

Supplementary Table S1 Geographic location and climatic features of the 30 sampling sites along a latitudinal gradient across eastern China

No.	River name	Climatic zone	Latitude (°N)	Longitude (°E)	Altitude (m)	Width (m)	MAP (mm)	MAT (°C)
1	Songhua River	Temperate monsoon climate	45.1	124.9	133.4	850.0	475.0	4.7
2	Yitong River	Temperate monsoon climate	44.4	125.2	164.1	25.0	538.0	5.3
3	Xinkai River	Temperate monsoon climate	43.7	123.5	118.7	7.0	465.0	7.0
4	Yingjin River	Temperate monsoon climate	42.4	119.	498.9	6.0	366.0	7.6
5	Chai River	Temperate monsoon climate	42.3	123.9	63.0	140.0	654.0	7.8
6	Xibo River	Temperate monsoon climate	41.9	118.7	770.6	3.0	412.0	7.1
7	Liao River	Temperate monsoon climate	41.5	122.7	11.3	120.0	612.0	8.6
8	Xiangyang River	Temperate monsoon climate	40.5	115.2	562.2	30.0	380.0	9.6
9	Liugu River	Temperate monsoon climate	40.3	120.4	0.2	25.0	582.0	9.3
10	Sanggan River	Temperate monsoon climate	40.2	114.6	806.7	4.5.0	375.0	7.9
11	Hutuo River	Temperate monsoon climate	38.9	112.8	803.5	25.0	409.0	9.1
12	Jiedijian River	Temperate monsoon climate	38.3	116.9	1.1	10.0	493.0	13.1
13	Xiao River	Temperate monsoon climate	37.7	112.8	800.9	4.0	413.0	9.6
14	Zhuozhang River	Temperate monsoon climate	37.1	112.9	1000.2	45.0	552.0	7.9
15	Yellow River	Temperate monsoon climate	35.7	115.6	46.6	380.0	589.0	9.1
16	Qin River	Temperate monsoon climate	35.1	113.4	88.7	22.0	579.0	9.9
17	Huiji River	Temperate monsoon climate	34.1	115.3	41.2	28.0	733.0	9.4
18	Sha River	Temperate monsoon climate	33.7	114.1	47.8	170.0	771.0	14.5
19	Huai River	Subtropical monsoon climate	32.3	114.9	31.9	105.0	1032.0	15.1
20	Han River	Subtropical monsoon climate	30.4	113.4	2.5	320.0	1178.0	17.0
21	Xi River	Subtropical monsoon climate	30.4	115.2	4.5	45.0	1362.0	17.2
22	Qi River	Subtropical monsoon climate	30.2	115.3	7.0	120.0	1384.0	18.0
23	Yangtze River	Subtropical monsoon climate	29.6	113.2	23.2	2000.0	1256.0	18.5
24	Gan River	Subtropical monsoon climate	27.6	115.2	26.5	1500.0	1553.0	21.6
25	Xiang River	Subtropical monsoon climate	27.2	112.9	34.7	500.0	1432.0	22.4
26	Li River	Subtropical monsoon climate	25.6	110.5	182.5	150.0	1662.0	23.0
27	Bei River	Subtropical monsoon climate	24.2	113.4	22.1	350.0	1719.0	21.3
28	Qian River	Subtropical monsoon climate	23.6	109.7	38.1	180.0	1284.0	18.1
29	Moyang River	Subtropical monsoon climate	22.0	111.8	-1.4	280.0	2152.0	17.3
30	Nanliu River	Subtropical monsoon climate	21.8	109.2	3.9	200.0	1664.0	17.1