

Supplementary Information for:

Change of human footprint in China and its implications for

CO₂ emissions

Supplementary Notes

The basic of the seven major physical geographical divisions in China is determined on the basis of science, integrating multiple dimensions such as history and nationality, and following relevant division principles.

Northeast provinces: Heilongjiang, Jilin, Liaoning

North provinces: Beijing, Tianjin, Hebei, Shanxi, Inner Mongolia

Northwest provinces: Gansu, Ningxia, Shan'xi, Qinghai, Xinjiang

East provinces: Shanghai, Jiangsu, Zhejiang, Anhui, Shandong

Central provinces: Hunan, Hubei, Henan, Jiangxi

Southwest provinces: Sichuan, Chongqing, Tibet, Yunnan, Guizhou

South provinces: Guangdong, Guangxi, Fujian, Hainan

Supplementary Table Captions

Table S1. Spatio-temporal characteristics of the human footprints in China.

Table S2. Spatio-temporal characteristics of CO₂ emissions.

Table S1. Spatio-temporal characteristics of the human footprints in China.

Region	Human footprint area ($\times 10^4$ km ²)	2000	2005	2010	2015	2017	Chang rate (%)	2000–2017
Central	Low (0–20)	48.77	47.97	47.93	43.29	39.72	-18.56	46.78
	Moderate (20–30)	17.64	18.19	17.91	22.02	25.39	43.93	19.18
	High (30–60)	0.67	0.92	1.24	1.77	1.97	194.03	1.12
East	Low (0–20)	18.86	17.85	18.57	16.11	14.81	-21.47	16.36
	Moderate (20–30)	29.27	29.71	28.28	29.46	30.09	2.80	30.8
	High (30–60)	0.6	1.17	1.88	3.16	3.83	538.33	1.57
North	Low (0–20)	144.45	142.52	143.69	141.19	138.18	-4.34	142.29
	Moderate (20–30)	16.19	17.71	16.3	18.35	20.13	24.34	17.83
	High (30–60)	0.73	1.12	1.38	1.82	3.06	319.18	1.24
Northeast	Low (0–20)	79.54	76.86	75.08	73.36	73.07	-8.13	75.67
	Moderate (20–30)	10.97	13.61	15.09	16.33	16.55	50.87	14.68
	High (30–60)	0.36	0.4	0.7	1.18	1.25	247.22	0.51
Northwest	Low (0–20)	276.12	275.06	275.16	269.27	266.81	-3.37	275.11
	Moderate (20–30)	2.51	3.53	3.37	9	11.46	356.57	3.43
	High (30–60)	0.11	0.15	0.21	0.47	0.47	327.27	0.22
South	Low (0–20)	46.18	45.38	44.8	41.87	40.77	-11.72	44.7
	Moderate (20–30)	3.25	3.99	4.23	6.71	7.51	131.08	4.24
	High (30–60)	0.13	0.19	0.53	0.98	1.28	884.62	0.62
Southwest	Low (0–20)	85.59	83.58	83.58	77.01	71.69	-16.24	83.2
	Moderate (20–30)	7.73	9.7	9.59	15.49	20.71	167.92	9.95
	High (30–60)	0.07	0.11	0.22	0.89	0.99	1314.29	0.24
China	Low (0–20)	699.5	689.21	688.82	662.09	645.05	-7.78	684.09
	Moderate (20–30)	87.57	96.44	94.75	117.37	131.84	50.55	100.11
	High (30–60)	2.66	4.07	6.16	10.27	12.84	382.71	5.53

Table S2. Spatio-temporal characteristics of CO₂ emissions.

Region	CO2 (Mt)	2000	2005	2010	2015	2017	2000–2017
Central	Low (0–20)	476.33	755.62	1106.13	1249.49	1288.36	812.03
	Moderate (20–30)	0	0	47.84	66.54	107.45	107.45
	High (30–60)	0	0	0	0	0	0
East	Low (0–20)	682.95	1288.54	1664.74	1704.06	1749.03	1066.08
	Moderate (20–30)	51.11	142.29	462.91	485.62	507.61	456.50
	High (30–60)	0	41.31	56.43	44.54	43.77	43.77
North	Low (0–20)	654.95	1086.86	1414.58	1452.49	1451.92	796.97
	Moderate (20–30)	12.26	59.6	382.62	473.08	512.18	499.92
	High (30–60)	0	0	0	30.08	34.26	34.26
Northeast	Low (0–20)	400.53	588.89	792.98	800.13	795.49	394.96
	Moderate (20–30)	0	10.52	64.29	103	109.32	109.32
	High (30–60)	0	0	0	0	0	0
Northwest	Low (0–20)	229.78	376.44	588.98	764.02	789	559.22
	Moderate (20–30)	0	0	56.68	120.72	210.15	210.15
	High (30–60)	0	0	0	0	0	0
South	Low (0–20)	323.29	479.46	664.21	764.28	783.81	460.52
	Moderate (20–30)	33.56	52.91	131.47	153.61	194.93	161.37
	High (30–60)	0	34.33	46.56	45.05	44.03	44.03
Southwest	Low (0–20)	330.06	506.79	720.48	761.77	828.98	498.92
	Moderate (20–30)	0	13.14	54.52	76.08	80.82	80.82
	High (30–60)	0	0	0	0	0	0
China	Low (0–20)	3097.89	5082.6	6952.1	7496.24	7686.59	4588.70
	Moderate (20–30)	96.92	278.46	1200.33	1478.64	1722.45	1625.53
	High (30–60)	0	75.64	102.99	119.67	122.06	122.06

Supplementary Figure Captions

Figure S1. Analytical scope of CO₂ emissions including (a) spatial distribution diagram of the monitoring area at the county level and (b) spatial distribution of regions in China used for estimating CO₂ emissions.

Figure S2. Annual CO₂ emissions by seven regions in China.

Figure S3. Annual CO₂ emissions (g) per USD in China during 2000–2017. The national average is 1.45 g CO₂ per USD based on the 18-year period.

Figure S4. Average CO₂ emissions in China in each provincial administrative unit.

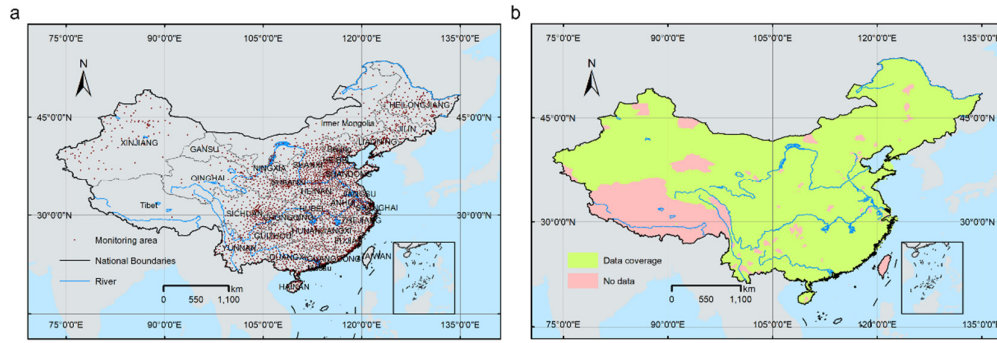


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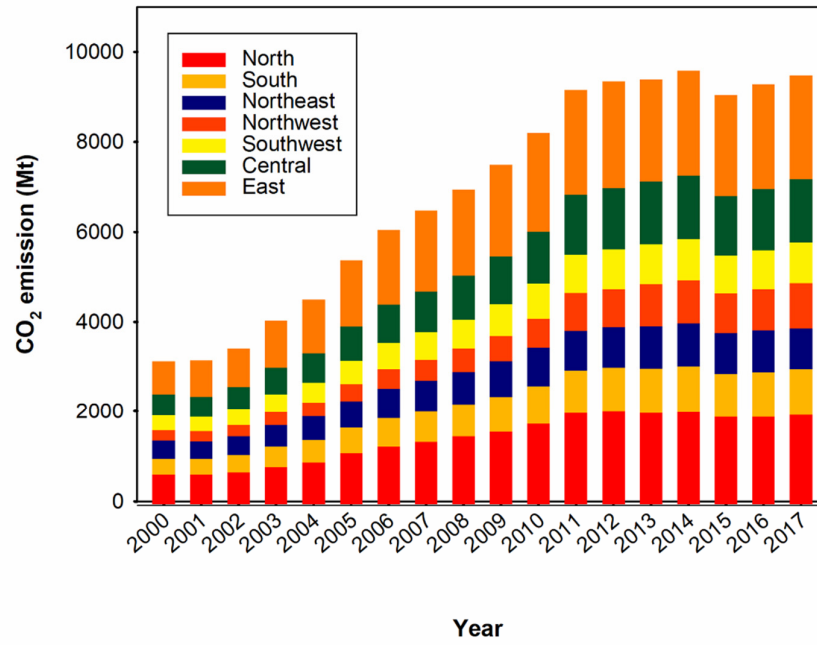


Figure S2. Annual CO₂ emissions by seven regions in China.

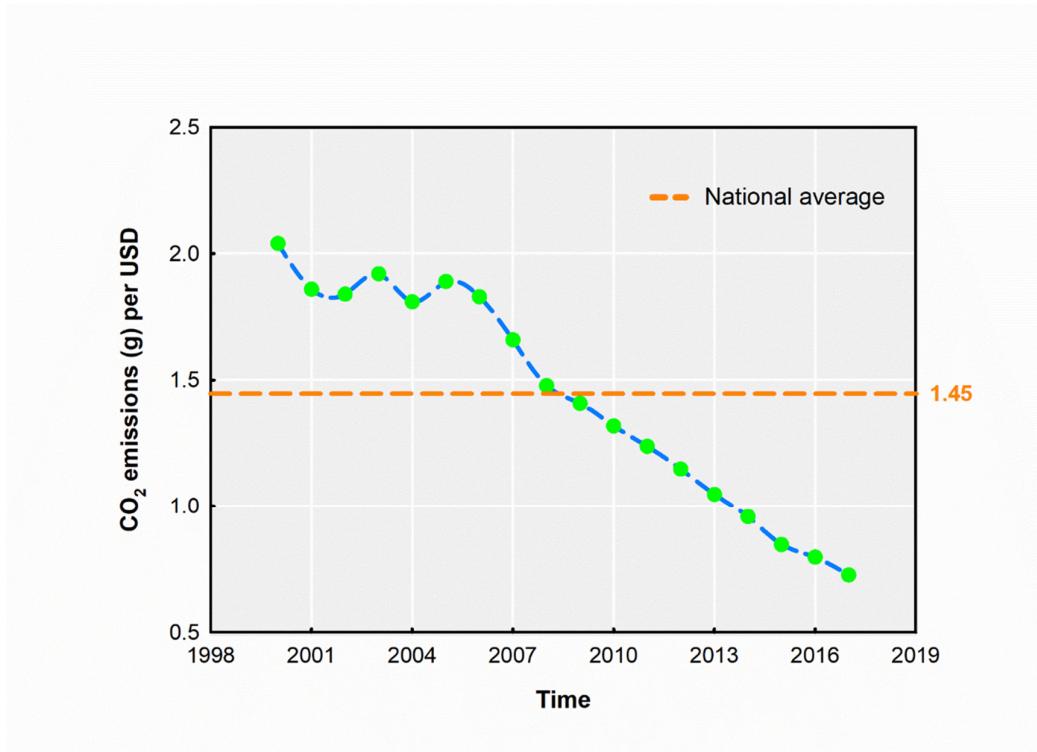


Figure S3. Annual CO₂ emissions (g) per USD in China during 2000–2017. National average is 1.45 g CO₂ per USD based the 18-year period.

