

Supplementary Information

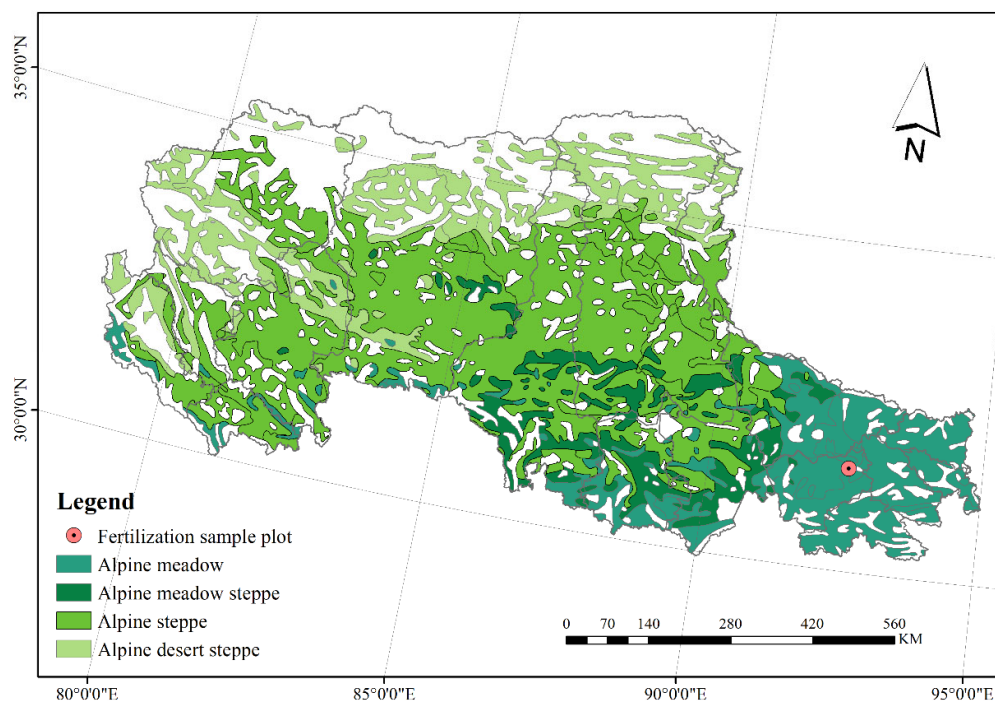


Figure S1. The location of study area

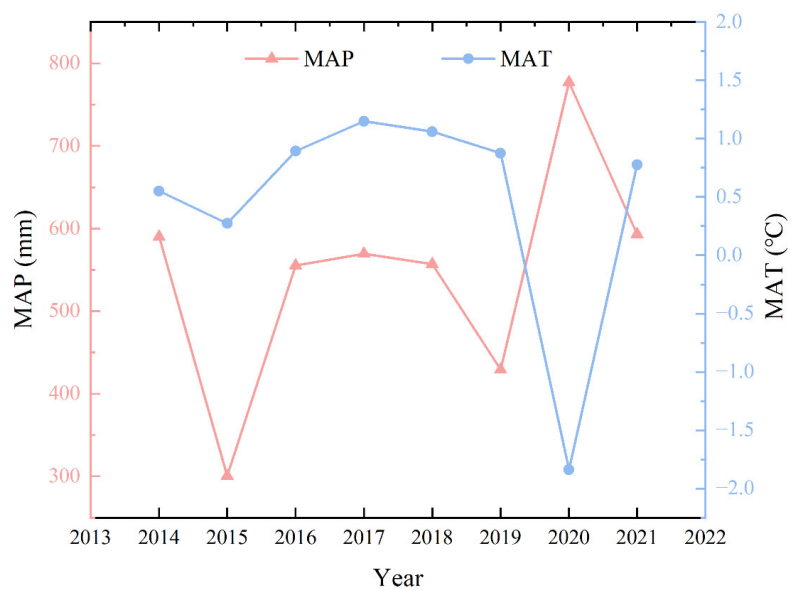


Figure S2. MAP and MAT in the study area from 2014 to 2021

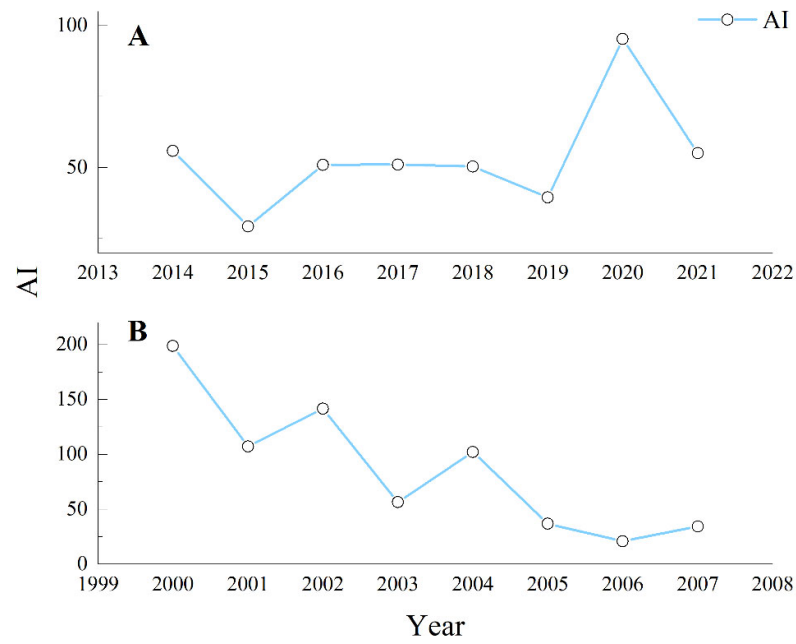


Figure S3. The changes of the aridity index (AI) from 2014 to 2021 (A), 2000 to 2007 (B).

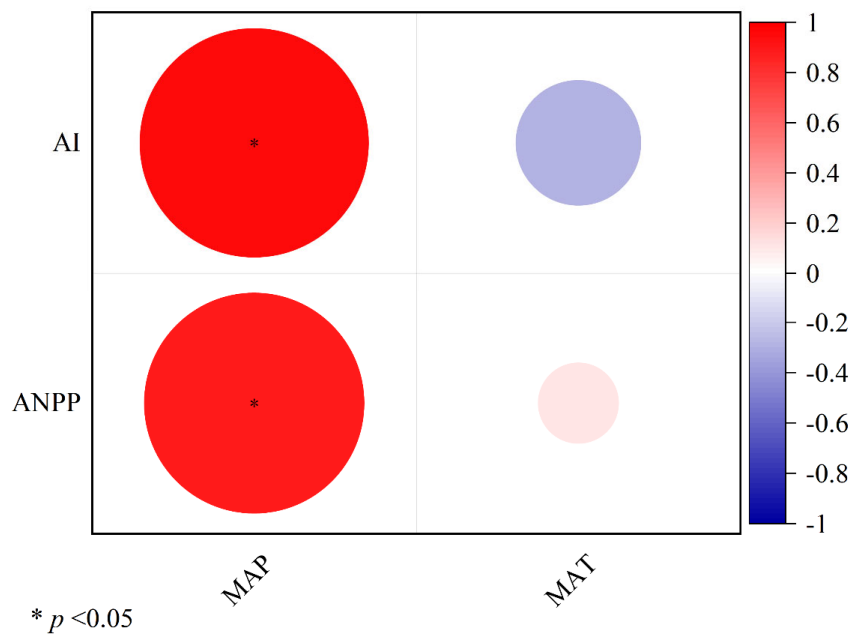


Figure S4. Correlation analysis between MAP, MAT, AI and ANPP.

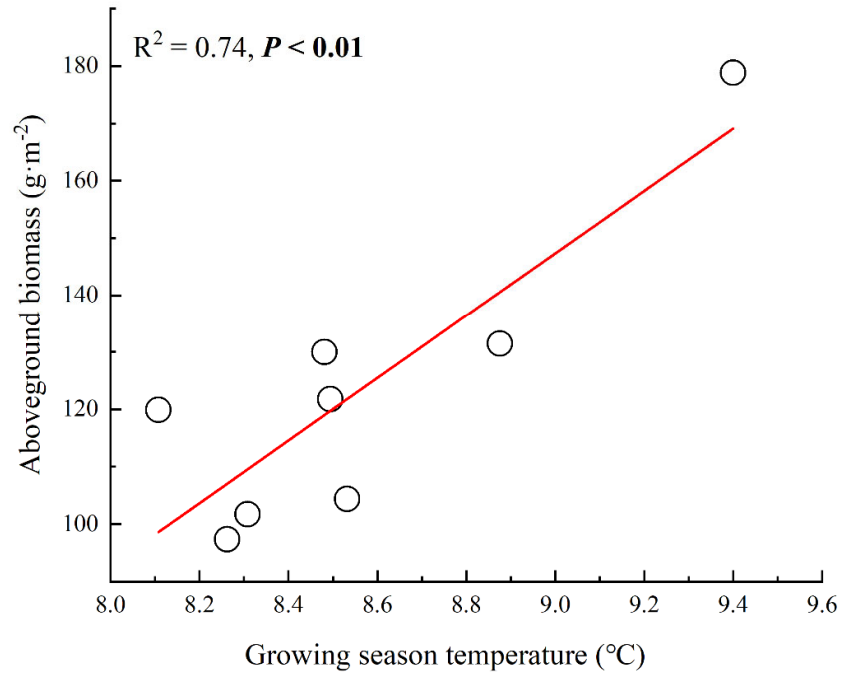


Figure S5. Fitting analysis of growing season temperature and aboveground biomass.

Table S1. Variations of soil properties in four treatments.

Treatment	pH	NH ₄ ⁺ -N (mg·kg ⁻¹)	NO ₃ ⁻ -N (mg·kg ⁻¹)	TP (g·kg ⁻¹)	TN (g·kg ⁻¹)	AP (g·kg ⁻¹)
CK	6.7±0.5 a	10.42±4.6 a	15.99±1.4 b	0.32±0.01 b	3.56±0.4 a	8.53±2.9 b
N	6.2±0.5 b	10.43±2.7 a	25.85±3.8 a	0.37±0.05 b	3.91±0.4 a	10.09±2.0 b
P	6.5±0.2 ab	12.23±1.3 a	13.45±3.0 b	0.54±0.04 a	3.90±0.6 a	76.8±16.7 a
N+P	6.1±0.2 ab	12.38±5.9 a	24.34±5.6 a	0.55±0.02 a	3.74±0.4 a	83.80±6.5 a

TN, soil total N; TP, soil total P; AP, available P. Different letters indicate significant differences (Duncan's test, $p < 0.05$) among four treatments.