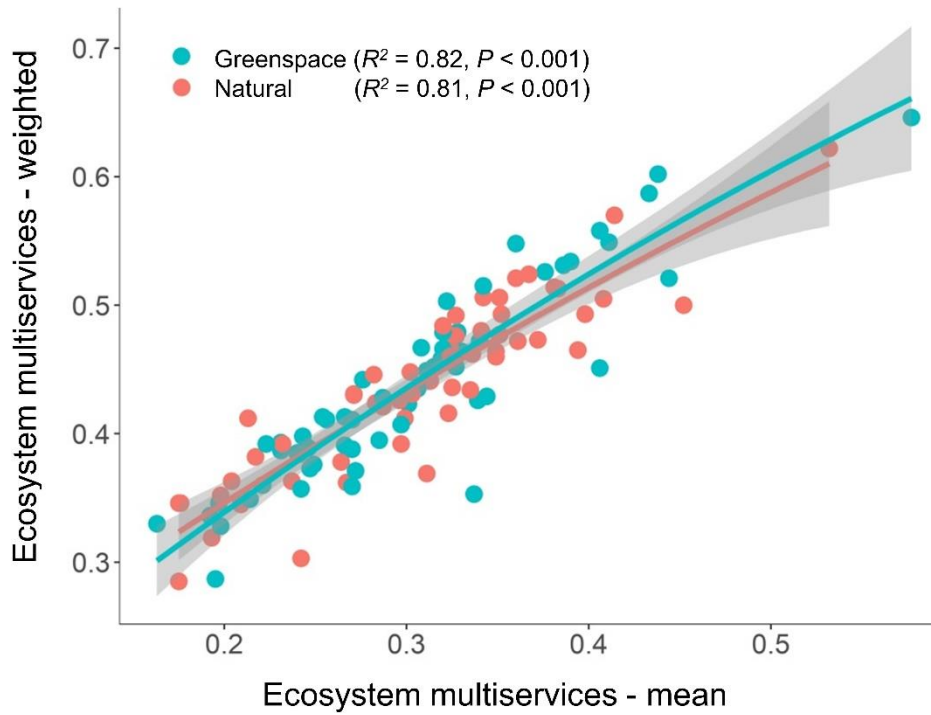


1 **SUPPLEMENTARY MATERIAL**

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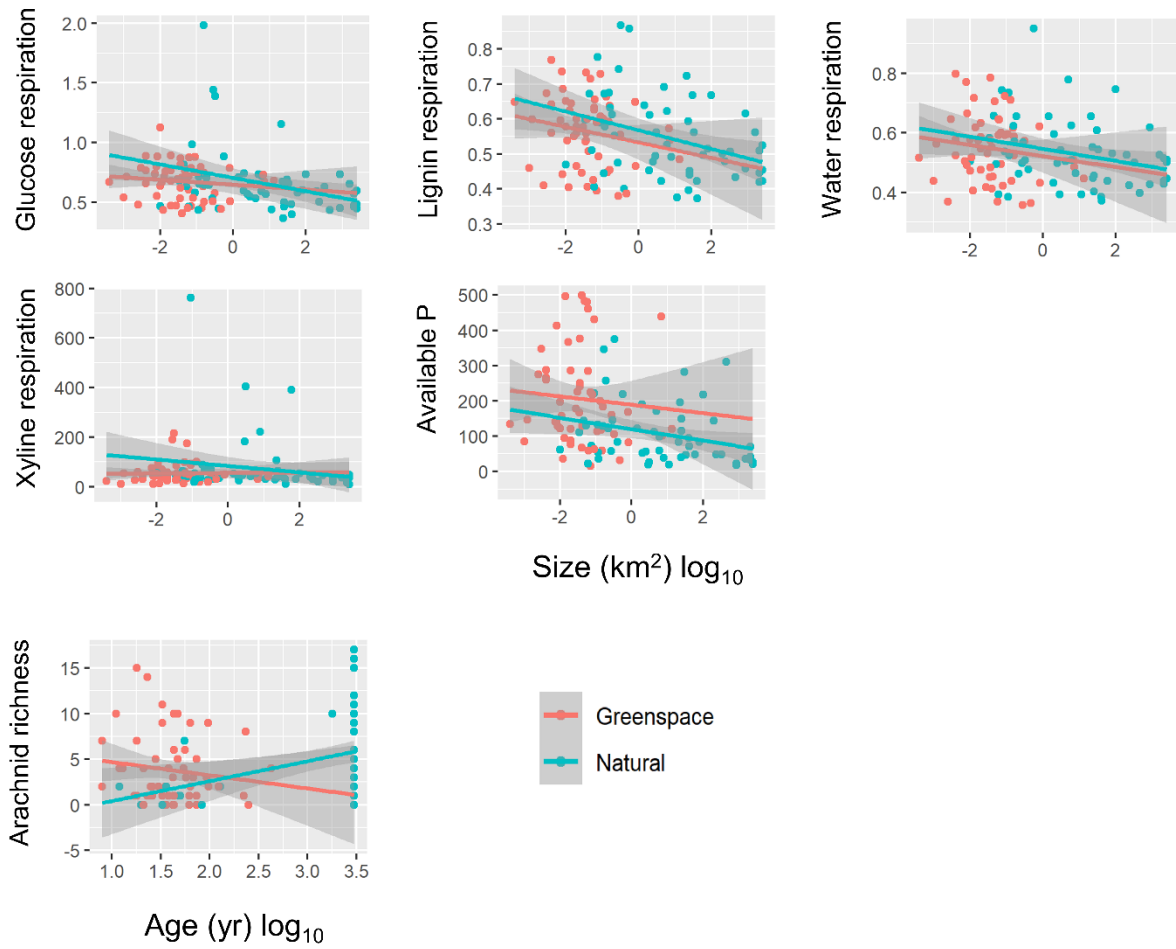


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6 **Supplementary Figure 1.** Scatter plot with relationship between mean ecosystem
7 multiservices and weighted ecosystem multiservices in greenspaces and natural systems.

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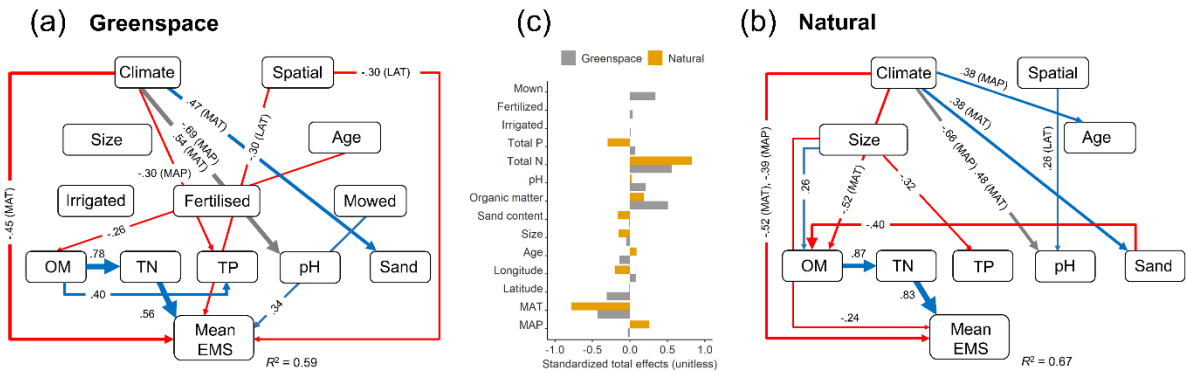
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11 **Supplementary Figure 2.** Models of changes in respiration (glucose, lignin, water and
 12 xyline) and available phosphorus in relation to size of greenspace and natural area, and
 13 arachnid richness in relation to age of greenspaces and natural areas.

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18 **Supplementary Figure 3.** Direct and indirect relationships between spatial (latitude,
19 longitude), aridity, area and size of greenspaces and natural areas, management factors
20 (irrigation, fertilisation, mowing), soils (organic matter [OM], soil total nitrogen [TN], soil
21 pH and soil texture [sand content] and the mean (unweighted) ecosystem multiservices
22 (EMS) for (a) greenspaces and (b) natural areas. Red and blue vectors represent negative and
23 positive relationships, respectively, and values on the vectors represent the path coefficients.
24 (c) standardized total effects (STE), i.e., the sum of direct and indirect effects of each of the
25 attributes on ecosystem multiservices. Note that the model for natural areas does not contain
26 information on management factors (mowing, fertilising, irrigating). The variance explained
27 by the model (R^2) of each parameter is given. Non-significant relationships are not shown.
28 Model fit: Greenspace: $\chi^2 = 0.24$, $df = 1$, $P = 0.594$, NFI = 0.98; Natural area: $\chi^2 = 0.13$, $df =$
29 1 , $P = 0.716$, NFI = 0.97.

Supplementary Table 1. Description of sites using in this study and their management

PlotID	Paired site	LandUse	City	Country	Size km2	Age	Type	Latitude	Longitude	Weed spraying	Timber removal	Livestock grazing	Pest control	Path maintenance	Irrigated	Fertilising	Mowing
1	1	Natural	Tonghua City, Jilin, China	China	200	3000	Natural	41.73528	126.0447	No	No	No	No	No	No	No	No
6	1	Urban greenspace	Tonghua City, Jilin, China	China	0.04	25	Urban	41.73944	125.9428	Yes	No	No	No	Yes	No	No	No
2	2	Natural	Baishan City, Jilin, China	China	25	3000	Natural	42.27528	127.4425	No	No	No	No	No	No	No	No
7	2	Urban greenspace	Baishan City, Jilin, China	China	0.16	26	Urban	42.17528	127.5003	Yes	No	No	No	Yes	No	No	No
3	3	Natural	Yanji City, Jilin, China	China	100	3000	Natural	42.84056	129.4636	No	No	No	No	No	No	No	No
8	3	Urban greenspace	Yanji City, Jilin, China	China	0.32	54	Urban	42.91083	129.49	Yes	No	No	No	Yes	No	No	No
4	4	Natural	Dunhua City, Jilin, China	China	0.4	3000	Natural	43.33889	128.2375	No	No	No	Yes	Yes	No	No	No
9	4	Urban greenspace	Dunhua City, Jilin, China	China	0.14	33	Urban	43.38083	128.2242	Yes	No	No	No	Yes	No	No	No
5	5	Natural	Jilin City, Jilin, China	China	5	3000	Natural	43.87778	126.6067	No	No	No	Yes	Yes	No	No	No
10	5	Urban greenspace	Jilin City, Jilin, China	China	0.02	33	Urban	43.8425	126.5231	Yes	No	No	No	Yes	No	No	No
18	6	Natural	Santiago, Santiago Metropolitan Region, Chile	Chile	325	3000	Natural	-33.3822	-70.9635	No	No	No	No	No	No	No	No
23	6	Urban greenspace	Santiago, Santiago Metropolitan Region, Chile	Chile	7.2	11	Urban	-33.3739	-70.6074	Yes	No	No	No	Yes	No	No	No
25	7	Natural	Belo Horizonte, Minas Gerais State, Brazil	Brazil	2500	3000	Natural	-19.2689	-43.585	No	No	No	No	No	No	No	No
28	7	Urban greenspace	Belo Horizonte, Minas Gerais State, Brazil	Brazil	0.15	96	Urban	-19.8737	-43.9726	Yes	No	No	No	Yes	Yes	No	Yes
26	8	Natural	Contagem, Minas Gerais State, Brazil	Brazil	2500	3000	Natural	-19.2653	-43.5836	No	No	No	No	No	No	No	No
29	8	Urban greenspace	Contagem, Minas Gerais State, Brazil	Brazil	0.02	18	Urban	-19.9399	-44.039	Yes	No	No	No	Yes	Yes	No	Yes

27	9	Natural	Betim, Minas Gerais State, Brazil	Brazil	2500	3000	Natural	-19.2944	-43.6058	No	No	No	No	No	No	No	No
30	9	Urban greenspace	Betim, Minas Gerais State, Brazil	Brazil	0.07	23	Urban	-19.9392	-44.1845	Yes	No	No	No	Yes	No	No	No
31	10	Natural	Longmont, CO, USA	USA	21	3000	Natural	40.24202	-105.212	No	No	No	No	No	No	No	No
34	10	Urban greenspace	Longmont, CO, USA	USA	0.014	24	Urban	40.16144	-105.121	Yes	No	No	No	Yes	Yes	Yes	Yes
32	11	Natural	Grand Junction, CO, USA	USA	30	3000	Natural	39.19037	-109.115	No	No	No	No	No	No	No	No
35	11	Urban greenspace	Grand Junction, CO, USA	USA	0.01	26	Urban	39.11263	-108.608	Yes	No	No	No	Yes	No	No	Yes
33	12	Natural	Cheyenne, WY, USA	USA	22.9	3000	Natural	41.31594	-104.827	No	No	No	No	No	No	No	No
36	12	Urban greenspace	Cheyenne, WY, USA	USA	0.036	47	Urban	41.156	-104.831	Yes	No	No	No	Yes	Yes	Yes	Yes
38	13	Natural	South Lyon, MI, USA	USA	0.034	3000	Natural	42.44511	-83.4423	No	No	No	No	No	No	No	No
39	13	Urban greenspace	South Lyon, MI, USA	USA	0.16	43	Urban	42.43936	-83.6751	Yes	No	No	No	Yes	Yes	Yes	Yes
40	14	Natural	Oxford, England, UK	UK	0.57	1800	Natural	51.76	-1.29845	No	Limited	No	No	No	No	No	No
44	14	Urban greenspace	Oxford, England, UK	UK	0.004	18	Urban	51.75251	-1.28776	Yes	No	No	No	Yes	No	No	Yes
41	15	Natural	Bodø, Norway	Norway	0.19	3000	Natural	67.3018	14.39011	No	No	No	No	No	No	No	No
45	15	Urban greenspace	Bodø, Norway	Norway	0.008	97	Urban	67.28266	14.38605	Yes	No	No	No	Yes	Yes	Yes	Yes
46	16	Natural	Uppsala, Sweden	Sweden	0.09	3000	Natural	59.85207	17.59767	No	No	No	No	No	No	No	No
42	16	Urban greenspace	Uppsala, Sweden	Sweden	0.06	8	Urban	59.85237	17.63497	Yes	No	No	No	Yes	Yes	Yes	Yes
49	17	Natural	Poitiers, France	France	2.48	55	Natural	46.50694	0.371667	No	Limited	No	No	No	No	No	No
48	17	Urban greenspace	Poitiers, France	France	0.8	233	Urban	46.57556	0.335278	Yes	No	No	No	Yes	Yes	Yes	Yes
51	18	Natural	Niort, France	France	0.045	3000	Natural	46.30389	-0.68444	No	Limited	No	No	No	No	No	No
50	18	Urban greenspace	Niort, France	France	0.004	33	Urban	46.325	-0.46722	Yes	No	No	No	Yes	No	Yes	No
53	19	Natural	Tours, France	France	4.2	3000	Natural	47.33556	0.751389	No	Limited	No	No	No	No	No	No

52	19	Urban greenspace	Tours, France	France	0.036	63	Urban	47.39639	0.677222	Yes	No	No	No	Yes	No	No	No
54	20	Natural	Ljubljana, Slovenia	Slovenia	2.95	3000	Natural	46.05218	14.4783	No	No	No	No	No	No	No	No
57	20	Urban greenspace	Ljubljana, Slovenia	Slovenia	0.013	73	Urban	46.0519	14.47988	Yes	No	No	No	Yes	No	No	Yes
55	21	Natural	Koper, Slovenia	Slovenia	2	3000	Natural	45.52613	13.71719	No	No	No	No	No	No	No	No
58	21	Urban greenspace	Koper, Slovenia	Slovenia	0.0012	63	Urban	45.54442	13.73122	Yes	No	No	No	Yes	Yes	No	Yes
56	22	Natural	Maribor, Slovenia	Slovenia	0.27	3000	Natural	46.58093	15.6363	No	No	No	No	No	No	No	No
59	22	Urban greenspace	Maribor, Slovenia	Slovenia	0.13	63	Urban	46.5652	15.6488	Yes	No	No	No	Yes	Yes	No	Yes
60	23	Natural	Pretoria, South Africa	South Africa	6	128	Natural	-25.7879	28.20304	No	No	No	No	No	No	No	No
63	23	Urban greenspace	Pretoria, South Africa	South Africa	0.04	43	Urban	-25.7618	28.22027	Yes	No	No	No	Yes	Yes	No	Yes
61	24	Natural	Germiston, South Africa	South Africa	0.116	49	Natural	-26.4834	28.21157	No	No	No	No	No	No	No	No
64	24	Urban greenspace	Germiston, South Africa	South Africa	0.06	93	Urban	-26.1643	28.131	Yes	No	No	No	Yes	No	No	No
62	25	Natural	Cape Town, South Africa	South Africa	0.22	50	Natural	-33.3338	18.27285	No	No	No	No	No	No	No	No
65	25	Urban greenspace	Cape Town, South Africa	South Africa	0.048	12	Urban	-33.904	18.40195	Yes	No	No	No	Yes	Yes	Yes	Yes
67	26	Natural	Durgapur, West Bengal, India	India	11.3	3000	Natural	23.59842	87.42919	No	Some	Little	No	No	No	No	No
66	26	Urban greenspace	Durgapur, West Bengal, India	India	0.473	38	Urban	23.56219	87.30094	Yes	No	No	No	Yes	Yes	No	Yes
70	27	Natural	Mirzapur, Uttar Pradesh, India	India	0.061	3000	Natural	25.04673	82.59435	No	No	Little	No	No	No	No	No
68	27	Urban greenspace	Mirzapur, Uttar Pradesh, India	India	0.0025	35	Urban	25.1431	82.56114	Yes	No	No	No	Yes	Yes	No	Yes
71	28	Natural	Agra, Uttar Pradesh, India	India	1.98	3000	Natural	27.25058	77.87598	No	No	Little	No	No	No	No	No
69	28	Urban greenspace	Agra, Uttar Pradesh, India	India	0.28	123	Urban	27.20264	78.01269	Yes	No	No	No	Yes	Yes	Yes	Yes
72	29	Natural	Beijing, China	China	0.29	3000	Natural	40.07264	116.182	Annual	No	No	No	No	No	No	No
75	29	Urban greenspace	Beijing, China	China	0.091	25	Urban	40.01034	116.3886	Yes	No	No	No	Yes	Yes	No	No

77	30	Natural	Tai'an, Shandong, China	China	0.156	3000	Natural	36.20803	117.1102	Occasional	No	No	No	No	No	No	No
73	30	Urban greenspace	Tai'an, Shandong, China	China	0.017	43	Urban	36.22181	117.0188	Yes	No	No	No	Yes	No	No	No
74	31	Natural	Tianjin, China	China	0.076	3000	Natural	39.07533	117.1478	Annual	No	No	No	No	No	No	No
76	31	Urban greenspace	Tianjin, China	China	0.11	73	Urban	39.08455	117.6862	Yes	No	No	No	Yes	No	No	No
80	32	Natural	Ürümqi, Xinjiang, China	China	450	3000	Natural	43.83421	88.04523	Annual	No	No	No	No	No	No	No
83	32	Urban greenspace	Ürümqi, Xinjiang, China	China	0.042	68	Urban	43.83083	87.65702	Yes	No	No	No	Yes	No	No	No
84	33	Natural	Alice Springs, Northern Territory, Australia	Australia	1570	20	Natural	-23.8255	133.3547	No	No	No	No	No	No	No	No
89	33	Urban greenspace	Alice Springs, Northern Territory, Australia	Australia	0.0085	21	Urban	-23.7083	133.8746	Yes	No	No	No	Yes	Yes	No	Yes
85	34	Natural	Brisbane, Queensland, Australia	Australia	24	3000	Natural	-27.4922	153.4294	No	No	No	Little	No	No	No	No
90	34	Urban greenspace	Brisbane, Queensland, Australia	Australia	0.003	73	Urban	-27.4984	153.016	Yes	No	No	No	Yes	Yes	No	Yes
86	35	Natural	Mildura, Victoria, Australia	Australia	0.33	3000	Natural	-34.1802	142.1729	No	No	Limited	No	No	No	No	No
91	35	Urban greenspace	Mildura, Victoria, Australia	Australia	0.071	23	Urban	-34.1854	142.1696	Yes	No	No	No	Yes	Yes	Yes	Yes
87	36	Natural	Cecil Hills, Sydney, New South Wales, Australia	Australia	1.43	3000	Natural	-33.8812	150.8546	No	No	No	No	No	No	No	No
92	36	Urban greenspace	Cecil Hills, Sydney, New South Wales, Australia	Australia	0.091	17	Urban	-33.8814	150.8533	Yes	No	No	No	Yes	No	No	Yes
88	37	Natural	Heathcote, Sydney, New South Wales, Australia	Australia	0.01	3000	Natural	-34.0721	151.0012	No	No	No	Little	Occasional	No	No	No

93	37	Urban greenspace	Heathcote, Sydney, New South Wales, Australia	Australia	0.01	57	Urban	-34.0822	151.0126	Yes	No	No	No	Yes	Yes	No	Yes
94	38	Natural	Barcelona, Catalunya, Spain	Spain	80	36	Natural	41.47676	2.147501	No	Limited	No	No	No	No	No	No
95	38	Urban greenspace	Barcelona, Catalunya, Spain	Spain	0.02	47	Urban	41.41599	2.150663	Yes	No	No	No	Yes	Yes	No	No
96	39	Natural	Pullman, Washington, USA	USA	0.168	3000	Natural	46.72546	-116.923	No	No	No	No	No	No	No	No
97	39	Urban greenspace	Pullman, Washington, USA	USA	0.004	43	Urban	46.74008	-117.175	Yes	No	No	No	Yes	No	No	No
98	40	Natural	Corvallis, Oregon, USA	USA	0.053	3000	Natural	44.49646	-123.338	No	No	No	No	No	No	No	No
99	40	Urban greenspace	Corvallis, Oregon, USA	USA	0.02	8	Urban	44.53041	-123.26	Yes	No	No	No	Yes	No	Yes	Yes
100	41	Natural	Coyoacán, Mexico City, Mexico	Mexico	859	3000	Natural	19.60301	-99.478	No	No	No	No	No	No	No	No
103	41	Urban greenspace	Coyoacán, Mexico City, Mexico	Mexico	0.063	43	Urban	19.31056	-99.1831	Yes	No	No	No	Yes	No	No	No
101	42	Natural	Tlalpan, Mexico City, Mexico	Mexico	859	3000	Natural	19.60134	-99.4759	No	No	No	No	No	No	No	No
104	42	Urban greenspace	Tlalpan, Mexico City, Mexico	Mexico	0.035	28	Urban	19.29432	-99.1939	Yes	No	No	No	Yes	No	No	Yes
102	43	Natural	Miguel Hidalgo, Mexico City, Mexico	Mexico	233	3000	Natural	19.081	-99.1701	No	No	No	No	No	No	No	No
105	43	Urban greenspace	Miguel Hidalgo, Mexico City, Mexico	Mexico	6.86	223	Urban	19.41875	-99.1863	Yes	No	No	No	Yes	No	No	Yes
106	44	Natural	Madrid, Comunidad de Madrid, Spain	Spain	25	3000	Natural	40.57222	-4.15333	No	No	No	No	No	No	No	No
107	44	Urban greenspace	Madrid, Comunidad de Madrid, Spain	Spain	0.08	42	Urban	40.41056	-3.69028	Yes	No	No	No	Yes	Yes	Yes	No

114	45	Natural	Esa-Odo, Osun state, Nigeria	Nigeria	2100	3000	Natural	7.757	4.828	No	Limited	Limited	No	No	No	No	No
115	45	Urban greenspace	Esa-Odo, Osun state, Nigeria	Nigeria	0.012	42	Urban	7.756	4.811	Yes	No	No	No	Yes	Yes	Yes	Yes
118	46	Natural	Obafemi Awolowo University, Osun state, Nigeria	Nigeria	2100	3000	Natural	7.616	4.414	No	No	No	No	No	No	No	No
116	46	Urban greenspace	Obafemi Awolowo University, Osun state, Nigeria	Nigeria	0.0081	62	Urban	7.517	4.528	Yes	No	No	No	Yes	No	No	No
119	47	Natural	Ife city, Osun state, Nigeria	Nigeria	2100	3000	Natural	7.615	4.385	No	Limited	No	No	No	No	No	No
117	47	Urban greenspace	Ife city, Osun state, Nigeria	Nigeria	0.001	62	Urban	7.492	4.585	Yes	No	No	No	Yes	Yes	No	No
120	48	Natural	Lakeland, Florida, USA	USA	40	3000	Natural	28.296	-81.0404	No	No	No	No	No	No	No	No
121	48	Urban greenspace	Lakeland, Florida, USA	USA	0.0275	36	Urban	28.04038	-81.9666	Yes	No	No	No	Yes	Yes	Yes	Yes
122	49	Natural	Sebring, Florida, USA	USA	41.4	83	Natural	27.4712	-81.5303	No	No	No	No	No	No	No	No
123	49	Urban greenspace	Sebring, Florida, USA	USA	0.0004	21	Urban	27.48342	-81.4212	Yes	No	No	No	Yes	Yes	Yes	Yes
124	50	Natural	Punta Gorda, Florida, USA	USA	0.111	12	Natural	26.9093	-82.0678	No	No	No	No	No	No	No	No
125	50	Urban greenspace	Punta Gorda, Florida, USA	USA	0.057	18	Urban	26.9335	-82.0562	Yes	No	No	No	Yes	Yes	Yes	Yes
126	51	Natural	Utrera, Andalusia, Spain	Spain	0.12	3000	Natural	37.20107	-5.8445	No	No	No	No	No	No	No	No
127	51	Urban greenspace	Utrera, Andalusia, Spain	Spain	0.0072	423	Urban	37.19294	-5.76664	Yes	No	No	No	Yes	No	Yes	Yes
128	52	Natural	Coimbra, Portugal	Portugal	33.2	3000	Natural	40.09555	-8.49346	No	No	No	No	No	No	No	No
129	52	Urban greenspace	Coimbra, Portugal	Portugal	13.5	251	Urban	40.20521	-8.42056	Yes	No	No	No	Yes	No	No	No
130	53	Natural	Porto, Portugal	Portugal	60	3000	Natural	41.15715	-8.48495	No	No	No	No	No	No	No	No
131	53	Urban greenspace	Porto, Portugal	Portugal	0.83	30	Urban	41.1672	-8.67903	Yes	No	No	No	Yes	No	No	Yes
132	54	Natural	Jerusalem, Israel	Israel	8	3000	Natural	31.75198	35.12915	No	No	No	No	No	No	No	No

133	54	Urban greenspace	Jerusalem, Israel	Israel	0.036	56	Urban	31.77006	35.22345	Yes	No	No	No	Yes	Yes	Yes	Yes
134	55	Natural	Be'er Sheva, Israel	Israel	3.1	3000	Natural	31.24933	34.7415	No	No	Limited	No	No	No	No	No
135	55	Urban greenspace	Be'er Sheva, Israel	Israel	0.03	38	Urban	31.23465	34.79273	Yes	No	No	No	Yes	Yes	No	Yes
136	56	Natural	Ofakim, Israel	Israel	6	33	Natural	31.27107	34.65033	No	No	No	No	No	No	No	No
137	56	Urban greenspace	Ofakim, Israel	Israel	0.011	13	Urban	31.3095	34.63066	Yes	No	No	No	Yes	Yes	No	No