

Table S1. Years of extremely high ($> 23.84^{\circ}\text{C}$) and low ($< 21.78^{\circ}\text{C}$) reconstructed mean maximum temperatures from June to July ($T_{\text{max6-7}}$) from most extreme to least.

Rank	Warm year	$T_{\text{max6-7}}$	Cold year	$T_{\text{max6-7}}$
1	1890	24.96	1985	19.81
2	1797	24.81	1986	19.96
3	1796	24.73	1993	20.14
4	1849	24.66	1962	20.24
5	1891	24.41	1990	20.30
6	1848	24.40	1961	20.44
7	1918	24.36	1987	20.51
8	1795	24.34	1988	20.51
9	1784	24.22	1983	20.53
10	1892	24.22	2004	20.55
11	1921	24.16	1984	20.60
12	1865	24.14	1964	20.71
13	1852	24.12	1969	20.82
14	1829	24.08	1989	20.83
15	1861	24.07	1991	20.88
16	1860	24.06	2003	20.94
17	1811	24.02	1976	21.01
18	1866	24.00	1995	21.07
19	1812	23.98	1965	21.12
20	1919	23.98	1929	21.17
21	1851	23.97	2002	21.20
22	1889	23.95	1956	21.29
23	1941	23.93	1992	21.29
24	1862	23.91	2001	21.29
25	1776	23.91	1963	21.31
26	1864	23.90	1975	21.32
27	1922	23.89	1787	21.41
28	1885	23.89	1967	21.47
29	1775	23.88	1971	21.51
30	1854	23.87	1982	21.55
31	1884	23.87	1974	21.56
32	1888	23.87	1966	21.56
33	1822	23.87	1977	21.68
34	1873	23.87	1978	21.72
35	1823	23.86		
36	1868	23.85		

Table S2. Flood and drought events recorded in historical archives in Jilin Province since 1772 [52].

Disaster year	Short description of weather or related events
1811	Jilin province: Drought occurred in Dashengwula (now Jilin city)
1812	Jilin province: Droughts occurred in Dashengwula (now Jilin city)
1860	Jilin province: There was little rainfall all year round
1865	Jilin province: Droughts occurred in the provincial capital
1885	Jilin province: Droughts occurred in Changchun
1919	Jilin province: Droughts occurred in the Dongfeng, Tonghua, Panshi, Shuangliao and Meihekou.
1921	Jilin province: Droughts occurred in the Tongyu, Yitong and Lishu.
1929	Jilin province: Flooding disaster occurred in Huadian, Yongji, Liaoyuan, Dehui, Yushu, Tongyu, Meihekou, Anguang, Panshi and Fuyu.
1961	Jilin province: Flooding disaster occurred in the Changbai Mountain
1962	Jilin province: Flooding disaster occurred in the Changbai Mountain
1964	Jilin province: Flooding disaster occurred in the Changbai Mountain
1965	Jilin province: Flooding disaster occurred in the Changbai Mountain
1969	Jilin province: Flooding disaster occurred in the Changbai Mountain
1976	Jilin province: Flooding disaster occurred in the Changbai Mountain
1983	Jilin province: Flooding disaster occurred in the Changbai Mountain
1984	Jilin province: Flooding disaster occurred in the Changbai Mountain in summer
1985	Jilin province: Severe flooding disaster occurred in Changchun during June and July
1987	Jilin province: Flooding disaster occurred in Jiuzhan, Hunchun, Longjing, Antu, Daan, Qianguo, Tongyu and Tonghua in July
1988	Jilin province: Flooding disaster occurred in Yushu and Daan in July
1989	Jilin province: Flooding disaster occurred in 11 regions in July, such as Baishan, Huadian, Jian, etc.
1990	Jilin province: Flooding disaster occurred in Jian, Baicheng, Fuyu and Daan in June and July
1991	Jilin province: Severe flooding disaster occurred in 15 regions in June and July, such as Helong, Hunchun, Liuhe, etc.