

Supplementary material

Appendix 1.

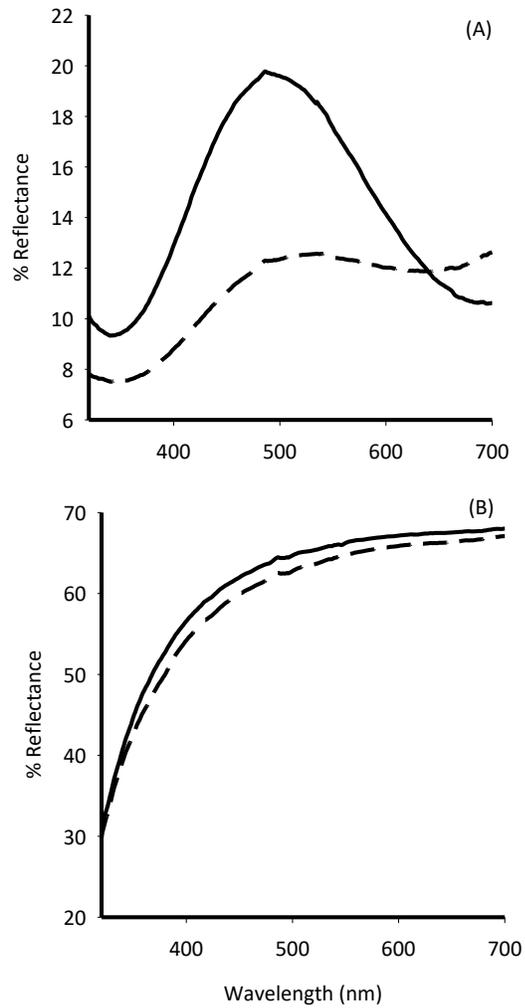


Figure A1. Example reflectance spectra of (A) dorsal and (B) breast plumage in after-second year (ASY) female (solid line) and second-year (SY) female (dashed line) tree swallows. Spectra were produced by averaging reflectance spectra from 10 SY and 10 ASY female tree swallows.

Table A1. Principal components factor loading table for the dorsal plumage color of SY and ASY female tree swallows.

Color Variable	PC1	PC2
Blue brightness	0.762	0.427
Green chroma	0.278	0.939
Blue chroma	0.968	0.053
UV chroma	-0.106	-0.971
Hue	-0.925	-0.198
Eigen value	2.462	2.048
% variance explained	49.24	40.96

Table A2. Principal components factor loading table for the response of ASY female tree swallows to a territorial intrusion.

Behavior	PC1	PC2
Number of hovers	0.160	0.513
Number of fights with caged female	0.982	0.064
Time on cage	0.967	0.081
Time on nest box	0.162	0.771
Time within 2 m of caged female	-0.224	0.758
Eigen value	2.00	1.44
% variance explained	40.0	28.9

Table A3. ANOVA results for comparison of ASY and SY females captured in 2011 and 2012.

Term	β	F	df	P
Color PC1		372.47	3, 879	< 0.001
Year (2011)	0.510	68.21	1, 879	< 0.001
Age class (ASY)	1.691	1088.54	1, 879	< 0.001
Year x Age class (2011 & ASY)	-0.232	5.888	1, 879	0.015
Color PC2		69.96	3, 879	< 0.001
Year (2011)	-0.171	7.466	1, 879	0.006
Age class (ASY)	0.891	186.24	1, 879	< 0.001
Year x Age class (2011 & ASY)	-0.013	0.009	1, 879	0.923
White brightness		63.36	3, 878	< 0.001
Year (2011)	0.090	157.53	1, 878	< 0.001
Age class (ASY)	0.019	13.16	1, 878	< 0.001
Year x Age class (2011 & ASY)	0.018	1.377	1, 878	0.241

Table A4. The mean and standard error plumage PCA scores for ASY females initially captured in 2011 and recaptured in 2012.

Color Variable	2011	2012	t	df	P
Color PC1	0.674 ± 0.062	0.427 ± 0.058	4.560	97	<0.001
Color PC2	0.219 ± 0.120	0.664 ± 0.111	4.269	97	<0.001
White brightness	0.743 ± 0.012	0.636 ± 0.010	7.330	95	<0.001