

Supplementary material

Appendix 1

Table A1. Number of males and females in each habitat according to the different methodologies used in the study.

Sampling	Urban		Non Urban	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
Google images	81	31	55	19
Captures	75	54	71	51
Transect	58	42	77	23

Table A2. Minimum model terms, rejected terms and random terms of the binomial GLMM age model (excluding transect data) explaining the presence/absence of leucism. Sample size: 437 individuals. P-values marked in bold indicate significance ($P < 0.05$). Likelihood Ratio Tests (LRT in table) were calculated for the random effect.

	Estimate	SE	X²	dF	p
Intercept	-4.245	0.676			
Age (Old)	0.811	0.360	5.06	1	0.024
Habitat (Urban)	0.575	0.303	3.60	1	0.058
Sex (Male)	2.156	0.554	4.60	1	0.032
Method (Citizen science)	1.883	0.709	0.06	1	0.809
Method (Captures): Sex (Male)	-2.431	0.739	10.83	1	0.001
Rejected terms					
Age (Old): Method (Citizen science)	0.084	0.768	0.01	1	0.913
Habitat (Urban): Age (Old)	0.359	0.718	0.25	1	0.617
Habitat (Urban): Method (Citizen science)	0.440	0.623	0.50	1	0.480
Random term					
Locality		LTR:	4.21		0.040

Table A3. Differences in percentage of leucism between urban and non-urban habitats for different species based on previously published data. P-values marked in bold indicate significance ($P < 0.05$).

Species	Pearson's chi-square test	Sample size	Source
Common blackbird (<i>Turdus merula</i>)	$\chi^2 = 4.88$; df = 1; p = 0.03	287	Rollin 1953
Common blackbird (<i>Turdus merula</i>)	$\chi^2 = 2.78$; df = 1; p = 0.10	497	Holyoak 1974
House sparrow (<i>Passer domesticus</i>)	$\chi^2 = 9.68$; df = 1; p = 0.002	2616	Holyoak 1974
Woodpigeon (<i>Columba palumbus</i>)	$\chi^2 = 1.35$; df = 1; p = 0.25	1012	Holyoak 1974
Common starling (<i>Sturnus vulgaris</i>)	$\chi^2 = 5.37$; df = 1; p = 0.02	1531	Holyoak 1974

Table A4. Minimum model terms, rejected terms and random terms of the binomial GLMM general model with only European data (including transect, capture and citizen science data) explaining the presence/absence of leucism. Sample size: 610 individuals. P-values marked in bold indicate significance ($P < 0.05$). Likelihood Ratio Tests (LRT in table) were calculated for the random effect.

	Estimate	SE	X ²	Df	p
Intercept	-4.083	0.600			
Habitat (Urban)	1.150	0.299	14.790	1	1.202e-04
Method (Citizen science)	1.726	0.687	10.842	2	0.004
Method (Transect)	-0.332	0.910			
Sex (Male)	2.166	0.554	5.963	1	0.015
Method (Captures): Sex (Male)	2.177	0.551	10.974	2	0.004
Rejected terms					
Method (Citizen science): Habitat (Urban)	0.880	0.715	1.515	2	0.469
Method (Transect): Habitat (Urban)	16.921	1725.907			
Random term					
Locality		LTR:	3.69		0.055

Table A5. Minimum model terms, rejected terms and random terms of the binomial GLMM age model with only European data (excluding transect data) explaining the presence/absence of leucism. Sample size: 410 individuals. P-values marked in bold indicate significance ($P < 0.05$). Likelihood Ratio Tests (LRT in table) were calculated for the random effect.

	Estimate	SE	X ²	dF	p
Intercept	-4.486	0.691			
Age (Old)	0.701	0.368	3.763	1	0.057
Habitat (Urban)	0.754	0.321	5.511	1	0.019
Sex (Male)	2.169	0.555	3.763	1	0.052
Method (Citizen science)	2.016	0.723	0.053	1	0.817
Method (Captures): Sex (Male)	-2.667	0.758	12.396	1	4.302e-04
Rejected terms					
Age (Old): Method (Citizen science)	-0.230	0.814	0.080	1	0.778
Habitat (Urban): Age (Old)	0.489	0.739	0.439	1	0.508
Habitat (Urban): Method (Citizen science)	1.022	0.715	2.041	1	0.153
Random term					
Locality		LTR:	4.59		0.03