

Effect of logging residues management on the distribution of potentially toxic elements in soils of large-scale clearcuts resulting from bark beetle forest damage

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Table S1. *T*-test for dependent samples; red written differences $P < 0.05$

Variable	Mean (mg/kg)	SD	<i>N</i>	Diff.	SDd	<i>t</i>	df	<i>P</i>
All soil layers								
Cu RLR	19.80	11.25						
Cu FOR	19.75	12.82	44	0.049	11.567	0.028	43	0.978
Cu RLR	20.39	10.84						
Cu WCH	18.94	9.497	38	1.449	10.412	0.858	37	0.396
Cu FOR	20.12	12.15						
Cu WCH	18.94	9.497	38	1.177	7.368	0.985	37	0.331
Zn RLR	59.71	23.41						
Zn FOR	55.34	23.42	44	4.371	24.561	1.180	43	0.244
Zn RLR	62.78	22.16						
Zn WCH	63.74	19.74	40	−0.957	17.951	−0.337	39	0.738
Zn FOR	58.04	22.83						
Zn WCH	63.74	19.74	40	−5.701	16.349	−2.206	39	0.033
Organic (FH) soil layer								
Cd RLR	1.165	0.516						
Cd FOR	0.973	0.415	11	0.191	0.307	2.068	10	0.066
Cd RLR	1.243	0.470						
Cd WCH	1.260	0.314	10	−0.017	0.551	−0.099	9	0.923
Cd FOR	1.040	0.370						
Cd WCH	1.260	0.314	10	−0.220	0.424	−1.644	9	0.135
Cr RLR	14.52	6.507						
Cr FOR	13.77	7.045	11	0.754	6.885	0.363	10	0.724
Cr RLR	15.62	5.674						
Cr WCH	15.54	6.311	10	0.083	9.113	0.029	9	0.978
Cr FOR	14.81	6.471						
Cr WCH	15.54	6.311	10	−0.732	8.828	−0.262	9	0.799
Ni RLR	10.25	2.595						
Ni FOR	11.45	5.343	11	−1.200	4.996	−0.797	10	0.444
Ni RLR	10.77	2.037						
Ni WCH	10.98	3.738	10	−0.213	3.884	−0.174	9	0.866
Ni FOR	12.09	5.156						
Ni WCH	10.98	3.738	10	1.113	5.421	0.649	9	0.532
Mineral soil layer (0–30 cm)								
Cd RLR	1.606	0.751						
Cd FOR	1.517	0.692	33	0.089	0.663	0.772	32	0.446
Cd RLR	1.716	0.697						
Cd WCH	1.600	0.565	30	0.116	0.546	1.166	29	0.253
Cd FOR	1.613	0.652						
Cd WCH	1.600	0.565	30	0.013	0.481	0.144	29	0.887
Cr RLR	29.13	16.54						
Cr FOR	31.43	21.47	33	−2.293	15.811	−0.833	32	0.411
Cr RLR	31.48	15.47						
Cr WCH	29.39	16.48	30	2.090	13.128	0.872	29	0.390
Cr FOR	33.69	21.22						

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Table S1 to be continued

Variable	Mean (mg/kg)	SD	N	Diff.	SDd	t	df	P
Mineral soil layer (0–30 cm)								
Cr WCH	29.39	16.48	30	4.298	11.642	2.022	29	0.052
Ni RLR	16.17	7.687						
Ni FOR	17.84	11.77	33	–1.668	9.202	–1.042	32	0.305
Ni RLR	17.29	7.142						
Ni WCH	17.65	9.363	30	–0.355	6.771	–0.287	29	0.776
Ni FOR	18.93	11.81						
Ni WCH	17.65	9.363	30	1.279	6.679	1.049	29	0.303
Organic (FH) soil layer								
Pb RLR	45.11	17.39						
Pb FOR	49.26	22.84	11	–4.147	13.525	–1.017	10	0.333
Pb RLR	44.94	18.32						
Pb WCH	35.11	7.865	10	9.830	16.861	1.843	9	0.098
Pb FOR	50.48	23.70						
Pb WCH	35.11	7.865	10	15.371	19.340	2.513	9	0.033
Mineral soil layer (0–10 cm)								
Pb RLR	34.99	14.39						
Pb FOR	37.06	10.87	11	–2.068	11.446	–0.599	10	0.562
Pb RLR	36.30	14.46						
Pb WCH	29.56	7.133	10	6.742	11.512	1.852	9	0.097
Pb FOR	38.68	9.951						
Pb WCH	29.56	7.133	10	9.125	6.739	4.282	9	0.002
Mineral soil layer (10–30 cm)								
Pb RLR	18.65	6.801						
Pb FOR	19.40	7.305	22	–0.745	6.485	–0.539	21	0.596
Pb RLR	19.23	6.823						
Pb WCH	16.87	9.729	20	2.357	7.465	1.412	19	0.174
Pb FOR	19.95	7.435						
Pb WCH	16.87	9.729	20	3.076	5.339	2.577	19	0.018

SD – standard deviation; Diff. – difference; SDd – standard deviation of difference; df – degree of freedom

Table S2. Studied sites soil characteristics in organic (FH) and mineral layers

Site	Layer	pH _{H2O} (–)		pH _{CaCl2} (–)		C (%)		N (%)		C/N (–)	
		mean	SD	mean	SD	mean	SD	mean	SD	mean	SD
Bitoványky	FH	4.64	0.24	4.08	0.29	36.22	1.68	1.49	0.21	24.62	3.08
Bitoványky	0–10	4.29	0.18	3.58	0.16	4.40	0.62	0.24	0.03	18.55	1.97
Bitoványky	10–20	4.45	0.09	3.74	0.06	1.75	0.32	0.10	0.00	17.29	3.66
Bitoványky	20–30	4.52	0.09	3.77	0.03	1.66	0.50	0.09	0.00	18.64	5.45
Černá Hora	FH	5.07	0.05	4.47	0.18	31.48	7.34	1.30	0.37	24.76	2.68
Černá Hora	0–10	4.38	0.21	3.66	0.28	5.62	2.06	0.31	0.12	18.29	2.21
Černá Hora	10–20	4.36	0.26	3.65	0.21	2.31	1.25	0.14	0.08	17.32	2.69
Černá Hora	20–30	4.47	0.20	3.73	0.15	1.61	0.99	0.10	0.06	16.12	1.47
Český Krumlov	FH	3.96	0.19	3.11	0.11	42.39	2.60	1.55	0.11	27.30	0.32
Český Krumlov	0–10	4.05	0.14	3.34	0.04	4.33	0.39	0.17	0.01	25.65	1.50
Český Krumlov	10–20	4.22	0.10	3.66	0.08	3.22	0.15	0.13	0.01	25.12	1.94
Český Krumlov	20–30	4.37	0.07	3.85	0.03	2.50	0.09	0.11	0.01	22.94	2.12
Dalov	FH	4.22	0.15	3.32	0.18	29.79	11.52	1.29	0.57	23.64	1.93
Dalov	0–10	4.10	0.30	3.41	0.21	6.15	0.62	0.31	0.03	19.61	0.64
Dalov	10–20	4.21	0.29	3.63	0.14	2.85	0.24	0.18	0.01	16.23	1.02
Dalov	20–30	4.26	0.19	3.77	0.04	2.00	0.44	0.14	0.01	13.97	1.72
Horní Radouň	FH	4.31	0.27	3.53	0.29	38.66	6.07	1.53	0.29	25.33	0.92
Horní Radouň	0–10	4.22	0.19	3.58	0.09	2.56	0.84	0.14	0.03	18.42	2.10
Horní Radouň	10–20	4.41	0.12	3.83	0.06	1.09	0.22	0.07	0.01	14.50	1.38
Horní Radouň	20–30	4.51	0.12	3.89	0.04	0.71	0.01	0.06	0.00	11.54	0.64
Kuničky	FH	4.42	0.27	3.66	0.31	35.75	9.27	1.39	0.38	25.79	1.15
Kuničky	0–10	4.02	0.16	3.35	0.13	4.01	0.59	0.19	0.02	20.94	1.03
Kuničky	10–20	4.19	0.16	3.61	0.09	1.83	0.34	0.09	0.01	19.45	1.71
Kuničky	20–30	4.34	0.13	3.76	0.06	1.18	0.14	0.07	0.01	17.64	1.75
Nová Brtnice	FH	4.51	0.02	3.91	0.04	32.85	5.18	1.36	0.26	24.31	0.84
Nová Brtnice	0–10	4.40	0.20	3.58	0.18	4.93	0.14	0.26	0.02	19.13	0.77
Nová Brtnice	10–20	4.48	0.12	3.75	0.06	1.51	0.38	0.11	0.01	13.56	2.21
Nová Brtnice	20–30	4.50	0.12	3.79	0.08	0.70	0.13	0.07	0.01	10.30	0.15
Nové Valteřice	FH	4.30	0.14	3.32	0.12	35.07	5.71	1.44	0.24	24.37	0.33
Nové Valteřice	0–10	4.11	0.31	3.31	0.25	7.87	1.87	0.40	0.07	19.69	1.24
Nové Valteřice	10–20	4.28	0.44	3.52	0.34	3.70	1.42	0.21	0.06	17.09	2.62
Nové Valteřice	20–30	4.31	0.37	3.74	0.30	2.04	0.21	0.13	0.00	15.61	1.22
Rytířsko	FH	4.47	0.18	3.86	0.29	31.62	5.32	1.31	0.20	24.30	3.06
Rytířsko	0–10	4.33	0.25	3.59	0.23	3.78	0.60	0.21	0.03	18.08	0.36
Rytířsko	10–20	4.43	0.11	3.77	0.10	0.96	0.11	0.08	0.01	11.64	0.65
Rytířsko	20–30	4.46	0.06	3.80	0.07	0.60	0.21	0.06	0.01	9.41	2.26
Stonařov	FH	4.23	0.15	3.57	0.13	30.83	5.99	1.28	0.23	24.15	1.29
Stonařov	0–10	4.23	0.29	3.50	0.19	4.91	1.57	0.25	0.08	19.35	1.54
Stonařov	10–20	4.34	0.11	3.68	0.07	1.87	0.52	0.11	0.02	17.23	1.84
Stonařov	20–30	4.44	0.05	3.78	0.04	1.11	0.22	0.07	0.02	16.29	1.93
Velká Bíteš	FH	4.62	0.07	4.13	0.06	28.07	2.94	1.21	0.18	23.39	1.05
Velká Bíteš	0–10	4.33	0.14	3.57	0.15	4.23	0.98	0.22	0.03	19.44	1.91
Velká Bíteš	10–20	4.28	0.15	3.65	0.06	1.17	0.38	0.09	0.02	13.55	1.51
Velká Bíteš	20–30	4.51	0.09	3.77	0.03	0.51	0.17	0.06	0.01	8.94	1.40

SD – standard deviation