

Appendix 3: Table containing all estimations for bird trends during the 1989 – 2023 period. All species are identified through their scientific names. As multiple species were not detected during the first few years of the monitoring program, we added a column “Period of study” that encompasses the first and last year of observation for each species. Estimates of mean year effect on abundance and their associated standard errors are provided in the columns “Estimate” and “Standard error”, respectively. These estimates were converted to mean annual growth rate, that can be found in the “Growth rate” column, together with its 95% confidence interval. The corresponding mean percentage of increase (or decrease) over the period of study is given in the “Percentage of increase/decrease” column, together with their 95% confidence interval. Finally, the p-value associated with the effect of year on abundance and the trend classification obtained for each species can be found in the columns “P-value” and “Trend category”, respectively. NE means no estimation was available due to convergence issue.

Scientific name	Period of study	Estimate	Standard error	Growth rate	Percentage	P-value	Trend
<i>Accipiter nisus</i>	1989 - 2023	0.0018	0.0041	1.002 [0.994;1.01]	+6.4% [-18.9%; +39.5%]	0.656	Stable
<i>Acrocephalus arundinaceus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Acrocephalus palustris</i>	1989 - 2023	-0.0189	0.0096	0.981 [0.963;1]	-47.4% [-72.2%; -0.4%]	0.049	Moderate decline
<i>Acrocephalus schoenobaenus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Acrocephalus scirpaceus</i>	1989 - 2023	-0.0124	0.0058	0.988 [0.976;0.999]	-34.3% [-55.5%; -3.1%]	0.034	Moderate decline
<i>Actitis hypoleucos</i>	1989 - 2023	-0.0191	0.0114	0.981 [0.959;1.003]	-47.8% [-75.6%; +11.9%]	0.095	Uncertain
<i>Aegithalos caudatus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Alauda arvensis</i>	1989 - 2023	-0.0149	0.0019	0.985 [0.982;0.989]	-39.8% [-46.9%; -31.7%]	<0.001	Moderate decline
<i>Alcedo atthis</i>	1990 - 2023	0.0164	0.0068	1.017 [1.003;1.03]	+74.9% [+10.8%; +175.9%]	0.016	Moderate increase
<i>Alectoris rufa</i>	1989 - 2023	-0.0203	0.0047	0.98 [0.971;0.989]	-49.9% [-63.5%; -31.3%]	<0.001	Moderate decline
<i>Anas platyrhynchos</i>	1989 - 2023	0.0049	0.0037	1.005 [0.998;1.012]	+18.2% [-7.9%; +51.8%]	0.188	Stable
<i>Anthus campestris</i>	1989 - 2023	-0.0107	0.0111	0.989 [0.968;1.011]	-30.5% [-66.8%; +45.4%]	0.334	Stable
<i>Anthus pratensis</i>	NE	NE	NE	NE	NE	NE	NE
<i>Anthus trivialis</i>	1989 - 2023	-0.023	0.0027	0.977 [0.972;0.983]	-54.2% [-61.9%; -45%]	<0.001	Moderate decline
<i>Apus apus</i>	1989 - 2023	-0.0458	0.0033	0.955 [0.949;0.961]	-78.9% [-83.1%; -73.7%]	<0.001	Moderate to strong decline
<i>Ardea cinerea</i>	1989 - 2023	0.0128	0.0038	1.013 [1.005;1.02]	+54.5% [+20%; +98.9%]	<0.001	Moderate increase
<i>Athene noctua</i>	NE	NE	NE	NE	NE	NE	NE
<i>Branta canadensis</i>	1989 - 2023	0.0838	0.0205	1.087 [1.045;1.132]	+1628.5% [+339.9%; +6691.6%]	<0.001	Strong increase
<i>Bubulcus ibis</i>	NE	NE	NE	NE	NE	NE	NE
<i>Burhinus oedicednus</i>	1989 - 2023	0.0037	0.0075	1.004 [0.989;1.019]	+13.5% [-31.3%; +87.5%]	0.621	Stable
<i>Buteo buteo</i>	1989 - 2023	0.0019	0.0016	1.002 [0.999;1.005]	+6.7% [-4.2%; +18.8%]	0.241	Stable
<i>Carduelis cannabina</i>	1989 - 2023	0.0082	0.0033	1.008 [1.002;1.015]	+32.4% [+6.3%; +64.7%]	0.012	Moderate increase
<i>Carduelis carduelis</i>	1989 - 2023	-0.0065	0.0021	0.993 [0.989;0.998]	-19.9% [-30.4%; -7.8%]	0.002	Moderate decline
<i>Carduelis chloris</i>	NE	NE	NE	NE	NE	NE	NE
<i>Certhia brachydactyla</i>	1989 - 2023	0.0122	0.0017	1.012 [1.009;1.016]	+51.5% [+34.9%; +70.2%]	<0.001	Moderate increase
<i>Certhia familiaris</i>	NE	NE	NE	NE	NE	NE	NE
<i>Cettia cetti</i>	1989 - 2023	0.0189	0.0056	1.019 [1.008;1.03]	+89.9% [+31%; +175.3%]	<0.001	Moderate increase
<i>Charadrius dubius</i>	NE	NE	NE	NE	NE	NE	NE
<i>Ciconia ciconia</i>	NE	NE	NE	NE	NE	NE	NE
<i>Cinclus cinclus</i>	1990 - 2023	-0.0071	0.0105	0.993 [0.973;1.014]	-21.4% [-61%; +58.4%]	0.500	Stable
<i>Circus aeruginosus</i>	1989 - 2023	-0.0099	0.0075	0.99 [0.976;1.005]	-28.5% [-56.6%; +17.9%]	0.189	Stable
<i>Circus cyaneus</i>	1989 - 2023	-0.0348	0.0053	0.966 [0.956;0.976]	-69.4% [-78.5%; -56.4%]	<0.001	Moderate decline

<i>Circus pygargus</i>	1989 - 2023	-0.0334	0.0071	0.967 [0.954;0.981]	-67.9% [-79.9%; -48.7%]	<0.001	Moderate decline
<i>Cisticola juncidis</i>	1989 - 2023	0.0407	0.0077	1.042 [1.026;1.057]	+299.6% [+139.7%; +566.1%]	<0.001	Moderate to strong increase
<i>Coccothraustes coccothraustes</i>	1989 - 2023	0.0128	0.0049	1.013 [1.003;1.023]	+54.3% [+11.3%; +113.9%]	0.009	Moderate increase
<i>Columba livia</i>	NE	NE	NE	NE	NE	NE	NE
<i>Columba oenas</i>	1989 - 2023	0.0547	0.0058	1.056 [1.044;1.068]	+542.2% [+336.5%; +844.9%]	<0.001	Strong increase
<i>Columba palumbus</i>	1989 - 2023	0.0385	0.0013	1.039 [1.037;1.042]	+269.7% [+239.6%; +302.5%]	<0.001	Strong increase
<i>Corvus corone</i>	1989 - 2023	-8,00E-04	0.0014	0.999 [0.997;1.002]	-2.7% [-11.1%; +6.5%]	0.554	Stable
<i>Corvus frugilegus</i>	1989 - 2023	-0.024	0.0082	0.976 [0.961;0.992]	-55.7% [-74.4%; -23.3%]	0.004	Moderate decline
<i>Corvus monedula</i>	1989 - 2023	0.0483	0.0059	1.049 [1.037;1.062]	+415.8% [+248%; +664.5%]	<0.001	Strong increase
<i>Corvus corax</i>	1989 - 2023	0.0285	0.0074	1.029 [1.014;1.044]	+163.8% [+61.2%; +331.6%]	<0.001	Moderate increase
<i>Coturnix coturnix</i>	NE	NE	NE	NE	NE	NE	NE
<i>Cuculus canorus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Cygnus olor</i>	NE	NE	NE	NE	NE	NE	NE
<i>Delichon urbicum</i>	1989 - 2023	-0.0195	0.0047	0.981 [0.972;0.99]	-48.5% [-62.3%; -29.6%]	<0.001	Moderate decline
<i>Dendrocopos major</i>	1989 - 2023	0.013	0.0014	1.013 [1.01;1.016]	+55.4% [+41.2%; +71%]	<0.001	Moderate increase
<i>Dendrocopos medius</i>	NE	NE	NE	NE	NE	NE	NE
<i>Dendrocopos minor</i>	1989 - 2023	-0.0023	0.0045	0.998 [0.989;1.007]	-7.6% [-31.6%; +24.9%]	0.607	Stable
<i>Dryocopus martius</i>	1989 - 2023	0.011	0.0031	1.011 [1.005;1.017]	+45.5% [+18.3%; +78.8%]	<0.001	Moderate increase
<i>Ardea alba</i>	2001 - 2023	0.0895	0.0176	1.094 [1.057;1.132]	+1996.2% [+549.2%; +6668.3%]	<0.001	Strong increase
<i>Egretta garzetta</i>	NE	NE	NE	NE	NE	NE	NE
<i>Emberiza cia</i>	NE	NE	NE	NE	NE	NE	NE
<i>Emberiza cirius</i>	NE	NE	NE	NE	NE	NE	NE
<i>Emberiza citrinella</i>	1989 - 2023	-0.0564	0.0022	0.945 [0.941;0.949]	-85.3% [-87.3%; -82.9%]	<0.001	Strong decline
<i>Emberiza hortulana</i>	1989 - 2023	-0.0706	0.0166	0.932 [0.902;0.963]	-90.9% [-97%; -72.5%]	<0.001	Moderate to strong decline
<i>Emberiza schoeniclus</i>	1989 - 2023	-0.0421	0.0085	0.959 [0.943;0.975]	-76.1% [-86.4%; -57.9%]	<0.001	Moderate to strong decline
<i>Erithacus rubecula</i>	1989 - 2023	0.0106	0.0013	1.011 [1.008;1.013]	+43.2% [+31.2%; +56.3%]	<0.001	Moderate increase
<i>Falco subbuteo</i>	NE	NE	NE	NE	NE	NE	NE
<i>Falco tinnunculus</i>	1989 - 2023	0.0033	0.0021	1.003 [0.999;1.007]	+12% [-2.4%; +28.6%]	0.106	Stable
<i>Ficedula hypoleuca</i>	NE	NE	NE	NE	NE	NE	NE
<i>Fringilla coelebs</i>	1989 - 2023	-8,00E-04	9,00E-04	0.999 [0.998;1.001]	-2.8% [-8.1%; +2.9%]	0.330	Stable
<i>Fulica atra</i>	1989 - 2023	-0.0049	0.0067	0.995 [0.982;1.008]	-15.4% [-46%; +32.6%]	0.467	Stable
<i>Gallinula chloropus</i>	1989 - 2023	-0.0143	0.0037	0.986 [0.979;0.993]	-38.4% [-51.8%; -21.3%]	<0.001	Moderate decline
<i>Galerida cristata</i>	NE	NE	NE	NE	NE	NE	NE
<i>Garrulus glandarius</i>	1989 - 2023	0.0024	0.0014	1.002 [1;1.005]	+8.5% [-1.5%; +19.4%]	0.098	Stable

<i>Hippolais icterina</i>	1989 - 2023	-0.0615	0.0182	0.94 [0.907;0.974]	-87.6% [-96.3%; -58.5%]	<0.001	Moderate to strong decline
<i>Hippolais polyglotta</i>	1989 - 2023	0.002	0.0022	1.002 [0.998;1.006]	+7% [-7.6%; +23.9%]	0.365	Stable
<i>Hirundo rustica</i>	1989 - 2023	-0.0234	0.002	0.977 [0.973;0.981]	-54.8% [-60.4%; -48.4%]	<0.001	Moderate decline
<i>Jynx torquilla</i>	1989 - 2023	0.007	0.0051	1.007 [0.997;1.017]	+26.7% [-9.8%; +77.9%]	0.172	Stable
<i>Lanius collurio</i>	1989 - 2023	0.0104	0.003	1.01 [1.004;1.016]	+42.2% [+16.3%; +73.9%]	<0.001	Moderate increase
<i>Lanius senator</i>	1989 - 2023	-0.0156	0.0107	0.984 [0.964;1.005]	-41.2% [-71.2%; +19.8%]	0.143	Stable
<i>Larus argentatus</i>	1989 - 2023	0.0081	0.0148	1.008 [0.979;1.038]	+31.7% [-50.8%; +252.6%]	0.583	Uncertain
<i>Larus fuscus</i>	1989 - 2023	0.0177	0.0229	1.018 [0.973;1.065]	+82.3% [-60.4%; +738.4%]	0.441	Uncertain
<i>Larus michahellis</i>	2001 - 2023	0.0377	0.0152	1.038 [1.008;1.07]	+260.7% [+31%; +892.8%]	0.013	Moderate to strong increase
<i>Chroicocephalus ridibundus</i>	1989 - 2023	9,00E-04	0.0146	1.001 [0.973;1.03]	+3.1% [-61%; +172.3%]	0.951	Stable
<i>Locustella naevia</i>	NE	NE	NE	NE	NE	NE	NE
<i>Lullula arborea</i>	1989 - 2023	0.0203	0.003	1.02 [1.014;1.027]	+99.3% [+62.7%; +144.2%]	<0.001	Moderate increase
<i>Luscinia megarhynchos</i>	1989 - 2023	-0.0011	0.0015	0.999 [0.996;1.002]	-3.7% [-13.1%; +6.8%]	0.474	Stable
<i>Luscinia svecica</i>	1989 - 2023	0.0168	0.0128	1.017 [0.992;1.043]	+77.2% [-24.6%; +316.8%]	0.190	Uncertain
<i>Merops apiaster</i>	1989 - 2023	0.0212	0.0175	1.021 [0.987;1.057]	+105.9% [-35.7%; +558.9%]	0.224	Uncertain
<i>Emberiza calandra</i>	1989 - 2023	0.0017	0.0034	1.002 [0.995;1.008]	+5.8% [-15.8%; +33%]	0.627	Stable
<i>Milvus migrans</i>	NE	NE	NE	NE	NE	NE	NE
<i>Milvus milvus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Motacilla alba</i>	1989 - 2023	7,00E-04	0.0021	1.001 [0.997;1.005]	+2.4% [-11%; +17.7%]	0.744	Stable
<i>Motacilla cinerea</i>	1989 - 2023	0.0094	0.0055	1.009 [0.999;1.02]	+37.8% [-4.4%; +98.7%]	0.086	Stable
<i>Motacilla flava</i>	1989 - 2023	-0.0018	0.0042	0.998 [0.99;1.006]	-6% [-29.1%; +24.5%]	0.666	Stable
<i>Muscicapa striata</i>	NE	NE	NE	NE	NE	NE	NE
<i>Numenius arquata</i>	1990 - 2023	-0.0496	0.0161	0.952 [0.922;0.982]	-81.5% [-93.7%; -45.8%]	0.002	Moderate to strong decline
<i>Oenanthe oenanthe</i>	1989 - 2023	-0.0104	0.0121	0.99 [0.967;1.013]	-29.8% [-68.6%; +56.7%]	0.387	Stable
<i>Oriolus oriolus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Periparus ater</i>	NE	NE	NE	NE	NE	NE	NE
<i>Cyanistes caeruleus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Lophophanes cristatus</i>	1989 - 2023	-0.0096	0.004	0.99 [0.983;0.998]	-27.9% [-44.6%; -6.2%]	0.015	Moderate decline
<i>Parus major</i>	NE	NE	NE	NE	NE	NE	NE
<i>Parus montanus</i>	1989 - 2023	-0.0531	0.0071	0.948 [0.935;0.962]	-83.6% [-89.8%; -73.6%]	<0.001	Moderate to strong decline
<i>Poecile palustris</i>	1989 - 2023	-0.0126	0.0031	0.988 [0.981;0.994]	-34.7% [-47%; -19.6%]	<0.001	Moderate decline
<i>Passer domesticus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Passer montanus</i>	1989 - 2023	-0.0905	0.0075	0.913 [0.9;0.927]	-95.4% [-97.2%; -92.4%]	<0.001	Strong decline
<i>Pernis apivorus</i>	1989 - 2023	0.0168	0.0123	1.017 [0.993;1.042]	+77.2% [-21.9%; +302.1%]	0.171	Uncertain

<i>Perdix perdix</i>	1989 - 2023	-0.0317	0.0059	0.969 [0.958;0.98]	-66% [-77.1%; -49.5%]	<0.001	Moderate decline
<i>Petronia petronia</i>	1989 - 2023	0.0301	0.0175	1.031 [0.996;1.066]	+178.5% [-13%; +791.7%]	0.085	Uncertain
<i>Phalacrocorax carbo</i>	1989 - 2023	0.0659	0.0122	1.068 [1.043;1.094]	+839% [+317.3%; +2013%]	<0.001	Strong increase
<i>Phasianus colchicus</i>	1989 - 2023	0.018	0.0028	1.018 [1.013;1.024]	+84.6% [+53.1%; +122.6%]	<0.001	Moderate increase
<i>Phoenicurus ochruros</i>	NE	NE	NE	NE	NE	NE	NE
<i>Phoenicurus phoenicurus</i>	1989 - 2023	0.0268	0.003	1.027 [1.021;1.033]	+148.5% [+103.4%; +203.5%]	<0.001	Moderate increase
<i>Phylloscopus bonelli</i>	1989 - 2023	0.0213	0.0044	1.021 [1.013;1.03]	+106% [+53.7%; +176.1%]	<0.001	Moderate increase
<i>Phylloscopus collybita</i>	NE	NE	NE	NE	NE	NE	NE
<i>Phylloscopus sibilatrix</i>	1989 - 2023	-0.0166	0.0048	0.984 [0.974;0.993]	-43.2% [-58.7%; -21.8%]	<0.001	Moderate decline
<i>Phylloscopus trochilus</i>	1989 - 2023	-0.0433	0.0047	0.958 [0.949;0.966]	-77.1% [-83.2%; -68.7%]	<0.001	Moderate to strong decline
<i>Picus canus</i>	1989 - 2023	-0.0217	0.0103	0.978 [0.959;0.998]	-52.3% [-76%; -5.2%]	0.035	Moderate decline
<i>Pica pica</i>	NE	NE	NE	NE	NE	NE	NE
<i>Picus viridis</i>	1989 - 2023	-0.0036	0.0016	0.996 [0.993;1]	-11.4% [-20.2%; -1.7%]	0.023	Moderate decline
<i>Podiceps cristatus</i>	1990 - 2023	-0.0354	0.0117	0.965 [0.943;0.988]	-70% [-86.2%; -34.6%]	0.002	Moderate decline
<i>Prunella modularis</i>	1989 - 2023	-0.0217	0.0021	0.979 [0.975;0.983]	-52.1% [-58.3%; -45%]	<0.001	Moderate decline
<i>Psittacula krameri</i>	2001 - 2023	0.2053	0.0186	1.228 [1.184;1.274]	+107578.9% [+31039.8%; +372244%]	<0.001	Strong increase
<i>Ptyonoprogne rupestris</i>	1990 - 2023	0.008	0.017	1.008 [0.975;1.042]	+31.3% [-57.8%; +308.2%]	0.638	Uncertain
<i>Pyrrhula pyrrhula</i>	1989 - 2023	-0.0315	0.004	0.969 [0.961;0.977]	-65.7% [-73.7%; -55.4%]	<0.001	Moderate decline
<i>Regulus ignicapilla</i>	1989 - 2023	0.0321	0.003	1.033 [1.027;1.039]	+197.4% [+143.4%; +263.5%]	<0.001	Moderate to strong increase
<i>Regulus regulus</i>	1989 - 2023	-0.0329	0.0035	0.968 [0.961;0.974]	-67.4% [-74.1%; -58.8%]	<0.001	Moderate decline
<i>Riparia riparia</i>	1989 - 2023	-0.0079	0.0161	0.992 [0.961;1.024]	-23.4% [-73.8%; +123.3%]	0.625	Stable
<i>Saxicola rubetra</i>	1989 - 2023	-0.0599	0.0099	0.942 [0.924;0.96]	-87% [-93.3%; -74.8%]	<0.001	Strong decline
<i>Saxicola rubicola</i>	1989 - 2023	-0.0015	0.0023	0.998 [0.994;1.003]	-5.1% [-18.8%; +11%]	0.514	Stable
<i>Serinus serinus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Sitta europaea</i>	NE	NE	NE	NE	NE	NE	NE
<i>Sterna hirundo</i>	NE	NE	NE	NE	NE	NE	NE
<i>Strix aluco</i>	1989 - 2023	-0.0308	0.0069	0.97 [0.957;0.983]	-64.9% [-77.9%; -44.5%]	<0.001	Moderate decline
<i>Streptopelia decaocto</i>	1989 - 2023	0.0054	0.0016	1.005 [1.002;1.009]	+20.2% [+7.9%; +33.9%]	<0.001	Moderate increase
<i>Streptopelia turtur</i>	1989 - 2023	-0.0364	0.0021	0.964 [0.96;0.968]	-71% [-74.8%; -66.7%]	<0.001	Moderate decline
<i>Sturnus vulgaris</i>	1989 - 2023	0.0221	0.0024	1.022 [1.017;1.027]	+111.8% [+80.3%; +148.9%]	<0.001	Moderate increase
<i>Sylvia atricapilla</i>	NE	NE	NE	NE	NE	NE	NE
<i>Sylvia borin</i>	1989 - 2023	-0.0246	0.0027	0.976 [0.97;0.981]	-56.7% [-63.9%; -48.1%]	<0.001	Moderate decline
<i>Sylvia cantillans</i>	NE	NE	NE	NE	NE	NE	NE

<i>Sylvia communis</i>	1989 - 2023	-0.003	0.0019	0.997 [0.993;1.001]	-9.7% [-20.3%; +2.2%]	0.107	Stable
<i>Sylvia curruca</i>	1989 - 2023	-9,00E-04	0.0053	0.999 [0.989;1.01]	-3% [-31.7%; +38%]	0.867	Stable
<i>Sylvia hortensis</i>	1989 - 2023	0.0213	0.0125	1.021 [0.997;1.047]	+106.1% [-10.3%; +373.2%]	0.088	Uncertain
<i>Sylvia melanocephala</i>	1989 - 2023	0.0065	0.0068	1.007 [0.993;1.02]	+24.9% [-20.6%; +96.3%]	0.336	Stable
<i>Sylvia undata</i>	NE	NE	NE	NE	NE	NE	NE
<i>Tachybaptus ruficollis</i>	1989 - 2023	-0.0194	0.0107	0.981 [0.96;1.001]	-48.3% [-74.6%; +5.2%]	0.069	Uncertain
<i>Tadorna tadorna</i>	1989 - 2023	0.046	0.0167	1.047 [1.013;1.082]	+378.1% [+57.6%; +1350.1%]	0.06	Moderate to strong increase
<i>Troglodytes troglodytes</i>	NE	NE	NE	NE	NE	NE	NE
<i>Turdus merula</i>	1989 - 2023	-6,00E-04	9,00E-04	0.999 [0.998;1.001]	-2% [-7.8%; +4.2%]	0.517	Stable
<i>Turdus philomelos</i>	1989 - 2023	-1,00E-04	0.0014	1 [0.997;1.003]	-0.3% [-9.2%; +9.5%]	0.950	Stable
<i>Turdus pilaris</i>	1995 - 2023	-0.0169	0.0112	0.983 [0.962;1.005]	-43.7% [-73.3%; +18.7%]	0.131	Stable
<i>Turdus torquatus</i>	NE	NE	NE	NE	NE	NE	NE
<i>Turdus viscivorus</i>	1989 - 2023	0.0036	0.0025	1.004 [0.999;1.009]	+13% [-4.3%; +33.4%]	0.151	Stable
<i>Upupa epops</i>	1989 - 2023	0.0018	0.0033	1.002 [0.995;1.008]	+6.3% [-14.5%; +32.3%]	0.582	Stable
<i>Vanellus vanellus</i>	1989 - 2023	-0.0509	0.0089	0.95 [0.934;0.967]	-82.3% [-90.2%; -67.9%]	<0.001	Moderate to strong decline