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Supplementary material

Supplementary material Appendix 1.

Response variable: Total hours of night incubation.				
Multiple linear regression.				
N = 18 hens (excluded seven hens with no morphometric data, two that abandoned during night incubation, and one that incubated for zero nights (no night incubation start date)).				
Full model; $F_{3,16}$ = 2.54; R^2 = 0.32; *p* = 0.09				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night incubation start date	-0.18 ± 0.25	-0.72	2.17	0.48
Body condition	-0.46 ± 0.5	-0.93	3.42	0.37
Night incubation start date * Body condition	0.008 ± 0.006	1.42	2.03	0.17
Reduced model; $F_{1,19}$ = 4.99; R^2 = 0.21; *p* = 0.037				
N = 19 hens (included hen that did not incubate at night because this model excludes night incubation start date as a predictor).				
Term	*Estimate ± SE*	*t*	*F*	*P*
Body condition	0.26 ± 0.12	2.23	4.99	0.037

Table A1: Full and reduced multiple linear regression exploring the relationship between the night incubation start date, hen body condition, and their interaction and the total number of hours of night incubation. The response variable was the total number of hours a hen incubated during the night incubation phase. Data from 10 hens were excluded from this analysis for either not having morphometric data available (7), abandoning their nest during night incubation (2), or never displaying night incubation behavior (1; no night incubation start date, replaced in reduced model). The model was reduced using backwards stepwise elimination of insignificant terms ($p >$

0.1). Terms are referred to as ‘significant’ if $p < 0.05$, and terms with $0.05 < p < 0.1$ are referred to as ‘trends’. Body condition was positively correlated with the total hours of incubation during the night incubation phase.

Response variable: Total nights of night incubation.				
Multiple linear regression.				
N = 18 hens (excluded seven hens with no morphometric data, two that abandoned during night incubation, and one that incubated for zero nights (no night incubation start date)).				
Full model; $F_{3,16} = 3.08$; $R^2 = 0.37$; $p = 0.058$				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night incubation start date	-0.006 ± 0.012	-0.31	0.03	0.76
Body condition	-0.027 ± 0.037	-0.73	7.36	0.47
Night incubation start date * Body condition	0.0006 ± 0.0004	1.36	1.83	0.19
Reduced model; $F_{1,19} = 6.84$; $R^2 = 0.26$; $p = 0.017$				
N = 19 hens (included hen that did not incubate at night because this model excludes night incubation start date as a predictor).				
Term	*Estimate ± SE*	*t*	*F*	*P*
Body condition	0.023 ± 0.009	2.62	6.84	0.017

Table A2: Full and reduced multiple linear regression exploring the relationship between the night incubation start date, hen body condition, and their interaction and the total number of nights of night incubation. The response variable was the total number of nights a hen incubated during the night incubation phase. Data from 10 hens were excluded from this analysis for either not having morphometric data available (7), abandoning their nest during night incubation (2), or never displaying night incubation behavior (1; no night incubation start date, replaced in reduced model). The model was reduced using backwards stepwise elimination of insignificant terms ($p >$ 0.1). Terms are referred to as 'significant' if $p < 0.05$, and terms with $0.05 < p < 0.1$ are referred to as 'trends'. Body condition was positively correlated with the total number of nights of incubation during the night incubation phase.

Response variable: Average length of night on-bouts.				
Multiple linear regression.				
N = 18 hens (excluded seven hens with no morphometric data, two that abandoned during night incubation, and one that incubated for zero nights (no night incubation start date)).				
Full model; $F_{3,16}$ = 1.96; R^2 = 0.27; p = 0.16				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night incubation start date	-0.048 ± 0.022	-2.17	3.26	0.046
Body condition	0.014 ± 0.045	0.32	2.15	0.75
Night incubation start date * Body condition	-0.0004 ± 0.0005	-0.69	0.48	0.49
Reduced model				
No significant terms.				

Table A3: Full and reduced multiple linear regression exploring the relationship between the night incubation start date, hen body condition, and their interaction and the average length of night on-bouts. The response variable was the average length of night on-bouts. Data from 10 hens were excluded from this analysis for either not having morphometric data available (7), abandoning their nest during night incubation (2), or never displaying night incubation behavior (1; no night incubation start date, replaced in reduced model). The model was reduced using backwards stepwise elimination of insignificant terms ($p > 0.1$). Terms are referred to as 'significant' if $p < 0.05$, and terms with $0.05 < p < 0.1$ are referred to as 'trends'. None of the predictor variables were predictive of the average length of night on-bouts.

Response variable: Length of each on-bout (hours). *Generalized linear mixed effect model with nest ID as a random effect, gamma error distribution, and log link function.* *N = 109 individual night on-bouts across 30 hens.*				
Full model; R^2 = 0.55; variance ± SD of random effect (Nest ID) = 0.019 ± 0.14; variance ± SD of residual = 0.018 ± 0.14				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night sequence number	0.0052 ± 0.14	-0.033		0.97
Average ambient temperature during the on-bout	-0.13 ± 0.057	-2.23		0.026
Night sequence number * average ambient temperature during the on-bout	0.22 ± 0.14	1.58		0.11
Reduced model; R^2 = 0.52; variance ± SD of random effect (Nest ID) = 0.02 ± 0.14; variance ± of residual = 0.02 ± 0.14				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night sequence number	0.21 ± 0.081	2.55	6.40	0.011

Table A4: Full and reduced generalized linear mixed regression exploring the relationship between the night sequence number, the average ambient temperature during a night on-bout, and their interaction and the length of the on-bout. Nest ID was incorporated as a random effect because most hens incubated for multiple nights before beginning full incubation, and the model was fitted with a gamma error distribution and inverse link function. The response variable was the length of the on-bout. One of the 32 wood duck hens in this study displayed no night incubation behavior before the onset of full incubation, so had no night on-bouts to include in this model. The model was reduced using backwards stepwise elimination of insignificant terms ($p > 0.1$). Terms are referred to as ‘significant’ if $p < 0.05$, and terms with $0.05 < p < 0.1$ are referred to as ‘trends’. The length of on-bouts varied positively with the night sequence number.

Response variable: Average incubation temperature during night on-bouts. *Multiple linear regression.* *N = 18 hens (excluded seven hens with no morphometric data, two that abandoned during night incubation, and one that incubated for zero nights (no night incubation start date)).*				
Full model; $F_{3,16}$ = 0.33; R^2 = 0.06; p = 0.80				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night incubation start date	0.003 ± 0.030	0.09	0.07	0.93
Body condition	0.038 ± 0.062	0.62	0.31	0.55
Night incubation start date * Body condition	-0.0005 ± 0.0007	-0.78	0.60	0.45
Reduced model				
No significant terms.				

Table A5: Full and reduced multiple linear regression exploring the relationship between the night incubation start date, hen body condition, and their interaction and the average incubation temperature during night on-bouts. The response variable was the average incubation temperature during night on-bouts. Data from 10 hens were excluded from this analysis for either not having morphometric data available (7), abandoning their nest during night incubation (2), or never displaying night incubation behavior (1; no night incubation start date, replaced in reduced model). The model was reduced using backwards stepwise elimination of insignificant terms ($p > 0.1$). Terms are referred to as 'significant' if $p < 0.05$, and terms with $0.05 < p < 0.1$ are referred to as 'trends'. None of the predictor variables were predictive of the average incubation temperature during night on-bouts.

Response variable: Average incubation temperature of each night on-bout. *Linear mixed effect model with nest ID as a random effect.* *N = 109 individual night on-bouts across 30 hens.*				
Full model; R^2 = 0.85; variance ± SD of random effect (Nest ID) = 7.63 ± 2.76; variance ± SD of residual = 1.89 ± 1.38				
Term	*Estimate ± SE*	*t*	*F*	*P*
Night sequence number	0.59 ± 0.17	3.49	12.19	0.001
Average ambient temperature during the on-bout	0.41 ± 0.06	6.77	45.87	<0.0001
Night sequence number * average ambient temperature during the on-bout	-0.026 ± 0.014	-1.79	3.23	0.076
Reduced model				
		Not reduced.		

Table A6: Full linear mixed regression exploring the relationship between the night sequence number, the average ambient temperature during a night on-bout, and their interaction and the average incubation temperature during the same on-bout. Nest ID was incorporated as a random effect because most hens incubated for multiple nights before beginning full incubation. The response variable was the average incubation temperature during the on-bout. One of the 32 wood duck hens in this study displayed no night incubation behavior before the onset of full incubation, so had no night on-bouts to include in this model. This model was not reduced because all terms were significant. The average incubation temperature varied positively with both the night sequence number and the average ambient temperature during the on-bout. The significant interaction term indicated that the average incubation temperature of the on-bout was most sensitive to ambient temperature early in the night incubation phase and was most sensitive to night sequence number at lower ambient temperatures.