Supplementary Materials

Table S1. Key parameters of each LUCC class for the InVEST urban cooling model.

lucode	Description	Shade	kc	Albedo	Green_area
11	Paddy Field	0	0.7	0.2	1
12	Irrigated land	0	0.75	0.2	1
21	Woodland	1	1	0.15	1
22	Shrub	0	0.9	0.225	1
23	Woodland with low density	1	0.9	0.2	1
24	Other woodland	1	0.8	0.2	1
31	High-coverage grass	0	0.6	0.2	1
32	Medium-coverage grass	0	0.6	0.2	1
33	Low-coverage grass	0	0.6	0.2	1
41	River	0	1	0.06	1
42	Lake	0	1	0.06	1
43	Pond	0	0.6	0.06	1
45	Beach	0	0.001	0.275	1
46	Beachland	0	0.001	0.275	1
51	Urban land	0	0.001	0.1675	0
52	Rural settlements	0	0.001	0.1675	0
53	Other construction land	0	0.001	0.1675	0
61	Sandy	0	0.001	0.275	0
62	Gobi	0	0.001	0.275	0
63	Saline land	0	0.001	0.275	0
64	Marshland	0	0.5	0.2	1
65	Bare land	0	0.001	0.275	0
66	Bare rock texture	0	0.001	0.225	0
67	others	0	0.001	0.275	0

Table S2. The CN value for each LULC type.

lucode	Land use type	A	B	C	D
11	Paddy Field	65	76	84	88
12	Irrigated land	65	76	84	88
21	Woodland	36	60	73	79
22	Shrub	36	60	73	79
23	Woodland with low density	36	60	73	79
24	Other woodland	48	67.75	78.25	83.5
31	High-coverage grass	49	69	79	84
32	Medium-coverage grass	49	69	79	84
33	Low-coverage grass	49	69	79	84
41	River	99	99	99	99
42	Lake	99	99	99	99
43	Pond	99	99	99	99
45	Beach	35	56	70	77
46	Beachland	35	56	70	77
51	Urban land	93.5	95	96	96.5
52	Rural settlements	98	98	98	98
54	Other construction land	89	92	94	95
61	Sandy	77	86	91	94
62	Gobi	77	86	91	94
63	Saline land	77	86	91	94
64	Marshland	35	56	70	77
65	Bare land	77	86	91	94
66	Bare rock texture	98	98	98	98
67	others	77	86	91	94
99	Ocean	99	99	99	99

Table S3. The components, factors, and data sources for calculating outdoor recreation potential.

Component	Factors	Data source	Distance thresholds	Description
Naturalness	The naturalness of different land-use types	http://www.resdc.cn	N/A	5: Woodlands. 4: Salt marshes, mudflats, wetlands. 3: Continental waters, shrubs. 2. Grassland, hedgerows.1 arable land, orchards, nurseries, and trails. 0: man-made structures, bare soil
Nature protection	Areas designated as nature reserves or natural parks	Baidu map open data platform API interface access	N/A	2: Protected natural reserve; 1: Sites of naturalistic interest, natural parks; 0: No protected areas or without naturalistic interest.
Water	Lakes	http://www.resdc.cn	1000	Areas where water elements are present all year round
	Beach land	http://www.resdc.cn	2000	
	Rivers	http://www.resdc.cn	1000	

Table S4. Cross-tabulation matrix was used to determine outdoor recreation demand values.

		Accessibility (km)					
		<0.3	0.3-0.6	0.6-0.9	0.9-1.2	1.2-1.5	>1.5
Population density (inhab. ha-1)	<5	0	0	0	0	0	0
	5-50	0	0.2	0.2	0.4	0.4	0.6
	50-100	0	0.2	0.4	0.4	0.6	0.8
	100-200	0	0.4	0.4	0.6	0.6	0.8
	200-400	0	0.4	0.6	0.6	0.8	0.8
	>400	0	0.6	0.8	0.8	0.8	1