

Supporting information

Effects of host abundance on larch budmoth outbreaks in the European Alps

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Table S1 Tree-ring inter-site correlations and climate signals. Correlations of the larch (orange) and spruce (green) RWI₃₀-chronologies with JJA temperatures (30yr-spline filtered), and intra-site larch-to-spruce correlations (grey) over the 1850-2000 period.

Table S2 Station data used for assessing the climate envelope in different larch growing regions (Fig. 6).

Figure S1 Delimitation of outbreak regions after Baltensweiler & Rubli (1999).

Figure S2 Regional December/January/February temperatures (dots and dashed lines, 1961-1990 mean) within the different larch growing regions along elevation.

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Site #	< 1000 m					1000-1450 m							> 1450 m						JJA
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	0.29	0.20	0.22	0.44	0.50	0.28	0.32	0.23	0.42	0.12	-0.12	0.15	0.10	0.12	0.02	-0.05	-0.13	-0.13	-0.07
2	0.55	0.39	0.15	0.25	0.23	0.49	0.29	0.25	0.22	0.31	-0.09	0.31	0.14	0.06	-0.01	0.09	-0.03	-0.12	-0.09
3	0.38	0.60	-0.02	0.69	0.12	0.40	0.33	0.20	0.29	0.45	0.19	0.37	0.39	0.21	0.35	0.17	0.27	0.22	-0.03
4	0.67	0.68	0.68	0.32	0.44	0.56	0.61	0.47	0.44	0.35	-0.01	0.34	0.34	0.20	0.27	0.13	0.09	-0.02	-0.11
5	0.53	0.47	0.52	0.61	0.70	0.37	0.45	0.52	0.44	0.24	-0.08	0.26	0.27	0.23	0.23	0.19	0.09	0.01	-0.01
6	0.59	0.77	0.49	0.65	0.46	0.34	0.52	0.45	0.68	0.66	0.33	0.56	0.46	0.37	0.52	0.49	0.40	0.23	0.07
7	0.61	0.70	0.58	0.58	0.56	0.68	0.59	0.66	0.63	0.33	0.16	0.43	0.47	0.24	0.26	0.23	0.23	0.04	-0.02
8	0.53	0.45	0.54	0.61	0.76	0.49	0.62	0.65	0.51	0.31	0.14	0.44	0.49	0.21	0.32	0.26	0.19	0.14	-0.07
9	0.55	0.73	0.57	0.68	0.57	0.71	0.78	0.54	0.59	0.54	0.26	0.57	0.52	0.38	0.49	0.42	0.35	0.21	0.11
10	0.62	0.54	0.33	0.57	0.56	0.60	0.66	0.62	0.64	0.28	0.47	0.60	0.57	0.49	0.69	0.51	0.60	0.37	0.16
11	0.47	0.54	0.31	0.60	0.27	0.57	0.61	0.49	0.59	0.62	0.23	0.49	0.49	0.42	0.61	0.54	0.59	0.66	0.23
12	0.41	0.41	0.31	0.48	0.42	0.57	0.50	0.61	0.54	0.69	0.56	0.34	0.76	0.53	0.56	0.52	0.58	0.51	0.14
13	0.21	0.31	0.20	0.32	0.38	0.38	0.40	0.47	0.46	0.51	0.41	0.83	0.48	0.53	0.65	0.64	0.60	0.52	0.32
14	0.36	0.17	0.06	0.28	0.38	0.17	0.28	0.48	0.24	0.52	0.44	0.57	0.59	0.46	0.55	0.70	0.57	0.51	0.31
15	0.10	0.26	0.11	0.18	0.14	0.35	0.36	0.23	0.50	0.54	0.47	0.53	0.56	0.39	0.49	0.76	0.80	0.66	0.26
16	0.22	0.27	0.12	0.33	0.30	0.32	0.48	0.49	0.42	0.59	0.61	0.61	0.66	0.64	0.64	0.41	0.73	0.66	0.43
17	0.22	0.29	0.14	0.20	0.14	0.31	0.45	0.34	0.37	0.54	0.47	0.64	0.68	0.51	0.70	0.70	0.41	0.74	0.39
18	0.33	0.35	0.25	0.35	0.33	0.37	0.48	0.51	0.37	0.45	0.48	0.71	0.72	0.50	0.44	0.65	0.76	0.29	0.29
JJA	-0.11	-0.13	-0.14	-0.08	-0.23	-0.13	-0.09	-0.13	0.00	0.00	0.24	0.25	0.34	0.29	0.37	0.33	0.33	0.35	

Table S2 Station data used for assessing the climate envelope in different larch habitats (Fig. 6).

Region	Station	Lat.	Lon.	m asl	Source
W-Alps	Genève-Cointrin (GVE)	46°15'	6°08'	420	MeteoSchweiz
	Aosta-Airport (AOS)	45°44'	7°18'	544	HISTALP
	Grächen (GRC)	46°12'	7°50'	1550	MeteoSchweiz
	Lago Gabiet (LGA)	45°50'	7°51'	2340	HISTALP
	Col du Grand St-Bernard (GSB)	45°52'	7°10'	2472	MeteoSchweiz
N-Alps	Salzburg-Flughafen (SAL)	47°48'	13°00'	450	HISTALP
	Kufstein (KUF)	47°35'	12°10'	493	HISTALP
	Bad Ischl (BIL)	47°42'	13°39'	512	HISTALP
	Radstadt (RAD)	47°23'	13°27'	858	HISTALP
	Feuerkogel (FEU)	47°49'	13°43'	1618	HISTALP
	Zugspitze (ZUG)	47°25'	10°59'	2962	HISTALP
	Tatra	Poprad/Tatry	49°04'	20°15'	695
Zakopane		49°18'	19°57'	860	GHCN
Kasprowy Wier		49°14'	19°59'	1989	GHCN
Lomnický štít		49°12'	20°13'	2635	GHCN

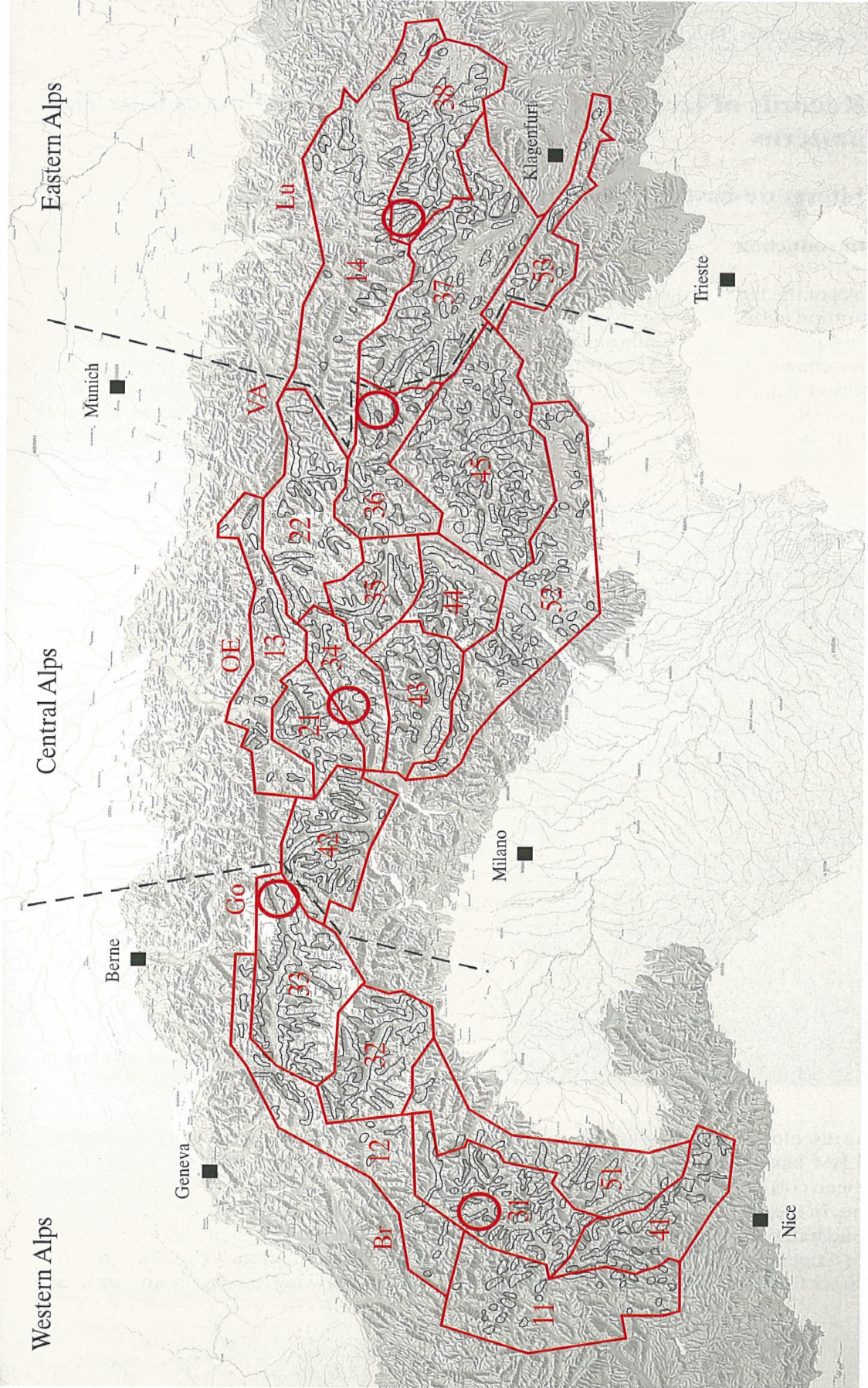


Fig. S1 Delimitation of outbreak regions after Baltensweiler & Rubli (1999).

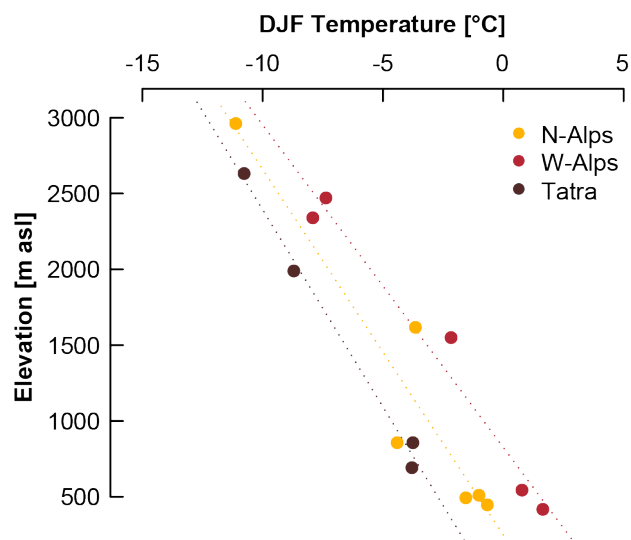


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