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## Appendix 1

Table A1. Basic information for the mountains examined in this analysis. The references were the sources where the information on regional flora came from. MAT and MAP, mean annual temperature and precipitation documented by the references, respectively; Region, the biogeographic region that the mountain locates in (Fig. 1): A, north and northeast china; B, northwest China; C, southeast China; D, eastern Himalayas.

	Mountain	Climatic zone	Latitude (°N)	Longitude (°E)	Altitude (m)	Area (km <sup>2</sup> )	MAT (°C)	MAP (mm)	Region	Reference
1	Huzhong	boreal	51°17' ~ 51°56'	122°42' ~ 123°18'	660 ~ 1528	1672.1	-2.7 ~ 5.3	395 ~ 688	A	Anonymous 1999
2	Liangshui	temperate	47°08' ~ 47°14'	128°48' ~ 128°56'	280 ~ 707	63.9	-0.3	676	A	Anonymous 1984a
3	Mt Changbai	temperate	41°42' ~ 42°25'	127°38' ~ 128°16'	300 ~ 2691	1900.0	-7.3 ~ 4.9	600 ~ 1340	A	Anonymous 1982
4	Mt Laotudingzi	temperate	41°11' ~ 41°22'	124°41' ~ 125°05'	467 ~ 1325.3	152.2	6.3	870 ~ 1060	A	Zhang and Guo 1996
5	Labagoumen	temperate	40°42' ~ 41°04'	116°17' ~ 116°42'	430 ~ 1697	184.8	7 ~ 9	500	A	Cui and Xing 2009
6	Mt Wuling	temperate	40°30' ~ 40°36'	117°27' ~ 117°35'	500 ~ 2118	143.8	7.6	700 ~ 900	A	Wang et al. 1997
7	Mt Xiaowutal	temperate	39°50' ~ 40°07'	114°47' ~ 115°30'	800 ~ 2882	218.3	6.4	400 ~ 700	A	Song 2001
8	Mt Guandi	temperate	37°20' ~ 38°20'	110°18' ~ 111°18'	739.8 ~ 2831	104.7	3 ~ 4	830.8	A	Zhang 1994
9	Mt Zhongtiao	temperate	34°38' ~ 35°37'	110°15' ~ 112°37'	300-2321.8	474.7	10.3 ~ 14.3	542 ~ 654	A	Shangguan et al. 2000
										Lian et al. 2010
10	Mt Taibai	subtropics	33°49' ~ 34°10'	107°19' ~ 107°58'	1060 ~ 3767.2	563.3	0.8 ~ 11.8	800 ~ 1000	C	Ren et al. 2006
11	Mt Niubei	subtropics	33°47' ~ 33°56'	108°45' ~ 109°03'	1200 ~ 2802	164.2	8 ~ 10	850 ~ 950	C	Li et al. 1999
12	Mt Xiaolong	subtropics	33°31' ~ 34°41'	104°23' ~ 106°43'	700 ~ 3941	8400.0	7 ~ 12	600 ~ 900	C	An 2001
13	Baotianman	subtropics	33°20' ~ 33°36'	111°47' ~ 112°04'	300 ~ 2100	232.0	11 ~ 14	>900	C	Anonymous 2006
14	Mt Motian	subtropics	32°16' ~ 33°15'	104°16' ~ 105°27'	500 ~ 4072	2137.5	< 15.6	460.3 ~ 1200	C	Wu 1997

15	Mt Michang	subtropics	32°29' ~ 32°41'	106°24' ~ 106°39'	570 ~ 2281	234.0	13.5	1100	C	Ren et al. 2008	
16	Mt Jigong	subtropics	31°46' ~ 31°52'	114°01' ~ 114°06'	300 ~ 830	29.4	15	1119	C	Song 1994	
17	Mt Shengnong	subtropics	31°21' ~ 31°36'	110°03' ~ 110°34'	420 ~ 3105	704.7	4.8 ~ 14.5	800 ~ 2500	C	Zhu and Song 1999	
18	Mt Tianmu	subtropics	30°20'	119°25'	200 ~ 1507	42.8	8.7 ~ 14.9	1536 ~ 1767	C	Anonymous 1984b	
										Chen 1986	
19	Guniujiang	subtropics	30°00' ~ 30°14'	117°20' ~ 117°37'	67 ~ 1727	148.2	9.2 ~ 14.9	1600 ~ 1700	C	Anonymous 2007	
										Shen et al. 2007	
20	Mt Gongga	subtropics	29°20' ~ 30°00'	101°30' ~ 102°10'	1096 ~ 7556	5295	1 ~ 17.2	639 ~ 1230	D	Liu 1985	
21	Mt Jinfo	subtropics	28°50' ~ 29°20'	107°00' ~ 107°20'	700 ~ 2251	418.5	8.3	1396	C	Liu et al. 1998	
22	Mt Wuyi	subtropics	27°48' ~ 28°00'	117°40' ~ 117°56'	350 ~ 2158	160.1	13.2 ~ 14.8	1813 ~ 3544	C	Liu and Fang 2001	
23	Mt Bamian	subtropics	26°18' ~ 26°36'	113°56' ~ 114°06'	420 ~ 2115.4	237.9	12.3 ~ 14.4	1967	C	Anonym 2003a	
24	Mt Mao'er	subtropics	25°48' ~ 25°58'	110°20' ~ 110°35'	279 ~ 2141.5	451.0	7 ~ 18.6	> 2100	C	Li 2001	
25	Mt Dupang	subtropics	25°15' ~ 25°37'	111°6' ~ 111°26'	271.8 ~ 2009.3	303.2	14 ~ 17.5	1600 ~ 1800	C	Anonymous 1998	
26	Mt Mang	subtropics	24°52' ~ 25°3'	112°43' ~ 113°0'	1100 ~ 1902	200.0	17.2	1710 ~ 2556	C	Yin 2003	
27	Mt Dinghu	subtropics	23°10'	112°34'	200 ~ 1000.3	11.6	20.9	1956	C	Ye et al. 2008	
28	Mt Yulong	subtropics	25°08' ~ 27°56'	99°23' ~ 101°31'	1100 ~ 5596	21219.0	<19.8	1000	D	Lü 1998	
29	Mt Wuliang	subtropics	24°00' ~ 24°45'	100°25' ~ 100°53'	900 ~ 3370	2800.0	<19	1100 ~ 1420	D	Peng 1998	
30	Mt Ailao	subtropics	23°36' ~ 24°44'	100°54' ~ 101°30'	600 ~ 3137.6	503.6	20.1	994	D	Xu and Jiang 1988	
31	Mt Wen	subtropics	23°16' ~ 23°29'	103°48' ~ 104°52'	1200 ~ 2991.2	268.7	11.0 ~ 17.7	1000 ~ 1700	D	Yang et al. 2008b	
32	Mt Jianfeng	tropic	18°23' ~ 18°52'	108°36' ~ 109°05'	112.8 ~ 1412.5	201.7	19.0 ~ 25.2	1650 ~ 2652	C	Han 2001	
33	Mt Nanjiabawa	tropic	28°07' ~ 30°04'	90°00' ~ 96°04'	1000 ~ 7782	22000.0	-1.1	491	D	Ni and Cheng 1992	
34	Mt Gong	tropic	27°40' ~ 28°50'	97°45' ~ 98°30'	1160 ~ 5242	4327.0	4 ~ 18	1000 ~ 4796	D	Li 1993	

35	Xishuangbanna	tropic	$21^{\circ}10' \sim 22^{\circ}24'$	$100^{\circ}16' \sim 101^{\circ}50'$	800 ~ 1500	2474.4	15.1 ~ 21.7	1196 ~ 2492	D	Anonymous 2004
36	Saihanba	temperate steppe	$42^{\circ}22' \sim 42^{\circ}31'$	$116^{\circ}53' \sim 117^{\circ}31'$	1000 ~ 1900	947.0	-1.2	450	B	Anonymous 2003b Wang et al. 2005
37	Mt Helan	temperate steppe	$38^{\circ}21' \sim 39^{\circ}22'$	$105^{\circ}44' \sim 106^{\circ}42'$	1300 ~ 3556.1	6000.0	-2.8 ~ 8.2	183 ~ 500	B	Di 1986
38	Middle Tianshan	temperate desert	$43^{\circ}45' \sim 43^{\circ}59'$	$88^{\circ}00' \sim 88^{\circ}20'$	1300 ~ 5445	380.7	2.6	400 ~ 800	B	Anonymous 2008
39	West Tianshan	temperate desert	$43^{\circ}03' \sim 43^{\circ}15'$	$82^{\circ}51' \sim 83^{\circ}06'$	1100 ~ 4100	312.2	5 ~ 7	600 ~ 800	B	Anonymous 2002
40	South Tianshan	temperate desert	$41^{\circ}40' \sim 42^{\circ}04'$	$79^{\circ}50' \sim 80^{\circ}54'$	1550 ~ 7435	2376.0	2 ~ 7	90 ~ 1000	B	Anonymous 2001
41	Mt Qilian	temperate desert	$36^{\circ}43' \sim 39^{\circ}36'$	$97^{\circ}25' \sim 103^{\circ}46'$	1740 ~ 4800	26530.2	0.2 ~ 3.6	200 ~ 500	B	Yang et al. 2008a

Table A2. Coefficients of the regression models for regional species richness in Table

1. SE = standard error.

Overall			Woody			Herbaceous		
Variable	Coefficient	SE		Coefficient	SE	Variable	Coefficient	SE
(Intercept)	-1222.42	631.03	(Intercept)	170.66	205.50	(Intercept)	-1441.62	818.92
MTCM <sup>2</sup>	-2.18	0.52	MAP	0.26	0.10	MTCM	-39.34	18.66
AET	2.54	0.51	MTCM	28.84	3.95	MTCM <sup>2</sup>	-2.30	0.56
log(area)	289.46	62.39	log(area)	56.95	23.18	AET	2.53	0.90
						log(area)	190.62	54.63

Table A3. Testing whether the relationship between regional richness and area differed among the four biogeographic regions in China (Fig. 1). In this analysis, area, biogeographic region (Region), and their interactions were used to explain the climate residuals of regional species richness (RSR). The climate residuals of RSR were calculated as: observed RSR minus the predicted values of the climatic variables (and their coefficients) in Table A2 (e.g. for overall species, the climate residuals of RSR = observed RSR –  $2.18 \times \text{MTCM}^2 + 2.54 \times \text{AET}$ ). Both the 'Region' and the 'log(area) : Region' terms were not significant for each species groups, suggesting that the species-area relationship did not differ among biogeographic regions for either regression intercept or slope. Abbreviations: DF = degree of freedom; MS = mean squares.

	DF	MS	F	p	DF	MS	F	p	DF	MS	F	p
	<u>Overall</u>				<u>Woody</u>				<u>Herbaceous</u>			
log(area)	1	10720361	29.27	0.000	1	302842	6.81	0.015	1	3323799	21.48	0.000
Region	3	413717	1.13	0.352	3	24957	0.56	0.645	3	80768	0.52	0.671
log(area): Region	3	356839	0.97	0.417	3	39417	0.89	0.461	3	245196	1.58	0.217
Residuals	32	366239			27	44487			26	154758		

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