;
 Mean annual precipitation: 603
 mm;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



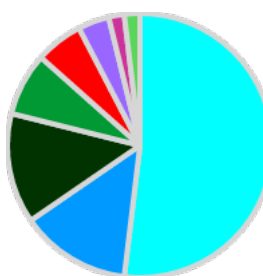
Initial stand (details by tree species)

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

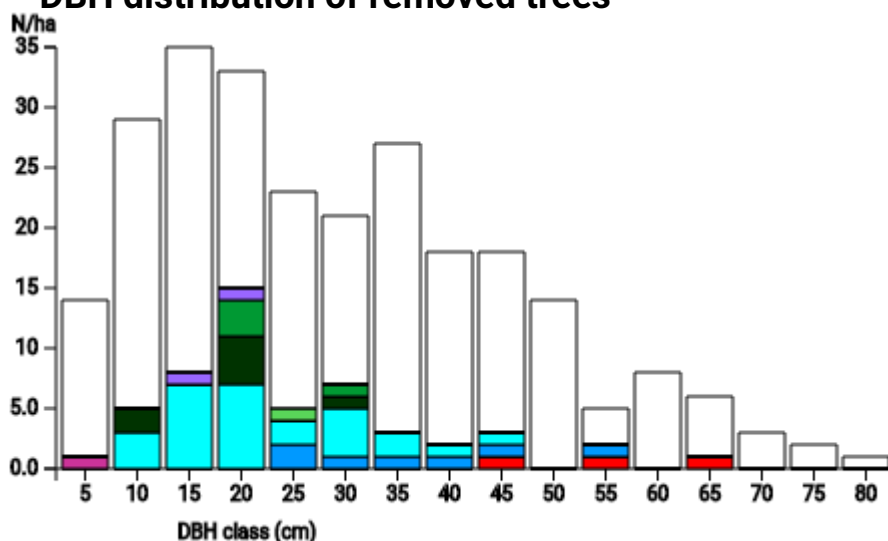
Volume: 46.6 m³
 Basal area: 3.7 m²
 Economic value: 4700 €
 Habitat value: 1049 pts.

Removed trees (N in %)



- hornbeam: 51.9 %
- narrow-leaved ash: 13.5 %
- Field elm: 13.5 %
- alder: 7.7 %
- pedunculate oak: 5.8 %
- black locust: 3.8 %
- field maple: 1.9 %
- London sycamore: 1.9 %
- wild cherry: 0 %

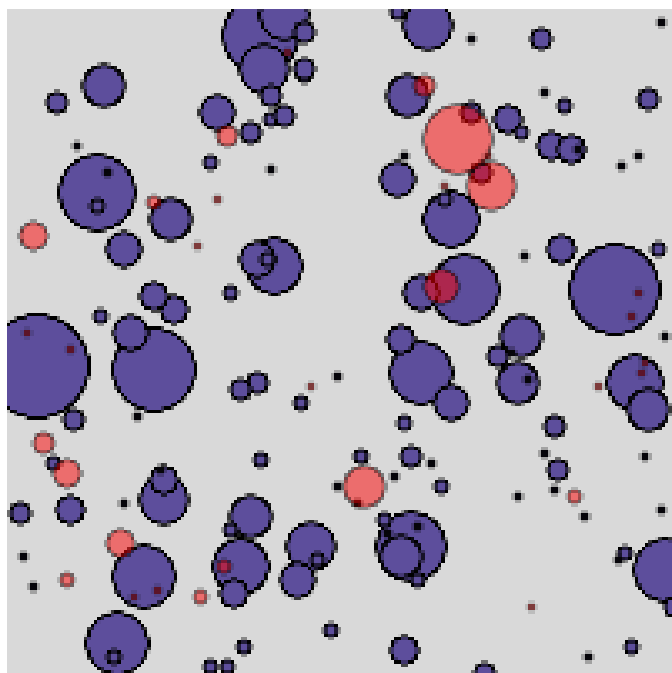
DBH distribution of removed trees



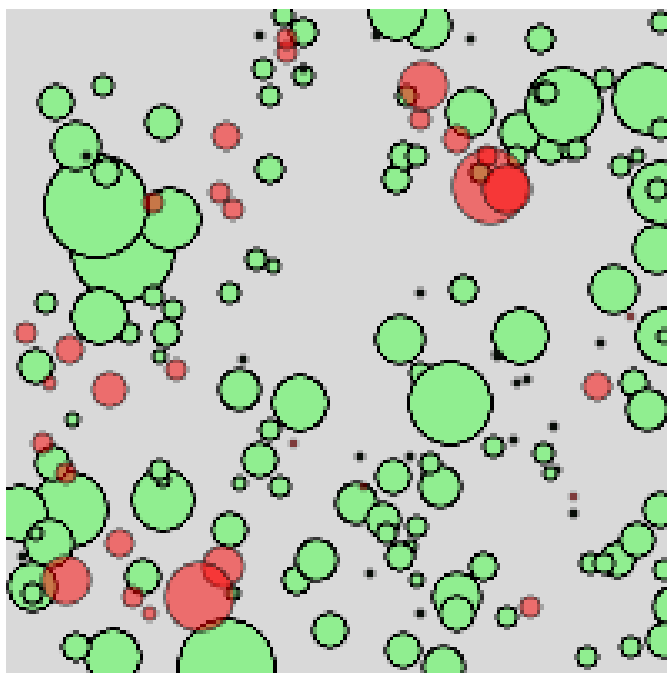
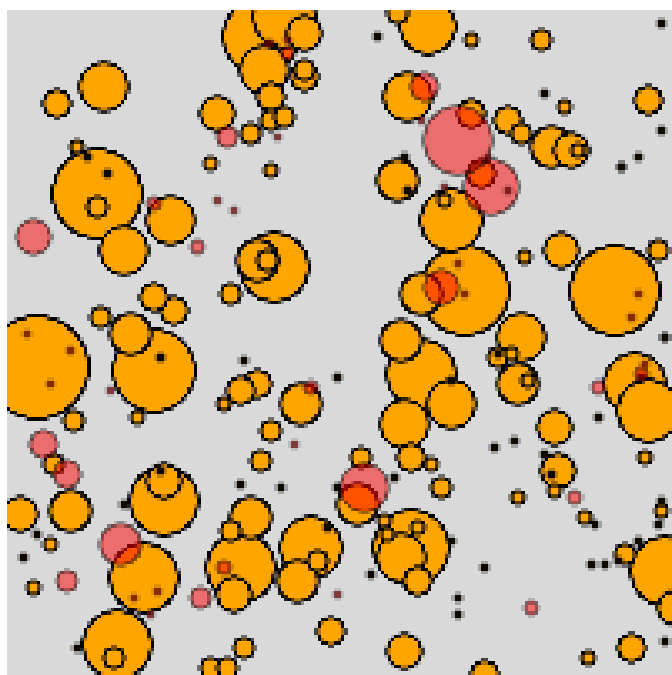
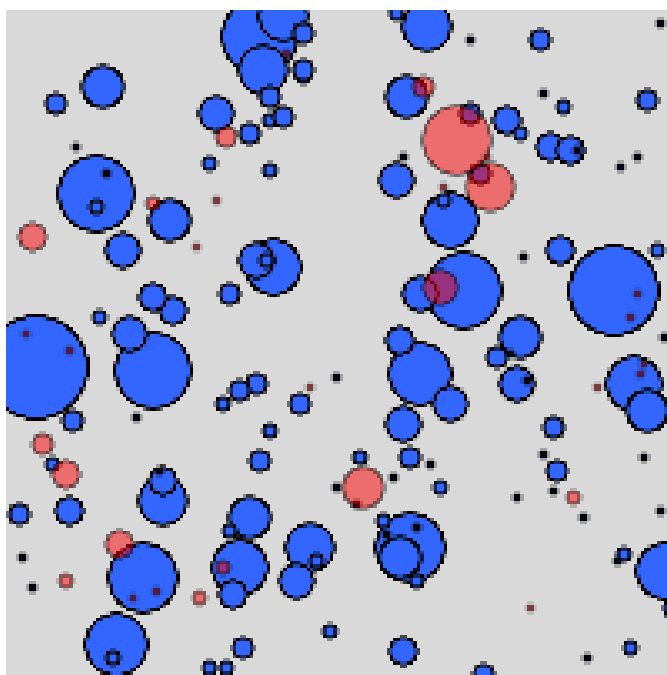
Removed trees (details by tree species)

Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	7	0.3	2.2	224	142	10
London sycamore	1	0.1	0.7	70	24	1
alder	4	0.2	1.8	182	55	4
black locust	2	0.1	0.4	40	12	2
field maple	1	0	0	2	0	0
hornbeam	27	1.5	16.8	1678	572	45
narrow-leaved ash	7	0.9	12.7	1284	204	14
pedunculate oak	3	0.8	12	1220	40	4
wild cherry	0	0	0	0	0	0
Total	52	3.7	46.7	4700	1049	80

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.

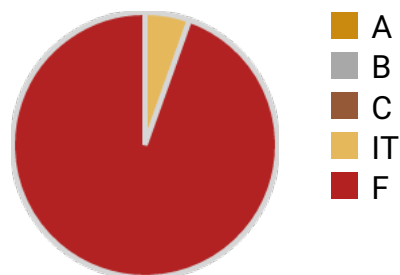
Economic values

Total value of removed trees: 4700 €
 Percentage of total stand value: 13.7 %
 Stand value after harvest: 29713 €

Economic value by tree species [€]

Tree species	Total	Per m ³
pedunculate oak	1220	101
field maple	2	100
narrow-leafed ash	1284	101
hornbeam	1678	100
Field elm	224	101
wild cherry	0	0
alder	182	102
black locust	40	100
London sycamore	70	100
Total	4700	101

Wood quality distribution (m³ in %)



Quality class	m ³	%
A	0	0
B	0	0
C	0	0
Industrial Timber	2.5	5.4
Fuelwood	44.1	94.6

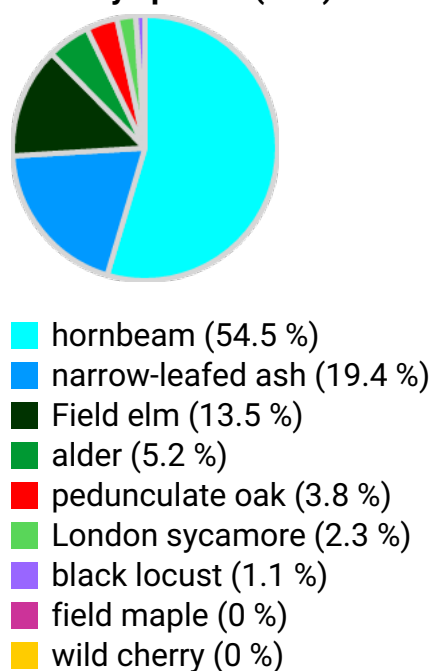
Habitat values

Total habitat value of removed trees: 1049 pts.
 Percentage of total stand value: 16.3 %
 Stand value after harvest: 5397 pts.

Habitat value by tree species [pts.]

Tree species	Total	Per m ³	Microhabitats [N]
pedunculate oak	40	3.3	4
field maple	0	0	0
narrow-leafed ash	204	16	14
hornbeam	572	34.1	45
Field elm	142	64.1	10
wild cherry	0	0	0
alder	55	30.8	4
black locust	12	30.3	2
London sycamore	24	34.3	1
Total	1049	22.5	80

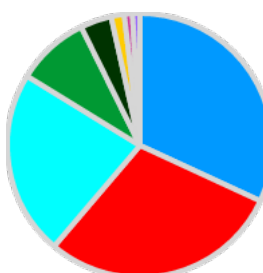
Habitat value (points) of removed trees by species (in %)



Remaining stand

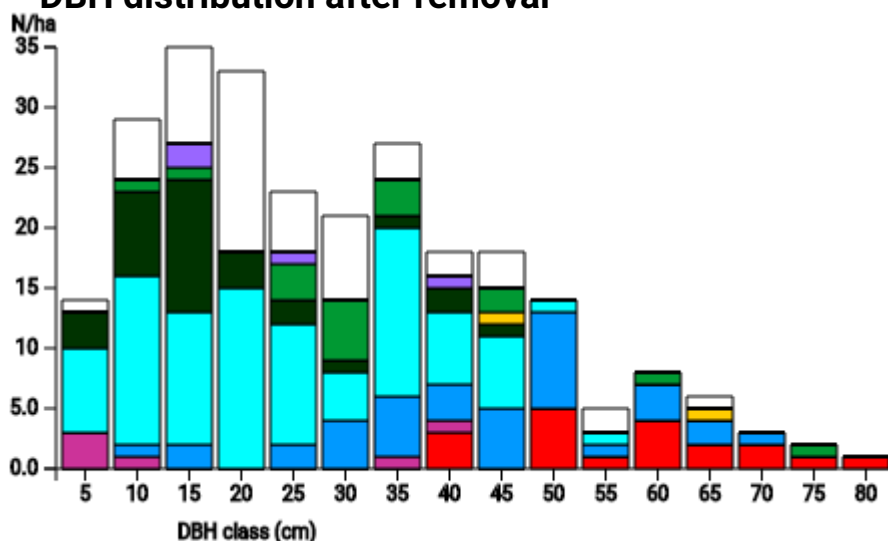
Volume: 297.6 m³
 Basal area: 22 m²
 Economic value: 29713 €
 Habitat value: 5397 pts.

Remaining trees by volume (m³ in %)



- narrow-leaved ash: 31.9 %
- pedunculate oak: 29.3 %
- hornbeam: 22.6 %
- alder: 8.9 %
- Field elm: 3.8 %
- wild cherry: 1.6 %
- field maple: 1 %
- black locust: 0.9 %
- 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	1.3	11.3	1052	614	39
London sycamore	0	0	0	0	0	0
alder	17	2	26.4	2670	356	27
black locust	4	0.2	2.6	256	59	7
field maple	6	0.3	3	302	187	10
hornbeam	89	5.8	67.4	6634	2658	233
narrow-leaved ash	37	6.3	95	9677	879	67
pedunculate oak	19	5.5	87.2	8649	517	45
wild cherry	2	0.5	4.7	473	127	7
Total	205	22	297.7	29713	5397	435

Retention treesVolume: 106.3 m³

Elite trees: 0

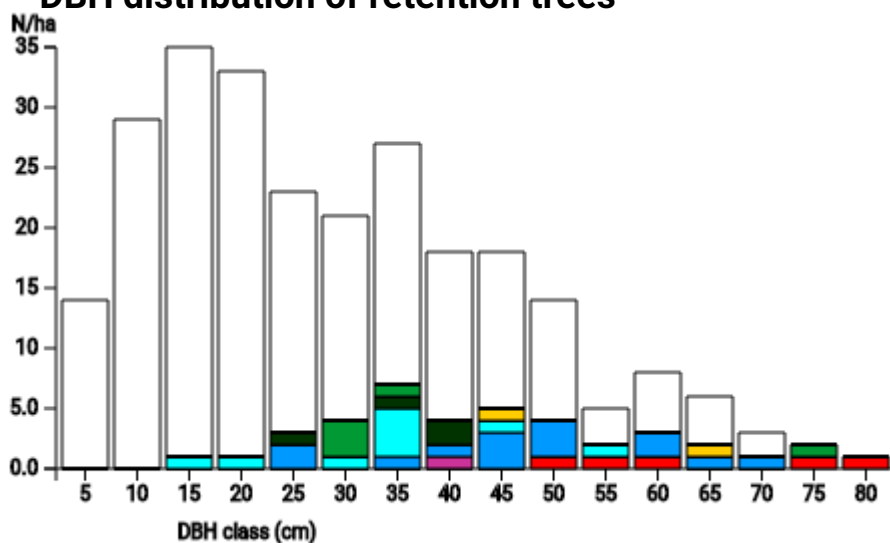
Habitat trees: 11

Economic value: 10660 €

Habitat value: 1710 pts.

Retention trees by volume (m³ in %)

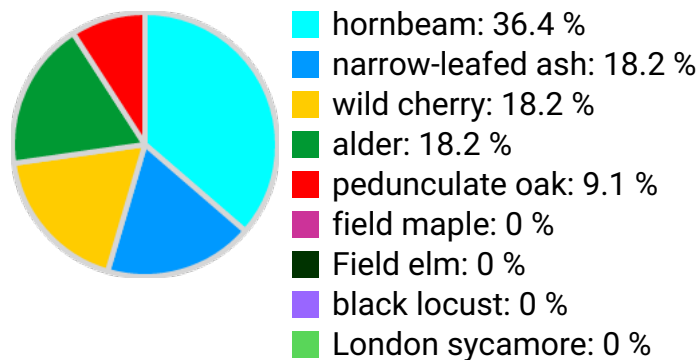
■ narrow-leaved ash: 40.9 %
■ pedunculate oak: 27.4 %
■ hornbeam: 11.2 %
■ alder: 10.1 %
■ wild cherry: 4.5 %
■ Field elm: 4.4 %
■ field maple: 1.5 %
■ black locust: 0 %
■ London sycamore: 0 %

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

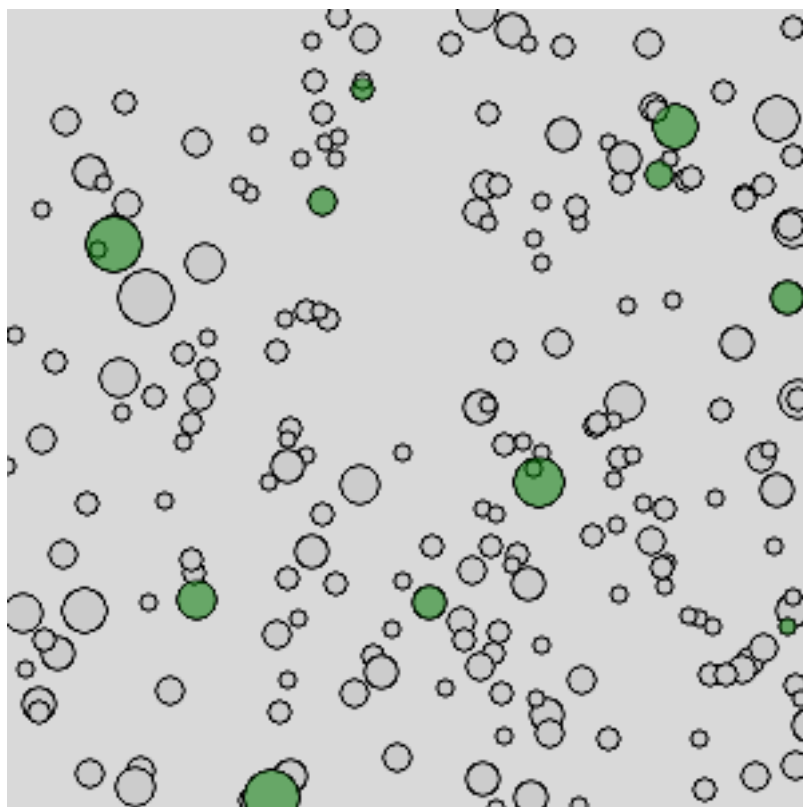
Tree species	N/ha	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Microhabitats (N)
Field elm	4	0.5	4.7	389	87	8
London sycamore	0	0	0	0	0	0
alder	5	0.8	10.8	1079	218	14
black locust	0	0	0	0	0	0
field maple	1	0.1	1.6	161	92	4
hornbeam	9	1	11.9	1190	515	33
narrow-leaved ash	14	2.9	43.5	4428	412	38
pedunculate oak	5	1.7	29.1	2939	259	15
wild cherry	2	0.5	4.7	473	127	7
Total	40	7.6	106.3	10660	1710	119

Number of habitat trees	[N]	11
Habitat value	pts.	751
	[% of total]	11.7
Economic value	[€]	1726
	[% of total]	5
Number of microhabitats	[N]	40
	[% of total]	7.8

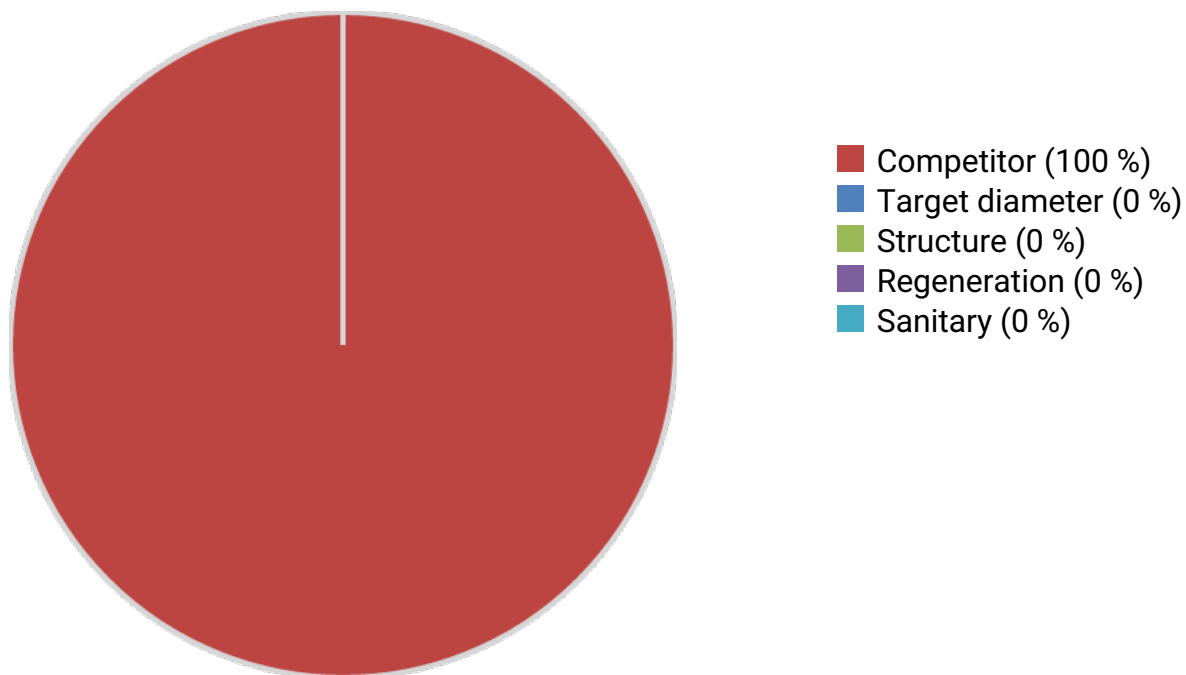
Habitat tree distribution by species (N in %)



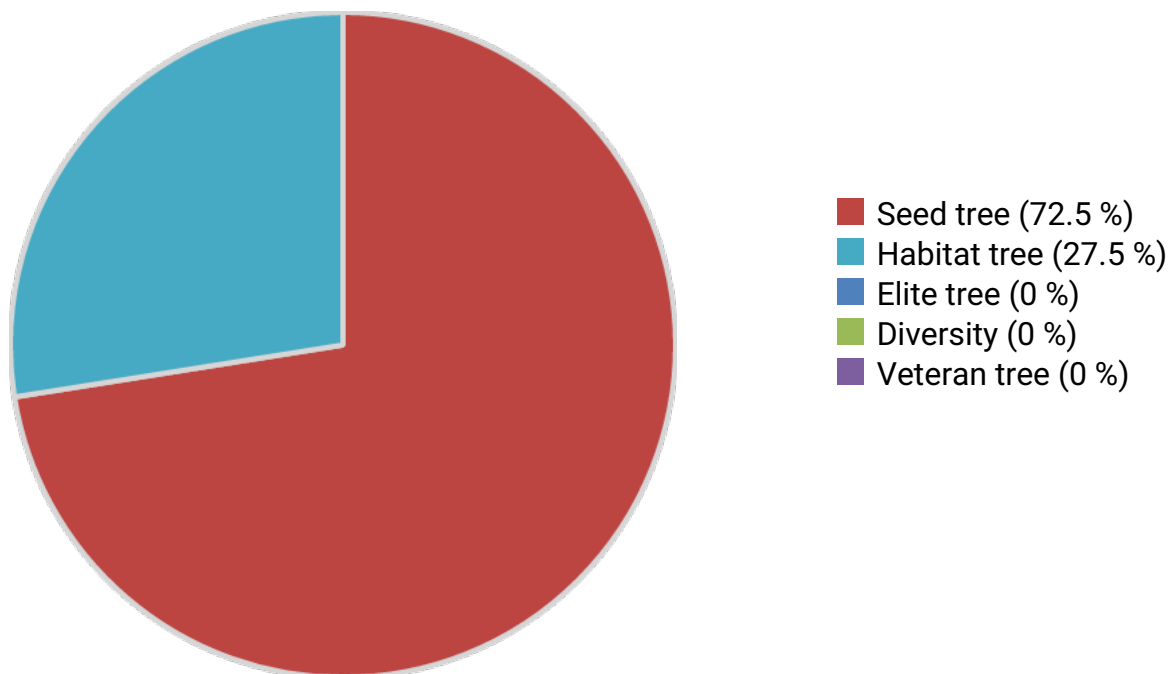
Spatial distribution of habitat trees



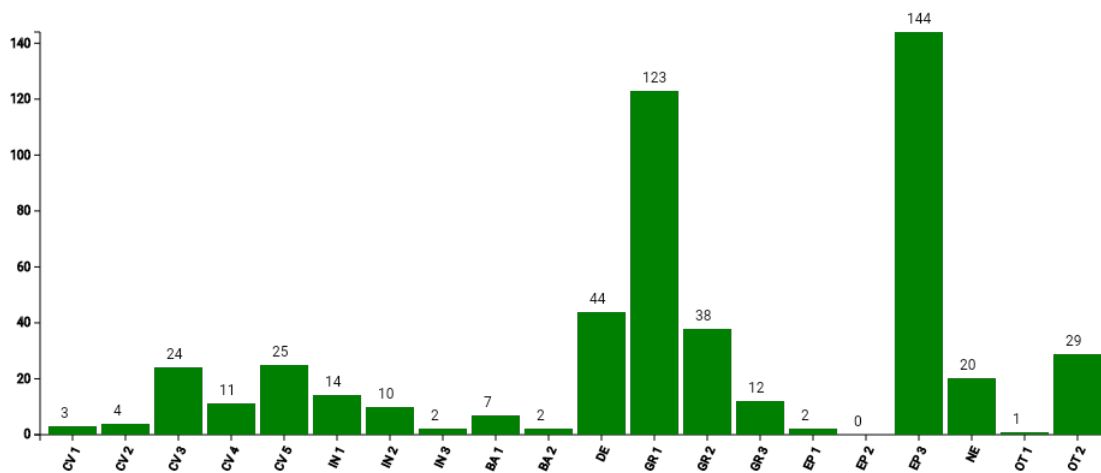
Reasons for removal



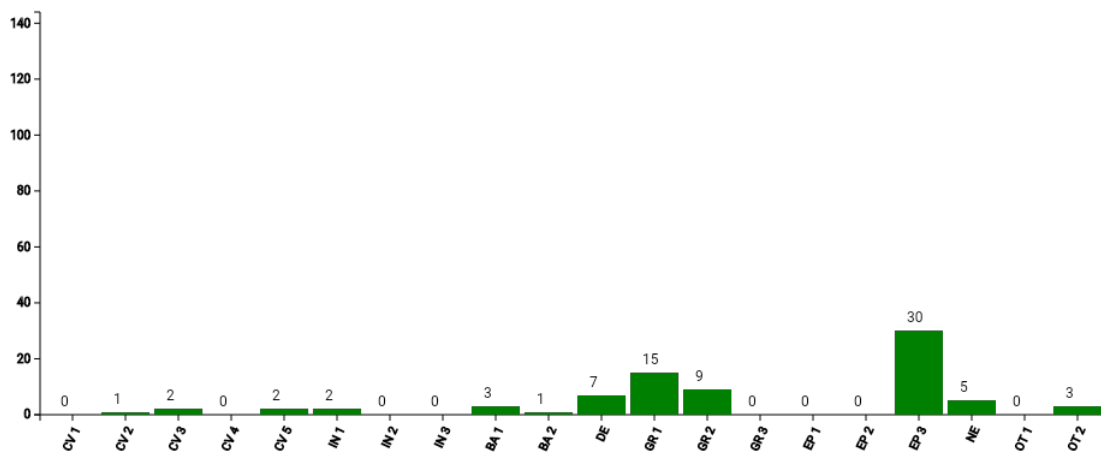
Reasons for retention



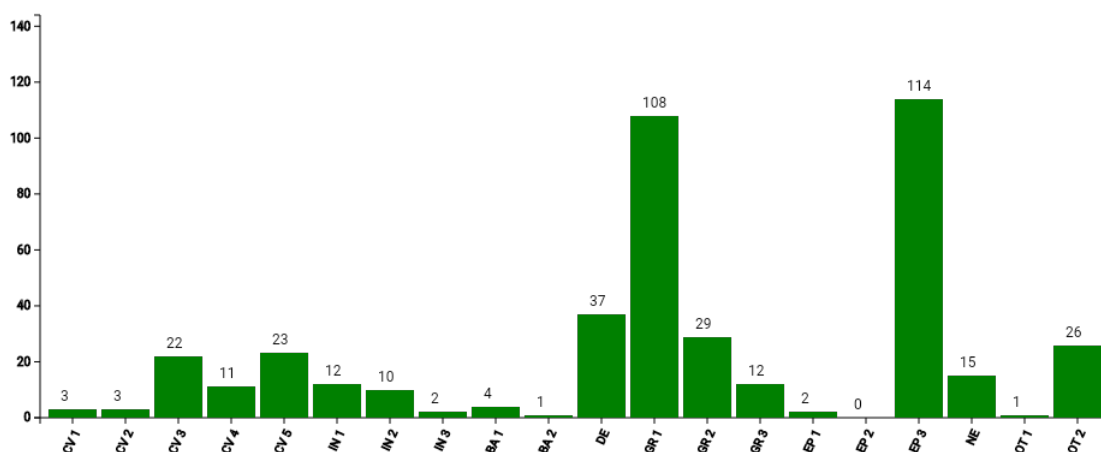
Distribution of tree microhabitats by code (N total)



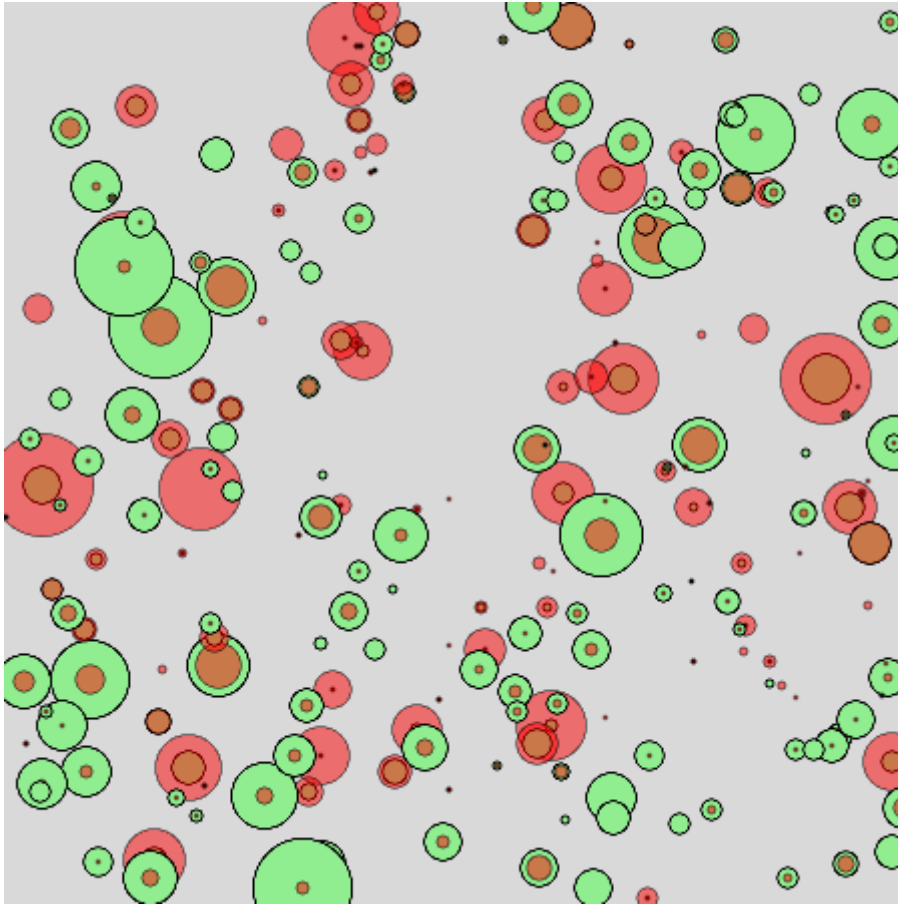
Removed tree microhabitats by code (N removed)



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 (40) Quercus robur	67	0.35	6.1	613	34	Competitor
narrow-leaved ash (56) Fraxinus angustifolia	59	0.27	4.1	412	95	Competitor
pedunculate oak (189) Quercus robur	55	0.24	3.4	348	6	Competitor
hornbeam (223) Carpinus betulus	49	0.19	2.3	230	34	Competitor
narrow-leaved ash (94) Fraxinus angustifolia	48	0.18	2.9	287	3	Competitor
pedunculate oak (78) Quercus robur	46.5	0.17	2.5	259	0	Competitor
hornbeam (181) Carpinus betulus	43	0.15	2.1	215	24	Competitor
narrow-leaved ash (22) Fraxinus angustifolia	40	0.13	2	199	58	Competitor
hornbeam (179) Carpinus betulus	39.5	0.12	1.8	180	28	Competitor
narrow-leaved ash (33) [REPLACE_DEAD]Fraxinus angustifolia	37.5	0.11	1.6	159	38	Competitor
hornbeam (235) Carpinus betulus	35	0.1	1.4	143	84	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
hornbeam (82) Carpinus betulus	32	0.08	0.9	87	0	Competitor
hornbeam (221) Carpinus betulus	30.5	0.07	1	97	53	Competitor
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
narrow-leaved ash (120) Fraxinus angustifolia	28	0.06	0.7	73	4	Competitor

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
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-leafed ash (119) Fraxinus angustifolia	25	0.05	0.5	53	0	Competitor
Field elm (105) Ulmus minor	24.5	0.05	0.5	49	28	Competitor
alder (67) Alnus glutinosa	24	0.05	0.4	45	0	Competitor
Field elm (59) Ulmus minor	24	0.05	0.4	41	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 (117) Carpinus betulus	22	0.04	0.4	37	11	Competitor
hornbeam (68) Carpinus betulus	22	0.04	0.4	37	0	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 (147) Carpinus betulus	21.5	0.04	0.4	37	36	Competitor
black locust (237) Robinia pseudoacacia	21.1	0.04	0.2	23	4	Competitor
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
hornbeam (6) Carpinus betulus	20.5	0.03	0.3	26	4	Competitor
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 (35) Carpinus betulus	18	0.03	0.2	23	3	Competitor
hornbeam (57)	17	0.02	0.2	17	60	Competitor

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
Carpinus betulus						
hornbeam (232) Carpinus betulus	17	0.02	0.2	23	18	Competitor
hornbeam (93) Carpinus betulus	17	0.02	0.2	15	0	Competitor
black locust (174) Robinia pseudoacacia	16.5	0.02	0.2	16	8	Competitor
hornbeam (83) Carpinus betulus	16.5	0.02	0.1	13	24	Competitor
hornbeam (141) Carpinus betulus	16	0.02	0.2	18	24	Competitor
Field elm (243) Ulmus minor	12.5	0.01	0.1	8	0	Competitor
hornbeam (102) Carpinus betulus	12	0.01	0.1	8	0	Competitor
Field elm (126) Ulmus minor	12	0.01	0.1	6	0	Competitor
hornbeam (34) Carpinus betulus	12	0.01	0.1	7	0	Competitor
hornbeam (69) Carpinus betulus	12	0.01	0.1	9	24	Competitor
field maple (9) Acer campestre	8	0.01	0	2	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
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
narrow-leaved ash (7) Fraxinus angustifolia	70	0.39	6.3	641	6	Seed tree
wild cherry (184) Prunus avium	66	0.34	4	398	77	Habitat 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
narrow-leaved ash (122) Fraxinus angustifolia	63	0.31	4.8	483	36	Seed tree
narrow-leaved ash (161) Fraxinus angustifolia	62	0.3	3.7	379	52	Seed tree
hornbeam (101) Carpinus betulus	55	0.24	3.3	329	132	Seed tree
pedunculate oak (155) [REPLACE_DEAD]Quercus robur	55	0.24	3.1	309	104	Habitat tree
narrow-leaved ash (81) Fraxinus angustifolia	54.5	0.23	3.6	360	76	Seed tree
narrow-leaved ash (21) Fraxinus angustifolia	54	0.23	3.8	384	27	Seed tree
narrow-leaved ash (124) Fraxinus angustifolia	51.5	0.21	3.2	344	10	Seed tree
pedunculate oak (187) Quercus robur	51	0.2	3.4	343	4	Seed tree
narrow-leaved ash (95) Fraxinus angustifolia	49	0.19	2.8	287	10	Seed tree
wild cherry (192) [REPLACE_DEAD]Prunus avium	49	0.19	0.8	76	50	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
narrow-leaved ash (39) Fraxinus angustifolia	47	0.17	3	305	0	Seed tree
Field elm (158)	44.5	0.16	1.7	176	10	Seed tree

Tree	DBH (cm)	Basal area (m ²)	Volume (m ³)	Economic value (€)	Habitat value (pts.)	Reason
Ulmus minor						
field maple (17) Acer campestre	42	0.14	1.6	161	92	Seed tree
narrow-leafed ash (66) Fraxinus angustifolia	41	0.13	1.9	197	24	Seed tree
Field elm (255) Ulmus minor	40	0.13	1.3	128	46	Seed tree
hornbeam (24) Carpinus betulus	39.5	0.12	1.4	142	27	Habitat tree
alder (180) Alnus glutinosa	38.5	0.12	1.4	144	42	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
Field elm (150) Ulmus minor	36	0.1	1.2	31	24	Seed tree
hornbeam (261) [REPLACE_DEAD]Carpinus betulus	35	0.1	1	100	127	Habitat tree
hornbeam (79) Carpinus betulus	35	0.1	1	97	128	Habitat tree
hornbeam (173) Carpinus betulus	33.5	0.09	1	105	12	Seed tree
alder (49) [REPLACE_DEAD]Alnus glutinosa	33	0.09	1.1	111	98	Habitat tree
alder (70) Alnus glutinosa	31.5	0.08	0.9	91	38	Habitat tree
alder (71) Alnus glutinosa	31	0.08	0.9	94	4	Seed tree
narrow-leafed ash (204) Fraxinus angustifolia	29.9	0.07	0.8	77	48	Seed tree
Field elm (125) Ulmus minor	29.5	0.07	0.5	54	7	Seed tree
narrow-leafed ash (201) Fraxinus angustifolia	26.5	0.06	0.6	61	0	Seed tree
hornbeam (134) Carpinus betulus	23	0.04	0.5	46	0	Seed tree
hornbeam (203) [REPLACE_DEAD]Carpinus betulus	19.5	0.03	0.1	12	4	Habitat tree