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Supplementary material

Resilience of European beech forests (*Fagus sylvatica* L.) after fire in a global change context

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Table S1. Investigated fire sites sorted by climatic regions (Piedmont, Insubria) and fire date

Other information listed: mean elevation, size class of burnt area (small<4 plots (S), medium 4-9 plots (M), large >9 plots (M)), years post-fire (age), UTM coordinates (WGS84), mean annual temperature (T), total annual precipitation (P) (observation period 1950-2010 from WorldClim Database, Hijmans et al. 2005), and number of plots investigated in burnt (Nb) and unburnt beech forests (Nc)

Regions Municipality	Elevation (m a.s.l.)	Burn size	Date of fire	Age	E	N	T (°C)	P (mm)	N_b/ N_c
Piedmont									
Sparone	1100	L	28.12.1980	34	382545	5030710	6	1109	16/1
Rosazza	1000	M	19.01.1990	24	418645	5058661	5.8	1195	5/0
Corio	1080	L	15.02.1990	24	385562	5021543	7.5	989	10/2

Arola	850	L	04.06.1997	16.5	449208	5074546	7.9	1172	13/0
Varallo	1300	L	11.08.2003	10.5	442360	5078456	7.2	1186	11/1
Condove	1100	L	01.03.2008	7	364870	5000781	7.4	979	11/1
Giaglione[A]	1300	M	03.03.2012	2	341650	5001664	6.4	1067	8/1
Insubric									
Indemini	1300	S	07.08.1970	42.5	488196	5105864	6.4	1349	3/1
Minusio	1000	S	04.11.1971	41	484123	5116368	4.7	1415	2/1
Gordevio[A]	1450	S	09.03.1973	40	482190	5116678	6.5	1355	1/0
Moghegno	1100	S	27.11.1973	39	492538	5101434	8.3	1310	3/1
Gordola	1060	S	28.03.1976	37	490491	5116753	6.0	1365	2/1
Arbedo	1300	L	20.03.1976	37	506667	5116933	7.1	1290	13/1
Astano	1050	S	01.01.1981	32	485796	5096454	8.2	1304	2/1
Indemini	1300	L	01.01.1981	32	484488	5104578	5.5	1376	12/1
Intragna	1150	S	04.01.1987	27	477570	5112256	7.6	1318	3/0
Aurigeno	900	S	01.08.1989	23.5	478824	5118037	8.2	1308	2/1
Mugena	900	M	23.03.1990	23	492683	5105828	7.1	1330	6/1
Novaggio	1300	S	10.03.1990	23	486829	5098133	5.4	1371	2/1
Avegno	1250	S	05.05.1990	23	482007	5116521	6.5	1355	2/0
Pollegio	1250	M	09.04.1995	18	492574	5139100	5.3	1391	5/2
Tenero	950	S	21.04.1996	17	487212	5116007	8.5	1315	3/0
Ronco s.A.	1300	M	15.03.1997	16	477225	5110649	6.6	1349	6/1
Magadino	1200	L	15.04.1997	16	491560	5107650	6.9	1335	26/3
Sonvico	1000	M	03.04.1997	16	501239	5101934	8.8	1300	5/2

Arbedo	1350	S	14.11.1998	14	506770	5115571	8.5	1302	3/2
Indemini[A]	1300	S	19.12.1998	14	488487	5106098	6.6	1347	1/1
Gordevio	1450	L	24.04.2002	11	482190	5116678	6.5	1355	13/4
Maggia	1380	S	12.03.2002	11	477394	5124084	5.7	1388	3/1
Bodio	1050	M	18.03.2003	10	495105	5136703	4	1436	5/1
Dissimo	1000	M	06.04.2003	11	466503	5111215	5	1402	5/1
Someo	1450	S	06.08.2003	9.5	475281	5126733	5.6	1395	3/1
Villadossola	1200	L	16.03.2005	9	440231	5098748	5.6	1305	11/1
Cugnasco	700	M	03.04.2006	7	494084	5114855	9.4	1317	4/1
Ronco s.A.	1300	S	23.04.2007	6	477225	5110649	6.6	1349	2/1
Druogno[A]	1100	L	26.03.2012	2	453207	5110682	4.8	1394	12/1

[A]Not used in the regeneration model.

Table S2. Regeneration densities of woody species in burnt and unburnt beech forests

Frequency of species presence (%) in plots (N 234) and the presence of mother-trees (M) indicated by • are noted for burnt forests

	Burnt beech forest						Unburnt beech forest	
	N (ha^{-1}) saplings		N (ha^{-1}) seedlings		Plots (%)	M	N (ha^{-1}) regeneration	
Species	mean	s.e.	mean	s.e.			mean	s.e.
Target species								
Fagus sylvatica L.	7059	992	7381	982	91	•	3042	959
Pioneers with wind-dispersal								
Betula pendula Roth	2331	353	390	70	60	•	0	0
Populus tremula L.	184	145	150	140	1	•	0	0
Laburnum alpinum J.Presl	146	62	4380	1936	9		0	0
Salix caprea L.	143	42	83	24	22		0	0
Corylus avellana L.	63	25	9	4	7		0	0
Alnus glutinosa (L.) Gaertn.	3	3	0	0	<1	•	0	0
Ailanthus altissima (Mill.) Swingle	2	2	0	0	<1		0	0
Populus nigra L.	0	0	1	1	1		0	0
Paulownia tomentosa (Thunb.)	1	1	0	0	<1		0	0
Populus alba L.	0	0	<1	<1	<1		0	0
Robinia pseudoacacia L.	<1	<1	0	0	<1		0	0
Other trees with barochorous/zoochorous seed dispersal								
Sorbus aucuparia L.	301	166	195	67	25	•	219	209
Sorbus aria Crantz	222	99	79	18	25	•	8	7
Fraxinus excelsior L.	196	89	3127	795	27	•	351	159
Acer opulifolium Chaix.	55	47	120	120	1		0	0
Castanea sativa Mill.	55	12	61	15	24	•	32	19
Acer pseudoplatanus L.	39	19	1012	596	17	•	59	47
Prunus avium L.	14	7	60	19	14	•	8	5

Frangula alnus Mill.	12	9	8	8	<1		0	0
Quercus petraea (Mattuschka)	11	4	35	11	11	•	3	3
Larix decidua Mill.	11	4	27	12	7	•	0	0
Picea abies (L.)	11	5	7	5	3	•	1	1
Pinus sylvestris L.	3	3	1	1	1	•	0	0
Ilex aquifolium L.	2	1	4	3	2		4	3
Pinus strobus L.	2	2	0	0	1		0	0
Juglans regia L.	2	1	0	0	<1		0	0
Acer campestre L.	1	1	3	1	1		0	0
Tilia cordata Mill.	1	1	0	0	<1		0	0
Quercus pubescens Willd.	0	0	7	5	1	•	0	0
Taxus baccata L.	0	0	1	1	1	•	3	3
Acer platanoides L.	0	0	<1	<1	<1		0	0