

## Supplementary Materials

Table 1. Drought events that occurred over Central Europe during 1980-2015

	Drought (CEU)	Severity	Drought (CEU)	Duration	Drought (CEU)	Intensity	Drought (CEU)	Peak value
1	Feb – Jun 2003	7.1	Jun – Dec 1983	7	Oct –Oct 1995	2.16	Jun – Oct 2015	-2.40
2	Jun – Oct 2015	6.45	Jan – Jun 2011	6	Nov – Nov 1993	1.73	Oct –Oct 1995	-2.16
3	Jan – Jun 2011	6.27	Dec 1992 – May 1993	6	Dec – Dec 2013	1.63	Aug – Nov 2011	-2.08
4	Jun – Dec 1983	6.15	Feb – Jun 2003	5	Oct –Oct 1985	1.6	Jun – Jul 1994	-2.07
5	May – Aug 1992	5.24	Jun – Oct 2015	5	Jun – Jul 2006	1.52	Mar - Apr 2007	-1.99
6	Aug – Nov 2011	4.37	Mar – Jul 2002	5	Aug – Sep 2009	1.46	Apr - May 2009	-1.96
7	Dec 1992 – May 1993	4.26	Dec 1990 – Apr 1991	5	Jan – Jan 2006	1.46	Jun – Jul 2006	-1.94
8	Sep – Nov 2005	3.71	May – Aug 1992	4	Sep – Sep 1982	1.44	Feb - Apr 2014	-1.90
9	Mar – Jul 2002	3.68	Aug – Nov 2011	4	May – May 1989	1.42	Jan – Mar 1989	-1.89
10	Jan – Mar 1989	3.46	Sep – Dec 2006	4	May – May 1990	1.42	Feb – Jun 2003	-1.86
11	Sep – Dec 2006	3.35	Dec 1996 – Mar 1997	4	Feb – Jun 2003	1.42	Feb - Mar 1982	-1.86
12	Dec 1990 – Apr 1991	3.25	Feb – Apr 1984	3	Jun – Jun 2008	1.37	Nov – Nov 1993	-1.74
13	Dec 2007 – Feb 2008	3.21	Oct – Dec 1984	3	Jun – Jul 1994	1.37	Dec 1996 – Mar 1997	-1.69
14	Dec 1996 – Mar 1997	3.06	May – Jul 1986	3	Oct – Oct 1987	1.31	Dec – Dec 2013	-1.63
15	Jun – Jul 2006	3.05	Sep – Nov 1986	3	May – Aug 1992	1.31	Sep – Nov 2005	-1.63
16	Aug - Sep 2009	2.93	Jan – Mar 1989	3	Jun – Oct 2015	1.29	Oct –Oct 1985	-1.61
17	Feb - Apr 2014	2.83	May – Jul 1999	3	Feb - Mar 1982	1.26	Sep – Dec 2006	-1.60
18	Jun – Jul 1994	2.74	Apr - Jun 2000	3	Mar – Mar 1990	1.25	Dec 1992 – May 1993	-1.57
19	Apr - Jun 2000	2.61	Sep – Nov 2005	3	Sep – Nov 2005	1.23	Sep – Nov 1986	-1.56
20	Sep – Nov 2014	2.55	Dec 2007 – Feb 2008	3	Mar – Mar 2012	1.2	Dec 2007 – Feb 2008	-1.55
21	Sep – Nov 1986	2.54	Jun – Aug 2013	3	Mar - Apr 2007	1.19	Jan – Jun 2011	-1.53
22	Feb - Mar 1982	2.53	Feb - Apr 2014	3	Nov – Nov 1982	1.18	Jan – Feb 1998	-1.52
23	Jun – Aug 2013	2.46	Sep – Nov 2014	3	Jan – Mar 1989	1.15	Aug - Sep 2009	-1.50
24	Mar - Apr 2007	2.38	Feb - Mar 1982	2	Aug – Nov 2011	1.09	Jan – Jan 2006	-1.47
25	Apr - May 2009	2.17	Oct – Nov 1988	2	Apr - May 2009	1.08	Sep – Sep 1982	-1.44
26	Oct –Oct 1995	2.16	Jun – Jul 1994	2	Dec 2007 – Feb 2008	1.07	May – May 1989	-1.43
27	Oct – Dec 1984	2.1	Jan – Feb 1998	2	Oct – Oct 2000	1.05	Mar – Mar 1990	-1.42
28	Jan – Feb 1998	2	Jul – Aug 1995	2	Jan – Jun 2011	1.04	Dec 1995 – Jan 1996	-1.42
29	Feb – Apr 1984	1.93	Dec 1995 – Jan 1996	2	Feb – Feb 1994	1.01	Jul – Aug 1995	-1.42
30	May – Jul 1986	1.88	Dec 2001 – Jan 2002	2	Jan – Feb 1998	1	Jun – Jun 2008	-1.37
31	Dec 2001 – Jan 2002	1.85	Aug – Sep 2003	2	Feb - Apr 2014	0.94	Oct – Oct 1987	-1.31
32	Oct – Nov 1988	1.8	Jun – Jul 2006	2	Dec 2001 – Jan 2002	0.92	Sep – Nov 2014	-1.31
33	May – Jul 1999	1.79	Mar - Apr 2007	2	Oct – Nov 1988	0.9	Dec 1990 – Apr 1991	-1.30
34	Nov – Nov 1993	1.74	Apr - May 2009	2	Jun – Dec 1983	0.88	May – Aug 1992	-1.29
35	Aug – Sep 2003	1.73	Aug - Sep 2009	2	Apr - Jun 2000	0.87	Aug – Sep 2003	-1.26
36	Dec – Dec 2013	1.63	Mar – Apr 2010	2	Aug – Sep 2003	0.86	May – May 1990	-1.25
37	Oct –Oct 1985	1.6	Sep – Sep 1982	1	Sep – Nov 2014	0.85	Dec 2001 – Jan 2002	-1.23
38	Jul – Aug 1995	1.53	Nov – Nov 1982	1	Sep – Nov 1986	0.84	Mar – Mar 2012	-1.20
39	Dec 1995 – Jan 1996	1.53	Oct –Oct 1985	1	Sep – Dec 2006	0.83	Nov – Nov 1982	-1.19
40	Jan – Jan 2006	1.46	Oct – Oct 1987	1	Jun – Aug 2013	0.82	Feb – Apr 1984	-1.18
41	Mar – Apr 2010	1.45	May – May 1989	1	Jul – Aug 1995	0.76	Apr - Jun 2000	-1.18
42	Sep – Sep 1982	1.44	Mar – Mar 1990	1	Dec 1995 – Jan 1996	0.76	Mar – Apr 2010	-1.17
43	May – May 1989	1.43	May – May 1990	1	Dec 1996 – Mar 1997	0.76	Oct – Dec 1984	-1.17
44	Mar – Mar 1990	1.42	Nov – Nov 1993	1	Mar – Jul 2002	0.73	Jun – Dec 1983	-1.16
45	Jun – Jun 2008	1.37	Feb – Feb 1994	1	Mar – Apr 2010	0.72	Jun – Aug 2013	-1.14
46	Oct – Oct 1987	1.31	Oct –Oct 1995	1	Dec 1992 – May 1993	0.71	May – Jul 1986	-1.10
47	May – May 1990	1.25	Oct – Oct 2000	1	Oct – Dec 1984	0.7	May – Jul 1999	-1.10
48	Mar – Mar 2012	1.2	Jan – Jan 2006	1	Dec 1990 – Apr 1991	0.65	Oct – Nov 1988	-1.09
49	Nov – Nov 1982	1.18	Jun – Jun 2008	1	Feb – Apr 1984	0.64	Mar – Jul 2002	-1.06
50	Oct – Oct 2000	1.05	Mar – Mar 2012	1	May – Jul 1986	0.62	Oct – Oct 2000	-1.05
51	Feb – Feb 1994	1.01	Dec – Dec 2013	1	May – Jul 1999	0.59	Feb – Feb 1994	-1.02

**Table 2.** The significance (a significance level of 95%), slope, intercept and coefficient of determination (R<sup>2</sup>) for severity, duration, intensity and peak values with respect to the MDS anomaly on annual, winter and summer scales of episodes classified based on duration. Underlined bold numbers represent significant linear relationship with MDS anomaly.

		Annual			Winter			Summer		
		Slope	Intercept	R2	Slope	Intercept	R2	Slope	Intercept	R2
Severity × MDS anomaly	Short – term	<u><b>-0.0176</b></u>	<u><b>1.6215</b></u>	<u><b>0.3629</b></u>	<u><b>-0.0141</b></u>	<u><b>1.5798</b></u>	<u><b>0.2908</b></u>	<u><b>-0.0226</b></u>	<u><b>1.6521</b></u>	<u><b>0.4964</b></u>
	Medium – term	-0.009	4.2931	0.0648	<u><b>-0.032</b></u>	<u><b>2.7559</b></u>	<u><b>0.6163</b></u>	0.015	6.0493	0.2896
Duration × MDS anomaly	Short – term	<u><b>-0.015</b></u>	<u><b>1.5987</b></u>	<u><b>0.1871</b></u>	-0.0098	1.55431	0.0929	<u><b>-0.023</b></u>	<u><b>1.632</b></u>	<u><b>0.393</b></u>
	Medium – term	-0.0068	4.5944	0.078	-0.0084	4.6806	0.2137	-0.0057	4.4436	0.0402
Intensity × MDS anomaly	Short – term	-0.001	1.1126	0.0044	-0.0018	0.8774	0.0116	0.0012	1.1214	0.0052
	Medium – term	-0.005	0.9437	0.0057	-0.0012	1.1206	0.0345	<u><b>0.0042</b></u>	<u><b>1.3481</b></u>	<u><b>0.7477</b></u>
Peak values × MDS anomaly	Short – term	0.0035	-1.386	0.0679	0.0039	-1.3889	0.0901	0.0027	-1.3865	0.039
	Medium – term	-0.00004	-1.5967	0.00001	0.0053	-1.1958	0.5746	-0.0058	-2.067	0.2519

**Table 3.** The significance (a significance level of 95%), slope, intercept and coefficient of determination (R<sup>2</sup>) for severity, duration, intensity and peak values with respect to MDS anomaly on annual, winter and summer scales of episodes classified based on peaks. Underlined bold numbers represent significant linear relationship with MDS anomaly.

		<b>Annual</b>			<b>Winter</b>			<b>Summer</b>		
		Slope	Intercept	R2	Slope	Intercept	R2	Slope	Intercept	R2
Severity × MDS anomaly	Severe	<u><b>-0.0240</b></u>	<u><b>2.1100</b></u>	<u><b>0.2735</b></u>	<u><b>-0.0297</b></u>	<u><b>1.7805</b></u>	<u><b>0.4408</b></u>	-0.0162	2.5511	0.1200
	Mild	-0.0029	1.2859	0.0628	-0.0020	1.2517	0.0191	-0.0043	1.3578	0.7671
Duration × MDS anomaly	Severe	<u><b>-0.0228</b></u>	<u><b>2.1700</b></u>	<u><b>0.2442</b></u>	<u><b>-0.0219</b></u>	<u><b>2.1442</b></u>	<u><b>0.2006</b></u>	-0.0218	2.3201	0.2800
	Mild	-0.0074	1.1233	0.0912	0.0048	1.1453	0.0287	Episodes lasted 1 month each one		
Intensity × MDS anomaly	Severe	-0.0060	1.0349	0.0027	-0.0015	1.0382	0.0145	0.0005	1.0345	0.0030
	Mild	-0.0047	1.2173	0.0831	-0.0008	1.1475	0.0031	0.0026	1.4425	0.1120
Peak values × MDS anomaly	Severe	0.0007	-1.5298	0.0036	0.0170	-1.5038	0.0337	-0.0007	-1.5672	0.0032
	Mild	0.0037	-1.2632	0.1021	0.0033	-1.2153	0.0652	0.0044	-1.3591	0.7949