

1 Table 2. Significant results of statistical analyses showing features that differ between age classes.

Feature	Resid. Dev	df	p	n	Association and % accuracy (n)	Consistent with known age birds? (n)
Wing						
Shape of primary tips	174.73	3, 139	<0.0001	143	Round: 76% first year (45) Pointed: 51% first year (57) Square: 68% adult (31) Intermediate: 89% adult (9)	In 60% first years (10) In 27% adults (30)
Shape of primary coverts	194.67	1, 143	0.039	144	Pointed: 61% first year (84) Rounded: 57% adult (60)	In 70% first years (10) In 40% adults (30)
Width of primary coverts	194.15	1, 142	0.029	144	Narrow: 59% first year (98) Wide: 60% adult (47)	In 70% first years (10) In 33% adults (30)
Shape of secondary tips	150.97	2, 116	0.001	119	Flat: 64% adult (58) Notched: 69% first year (58) Mixed: 100% first year (1)	In 67% adults (27) In 88% first years (8)
Wear and bleaching on tertial feathers	155.45	1, 126	<0.0001	128	Worn and bleached: 72% first year (75) Fresh: 68% adult (53)	In 80% first years (10) In 63% adults (24)
Markings on tertial feathers	125.06	1, 126	<0.0001	128	Diffuse: 71% adult (72) Distinct: 89% first year (56)	In 84% adults (25) In 90% first years (10)
Tail						
Shape of central tail feather tips	127.69	1, 131	<0.0001	135	Rounded: 84% adult (49) Pointed: 78% first year (80) Intermediate: 100% first year (5)	In 63% adults (24) In 100% first years (9)

Width of central tail feathers	177.06	1, 135	0.002	138	Narrow: 71% first year (62) Wide: 57% adult (75)	In 89% first years (9) In 67% adults (24)
Central tail feather wear and bleaching	137.94	1, 130	<0.0001	133	Worn and bleached: 88% first year (57) Fresh: 67% adult (75)	In 100% first years (10) In 78% adults (18)
Angle/shape of outer tail feathers	149.54	1, 133	<0.0001	135	Sharp: 83% first year (60) Shallow: 67% adult (75)	In 67% first years (9) In 83% adults (24)
Sixth tail feather white to shaft	159.00	2, 123	0.001	126	Yes both sides: 100% first year (5) Yes: 60% first year (86) No: 69% adult (35)	In 100% first years (1) In 71% first years (7) In 29% adults (24)
Coverts and body feathers						
Extent of black on longest upper-tail covert	144.44	4, 110	0.011	115	No black: 87% first year (23) < 1/3 black: 53% adult (53) 1/3 – 2/3 black: 53% adult (15) All black: 54% first year (24)	In 44% first years (9)
Other under tail covert shaft colour	162.23	1, 122	0.006	125	Black: 51% adult (102) Chestnut: 82% first year (22)	In 88% adults (25) In 44% first years (9)

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Statistics presented are the residual deviance (Resid. Dev.), degrees of freedom (df), p value (p) and sample size (n). For significant features the association and % accuracy across the entire dataset is given, along with sample size (n) and whether or not the feature is significant across the reduced dataset of known age birds. Features with accuracy higher than 80% are shown in bold.

1 Table 3. Results of statistical analyses to determine which features differ between sexes.

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Feature	Resid. Dev	df	p	n	Association and % accuracy (n)	Consistent with misidentified birds?
Head						
% of visible yellow on crown	92.322	1, 113	<0.0001	115	>20%: 84% male (76) <10%: 89% female (37)	In 80% males (5) In 25% females (4)
Malar stripe colour	124.99	3, 133	<0.0001	140	Chestnut: 93% male (30) Black: 59% male (34) Brown: 77% female (52) Yellow: 95% male (21)	In 20% males (5) In 60% males (5) In 100% females (5)
Distinct bright yellow above and behind eye	92.87	1, 135	<0.0001	137	Yes: 92% male (77) No: 85% female (59)	In 80% males In 80% females
Wing						
Markings on tertial feathers	158.68	1, 120	0.027	122	Distinct: 72% male (53) Diffuse: 52% male (69)	In 60% males
Tail						
Sixth tf white to shaft	145.10	2, 115	0.0004	118	Yes both sides: 100% male (4) Yes: 66% male (80) No: 68% female (34)	No misidentified birds In 60% males (5) In 25% females (4)
Fifth tf white to shaft	152.35	1, 114	0.017	116	Yes: 100% male (5) No: 56% male (111)	no misidentified birds
Size of white patch on	153.06	3, 166	0.019	120	Very small: 80% female (5)	No misidentified birds

fifth tail feather					Small: 51% female (41) Medium: 64% male (70) Same as sixth tf: 100% male (4)	In 50% females (4) In 80% males (5) No misidentified birds
Coverts and body feathers						
Rump feather shaft	135.92	1, 124	<0.0001	126	Black: 78% female (45) Blended: 76% male (81)	In 100% females (5) In 100% males (5)
Extent of black on longest upper-tail covert	88.02	4, 104	<0.0001	109	No black: 95% male (21) Short black: 77% male (52) Half black: 86% female (14) All black: 95% female (21)	In 25% males (4) In 50% males (4) No misidentified birds In 33% females (3)
Longest under tail covert shaft colour	136.89	1, 116	<0.0001	118	Black: 68% female (50) Black and chestnut: 76% male (68)	In 40% females (5) In 100% males (5)
Other under tail covert shaft colour	141.08	2, 115	<0.0001	118	Black: 52% female (95) Chestnut: 95% male (21)	In 100% females (5) In 25% males (4)

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2 Statistics presented are the residual deviance (Resid. Dev.), degrees of freedom (df), p value (p) and sample size (n). For significant features the
3 association and % accuracy are shown, along with sample size in each category (n) and level of consistency among misidentified birds. Features
4 with accuracy 80% or higher are in bold.

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