Supplementary Information

		P	*Rn*	*WS*	*Ta*	*RH*
1961-1983	Arid	1.15	−0.66	0.14	0.44	0.55
		(9.25)	(0.91)	(1.76)	(0.32)	(0.98)
	Transitional	0.39	−0.85	0.23	0.12	0.13
		(7.93)	(1.42)	(1.48)	(0.41)	(0.68)
	Humid	−4.52	−2.06	−0.64	−0.02	0.46
		(6.56)	(1.79)	(1.26)	(0.28)	(1.61)
1984-2010	Arid	3.27	−1.01	−0.75	1.28	1.05
		(8.31)	(1.20)	(1.56)	(0.62)	(1.26)
	Transitional	2.02	−0.34	−0.48	0.97	0.99
		(5.68)	(1.36)	(1.44)	(0.40)	(1.16)
	Humid	−1.08	−0.70	0.03	0.79	1.81
		(4.15)	(1.39)	(1.29)	(0.45)	(1.15)

Table S1. Averaged relative influences of five climate parameters over three hydro-climate regimes for two analysis period. Averaged relative influences of each climate parameters are computed for arid, transitional, and humid regions located on east of 100°E, respectively. Values in parentheses are standard deviations for each climate parameters for both specific region and period.
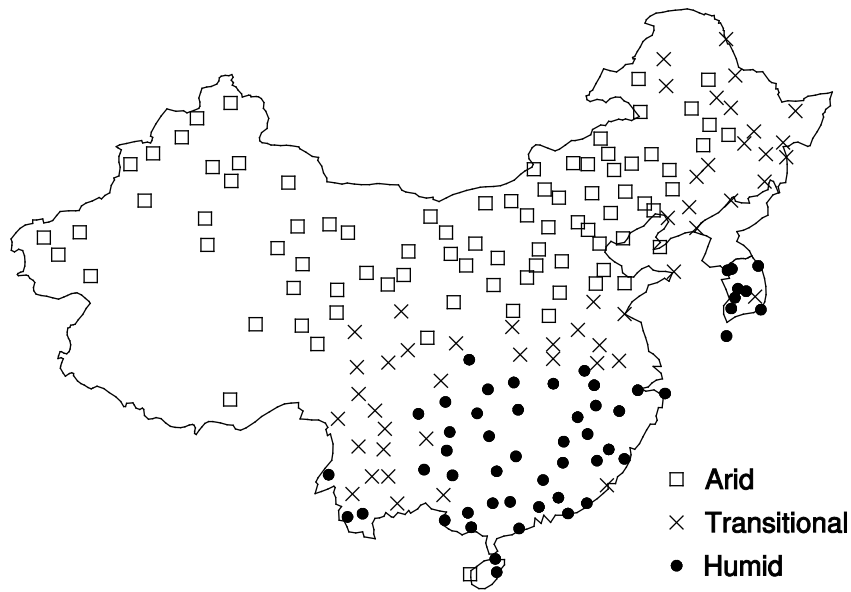
Figure S1. Spatial distribution of 189 meteorological stations in analysis domain. Spatial locations of 179 and 10 meteorological sites of Mainland China and South Korea. Empty squares, crosses and filled circles indicate stations that classified by arid, transitional, and humid regimes based on 50-year climatological *PET/P* for the period of 1961-2010.
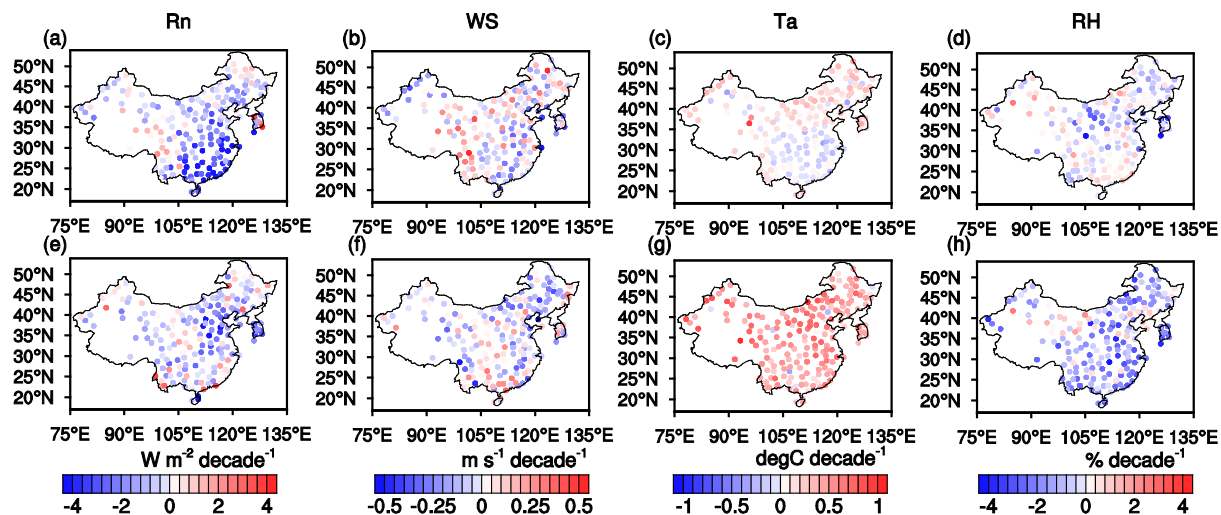
Figure S2. Spatial distributions of trends in *Rn*, *WS*, *Ta*, and *RH* over continental East Asia. a−d, The spatial distribution of trends in annual-mean *Rn* (a), *WS* (b), *Ta* (c), and *RH* (d) for the period of 1961−1983. e−h, as a−d, but for the period 1984−2010.
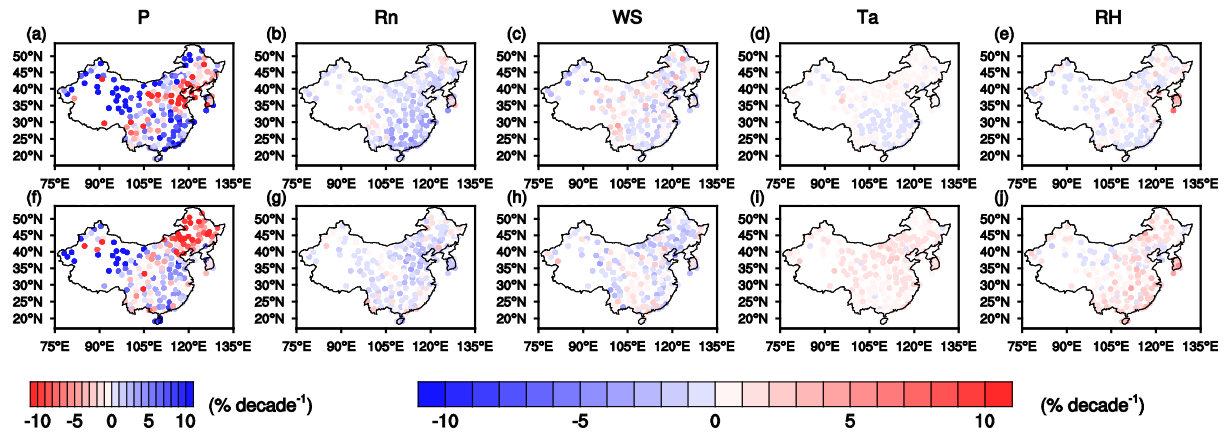
Figure S3. Spatial distributions of relative influences of five climate parameters on the
PET/P **trends. a-e, The spatial distribution of relative influences of changes in** *P* **(a),** *Rn*
(b), *WS* **(c),** *Ta* **(d), and** *RH* **(e) for the period of 1961-1983. f-j, as a-e, but for the period**
of 1984-2010.