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Supplement of

A tree-ring perspective on temporal changes in the frequency and intensity of hydroclimatic extremes in the territory of the Czech Republic since 761 AD

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Table S1. Complete list of negative and positive extremes found in the TRW Czech oak chronology in the 761–2010 period. Negative/positive extremes were defined by years in which TRW index exceeded the ± 1.5 multiple of a standard deviation (SD). Ranking express the extremity of the year (1 stands for the most negative/positive year according to TRW index). Validation – extreme years identified in various documentary, tree-ring and instrumental data: **D** – documentary sources from Central Europe before 1500 (see Table 1 for full description and references); **BR** - years with extreme March-July precipitation totals reconstructed from Fir TRW in southern Moravia (CR in the period 1376–1996 (Brázdil et al. 2002). Extremes were defined in the same way as in TRW oak chronology (± 1.5 multiple of SD) and number in brackets denotes extremity ranking: 1 stands for the year with the lowest precipitation (negative extremes) or the highest precipitation (positive extremes). **B11a** – the 20 most negative and positive fir TRW-based ZIND values in Southern Moravia in the 1501–1932 period (Büntgen et al. 2011a); **B11b** – negative and positive fir TRW extremes sampled across France, Switzerland, Germany and CR in the period 962–2007 (Büntgen et al. 2011b); **OM** – positive and negative years identified in Scots pine tree rings from Upper Silesia in the 1770–2010 period (Opala and Mendecki 2014); **O15** – positive and negative years identified in Scots pine tree rings from Upper Silesia and southern Poland in the 1568–2010 period (Opala, 2015); **S** – years with March–August reconstructed (1501–1803) and measured (1804–2010) extreme precipitation totals (Dobrovlný et al. (2015). Extremes were defined as ± 1.5 multiple of SD and number in brackets denotes extremity ranking: 1 stands for the year with the lowest precipitation (negative extremes) or the highest precipitation (positive extremes).

Negative extremes

Year	TRW index	Ranking	Validation
761	-1.589	123	
764	-2.366	19	
776	-1.648	115	
777	-1.698	99	
780	-1.911	64	
788	-2.332	24	
797	-1.530	139	
806	-1.986	50	
810	-2.454	13	
826	-1.786	83	
839	-1.817	78	
850	-2.572	7	
855	-1.725	95	
864	-1.756	87	
874	-2.138	31	
882	-2.028	42	
883	-1.711	96	
893	-1.815	79	
907	-1.805	80	
920	-2.340	23	
922	-1.531	138	
926	-1.686	102	
928	-2.724	5	

944	-1.696	100	
945	-3.266	1	
952	-1.521	142	
961	-1.627	116	
981	-1.965	52	
982	-1.936	60	
983	-1.708	97	
995	-1.876	70	
1000	-1.731	94	
1013	-1.578	125	
1019	-2.255	27	
1036	-1.667	111	
1037	-1.852	72	
1039	-1.651	113	
1046	-1.744	92	
1048	-2.511	8	
1058	-1.677	105	
1064	-1.687	101	
1070	-1.964	54	
1078	-1.554	133	
1091	-2.410	17	D
1111	-1.529	140	
1117	-1.864	71	
1121	-2.000	49	D
1132	-1.747	91	
1142	-3.162	2	
1159	-1.651	114	
1167	-2.838	4	D, B11
1171	-1.953	55	
1177	-1.936	59	D
1188	-1.552	134	
1189	-1.922	63	
1194	-1.903	66	D
1205	-1.577	126	D, B11
1209	-2.089	36	
1217	-1.675	106	D, B11
1224	-2.582	6	
1241	-1.757	86	
1248	-1.674	107	
1252	-2.079	37	D
1262	-2.019	43	D
1270	-2.064	38	D, B11
1278	-1.667	110	
1284	-1.985	51	
1287	-1.599	119	
1305	-1.795	82	

1306	-1.774	85	D, B11
1320	-2.004	47	D, B11
1326	-2.104	34	D
1337	-1.670	109	D
1353	-1.752	89	
1361	-1.889	68	D, B11
1379	-1.572	128	D, B11
1393	-1.942	58	D, B11
1397	-2.348	21	D, B11
1398	-1.608	118	
1420	-2.284	26	D, B11
1426	-1.928	61	D
1431	-1.796	81	
1448	-2.046	41	D
1462	-1.593	122	D, B11
1464	-2.011	45	
1469	-1.902	67	D
1479	-1.965	53	
1485	-2.009	46	D
1503	-2.480	11	B11
1525	-2.136	33	B11
1532	-1.753	88	S(33)
1535	-1.732	93	
1541	-1.583	124	B11
1564	-1.557	131	
1567	-1.513	143	
1571	-1.532	137	
1576	-1.683	104	
1590	-1.818	77	S(2), B11
1595	-1.844	73	
1603	-2.452	14	
1616	-2.474	12	S(4), B11
1619	-1.559	130	
1636	-2.163	30	B11
1637	-2.421	16	
1638	-1.838	74	
1653	-3.147	3	B11
1670	-2.003	48	
1672	-2.015	44	
1686	-2.050	40	
1707	-2.208	28	
1711	-2.098	35	
1732	-2.360	20	
1733	-1.684	103	
1741	-1.595	121	
1753	-2.191	29	

1779	-2.508	9	S(34)
1790	-2.137	32	S(6), OM
1800	-1.751	90	S(5), OM
1808	-2.297	25	S(7)
1811	-1.926	62	OM
1822	-1.832	75	
1835	-2.490	10	B11
1841	-1.656	112	
1842	-1.506	144	S(3)
1858	-1.943	57	OM, B11
1865	-1.877	69	B11
1868	-1.555	132	S(35)
1882	-1.596	120	
1885	-1.543	136	
1887	-1.946	56	
1893	-2.347	22	S(21), B11
1904	-1.549	135	S(36)
1921	-1.673	108	S(23)
1922	-2.442	15	B11
1934	-1.527	141	
1940	-1.830	76	OM, B11
1942	-1.575	127	OM
1959	-1.785	84	
1964	-2.373	18	
1976	-1.903	65	S(37), OM, B11
1993	-1.562	129	
1996	-2.062	39	
1998	-1.618	117	
2007	-1.705	98	

Positive extremes

Year	TRW index	Ranking	Validation
772	2.155	27	
781	2.002	41	
791	1.846	59	
809	1.566	117	
814	2.815	2	
818	1.535	128	
828	2.037	35	
843	1.661	95	
859	1.935	49	
875	2.658	5	
878	1.969	44	
901	1.643	99	
904	1.968	45	

909	1.609	111	
919	2.536	9	
932	1.556	118	
936	1.546	120	
942	1.845	60	
964	1.811	72	
965	1.632	101	
985	2.432	10	
991	1.540	124	
999	2.191	23	
1002	1.829	67	
1017	1.580	114	
1021	1.827	68	
1023	1.544	122	
1030	1.645	98	
1040	1.832	65	D
1052	2.285	14	D, B11
1068	2.649	6	
1079	1.664	93	
1089	1.967	46	
1098	2.823	1	
1106	1.571	115	D, B11
1115	2.006	39	
1120	1.612	110	
1122	1.868	55	D
1123	2.097	30	D
1140	1.801	73	
1143	1.752	81	
1147	1.829	66	
1160	2.044	33	
1163	1.819	71	
1168	1.840	63	
1186	1.841	62	
1187	1.624	106	D, B11
1191	1.713	86	
1199	1.944	48	
1200	1.751	82	
1206	1.511	131	
1219	2.091	31	
1221	2.235	17	
1257	2.003	40	D
1297	1.607	112	
1299	2.015	38	
1302	2.334	12	
1316	2.202	21	D, B11
1321	1.841	61	D

1345	1.500	134	B11
1350	2.219	18	
1359	2.041	34	D, B11
1362	1.537	125	D
1366	1.875	53	
1370	2.019	37	D
1389	2.271	15	D
1392	1.531	129	
1399	1.661	96	
1418	1.569	116	
1433	2.120	29	D
1436	2.205	20	D, B11
1445	1.537	127	D
1451	1.791	74	D
1468	1.545	121	
1481	2.037	36	D
1496	1.826	69	D
1511	1.872	54	S(19)
1515	1.847	58	S(1)
1526	1.769	78	
1531	1.639	100	S(30)
1533	1.966	47	
1545	1.764	79	B11
1563	2.161	26	S(20), B11
1570	1.853	56	B11
1579	1.671	92	
1600	1.585	113	
1609	1.613	109	
1617	2.074	32	
1628	1.506	132	
1632	1.542	123	
1648	1.760	80	S(28)
1655	2.127	28	
1673	1.549	119	
1675	2.194	22	S(18), B11
1679	1.625	104	
1682	1.673	89	
1696	1.672	91	
1698	1.725	85	S(7)
1712	1.789	76	
1713	2.716	4	B11
1716	1.927	50	
1730	1.631	102	
1734	2.627	7	S(8)
1738	1.504	133	
1740	1.614	107	

1754	2.240	16	
1771	2.410	11	S(5)
1774	1.663	94	
1789	1.835	64	
1796	1.676	88	OM, B11
1804	1.852	57	
1807	1.823	70	OM
1831	1.916	51	OM
1833	1.537	126	
1847	2.184	24	
1853	1.789	75	
1854	1.631	103	
1860	1.707	87	
1871	1.741	84	OM
1879	1.746	83	
1890	1.625	105	B11
1891	2.211	19	
1916	2.174	25	OM, B11
1919	1.889	52	
1926	1.773	77	S(14)
1931	1.613	108	
1932	1.673	90	
1946	1.652	97	
1951	1.988	43	
1969	2.306	13	
1975	2.000	42	
1982	2.787	3	
2001	2.553	8	OM
2009	1.519	130	