

APPENDIX

TABLE S1

Regression for 2013 and 2015 data measurements of comparable (i.e. $R^2 > 0.700$) characteristics ^a

Characteristic	Equation	F	df	df2	P	R ²
Burrow depth (cm)	$Y = 0.810 * X + 7.041$	38.162	1	14	0.002	0.732
Entrance width (cm)	$Y = 0.720 * X + 1.931$	74.455	1	17	<0.001	0.814
Area of bare ground (cm ²)	$Y = 0.81 * X + 11.216$	278.640	1	17	<0.001	0.942
Distance to next burrow (m)	$Y = 0.539 * X + 0.419$	55.204	1	16	<0.001	0.775

^a X represents 2015-2016 variable measures, Y represents the corrected value used for final analysis

TABLE S2

Linear mixed model results for raven morphometrics (and standardised PCA factor scores) with Mean $\pm$ SE (*n*) of fixed effects, against sex (female, male) and culprit status (DC, OB) with season as a random effect ^{a, b}

Characteristic	Female	Male	DC (1)	OB (0)	Sex	Culprit
Structural body size	-0.461 $\pm$ 0.277 (49)	0.745 $\pm$ 0.278 (51)	0.368 $\pm$ 0.332 (11)	-0.084 $\pm$ 0.256 (89)	$F_{1,96.2} = 62.627, P < 0.001$	$F_{1,96.7} = 3.090, P = 0.082$
Flight surfaces	-0.687 $\pm$ 0.555 (49)	0.293 $\pm$ 0.555 (51)	-0.128 $\pm$ 0.588 (11)	-0.266 $\pm$ 0.543 (89)	$F_{1,96.1} = 36.338, P < 0.001$	$F_{1,96.6} = 0.253, P = 0.616$
Mass (g)	484.013 $\pm$ 9.052 (49)	547.633 $\pm$ 9.060 (55)	527.303 $\pm$ 11.906 (11)	504.343 $\pm$ 7.784 (93)	$F_{1,100.3} = 101.281, P < 0.001$	$F_{1,96.3} = 4.521, P = 0.036$
Bill A (mm)	52.511 $\pm$ 0.358 (49)	56.325 $\pm$ 0.359 (55)	54.945 $\pm$ 0.577 (11)	53.890 $\pm$ 0.199 (93)	$F_{1,101.0} = 102.575, P < 0.001$	$F_{1,101.0} = 2.980, P = 0.087$
Bill B (mm)	37.493 $\pm$ 0.313 (49)	40.466 $\pm$ 0.315 (55)	39.549 $\pm$ 0.506 (11)	38.410 $\pm$ 0.174 (93)	$F_{1,101.0} = 81.168, P < 0.001$	$F_{1,101.0} = 4.521, P = 0.036$
Bill C (mm)	16.516 $\pm$ 0.421 (49)	17.733 $\pm$ 0.421 (55)	17.479 $\pm$ 0.472 (11)	16.770 $\pm$ 0.402 (93)	$F_{1,100.1} = 48.653, P < 0.001$	$F_{1,101.0} = 5.547, P = 0.020$
Bill D (mm)	17.287 $\pm$ 0.154 (49)	18.372 $\pm$ 0.154 (55)	17.872 $\pm$ 0.233 (11)	17.787 $\pm$ 0.108 (93)	$F_{1,100.6} = 56.529, P < 0.001$	$F_{1,64.5} = 0.125, P < 0.725$
Head plus bill (mm)	96.083 $\pm$ 0.452 (49)	100.587 $\pm$ 0.454 (55)	98.817 $\pm$ 0.730 (11)	97.854 $\pm$ 0.251 (93)	$F_{1,101.0} = 89.626, P < 0.001$	$F_{1,101.0} = 1.554, P = 0.215$
Tarsus length (mm)	59.209 $\pm$ 0.456 (49)	61.969 $\pm$ 0.457 (55)	60.900 $\pm$ 0.671 (11)	60.278 $\pm$ 0.339 (93)	$F_{1,100.5} = 46.424, P < 0.001$	$F_{1,74.8} = 0.838, P = 0.363$
Wing length (mm)	328.130 $\pm$ 4.529 (49)	340.343 $\pm$ 4.535 (52)	334.936 $\pm$ 4.991 (11)	333.537 $\pm$ 4.361 (90)	$F_{1,97.1} = 49.701, P < 0.001$	$F_{1,97.9} = 0.225, P = 0.636$
Tail length (mm)	202.778 $\pm$ 3.304 (49)	213.492 $\pm$ 3.308 (53)	209.705 $\pm$ 3.755 (11)	206.564 $\pm$ 3.135 (91)	$F_{1,98.1} = 53.304, P < 0.001$	$F_{1,99.0} = 1.568, P = 0.213$

^a Significant results indicated by emboldened text

^b “Structural body size” represents the principal component constituting all bill measurements, head plus bill, and tarsus. “Flight surfaces” represents a principal component with positive loadings > 0.5 against wing and tail length.

TABLE S3

Details of the principal components analysis of Little Raven morphometric traits, including factor loadings for the rotated solution ^a

Variable	PC 1 “Structural body size”	PC 2 “Flight surfaces”
Mass (g)	0.706	0.524
Bill A (mm)	0.818	0.392
Bill B (mm)	0.802	0.378
Bill C (mm)	0.798	-0.025
Bill D (mm)	0.749	0.278
Head plus bill (mm)	0.844	0.367
Tarsus length (mm)	0.805	0.268
Wing length (mm)	0.212	0.897
Tail length (mm)	0.238	0.848

^a Values > 0.5 are emboldened.