

Supplemental Information for Relationship between Vegetation and Environment in an Arid-hot Valley Region, Southwestern China

Supplemental Figure S1

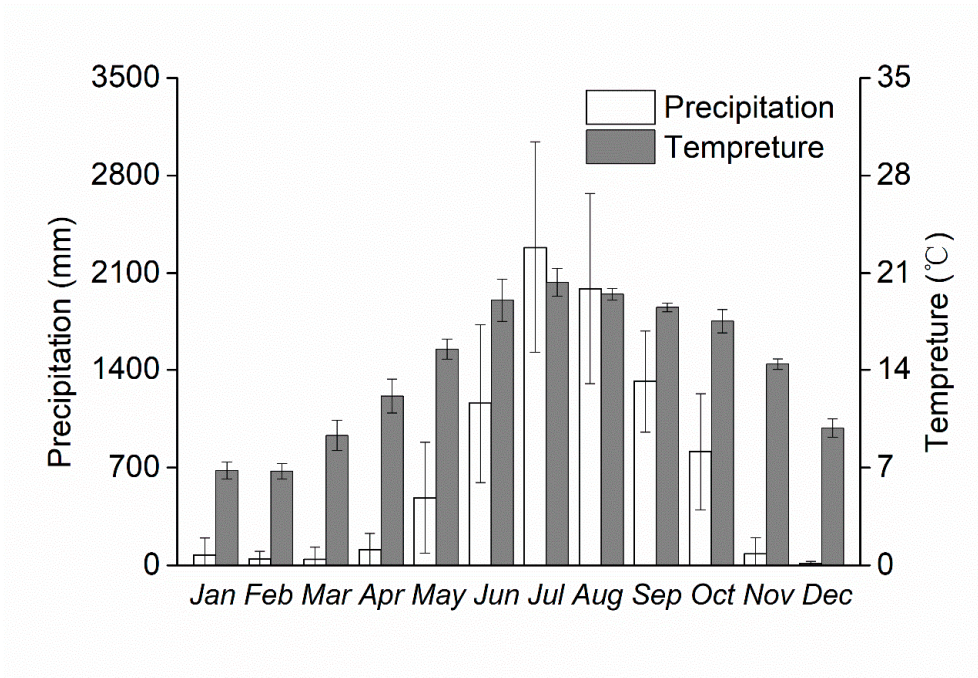


Figure S1. Distribution of temperatures and precipitation for Yongsheng County meteorological station. Variable names: Jan, January; Feb, February; Mar, March; Apr, April; Jun, June; Jul, July; Aug, August; Sep, September; Oct, October; Nov, November; Dec, December.

Supplemental Table S1

Table S1. Topography conditions and soil nutrient elements of quadrats in study area.

Elevation (m)	Slope (°)	Aspect (°)	Distance from the quadrats (m)	Topographic wetness index	Organic matter (g/kg)	Total nitrogen (g/kg)	Total potassium (g/kg)	Hydrolysable nitrogen(mg/kg)	Available phosphorus(mg/kg)
1380 ± 6	40 ± 10	280 ± 36	135 ± 14	5.06 ± 0.86	36.13 ± 13.14	1.60 ± 0.34	2.06 ± 1.34	409.06 ± 137.07	30.17 ± 31.48
1440 ± 6	30 ± 12	215 ± 95	221 ± 41	4.33 ± 0.92	29.05 ± 26.25	1.25 ± 0.35	1.64 ± 1.00	326.04 ± 130.31	24.33 ± 18.25
1520 ± 4	29 ± 9	112 ± 30	385 ± 17	6.24 ± 0.31	30.80 ± 12.67	1.39 ± 0.30	1.77 ± 1.08	351.74 ± 85.57	26.06 ± 26.24
1640 ± 22	37 ± 17	86 ± 71	1194 ± 77	4.22 ± 0.36	43.12 ± 14.00	1.18 ± 0.46	1.81 ± 0.45	296.68 ± 109.80	20.53 ± 19.26
1940 ± 24	24 ± 7	141 ± 84	1350 ± 238	4.38 ± 1.08	36.08 ± 16.50	1.30 ± 0.45	1.32 ± 0.61	333.39 ± 111.91	31.61 ± 34.47

Supplemental Table S2

Table S2. Correlation analysis (Pearson's r) for the relationships among the vegetation and environmental factors for *Dodonaea viscosa* and *Pinus yunnanensis*. Significance: *, $P < 0.05$; **, $P < 0.01$. Bio: Biomass; Den: density; Bra: branches; Cro: crown; Hei: height; Cov: coverage; Asp: aspect slope; Slo: slope; Ele: elevation; DBH: diameter at breast height; DQR: distance from quadrates to river; TWI: topographic wetness index; SM: soil moisture; OM: organic matter; TN: total nitrogen; TK: total potassium; AN: hydrolyzed nitrogen; AP: available phosphorus; SF: soil fertility.

Species		Bio	Bra	Den	DBH	Cro	Hei	Cov	Asp	Slo	Ele	DQR	SM	TWI	OM	TN	TK	AN	AP	SF
<i>D. viscosa</i>	Bio	1	0.48*	0.52*	0.67**	0.31	0.61**	0.24	0.06	0.35	-0.67**	-0.58**	-0.31	0.18	-0.04	0.42	0.12	0.50*	-0.02	0.18
	Bra		1	0.91**	0.29	0.13	0.19	0.12	-0.33	0.12	-0.19	-0.13	-0.27	0.26	0.22	0.34	0.29	0.25	-0.13	0.06
	Den			1	0.14	0.03	0.22	0.22	-0.41	0.09	-0.16	-0.05	-0.18	0.18	0.26	0.31	0.33	0.22	-0.09	0.07
	DBH				1	0.53**	0.79**	0.03	0	0.25	-0.78**	-0.76**	-0.67**	0.11	-0.19	0.36	0.14	0.34	0	0.2
	Cro					1	0.61**	0.21	-0.04	0.26	-0.35	-0.24	-0.3	0.42	0.36	0.01	0.19	0.11	-0.16	0.05
	Hei						1	0.34	0.09	0.33	-0.72**	-0.61**	-0.56**	0.27	0.04	0.31	0.41	0.33	-0.04	0.16
<i>P. yunnanensis</i>	Bio	1		0.56*	0.74**	0.79**	0.78**	0.34	0.27	0.03	0.48*	0.51*	0.25	0.22	0.25	-0.07	0.27	0.04	0.11	0.09
	Den			1	0.15	0.39	0.75**	0.13	0.21	-0.15	0.79**	0.88**	0.75**	0.05	0.54*	-0.2	-0.08	-0.15	-0.22	-0.12
	DBH				1	0.91**	0.69**	0.28	0.49*	0.17	0.14	0.08	0.14	0.37	-0.08	-0.1	0.19	0.08	0.28	0.1

Topography	Cro	1	0.86**	0.33	0.43	0.06	0.34	0.33	0.21	0.3	0.1	-0.16	0.11	0.02	0.19	0.06
	Hei		1	0.23	0.44	-0.05	0.67**	0.69**	0.59**	0.17	0.32	-0.16	-0.06	-0.02	-0.03	-0.05
	Cov			1	0.38	0.29	-0.21	-0.12	0.09	0.72**	0.13	-0.04	0.16	-0.06	-0.17	-0.18
	Asp				1	0.13	-0.07	-0.1	0.46*	0.41	0.03	0.13	-0.03	0.16	-0.3	-0.19
	Slo					1	-0.32	-0.2	-0.01	0.37	0.21	0.07	0.06	0.16	0.03	0.08
	Ele						1	0.94**	0.56*	-0.16	0.33	-0.21	-0.26	-0.17	0.05	-0.01
	DQR							1	0.59**	-0.14	0.50*	-0.22	-0.16	-0.18	-0.03	-0.01
	SM								1	0.14	0.37	-0.12	-0.24	-0.09	-0.27	-0.2
	TWI									1	0.28	0.04	0.19	0.07	-0.05	0.04
	OM										1	0.31	0.14	0.29	-0.33	0.21
	TN											1	0.22	0.93**	-0.08	0.54*
	TK												1	0.13	-0.12	-0.03
	AN													1	0.1	0.66**
	AP														1	0.68**
Soil	SF															1