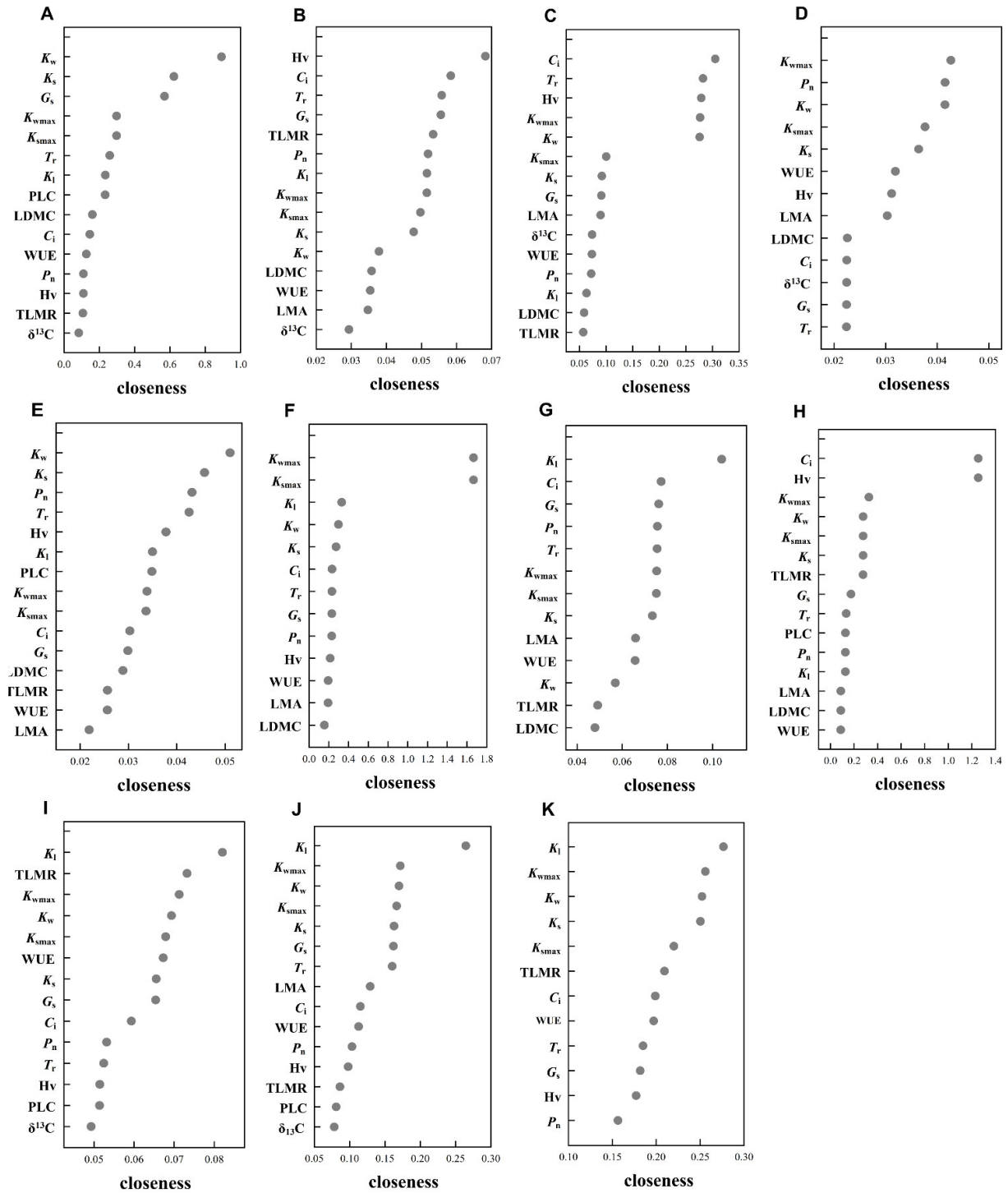


Supplementary Table S1. Sampling sites climatic characteristics.

site	isothermality	average temperature of the wettest quarter (°C)	precipitation in the wettest month (mm)	seasonal variation of precipitation
A	33.32	24.93	8	73.80
B	35.05	23.91	9	86.13
C	32.46	24.67	7	70.10
D	31.04	23.05	13	56.77
E	31.83	25.46	8	65.89
F	31.73	25.41	9	60.85
G	30.59	25.62	11	70.41
H	30.63	25.84	13	89.04
I	30.32	25.73	28	92.13
J	30.98	25.11	21	97.50
K	28.19	18.51	28	27.50



Supplementary Figure. S1. Variation in the network node parameter “closeness” for functional traits Among 11 populations (The sample size for each sampling point is 20). The traits abbreviation were mean percent loss of hydraulic conductivity (PLC), Wood-specific conductivity (K_w), Sapwood-specific conductivity (K_s), Maximum sapwood-specific conductivity (K_{smax}), Maximum wood-specific conductivity (K_{wmax}), Huber value (Hv), Branch leaf mass ratio (TLMR), Leaf-specific conductivity (K_i), Stomatal conductance (G_s), Water use efficiency (WUE), Transpiration rate (T_r), Net photosynthetic rate (P_n), Leaf mass per area (LMA), Leaf dry matter content (LDMC), Intercellular carbon dioxide concentration (C_i), Carbon isotope signature ($\delta^{13}C$).

Supplementary Table S2. Functional traits (mean \pm SD) of *P. pruinose* across 11 populations (The sample size for each sampling point is 20). The traits abbreviation were mean percent loss of hydraulic conductivity (PLC), Wood-specific conductivity (K_w), Sapwood-specific conductivity (K_s), Maximum sapwood-specific conductivity (K_{smax}), Maximum wood-specific conductivity (K_{wmax}), Huber value (Hv), Branch leaf mass ratio (TLMR), Leaf-specific conductivity (K_i), Stomatal conductance (G_s), Water use efficiency (WUE), Transpiration rate (T_r), Net photosynthetic rate (P_n), Leaf mass per area (LMA), Leaf dry matter content (LDMC), Intercellular carbon dioxide concentration (C_i), Carbon isotope signature ($\delta^{13}C$).

site	T_r	P_n	C_i	G_s	WUE	Hv $\times 10^4$	$K_i \times 10^4$	PLC	K_s	K_{smax}	K_w	K_{wmax}	LDMC	LMA	TLMR	$\delta^{13}C$
A	1.8 5 \pm 0.26	6.78 \pm 0.78	266.18 \pm 12.27	0.10 \pm 0.02	3.70 \pm 0.33	5.29 \pm 1.93	12.86 \pm 4.23	16.16 \pm 13.19	2.24 \pm 0.95	2.64 \pm 0.98	2.15 \pm 0.90	2.54 \pm 0.93	0.36 \pm 0.04	123.7 2 \pm 16.69	0.27 \pm 0.08	-26.73 \pm 0.51
B	2.3 0 \pm 0.29	7.10 \pm 0.62	270.17 \pm 13.07	0.11 \pm 0.02	3.13 \pm 0.24	8.77 \pm 4.01	14.65 \pm 4.96	27.26 \pm 19.95	1.60 \pm 1.16	2.06 \pm 1.17	1.46 \pm 1.02	1.88 \pm 1.01	0.31 \pm 0.07	162.6 9 \pm 34.52	0.23 \pm 0.11	-28.09 \pm 0.69
C	2.2 8 \pm 0.29	7.07 \pm 0.60	269.46 \pm 13.41	0.11 \pm 0.02	3.15 \pm 0.25	2.73 \pm 0.88	9.17 \pm 2.07	20.79 \pm 12.11	2.97 \pm 1.16	3.77 \pm 1.52	2.76 \pm 1.06	3.50 \pm 1.42	0.33 \pm 0.03	101.5 8 \pm 17.26	0.19 \pm 0.07	-27.13 \pm 0.57
D	1.7 3 \pm 0.25	4.33 \pm 0.85	294.00 \pm 13.51	0.08 \pm 0.02	2.52 \pm 0.34	2.64 \pm 0.97	7.44 \pm 1.73	14.66 \pm 8.72	2.67 \pm 1.07	3.15 \pm 1.33	2.25 \pm 0.99	2.66 \pm 1.20	0.34 \pm 0.01	106.6 8 \pm 11.14	0.18 \pm 0.07	-28.10 \pm 0.31
E	2.4 4 \pm 0.51	5.96 \pm 0.78	293.45 \pm 16.72	0.12 \pm 0.03	2.55 \pm 0.58	2.63 \pm 1.08	10.97 \pm 4.45	22.35 \pm 19.30	3.55 \pm 1.64	4.37 \pm 1.28	3.30 \pm 1.52	4.07 \pm 1.17	0.34 \pm 0.02	119.9 3 \pm 12.86	0.15 \pm 0.04	-27.09 \pm 0.49
F	1.9 1 \pm 0.48	5.52 \pm 1.08	281.37 \pm 19.96	0.10 \pm 0.03	3.02 \pm 0.52	4.65 \pm 1.80	8.00 \pm 2.33	27.32 \pm 12.93	1.48 \pm 0.82	2.04 \pm 1.02	1.31 \pm 0.74	1.81 \pm 0.91	0.32 \pm 0.03	130.8 9 \pm 18.69	0.22 \pm 0.07	-27.66 \pm 0.33
G	2.4 6 \pm 0.39	4.65 \pm 1.60	237.65 \pm 84.18	0.09 \pm 0.06	1.86 \pm 0.44	4.25 \pm 1.53	12.20 \pm 4.63	22.93 \pm 19.21	2.46 \pm 1.16	3.12 \pm 1.21	2.24 \pm 1.06	2.85 \pm 1.08	0.32 \pm 0.02	156.1 2 \pm 7.33	0.16 \pm 0.05	-25.40 \pm 0.47
H	2.5 7 \pm 0.49	4.46 \pm 1.04	316.56 \pm 14.30	0.12 \pm 0.03	1.76 \pm 0.29	4.58 \pm 1.56	7.97 \pm 1.82	22.02 \pm 12.93	1.49 \pm 0.55	1.90 \pm 0.62	1.41 \pm 0.55	1.79 \pm 0.62	0.32 \pm 0.04	132.3 3 \pm 20.17	0.19 \pm 0.05	-29.83 \pm 0.50
I	2.5 9 \pm 0.38	6.02 \pm 0.69	311.78 \pm 7.51	0.15 \pm 0.02	2.38 \pm 0.39	3.97 \pm 1.42	10.07 \pm 8.68	17.59 \pm 11.29	2.01 \pm 0.93	2.50 \pm 1.25	1.93 \pm 0.91	2.40 \pm 1.23	0.37 \pm 0.08	168.8 0 \pm 16.79	0.12 \pm 0.06	-27.27 \pm 0.76
J	1.9 7 \pm 0.60	5.71 \pm 1.51	288.34 \pm 23.25	0.11 \pm 0.04	2.98 \pm 0.52	8.44 \pm 4.05	13.41 \pm 7.05	23.24 \pm 13.24	1.26 \pm 0.57	1.67 \pm 0.69	1.14 \pm 0.51	1.51 \pm 0.63	0.28 \pm 0.05	133.8 3 \pm 12.03	0.30 \pm 0.11	-28.27 \pm 1.11
K	2.6 8 \pm 0.42	6.01 \pm 0.66	304.96 \pm 16.08	0.14 \pm 0.02	2.31 \pm 0.48	5.39 \pm 2.13	5.73 \pm 2.50	19.26 \pm 13.43	0.89 \pm 0.36	1.14 \pm 0.51	0.84 \pm 0.33	1.07 \pm 0.46	0.34 \pm 0.02	141.0 6 \pm 10.96	0.18 \pm 0.04	-28.55 \pm 0.43