

Supplementary Information

Table S1: Forest sites information. Linear distances are absolute values. Elevation difference is expressed as elevation of open site minus elevation of forest site.

Site ID	Location	Geographical position	Altitude (m)	Linear distance between paired sites (km)	Elevation difference between paired site (m)	PI
YPF	Yakutsk Siberia, Russia	62.24° N 129.65° E	220	25	-119	T Ohta
CBS	Jilin, China	42.4° N 128.08° E	738	4	-30	S J Han
GDK	Gyeonggi, Korea	37.75° N 127.15° E	128	26	-41	J Kim
SMF	Aichi, Japan	35.25° N 137.07° E	205	13	-154	A Kotani
QYZ	Jiangxi, China	26.73° N 115.05° E	102	33	-26	H M Wang
ALS	Yunnan, China	24.53° N 101.01° E	2476	1	5	Y P Zhang
DHS	Guangdong, China	23.17° N 112.57° E	240	2	-135	J H Yan
XSBN	Yunnan, China	21.50° N 101.35° E	750	48	-190	Y P Zhang
KMW	ChiangMai, Thailand	18.8° N 98.90° E	1342	9	-1030	N Yoshifuji
JFL	Hainan, China	18.73° N 108.89° E	890	2	-70	Y D Li
MMP	Lampang, Thailand	18.4° N 99.7° E	380	23	-139	N Yoshifuji
PDF	Central Kalimantan, Indonesia	2.35° S 114.03° E	30	12	0	T Hirano
Borden	Ontario, Canada	44.20° N 79.93° W	210	12	41	R Staebler

UMBS	Michigan, United State	45.56° N 84.71° W	234	6	-20	P Curtis
MMSF	Indiana, United State	39.32° N 86.41° W	275	9	-90	H Schmid
Great Mountain	Connecticut, United State	41.97° N 73.23° W	480	1	-73	X Lee
Harvard Forest	Massachusetts, United State	42.54° N 72.17° W	340	10	-172	W Munger / S Wofsy
Barlett	New Hampshire, United State	44.06° N 71.29° W	272	12	-107	A Richardson
Howland	Maine, United State	45.20° N 68.74° W	60	34	105	D Hollinger
Niwot Ridge	Colorado, United state	40.03° N 105.55° W	3050	1	-29	P Blanken
Walker Branch	Tennessee, United State	35.96° N 84.29° W	343	6	-68	T Meyers
Blodgett	California, United State	38.90° N 120.63° W	1315	35	-593	A Goldstein
Donaldson	Florida, United State	29.75° N 82.16° W	50	13	-13	T Martin
Duke-Hardwood	North Carolina, United State	35.97° N 79.10° W	163	15	-42	G Katul / R Oren
Duke-Pine	North Carolina, United State	35.98° N 79.09° W	163	14	-42	G Katul / R Oren

Flagstaff Unmanaged	Arizona, United State	35.09° N 111.76° W	2125	10	0	T Kolb
Kennedy Oak	Florida, United State	28.61° N 80.67° W	3	15	-1	B Drake
Lost Creek	Wisconsin, United State	46.08° N 89.98° W	480	29	6	P Bolstad / K Davis
Metollus-First	Oregon, United State	44.44° N 121.54° W	1188	51	-85	B Law
Metollus-Inter	Oregon, United State	44.45° N 121.56° W	1310	50	-207	B Law
Metollus-Old	Oregon, United State	44.50° N 121.62° W	915	54	188	B Law
Missouri Ozark	Oregon, United State	38.74° N 92.20° W	219	9	52	L Gu / S Pallardy / T Meyers
Mize	Florida, United State	29.76° N 82.24° W	50	9	-13	T Martin
Wind-River	Washington, United State	45.82° N 121.95° W	371	6	-27	K T Paw U
Old Aspen	Saskatchewan Canada	53.63° N 106.20° W	600	58	-172	A Barr
Old Black Spruce	Saskatchewan Canada	53.99° N 105.12° W	629	64	-97	A Barr
Old Jack Pine	Saskatchewan Canada	53.92° N 104.69° W	579	91	-47	A Barr
SK_transect	Saskatchewan,	53.90° N 104.65° W	520	11	0	A Barr

	Canada						
UCI-1850	Manitoba, Canada	55.88° N 98.48° W	259	40	-36		M Goulden
UCI-1930	Manitoba, Canada	55.91° N 98.52° W	259	43	-36		M Goulden
UCI-1981	Manitoba, Canada	55.86° N 98.49° W	259	40	-36		M Goulden
UCI-1989	Manitoba, Canada	55.92° N 98.96° W	259	70	-36		M Goulden
Northern Old Black Spruce	Manitoba, Canada	55.88° N 98.48° W	259	40	-36		W Munger / S Wofsy
Black Spruce Cut	Quebec, Canada	49.27° N 74.04° W	392	50	-88		H Margolis
Eastern Old Black Spruce	Quebec, Canada	49.69° N 74.34° W	397	16	-10		H Margolis
BC-88	British Columbia, Canada	49.53° N 124.90° W	120	20	-94		A Black
La Selva	Heredia, Costa Rica	10.42° N 84.02° W	100	5	0		S Oberbauer
La Paz	Baja california sur, Mexico	24.13° N 110.44° W	21	10	-5		W Oechel
KM83	Para, Brazil	3.01° S 54.97° W	100	6	0		M Goulden
KM67	Para, Brazil	2.85 °S 54.96° W	90	10	0		S Saleska
Jaru	Rondonia,	10.08° S 61.93° W	196	87	150		B Kruijt

	Brazil					
Calif_Transect	California, United State	33.60° N 116.45° W	1280	11	291	M Goulden

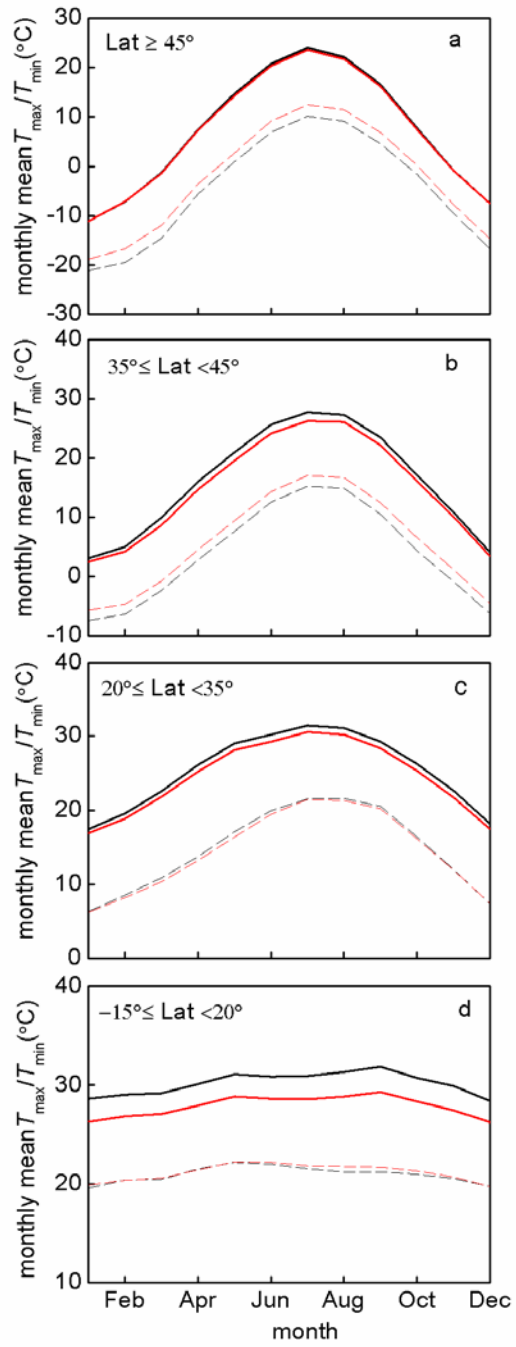


Figure S1 Comparison of seasonal variation of daily maximum and minimum air temperature in four latitudinal ranges without the site pairs whose elevation difference is larger than 100 m. Black and red solid lines indicate T_{\max} of open and forested land, respectively. Black and red dashed lines indicate T_{\min} of open and forested land, respectively.