

Table S1. Importance values of the dominant species of different old-growth forest communities in the Dawei Mountain area in Yunnan Province, Southwestern China.

Dominant species	Important values (%)							
	800 m		1,200 m		1,600 m		2,000 m	
	Karst	Non-karst	Karst	Non-karst	Karst	Non-karst	Karst	Non-karst
<i>Cyclobalanopsis glauca</i>	10.99	37.53	1.70	80.12	-	2.02	31.21	18.49
<i>Altingia yunnanensis</i>	-	-	-	-	-	8.58	-	-
<i>Castanopsis calathiformis</i>	-	-	-	-	-	7.58	-	-
<i>Macaranga henryi</i>	-	-	-	-	-	18.82	-	-
<i>Castanopsis hystrix</i>	-	-	-	-	-	-	-	27.14
<i>Caryota urens</i>	-	-	25.71	-	-	-	-	-
<i>Prunus laurocerasus</i>	-	-	-	-	9.66	-	-	-
<i>Symplocos yunnanensis</i>	-	-	-	-	-	5.59	-	-
<i>Castanopsis fargesii</i>	-	-	-	1.52	-	5.37	-	-
<i>Swida macrophlla</i>	-	-	-	-	-	-	7.62	2.01
<i>Metapanax delavayi</i>	-	-	-	-	-	-	7.32	-
<i>Cinnamomum rigidissimum</i>	-	-	-	-	-	-	-	-
<i>Schima villosa</i>	-	4.16	-	-	-	1.01	-	-
<i>Engelhardtia colebrookiana</i>	-	-	-	-	1.6	-	-	7.87
<i>Schima superba</i>	1.33	-	0.6	4.81	-	-	-	-
<i>Celtis sinensis</i>	4.05	-	3.37	-	-	0.3	5.63	-
<i>Tirpitzia sinensis</i>	1.26	-	-	-	-	-	-	-
<i>Pistacia weinmannifolia</i>	0.80	9.93	-	-	-	-	-	-
<i>Rhamnus davurica</i>	-	-	1.69	-	-	-	9.44	-

<i>Euonymus alatus</i>	19.18	-	-	-	-	-	5.42	-
<i>Choerospondias axillaris</i>	5.97	-	-	-	-	-	-	-
西南桦 <i>Betula alnoides</i>	-	9.93	-	-	-	-	-	-
<i>Lithocarpus hancei</i>	5.58	-	-	-	4.64	20.5	-	6.26
<i>Sarcococca ruscifolia</i>	0.08	4.97	-	-	-	-	-	-
<i>Aphananthe aspera</i>	5.07	-	6.54	-	-	1.10	-	-
<i>Saraca dives</i>	1.19	-	8.34	-	-	-	-	-
<i>Castanea henryi</i>	-	-	-	-	-	-	-	-
<i>Stranvaesia davidiana</i>	-	-	-	-	9.99	-	-	-
<i>Schefflera octophy</i>	-	-	-	-	9.72	-	-	-
<i>Tirpitzia sinensis</i>	1.26	-	5.75	-	8.64	-	-	-
<i>Ficus chapaensis</i>	4.36	-	0.6	-	6.57	-	-	-
<i>Machilus pingii</i>	3.62	-	0.9	-	4.76	-	9.8	-
<i>Pittosporum tobira</i>	-	-	-	-	2.79	-	0.3	-
<i>Carrierea calycina</i>	-	-	4.92	-	5.85	-	-	-
<i>Myrsine semiserrata</i>	-	-	-	-	2.05	-	1.3	-
<i>Other species</i>	35.26	33.48	39.88	13.55	33.73	29.13	21.96	38.23

Table S2. Community characteristics of tropical old-growth forest communities in the Dawei Mountain area in Yunnan Province, Southwestern China.

	2000		1600		1200		800	
	Karst	Non-karst	Karst	Non-karst	Karst	Non-karst	Karst	Non-karst
Ln (AGC (Mg/ha))	3.7 ± 0.21b	3.83 ± 0.21b	4.05 ± 0.07b	4.41 ± 0.1ab	4.35 ± 0.23ab	3.91 ± 0.15b	3.96 ± 0.24b	4.8 ± 0.41a
Ln (Species diversity)	0.28 ± 0.23b	0.36 ± 0.06ab	0.68 ± 0.04a	0.75 ± 0.04a	0.02 ± 0.19b	-1.28 ± 0.19c	0.39 ± 0.11a	0.13 ± 0.12ab
Ln (DBH diversity)	0.24 ± 0.07b	0.32 ± 0.08b	0.43 ± 0.02ab	0.37 ± 0.05ab	0.53 ± 0.05a	0.31 ± 0.06b	0.45 ± 0.05ab	0.48 ± 0.06a
Ln (Height diversity)	0.24 ± 0.13c	0.47 ± 0.04b	0.62 ± 0.05ab	0.71 ± 0.03a	0.51 ± 0.09b	0.56 ± 0.05ab	0.62 ± 0.05ab	0.5 ± 0.04a
CWM LDMC-Y	0.35 ± 0.03a	0.3 ± 0.01ab	0.25 ± 0.01b	0.31 ± 0.02ab	0.33 ± 0.02a	0.28 ± 0.01b	0.34 ± 0.02a	0.25 ± 0.01b
CWM SLA-Y (cm ² g ⁻¹)	183.25 ± 16.95b	156.73 ± 9.84b	228.32 ± 13.42a	165.22 ± 5.4b	154.06 ± 18.24b	222.8 ± 11.71a	208.41 ± 15.91ab	237.33 ± 10.91a
CWM LT-Y (mm)	0.5 ± 0.04ab	0.57 ± 0.02a	0.45 ± 0.03b	0.4 ± 0.02bc	0.35 ± 0.01c	0.24 ± 0d	0.39 ± 0.05bc	0.39 ± 0.03bc
CWM LNC-Y (mg g ⁻¹)	43.64 ± 2.54b	38.09 ± 1.83b	49.05 ± 2.37ab	40.38 ± 1.41b	53.7 ± 4.29a	50.48 ± 0.88ab	44.68 ± 3.1b	31.19 ± 0.6c
CWM LPC-Y (mg g ⁻¹)	2.51 ± 0.2d	4.4 ± 0.17b	3.37 ± 0.14c	3.72 ± 0.06c	4.75 ± 0.12ab	4.87 ± 0.09a	4.51 ± 0.19ab	2.76 ± 0.09d
CWM N:P-Y	18.57 ± 0.45a	8.55 ± 0.18e	14.55 ± 0.25b	10.8 ± 0.47c	12 ± 1.35d	10.37 ± 0.03cd	9.56 ± 0.59de	11.44 ± 0.58c
CWM LDMC-M	0.36 ± 0.02b	0.35 ± 0.01b	0.28 ± 0.01c	0.36 ± 0.01b	0.34 ± 0.02b	0.41 ± 0.01a	0.35 ± 0.02b	0.27 ± 0.01c
CWM SLA-M (cm ² g ⁻¹)	182.53 ± 13.93bc	138.65 ± 8.43d	189.12 ± 5.4b	147.25 ± 5.64d	150.64 ± 17.62cd	140.71 ± 7.21d	203.73 ± 13.62b	239.38 ± 14.5a
CWM LT-M (mm)	0.45 ± 0.02bc	0.6 ± 0.03a	0.4 ± 0.01cd	0.48 ± 0.03b	0.34 ± 0.01e	0.27 ± 0f	0.36 ± 0.03de	0.36 ± 0.01de
CWM LNC-M (mg g ⁻¹)	42.64 ± 1.89cd	31.88 ± 1.14e	49.85 ± 2.02ab	37.26 ± 1.07de	55.19 ± 4.39a	40.33 ± 0.64cd	46.12 ± 3.82bc	31.65 ± 0.69e
CWM LPC-M (mg g ⁻¹)	2.19 ± 0.15d	3.2 ± 0.09c	3.14 ± 0.1c	3.22 ± 0.09c	4.93 ± 0.11a	3.37 ± 0.06c	4.46 ± 0.29b	2.31 ± 0.1d
CWM N:P-M	20.67 ± 0.67a	9.92 ± 0.21e	16.09 ± 0.33b	11.68 ± 0.46de	12.08 ± 1.38d	11.95 ± 0.07d	10.25 ± 0.7de	14.11 ± 0.43c
FDvar LDMC-Y	0.4 ± 0.04a	0.21 ± 0.03bc	0.19 ± 0.03c	0.33 ± 0.03ab	0.13 ± 0.02cd	0.01 ± 0.01d	0.37 ± 0.09a	0.06 ± 0.01d
FDvar SLA-Y	0.54 ± 0.08ab	0.32 ± 0.05cd	0.38 ± 0.04bc	0.32 ± 0.02cd	0.3 ± 0.06cd	0.03 ± 0.01e	0.58 ± 0.1a	0.16 ± 0.04d
FDvar LT-Y	0.53 ± 0.07a	0.22 ± 0.04cd	0.4 ± 0.05ab	0.18 ± 0.03d	0.43 ± 0.07ab	0.01 ± 0e	0.24 ± 0.06cd	0.38 ± 0.08bc

FDvar LNC-Y	0.46 ± 0.07ab	0.17 ± 0.04c	0.55 ± 0.06a	0.35 ± 0.05b	0.17 ± 0.06c	0.02 ± 0.01c	0.51 ± 0.09a	0.11 ± 0.02c
FDvar LPC-Y	0.56 ± 0.07a	0.09 ± 0.03c	0.41 ± 0.07b	0.13 ± 0.03c	0.12 ± 0.04c	0.02 ± 0.01c	0.33 ± 0.06b	0.08 ± 0.02c
FDvar N:P-Y	0.11 ± 0.04abc	0.04 ± 0.01c	0.24 ± 0.03a	0.22 ± 0.01a	0.23 ± 0.1ab	0.01 ± 0.01c	0.18 ± 0.05ab	0.06 ± 0.02bc
FDvar LDMC-M	0.31 ± 0.04a	0.25 ± 0.06ab	0.16 ± 0.03cd	0.21 ± 0.01bc	0.11 ± 0.02d	0.06 ± 0.03d	0.37 ± 0.09a	0.07 ± 0.02d
FDvar SLA-M	0.5 ± 0.07ab	0.28 ± 0.05c	0.4 ± 0.04bc	0.27 ± 0.04c	0.26 ± 0.06c	0.08 ± 0.03d	0.59 ± 0.08a	0.25 ± 0.04c
FDvar LT-M	0.37 ± 0.07a	0.13 ± 0.03de	0.23 ± 0.02abc	0.33 ± 0.04ab	0.18 ± 0.06cd	0.01 ± 0e	0.19 ± 0.05bc	0.32 ± 0.08ab
FDvar LNC-M	0.26 ± 0.06bcd	0.15 ± 0.04cde	0.27 ± 0.03bc	0.31 ± 0.04ab	0.13 ± 0.05de	0.07 ± 0.02e	0.41 ± 0.08a	0.1 ± 0.02e
FDvar LPC-M	0.32 ± 0.05a	0.07 ± 0.02cd	0.21 ± 0.04b	0.08 ± 0.01cd	0.14 ± 0.04bcd	0.04 ± 0.02d	0.34 ± 0.05a	0.16 ± 0.03bc
FDvar N:P-M	0.22 ± 0.05ab	0.09 ± 0.02cd	0.17 ± 0.02abc	0.3 ± 0.03a	0.23 ± 0.11ab	0.02 ± 0.01d	0.1 ± 0.03bcd	0.08 ± 0.01cd

Note: AGC, aboveground carbon storage; CWM, community-weighted mean; FDvar, functional diversity; DBH, diameter at breast height; LDMC-Y, leaf dry matter content of young leaf; SLA-Y, specific leaf area of young leaf; LT-Y, leaf thickness of young leaf; LNC-Y, leaf nitrogen concentration of young leaf; LPC-Y, leaf phosphorus concentration of young leaf; N:P-Y, N:P ratio of young leaf; LDMC-M, leaf dry matter content of mature leaf; SLA-M, specific leaf area of mature leaf; LT-M, leaf thickness of mature leaf; LNC-M, leaf nitrogen concentration of mature leaf; LPC-M, leaf phosphorus concentration of mature leaf; N:P-M, N:P ratio of mature leaf. Mean ± standard error. Lowercase letters represent significant pairwise differences between different treatments ($P < 0.05$).