

Supporting Materials

Variability in the breeding season of Black Swans
Cygnus atratus in southeast Queensland, Australia

Table S1. Univariate test results between all variables used in the analyses of variation in breeding season extent and the number of breeding attempts per territorial pair. * = $P < 0.05$; ** = $P \leq 0.01$.

Predictor variable	Coefficient	R	$F_{1,13}$	P
Breeding season extent				
Number of territorial pairs	0.09	0.28	6.37	0.02*
Total number of breeding attempts	0.13	0.55	17.86	< 0.01**
Breeding attempts per territorial pair	2.52	0.014	1.09	0.32
SOI – annual	0.14	0.08	2.21	0.16
SOI – summer months	< -0.01	-0.07	0.01	0.96
SOI – non-summer months	0.16	0.17	3.96	0.07
Rain – annual	< 0.01	0.02	1.31	0.27
Rain – summer months	< 0.01	0.01	1.16	0.30
Rain – non-summer months	< -0.01	-0.07	0.10	0.76
Solar – annual	0.21	-0.07	0.05	0.84
Solar – summer months	0.28	-0.06	0.19	0.67
Solar – non-summer months	0.04	-0.08	< 0.01	0.97
Breeding attempts per territorial pair				
Number of territorial pairs	-0.01	0.03	1.37	0.26
Total number of breeding attempts	0.01	0.17	3.84	0.07
Number of breeding months	0.031	0.01	1.09	0.32
SOI – annual	0.03	0.38	9.65	0.01**
SOI – summer months	0.02	0.29	6.72	0.02*
SOI – non-summer months	0.02	0.23	5.28	0.03*
Rain – annual	< 0.01	0.14	3.23	0.10
Rain – summer months	< 0.01	-0.01	10.22	0.01**
Rain – non-summer months	< 0.01	0.27	6.07	0.03*
Solar – annual	-0.24	0.31	7.34	0.02*
Solar – summer months	-0.16	0.34	8.05	0.01**
Solar – non-summer months	-0.21	0.22	4.96	0.04*

Table S2. Initial GLM of the relationship between predictor variables and the extent of the Black Swan breeding season in southeast Queensland, Australia, from 2008–2022 inclusive.

Predictor variable	Coefficient	R	$t_{1,13}$	P
Intercept	28.71		0.87	0.43
Number of territorial pairs	0.12	0.38	0.92	0.40
Total number of breeding attempts	0.24	0.63	1.79	0.13
Breeding attempts per territorial pair	−2.88	−0.21	−0.48	0.64
SOI – summer months	−0.12	−0.61	−1.75	0.14
SOI – non-summer months	0.20	0.58	1.61	0.17
Rain – summer months	−0.01	−0.13	−0.30	0.78
Rain – non-summer months	−0.01	−0.22	−0.51	0.63
Solar – summer months	−0.22	−0.11	−0.26	0.80
Solar – non-summer months	2.51	0.61	1.71	0.15

Table S3. Initial GLM of the relationship between predictor variables and the number of breeding attempts per territorial pair in southeast Queensland, Australia, from 2008–2022 inclusive. * = $P < 0.05$; ** = $P \leq 0.01$.

Predictor variable	Coefficient	R	$t_{1,13}$	P
Intercept	−0.94		0.37	0.73
Number of territorial pairs	−0.02	−0.84	−3.56	0.01**
Total number of breeding attempts	0.02	0.80	3.03	0.03*
Breeding season extent	−0.01	−0.21	−0.48	0.65
SOI – summer months	−0.01	−0.01	−0.01	0.10
SOI – non-summer months	0.01	0.42	1.02	0.35
Rain – summer months	< 0.01	−0.04	−0.09	0.93
Rain – non-summer months	< −0.01	−0.01	−0.01	0.98
Solar – summer months	−0.01	−0.01	−0.02	0.99
Solar – non-summer months	0.11	0.38	0.92	0.40