

Table S1. Shenyang historical place names (Yan, 2012; Lu and Teng, 2000; Ge, 2005)

Dynasty	Starting Year	Region Name
Western Han Dynasty	140BC	Gao Xian, Hou Cheng
Eastern Han Dynasty	108AD	Liao Dong Jun, Xuan Tu Jun
Three Kingdoms Period	238AD	Xuan Tu Ju, Gao Xian
Jin Dynasty	404AD	Gai Mou Cheng
Tang Dynasty	670AD	Gai Mou Zhou
Five Dynasties and Ten Kingdoms Period	916AD	Shen Zhou
Yuan Dynasty	1296AD	Shen Yang Lu
Northern Yuan Dynasty	1386AD	Shen Yang Zhong Wei
Ming Dynasty	1634AD	Shengjing
Qing Dynasty	1657AD	Feng Tian
Qing Dynasty	1664AD	Cheng De Xian
Republic of China	1929AD	Shen Yang Shi

Table S2. Influence of relocated in Shenyang on precipitation data

Periods between station location changes	Shenyang (mm)	Benxi (mm)	Rainfall ratio	Relative change	R^2
1955 JAN - 1970 SEP	60.61	67.75	0.89	0.118	0.89
1970 OCT - 1976 SEP	60.72	68.38	0.89	0.126	0.90
1976 OCT - 1988 DEC	57.14	64.28	0.89	0.125	0.88
1989 JAN - 2006 MAY	55.78	62.89	0.89	0.127	0.87
2006 JUN - 2012 DEC	60.87	72.16	0.84	0.185	0.88