

Electronic appendix Table 1 Location of the eight cities and their current human population size extracted from www.wikipedia.org

City	Latitude	Longitude	Human population size
Rovaniemi	66° 27' N	25° 37' E	59,000
Oslo	59° 57' N	10° 45' E	1,422,000
Brønderslev	57° 12' N	10° 00' E	12,000
Poznan	52° 25' N	16° 55' E	856,000
Olomouc	49° 34' N	17° 15' E	110,000
Paris	48° 04' N	2° 11' E	11,769,000
Budapest	47° 28' N	19° 02' E	2,503,000
Toledo	39° 51' N	4° 01' W	298,000
Granada	37° 15' N	3° 40' W	238,000

Electronic appendix Table 2. Difference in population density between urban and rural habitats, year of urbanization, population and sample size for rural and urban habitats.

Species	Difference in density	Year urbanized	Population	Sample size rural habitat	Sample size urban habitat
<i>Aegithalos caudatus</i>	0.9031	.	Budapest	2	0
<i>Aegithalos caudatus</i>	0.1249	2000	Paris	5	3
<i>Anas platyrhynchos</i>	0.3424	1990	Brønderslev	4	5
<i>Anas platyrhynchos</i>	0.3424	1990	Budapest	0	2
<i>Anas platyrhynchos</i>	0.6021	.	Granada	0	20
<i>Anas platyrhynchos</i>	1.1761	.	Olomouc	4	37
<i>Anas platyrhynchos</i>	0	1900	Oslo	5	5
<i>Anas platyrhynchos</i>	0.5195	1900	Paris	21	50
<i>Anas platyrhynchos</i>	0.1761	.	Poznan	7	8
<i>Anas platyrhynchos</i>	0.4771	2010	Toledo	0	12
<i>Carduelis</i>	0	2000	Brønderslev	0	0

<i>carduelis</i>					
<i>Carduelis</i>	-0.1498	1888	Budapest	32	27
<i>carduelis</i>					
<i>Carduelis</i>	0.2109	.	Granada	91	210
<i>carduelis</i>					
<i>Carduelis</i>	-0.1597	2010	Olomouc	9	16
<i>carduelis</i>					
<i>Carduelis</i>	-0.9777	2000	Oslo	18	1
<i>carduelis</i>					
<i>Carduelis</i>	-0.4771	2010	Paris	3	2
<i>carduelis</i>					
<i>Carduelis</i>	0.1493	.	Toledo	82	104
<i>carduelis</i>					
<i>Carduelis</i>	0.3245	1970	Brønderslev	30	58
<i>chloris</i>					
<i>Carduelis</i>	-0.0669	1923	Budapest	11	37
<i>chloris</i>					
<i>Carduelis</i>	0.4428	1959	Granada	58	199
<i>chloris</i>					
<i>Carduelis</i>	0.0241	.	Olomouc	17	31
<i>chloris</i>					
<i>Carduelis</i>	-0.0833	1970	Oslo	62	51
<i>chloris</i>					
<i>Carduelis</i>	0.6872	1950	Paris	21	102
<i>chloris</i>					
<i>Carduelis</i>	-0.01	1954	Rovaniemi	26	25
<i>chloris</i>					
<i>Carduelis</i>	0.4629	.	Toledo	32	76

<i>chloris</i>					
<i>Certhia</i>	-0.8129	1950	Paris	48	4
<i>brachydactyla</i>					
<i>Certhia</i>	0.7782	.	Toledo	0	0
<i>brachydactyla</i>					
<i>Coccothraustes</i>	-0.0669	2010	Olomouc	16	7
<i>coccothraustes</i>					
<i>Coccothraustes</i>	0	2010	Paris	0	0
<i>coccothraustes</i>					
<i>Coccothraustes</i>	-0.8451	.	Poznan	8	1
<i>coccothraustes</i>					
<i>Coccothraustes</i>	0.4771	2010	Toledo	0	4
<i>coccothraustes</i>					
<i>Columba livia</i>	0.417	1950	Budapest	14	225
<i>Columba livia</i>	0.4429	1850	Granada	347	680
<i>Columba livia</i>	0.8129	.	Oslo	1	12
<i>Columba livia</i>	1.29	1850	Paris	4	48
<i>Columba livia</i>	1.7993	.	Rovaniemi	0	37
<i>Columba livia</i>	1.4624	.	Toledo	0	164
<i>Columba oenas</i>	-1.3802	2000	Oslo	23	0
<i>Columba oenas</i>	-0.699	1950	Paris	8	1
<i>Columba</i>	0.2666	1950	Brønderslev	135	240
<i>palumbus</i>					
<i>Columba</i>	-0.5119	2010	Budapest	12	16
<i>palumbus</i>					
<i>Columba</i>	-1.6564	2005	Granada	180	2
<i>palumbus</i>					
<i>Columba</i>	0.1542	.	Olomouc	19	142

<i>palumbus</i>					
<i>Columba</i>	-0.0139	1950	Oslo	94	91
<i>palumbus</i>					
<i>Columba</i>	-0.0711	1880	Paris	229	172
<i>palumbus</i>					
<i>Columba</i>	-0.0872	1908	Poznan	21	33
<i>palumbus</i>					
<i>Columba</i>	-0.5119	.	Toledo	252	50
<i>palumbus</i>					
<i>Corvus cornix</i>	-0.5482	1970	Brønderslev	64	14
<i>Corvus cornix</i>	0.5477	.	Budapest	9	66
<i>Corvus cornix</i>	0.1317	1970	Oslo	47	64
<i>Corvus cornix</i>	0.9294	.	Poznan	1	19
<i>Corvus cornix</i>	0.2414	.	Rovaniemi	23	40
<i>Corvus corone</i>	0.0341	1950	Paris	75	73
<i>Corvus corone</i>	0.9294	.	Poznan	0	0
<i>Corvus</i>	0.0631	1950	Brønderslev	262	358
<i>frugilegus</i>					
<i>Corvus</i>	0.699	.	Poznan	0	15
<i>frugilegus</i>					
<i>Corvus</i>	1.1934	1880	Brønderslev	10	230
<i>monedula</i>					
<i>Corvus</i>	1.2041	.	Olomouc	4	20
<i>monedula</i>					
<i>Corvus</i>	-0.1047	1880	Oslo	13	1
<i>monedula</i>					
<i>Corvus</i>	1.8865	.	Poznan	0	99
<i>monedula</i>					

<i>Corvus monedula</i>	0.2609	.	Toledo	26	16
<i>Delichon urbica</i>	0.9606	1850	Granada	113	83
<i>Delichon urbica</i>	0.4771	1850	Paris	0	2
<i>Delichon urbica</i>	-1.4698	.	Toledo	0	0
<i>Dendrocopos major</i>	-0.1761	2010	Budapest	0	1
<i>Dendrocopos major</i>	-0.2583	2010	Olomouc	27	15
<i>Dendrocopos major</i>	-0.8451	1990	Paris	16	1
<i>Dendrocopos major</i>	0	2010	Rovaniemi	1	1
<i>Dendrocopos major</i>	0.301	2010	Toledo	0	2
<i>Emberiza citrinella</i>	-1.2553	2010	Olomouc	33	0
<i>Emberiza citrinella</i>	-0.7782	2010	Oslo	5	0
<i>Emberiza citrinella</i>	-0.9358	1967	Rovaniemi	41	4
<i>Emberiza schoeniclus</i>	-0.4771	2010	Brønderslev	1	0
<i>Emberiza schoeniclus</i>	-1.1139	2010	Rovaniemi	7	0

<i>Eritacus</i>	-0.1445	1980	Oslo	52	37
<i>rubecula</i>					
<i>Eritacus</i>	-0.2808	2010	Brønderslev	16	6
<i>rubecula</i>					
<i>Eritacus</i>	0	.	Budapest	0	1
<i>rubecula</i>					
<i>Eritacus</i>	0	.	Granada	0	4
<i>rubecula</i>					
<i>Eritacus</i>	-0.4472	2010	Olomouc	11	2
<i>rubecula</i>					
<i>Eritacus</i>	-0.1614	1900	Paris	142	76
<i>rubecula</i>					
<i>Eritacus</i>	0.4771	1990	Poznan	1	0
<i>rubecula</i>					
<i>Ficedula</i>	0	2010	Paris	0	0
<i>hypoleuca</i>					
<i>Ficedula</i>	-0.0678	1967	Rovaniemi	49	42
<i>hypoleuca</i>					
<i>Fringilla</i>	-0.1316	1950	Brønderslev	79	75
<i>coelebs</i>					
<i>Fringilla</i>	0.8451	1890	Budapest	0	16
<i>coelebs</i>					
<i>Fringilla</i>	-0.1687	2010	Olomouc	49	50
<i>coelebs</i>					
<i>Fringilla</i>	-0.3896	1950	Oslo	102	41
<i>coelebs</i>					
<i>Fringilla</i>	0.301	1900	Paris	59	118
<i>coelebs</i>					

<i>Fringilla coelebs</i>	0.0792	1990	Poznan	17	16
<i>Fringilla coelebs</i>	-0.1996	1967	Rovaniemi	45	28
<i>Galerida cristata</i>	0	.	Poznan	0	0
<i>Galerida cristata</i>	-0.3153	2010	Toledo	30	20
<i>Gallinula chloropus</i>	-0.4771	2010	Brønderslev	0	0
<i>Gallinula chloropus</i>	0	.	Oslo	1	0
<i>Gallinula chloropus</i>	0.2341	1950	Paris	11	18
<i>Garrulus glandarius</i>	0.301	2010	Budapest	4	1
<i>Garrulus glandarius</i>	0	2010	Olomouc	13	8
<i>Garrulus glandarius</i>	-0.243	2010	Paris	18	5
<i>Garrulus glandarius</i>	-0.426	2010	Poznan	6	0
<i>Hirundo rustica</i>	0	1950	Brønderslev	0	1
<i>Hirundo rustica</i>	-0.5229	2010	Budapest	2	2
<i>Hirundo rustica</i>	-0.6446	2010	Granada	59	13

<i>Hirundo</i>	0.2791	2010	Toledo	60	174
<i>rustica</i>					
<i>Larus</i>	0	2010	Brønderslev	0	0
<i>argentatus</i>					
<i>Larus</i>	0.6021	2010	Oslo	0	3
<i>argentatus</i>					
<i>Larus marinus</i>	0	2010	Brønderslev	0	0
<i>Larus marinus</i>	0	2010	Oslo	0	16
<i>Larus</i>	0.9379	.	Olomouc	1	14
<i>ridibundus</i>					
<i>Larus</i>	0.0994	1950	Oslo	43	34
<i>ridibundus</i>					
<i>Larus</i>	1.5563	.	Rovaniemi	0	21
<i>ridibundus</i>					
<i>Motacilla alba</i>	0	1950	Brønderslev	2	0
<i>Motacilla alba</i>	-0.0792	2010	Granada	6	4
<i>Motacilla alba</i>	-0.699	2010	Olomouc	8	0
<i>Motacilla alba</i>	0.3979	1970	Oslo	7	19
<i>Motacilla alba</i>	0	2010	Paris	0	0
<i>Motacilla alba</i>	-0.1761	2010	Poznan	2	0
<i>Motacilla alba</i>	0.5149	1850	Rovaniemi	6	21
<i>Motacilla</i>	0	2010	Olomouc	4	0
<i>cinerea</i>					
<i>Motacilla</i>	0.368	1990	Paris	2	6
<i>cinerea</i>					
<i>Muscicapa</i>	0	1950	Brønderslev	0	0
<i>striata</i>					
<i>Muscicapa</i>	0.301	.	Granada	4	4

<i>striata</i>					
<i>Muscicapa</i>	0.243	.	Olomouc	4	11
<i>striata</i>					
<i>Muscicapa</i>	0	2010	Paris	0	0
<i>striata</i>					
<i>Parus ater</i>	0	.	Budapest	1	3
<i>Parus ater</i>	-0.1091	2010	Granada	7	6
<i>Parus ater</i>	-0.301	2010	Oslo	1	0
<i>Parus ater</i>	0.301	1990	Paris	0	3
<i>Parus</i>	0.0414	1980	Brønderslev	9	14
<i>caeruleus</i>					
<i>Parus</i>	0.699	.	Budapest	4	17
<i>caeruleus</i>					
<i>Parus</i>	0.6021	.	Granada	5	5
<i>caeruleus</i>					
<i>Parus</i>	0.0896	.	Olomouc	29	51
<i>caeruleus</i>					
<i>Parus</i>	-0.0106	1980	Oslo	82	80
<i>caeruleus</i>					
<i>Parus</i>	-0.1001	1970	Paris	116	94
<i>caeruleus</i>					
<i>Parus</i>	0.0997	1973	Rovaniemi	18	23
<i>caeruleus</i>					
<i>Parus</i>	0.284	.	Toledo	22	34
<i>caeruleus</i>					
<i>Parus major</i>	0.2969	1950	Brønderslev	58	106
<i>Parus major</i>	0.1701	1920	Budapest	78	218
<i>Parus major</i>	0.0782	.	Olomouc	66	70

<i>Parus major</i>	0.0173	1950	Oslo	73	76
<i>Parus major</i>	0.128	1950	Paris	114	145
<i>Parus major</i>	0.2523	1990	Poznan	26	36
<i>Parus major</i>	0.3104	1850	Rovaniemi	27	56
<i>Parus major</i>	-0.1461	.	Toledo	58	36
<i>Parus palustris</i>	-0.8451	2000	Paris	9	0
<i>Passer</i>	0.9542	1880	Brønderslev	0	5
<i>domesticus</i>					
<i>Passer</i>	-0.2218	.	Budapest	32	46
<i>domesticus</i>					
<i>Passer</i>	0.3916	1850	Granada	325	839
<i>domesticus</i>					
<i>Passer</i>	-0.8239	.	Olomouc	23	41
<i>domesticus</i>					
<i>Passer</i>	1.9191	1880	Oslo	0	82
<i>domesticus</i>					
<i>Passer</i>	1.3082	1850	Paris	7	208
<i>domesticus</i>					
<i>Passer</i>	0.5027	1900	Poznan	46	122
<i>domesticus</i>					
<i>Passer</i>	1.349	1919	Rovaniemi	3	80
<i>domesticus</i>					
<i>Passer</i>	0.7002	.	Toledo	54	666
<i>domesticus</i>					
<i>Passer</i>	2.0212	1900	Brønderslev	0	86
<i>montanus</i>					
<i>Passer</i>	-0.6021	1901	Budapest	50	10
<i>montanus</i>					

<i>Passer</i>	-0.3358	2010	Olomouc	13	12
<i>montanus</i>					
<i>Passer</i>	1.5051	1950	Oslo	0	31
<i>montanus</i>					
<i>Passer</i>	-0.3181	.	Poznan	42	33
<i>montanus</i>					
<i>Passer</i>	1.2788	.	Rovaniemi	0	11
<i>montanus</i>					
<i>Passer</i>	0.6232	2010	Toledo	14	30
<i>montanus</i>					
<i>Phoenicurus</i>	-0.4771	1937	Budapest	30	9
<i>ochruros</i>					
<i>Phoenicurus</i>	0.2596	.	Olomouc	16	21
<i>ochruros</i>					
<i>Phoenicurus</i>	1.2553	1850	Paris	1	24
<i>ochruros</i>					
<i>Phoenicurus</i>	0	1990	Poznan	18	5
<i>ochruros</i>					
<i>Phoenicurus</i>	0.6021	2010	Toledo	0	4
<i>ochruros</i>					
<i>Phoenicurus</i>	0	1990	Brønderslev	0	2
<i>phoenicurus</i>					
<i>Phoenicurus</i>	0.8451	.	Olomouc	2	14
<i>phoenicurus</i>					
<i>Phoenicurus</i>	-0.722	1967	Rovaniemi	34	6
<i>phoenicurus</i>					
<i>Phylloscopus</i>	-0.2478	1990	Brønderslev	20	13
<i>collybita</i>					

<i>Phylloscopus collybita</i>	-0.699	2010	Budapest	2	4
<i>Phylloscopus collybita</i>	0.7782	2010	Granada	0	0
<i>Phylloscopus collybita</i>	0.2218	2010	Olomouc	67	66
<i>Phylloscopus collybita</i>	-0.4771	1990	Paris	79	26
<i>Phylloscopus collybita</i>	-0.301	2010	Toledo	18	8
<i>Pica pica</i>	0.1326	1950	Brønderslev	15	18
<i>Pica pica</i>	-0.4424	2010	Budapest	67	30
<i>Pica pica</i>	-0.8033	2010	Granada	100	20
<i>Pica pica</i>	0.2553	.	Olomouc	2	7
<i>Pica pica</i>	0.6651	1950	Oslo	7	36
<i>Pica pica</i>	0.6368	1950	Paris	34	149
<i>Pica pica</i>	0.1102	.	Poznan	37	72
<i>Pica pica</i>	0.4973	.	Rovaniemi	12	39
<i>Pica pica</i>	0.1204	.	Toledo	92	94
<i>Picus viridis</i>	0	2010	Budapest	1	0
<i>Picus viridis</i>	-0.3212	1980	Paris	69	25
<i>Picus viridis</i>	-0.2218	2010	Poznan	1	5
<i>Pyrrhula pyrrhula</i>	0	2010	Brønderslev	0	0
<i>Pyrrhula pyrrhula</i>	0	2010	Paris	0	0
<i>Regulus ignicapillus</i>	0	2010	Granada	0	0

<i>Regulus ignicapillus</i>	0	2010	Paris	0	0
<i>Regulus regulus</i>	-0.6021	2010	Oslo	3	0
<i>Regulus regulus</i>	0.1139	1980	Paris	13	20
<i>Serinus serinus</i>	0.1217	1959	Granada	210	225
<i>Serinus serinus</i>	0.3559	.	Olomouc	11	33
<i>Serinus serinus</i>	-0.301	2010	Paris	2	0
<i>Serinus serinus</i>	0.1296	.	Toledo	68	78
<i>Sitta europaea</i>	0	.	Budapest	0	2
<i>Sitta europaea</i>	-0.0348	2010	Olomouc	8	7
<i>Sitta europaea</i>	-0.7782	1980	Oslo	17	2
<i>Sitta europaea</i>	-0.4771	1950	Paris	5	3
<i>Streptopelia decaocto</i>	1.3979	1950	Brønderslev	1	59
<i>Streptopelia decaocto</i>	1.1399	.	Granada	11	120
<i>Streptopelia decaocto</i>	0.3287	.	Olomouc	17	56
<i>Streptopelia decaocto</i>	0.976	1950	Paris	10	204
<i>Streptopelia decaocto</i>	0.4175	.	Poznan	10	27
<i>Streptopelia decaocto</i>	0.9542	.	Toledo	4	46
<i>Sturnus unicolor</i>	0.1754	1989	Granada	254	333

<i>Sturnus unicolor</i>	-0.0161	.	Toledo	74	202
<i>Sturnus vulgaris</i>	1.2304	1900	Brønderslev	0	9
<i>Sturnus vulgaris</i>	-0.8373	1923	Budapest	23	16
<i>Sturnus vulgaris</i>	-0.7036	2010	Olomouc	67	18
<i>Sturnus vulgaris</i>	0	1900	Oslo	11	11
<i>Sturnus vulgaris</i>	0.2932	1850	Paris	51	90
<i>Sturnus vulgaris</i>	-0.7817	1900	Poznan	120	46
<i>Sylvia atricapilla</i>	0.1513	1990	Brønderslev	11	11
<i>Sylvia atricapilla</i>	-0.2109	2010	Budapest	20	28
<i>Sylvia atricapilla</i>	0.0322	.	Granada	11	17
<i>Sylvia atricapilla</i>	-0.0766	2010	Olomouc	97	95
<i>Sylvia atricapilla</i>	-0.1271	1950	Paris	124	99
<i>Sylvia atricapilla</i>	0.9031	.	Toledo	6	58
<i>Sylvia communis</i>	-0.7179	2010	Brønderslev	40	7

<i>Sylvia</i>	-0.3802	2010	Olomouc	8	4
<i>communis</i>					
<i>Sylvia curruca</i>	0.4771	1960	Brønderslev	3	6
<i>Sylvia curruca</i>	0	.	Budapest	1	10
<i>Sylvia curruca</i>	0.9031	.	Olomouc	3	9
<i>Sylvia</i>	-0.6672	2010	Granada	100	9
<i>melanocephala</i>					
<i>Sylvia</i>	-0.5563	2010	Toledo	20	6
<i>melanocephala</i>					
<i>Troglodytes</i>	0.0941	1930	Brønderslev	36	47
<i>troglodytes</i>					
<i>Troglodytes</i>	0	1930	Oslo	0	0
<i>troglodytes</i>					
<i>Troglodytes</i>	-0.1491	1950	Paris	188	143
<i>troglodytes</i>					
<i>Turdus iliacus</i>	-0.9031	2010	Olomouc	0	0
<i>Turdus iliacus</i>	-0.4821	1967	Rovaniemi	52	17
<i>Turdus merula</i>	0.4386	1900	Brønderslev	97	170
<i>Turdus merula</i>	0.649	1893	Budapest	24	212
<i>Turdus merula</i>	0.7016	1959	Granada	50	159
<i>Turdus merula</i>	0.7435	.	Olomouc	29	196
<i>Turdus merula</i>	0.1082	1900	Oslo	52	67
<i>Turdus merula</i>	0.0803	1880	Paris	243	279
<i>Turdus merula</i>	-0.2218	1904	Poznan	22	21
<i>Turdus merula</i>	0.8337	.	Toledo	6	76
<i>Turdus</i>	0.2648	.	Olomouc	21	31
<i>philomelos</i>					
<i>Turdus</i>	-0.3493	1950	Paris	57	25

philomelos

<i>Turdus</i>	-0.3802	1920	Poznan	8	4
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philomelos

<i>Turdus pilaris</i>	0	2010	Brønderslev	0	0
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<i>Turdus pilaris</i>	-0.9542	2010	Olomouc	38	12
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<i>Turdus pilaris</i>	0.1293	1980	Oslo	97	131
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<i>Turdus pilaris</i>	1.0414	.	Poznan	1	22
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<i>Turdus pilaris</i>	-0.15	.	Rovaniemi	53	37
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<i>Turdus</i>	-0.4771	2010	Brønderslev	4	0
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viscivorus

<i>Turdus</i>	0.2218	1990	Paris	3	4
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viscivorus

