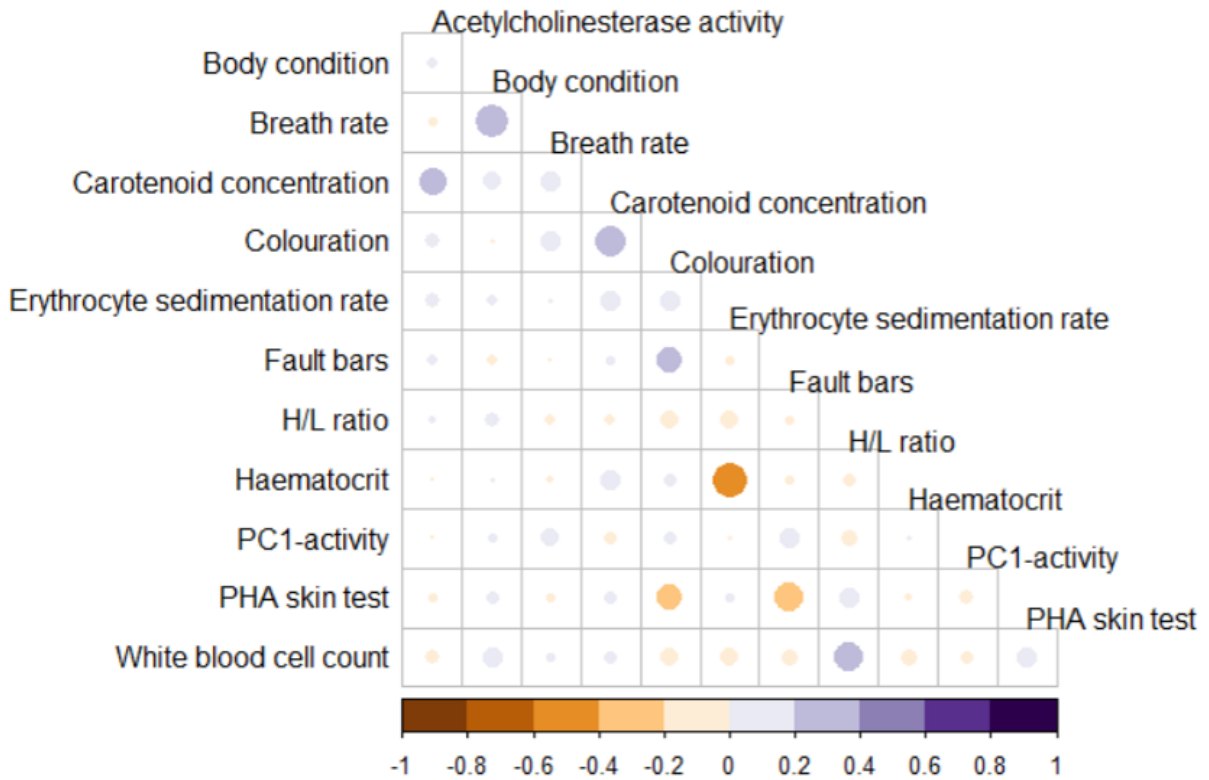


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## Supplementary material

2 **Fig. S1.** Spearman's rank correlation coefficients for all life history traits of Montagu's harrier  
3 chicks analysed in this study (380 chicks, 137 nests, all years included). Dot colour represents  
4 the direction of the correlation (purple = positive, orange-brown = negative) and dot size is  
5 proportional to effect size (larger dots = larger effects).



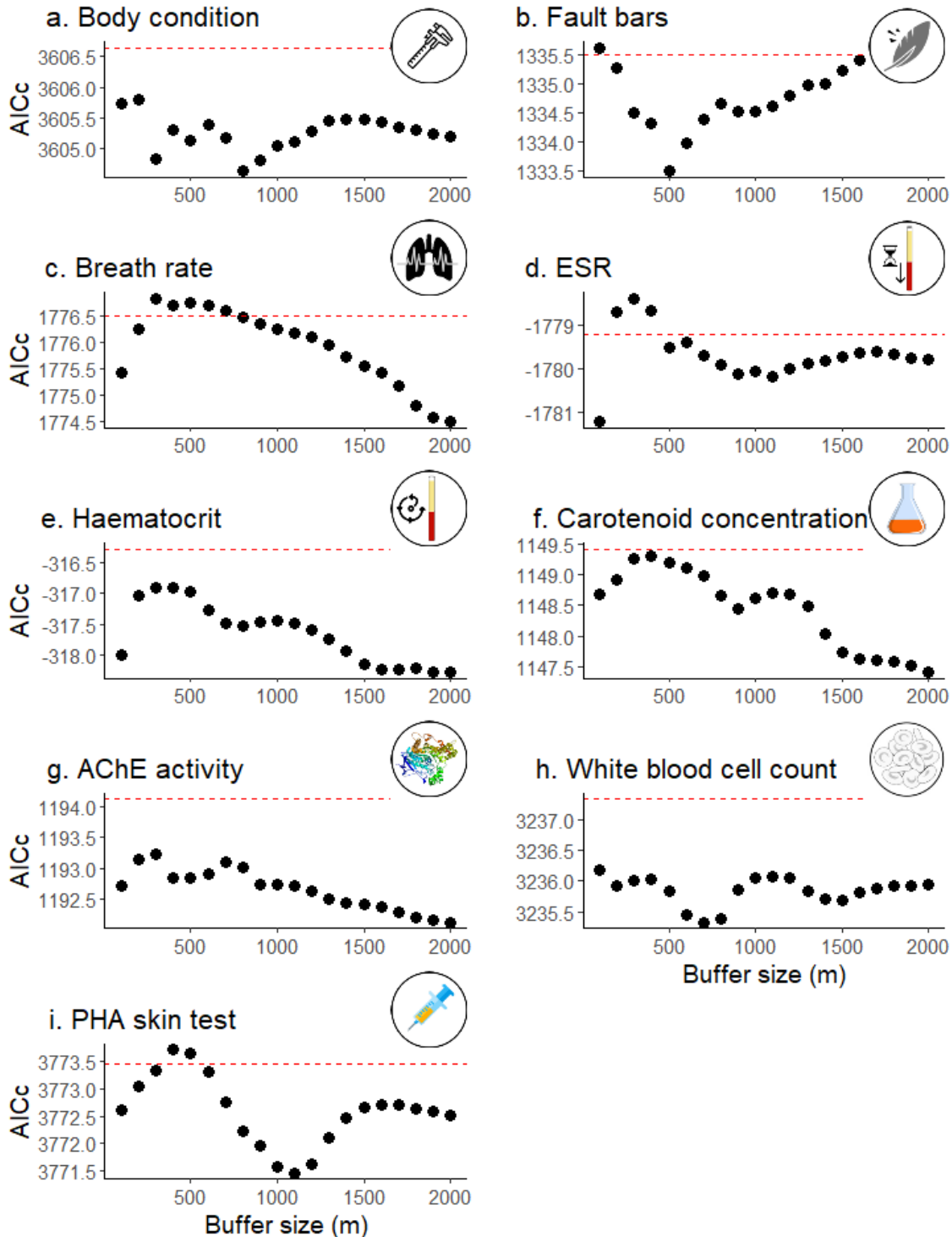
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10 **Fig. S2.** Model selection using AICc to assess the responses of life history traits (LHTs) of  
 11 Montagu's harrier, *Circus pygargus*, chicks to the effect of the percentage of organic farming  
 12 (OF) around the nest at different buffer sizes (from 100 m to 2000 m radius). Measured LHTs  
 13 are (a) body condition, (b) fault bar, (c) breath rate, (d) erythrocyte sedimentation rate (ESR),  
 14 (e) haematocrit, (f) carotenoid concentration, (g) acetylcholinesterase activity, (h) white blood  
 15 cell count and (i) PHA skin test. AICc = Akaike Information Criterion corrected for small sample  
 16 sizes. Red dotted lines correspond to the lowest AICc of candidate models + 2. Black dots  
 17 indicate a non-significant OF effect (i.e., the 95% confidence interval of model estimate  
 18 crosses 0).



1 **Table S1.** Summary statistics for 12 life history traits (LHTs) measured for 380 Montagu's harrier chicks from 137 nests monitored between 2016  
2 and 2021. Descriptive statistics given are N = sample size (number of chicks), mean, SD = standard deviation, and min-max = minimum and  
3 maximum values. Units of measure next to the corresponding LHT are g = grams, mm/h = millimetres per hour, % = percentage, µg/mL =  
4 micrograms per millilitre, mU/min = milliunits per minute, and mm = millimetres.

Measured life history traits (units)	2016		2017		2018		2019		2020		2021	
	N	Mean ± SD (min-max)	N	Mean ± SD (min-max)	N	Mean ± SD (min-max)	N	Mean ± SD (min-max)	N	Mean ± SD (min-max)	N	Mean ± SD (min-max)
<b>Morphometrics</b>												
Body condition (g)	40	<b>316.0 ± 25.1</b> (253.9 - 372.4)	31	<b>313.2 ± 29.8</b> (248.7 - 399.3)	81	<b>312.0 ± 30.3</b> (244.6 - 395.1)	84	<b>309.0 ± 32.2</b> (224.1 - 430.0)	85	<b>330.5 ± 30.0</b> (272.7 - 403.0)	57	<b>336.3 ± 34.8</b> (274.8 - 447.5)
Fault bars	37	<b>3.6 ± 1.8</b> (1 - 8)	25	<b>3.1 ± 1.3</b> (1 - 6)	81	<b>4.5 ± 2.0</b> (1 - 10)	69	<b>2.8 ± 1.6</b> (0 - 8)	84	<b>2.1 ± 1.6</b> (0 - 8)	53	<b>3.0 ± 1.6</b> (0 - 8)
Cere colouration	40	<b>1.6 ± 1.3</b> (0 - 5)	32	<b>1.6 ± 0.8</b> (0 - 3)	81	<b>2.2 ± 0.9</b> (0 - 4)	84	<b>0.9 ± 0.9</b> (0 - 4)	85	<b>1.1 ± 1.0</b> (0 - 3)	58	<b>1.8 ± 1.0</b> (0 - 4)
<b>Physiology</b>												
Breath rate score	0	NA	32	<b>15.05 ± 3.21</b> (8.00 - 21.67)	81	<b>15.89 ± 3.53</b> (9.67 - 27.00)	84	<b>14.80 ± 3.60</b> (8.67 - 32.67)	84	<b>16.07 ± 3.36</b> (9.00 - 24.33)	58	<b>15.88 ± 2.89</b> (9.00 - 21.67)
Erythrocyte sedimentation rate (mm/h)	35	<b>0.04 ± 0.02</b> (0.01 - 0.10)	30	<b>0.07 ± 0.02</b> (0.04 - 0.12)	79	<b>0.08 ± 0.02</b> (0.03 - 0.13)	77	<b>0.06 ± 0.02</b> (0.02 - 0.13)	84	<b>0.07 ± 0.02</b> (0.02 - 0.15)	57	<b>0.07 ± 0.02</b> (0.03 - 0.12)
Haematocrit (%)	26	<b>36.86 ± 5.49</b> (30.36 - 58.97)	31	<b>38.63 ± 6.45</b> (23.29 - 49.69)	79	<b>37.10 ± 5.40</b> (27.26 - 50.25)	77	<b>37.74 ± 5.73</b> (23.61 - 62.98)	83	<b>38.10 ± 4.46</b> (25.21 - 50.42)	52	<b>40.41 ± 7.22</b> (31.96 - 62.84)
Carotenoid concentration (µg/mL)	37	<b>18.36 ± 15.28</b> (0.68 - 60.20)	27	<b>20.60 ± 15.50</b> (2.02 - 57.61)	70	<b>25.17 ± 15.91</b> (1.82 - 118.20)	52	<b>16.91 ± 9.06</b> (0.28 - 37.13)	66	<b>25.81 ± 23.16</b> (2.91 - 113.70)	55	<b>45.91 ± 21.76</b> (14.66 - 102.82)

Acetylcholinesterase activity (mU/min)	0	NA	0	NA	74	<b>14.09 ± 1.66</b>	69	<b>12.66 ± 2.16</b>	79	<b>14.34 ± 2.20</b>	49	<b>16.16 ± 2.99</b>
						(10.55 - 18.12)		(5.02 - 17.26)		(7.34 - 20.21)		(9.58 - 22.76)
White blood cell count	22	<b>96.86 ± 52.77</b>	30	<b>68.83 ± 34.67</b>	62	<b>71.92 ± 31.04</b>	81	<b>101.12 ± 30.94</b>	80	<b>94.61 ± 46.39</b>	51	<b>86.69 ± 36.38</b>
		(10 - 211)		(25 - 174)		(23 - 188)		(29 - 163)		(32 - 398)		(22 - 188)
H/L ratio	21	<b>2.26 ± 1.77</b>	30	<b>1.25 ± 1.10</b>	61	<b>0.73 ± 0.82</b>	81	<b>1.12 ± 0.77</b>	80	<b>0.98 ± 0.73</b>	51	<b>0.93 ± 0.44</b>
		(0.50 - 8.50)		(0.36 - 5.94)		(0.16 - 6.17)		(0.25 - 5.78)		(0.19 - 5.68)		(0.25 - 2.19)
PHA skin test (mm)	39	<b>81.1 ± 63.7</b>	30	<b>109.8 ± 52.9</b>	81	<b>99.2 ± 41.6</b>	76	<b>153.6 ± 50.6</b>	74	<b>157.2 ± 54.6</b>	57	<b>132.4 ± 52.8</b>
		(-6.0 - 227.0)		(10.0 - 264.7)		(0 - 239.0)		(52.0 - 279.3)		(21.7 - 288.3)		(28.7 - 276.7)
<b>Behaviour</b>												
PC1_activity	0	NA	32	<b>0.19 ± 1.21</b>	81	<b>0.22 ± 1.55</b>	81	<b>-0.06 ± 1.63</b>	84	<b>-0.33 ± 0.96</b>	58	<b>0.15 ± 1.38</b>
				(-1.50 - 4.22)		(-1.50 - 7.54)		(-1.50 - 9.92)		(-1.50 - 2.68)		(-1.50 - 5.29)

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7 **Table S2.** Effects of organic farming (OF) percentage around nests and year on four life history traits of Montagu's harrier, *Circus pygargus*,  
8 nestlings. Tests were performed using Linear Mixed-effects Models (LMMs) for H/L ratio (log-transformed) and PC1-activity, and Generalised  
9 LMMs fitted with a Poisson distribution (PGLMMs) for colouration score (see text for details). Significant effects are in bold. Sample sizes are  
10 indicated below each life history trait.

Response variables ( <i>sample size</i> )	Fixed factors	Chi-squared test		
Colouration score ( <i>380 chicks, 137 nests</i> )	OF	$\chi^2 = 4.030$	df = 1	<b><math>p &lt; 0.05</math></b>
	Year	$\chi^2 = 44.812$	df = 5	<b><math>p &lt; 0.001</math></b>
H/L ratio (log-transformed) ( <i>324 chicks, 128 nests</i> )	OF	$\chi^2 = 11.159$	df = 1	<b><math>p &lt; 0.001</math></b>
	Year	$\chi^2 = 67.991$	df = 5	<b><math>p &lt; 0.001</math></b>
PC1-activity ( <i>336 chicks, 122 nests</i> )	OF	$\chi^2 = 4.963$	df = 1	<b><math>p &lt; 0.05</math></b>
	Year	$\chi^2 = 4.644$	df = 4	$p = 0.326$