

Appendix 1

Table A1.1. Results from linear mixed-effects model for each habitat (crop and pasture) separately with clutch size as the dependent variable, species and year as main effects, 2-way interactions, and with individual nest ID nested within location as a random effect (cs~species*year+jegg).

		df	F	P
Crop	Species	1, 130	27.403	< 0.0001
	Year	3, 53	1.7	< 0.0001
	Lay Date	1, 53	8.827	0.0045
	Species:Year	3, 53	1.696	0.1790
Pasture	Species	1, 181	21.232	< 0.0001
	Year	3, 94	2.040	0.1135
	Lay Date	1, 94	6.755	0.0109
	Species:Year	3, 94	7.224	0.0002

Table A1.2. Results from linear mixed-effects model for each species (Barn Swallow and Tree Swallow) separately with clutch size as the dependent variable, with year and habitat (crop and pasture) as main effects, 2-way interactions, and with individual nest ID nested within location as a random effect (cs~hab*year+jegg).

		df	F	P
Barn Swallow	Habitat	1, 93	4.616	0.0343
	Year	3, 76	1.14	0.3384
	Lay Date	1, 76	11.903	0.0009
	Habitat:Year	3, 76	0.696	0.5576
Tree Swallow	Habitat	1, 68	2.617	0.1104
	Year	3, 71	4.304	0.0076
	Lay Date	1, 71	4.143	0.0455
	Habitat:Year	3, 71	3.998	0.0109

Table A1.3. Results from linear mixed-effects model with brood size as the dependent variable, with species, habitat and year (2014-2016) as the main effects, all 2-way and 3-way interactions and with individual nest ID nested within location as a random effect (bs~species*year*hab).

	df	F	P
Habitat	1, 14	0.0713	0.8972
Species	1, 148	0.8567	0.3562
Year	2, 29	5.4186	0.0100
Habitat:Species	1, 148	0.0607	0.8057
Habitat:Year	2, 29	0.3652	0.6972
Species:Year	2, 29	5.5317	0.0092
Habitat:Species:Year	2, 29	0.8888	0.4220

Table A1.4. Annual variation in average temperature (°C) across 4 years (2013-2016) calculated using ANOVA for the 2 week and 4 week pre-laying period for each species separately (Barn Swallow and Tree Swallow) and the chick rearing period for both species. Significant results are shown by bolded text.

	Breeding period	Year	Estimate \pm sd	df	F	P-value
Barn Swallows	2 Week Pre-laying Period	2013	11.8 \pm 2.7	3	3.1791	0.03087
		2014	12.0 \pm 1.9	3	3.1791	0.03087
		2015	10.7 \pm 1.7	3	3.1791	0.03087
		2016	13.1 \pm 2.0	3	3.1791	0.03087
	4 Week Pre-laying Period	2013	10.3 \pm 2.7	3	5.3329	0.001799
		2014	11.0 \pm 1.8	3	5.3329	0.001799
		2015	10.0 \pm 1.7	3	5.3329	0.001799
		2016	12.0 \pm 2.0	3	5.3329	0.001799
Tree Swallows	2 Week Pre-laying Period	2013	11.4 \pm 2.6	3	1.6623	0.1855
		2014	11.7 \pm 2.2	3	1.6623	0.1855
		2015	10.8 \pm 1.8	3	1.6623	0.1855
		2016	12.5 \pm 1.8	3	1.6623	0.1855
	4 Week Pre-laying Period	2013	10.1 \pm 2.6	3	5.8357	0.0009667
		2014	11.0 \pm 1.8	3	5.8357	0.0009667
		2015	9.8 \pm 1.8	3	5.8357	0.0009667
		2016	11.73 \pm 1.7	3	5.8357	0.0009667
Both	Chick Rearing Period (June)	2013	16.3 \pm 2.0	3	6.74	0.000313
		2014	15.7 \pm 1.4	3	6.74	0.000313
		2015	17.8 \pm 2.2	3	6.74	0.000313
		2016	16.1 \pm 2.1	3	6.74	0.000313

Table A1.5. Annual variation in average wind speed (kilometre/hour) across 4 years (2013-2016) calculated using ANOVA for the 2 week and 4 week pre-laying period for each species separately (Barn Swallow and Tree Swallow) and the chick rearing period for both species. Significant results are shown by bolded text.

	Breeding period	Year	Estimate \pm sd	df	F	P-value
Barn Swallows	2 Week Pre-laying Period	2013	15.6 \pm 9.0	3	0.4119	0.7451
		2014	14.1 \pm 3.0	3	0.4119	0.7451
		2015	14.2 \pm 4.0	3	0.4119	0.7451
		2016	13.4 \pm 4.1	3	0.4119	0.7451
	4 Week Pre-laying Period	2013	15.4 \pm 7.4	3	0.3819	0.7663
		2014	15.0 \pm 3.8	3	0.3819	0.7663
		2015	14.5 \pm 4.6	3	0.3819	0.7663
		2016	14.0 \pm 3.3	3	0.3819	0.7663
Tree Swallows	2 Week Pre-laying Period	2013	15.4 \pm 9.1	3	0.2618	0.8526
		2014	13.9 \pm 3.2	3	0.2618	0.8526
		2015	14.5 \pm 4.3	3	0.2618	0.8526
		2016	13.8 \pm 3.7	3	0.2618	0.8526
	4 Week Pre-laying Period	2013	15.4 \pm 7.4	3	0.2906	0.8321
		2014	14.8 \pm 4.1	3	0.2906	0.8321
		2015	14.4 \pm 4.6	3	0.2906	0.8321
		2016	14.3 \pm 3.1	3	0.2906	0.8321
Both	Chick Rearing Period (June)	2013	12.6 \pm 3.6	3	2.7259	0.04735
		2014	13.6 \pm 3.5	3	2.7259	0.04735
		2015	15.3 \pm 4.4	3	2.7259	0.04735
		2016	13.9 \pm 3.0	3	2.7259	0.04735

Table A1.6. Annual variation in average rainfall (millimeters) across 4 years (2013-2016) calculated using ANOVA for the 2 week and 4 week pre-laying period for each species separately (Barn Swallow and Tree Swallow) and the chick rearing period for both species. Significant results are shown by bolded text.

	Breeding period	Year	Estimate \pm sd	df	F	P-value
Barn Swallows	2 Week Pre-laying Period	2013	0.2 \pm 0.7	3	2.5399	0.066
		2014	3.6 \pm 6.0	3	2.5399	0.066
		2015	2.6 \pm 4.6	3	2.5399	0.066
		2016	0.7 \pm 1.7	3	2.5399	0.066
	4 Week Pre-laying Period	2013	2.7 \pm 6.3	3	1.887	0.1359
		2014	3.7 \pm 6.0	3	1.887	0.1359
		2015	1.8 \pm 3.6	3	1.887	0.1359
		2016	0.8 \pm 1.8	3	1.887	0.1359
Tree Swallows	2 Week Pre-laying Period	2013	0.2 \pm 0.7	3	2.6605	0.05687
		2014	3.6 \pm 6.0	3	2.6605	0.05687
		2015	2.9 \pm 4.6	3	2.6605	0.05687
		2016	0.7 \pm 1.7	3	2.6605	0.05687
	4 Week Pre-laying Period	2013	2.8 \pm 6.3	3	1.8734	0.1382
		2014	3.7 \pm 6.0	3	1.8734	0.1382
		2015	1.8 \pm 3.6	3	1.8734	0.1382
		2016	0.8 \pm 1.8	3	1.8734	0.1382
Both	Chick Rearing Period (June)	2013	1.5 \pm 3.6	3	1.4471	0.2327
		2014	1.2 \pm 2.7	3	1.4471	0.2327
		2015	0.4 \pm 1.4	3	1.4471	0.2327
		2016	1.9 \pm 3.8	3	1.4471	0.2327

Table A1.7. Results from linear mixed-effects model with average lay date as the dependent variable, with 2 week and 4 week pre-laying temperatures and species as the main effects, and site as a random effect.

		df	F	P
2 week Pre-laying	2 week Pre-Laying Temperature	1, 60	4.6704	0.0347
	Species	1, 60	0.2909	0.5916
	2 week Pre-Laying Temperature: Species	1, 60	0.0039	0.9507
4 Week Pre-laying	4 week Pre-Laying Temperature	1, 60	14.1136	0.0004
	Species	1, 60	4.0835	0.0478
	4 week Pre-Laying Temperature: Species	1, 60	2.0178	0.1606

Table A1.8. Variation in taxonomic distribution of major prey Orders from sampling nets by habitat for only the chick-rearing period (13-18 June).

	Crop	Pasture	Non-agriculture
Total insects	3204	4975	246
Aranae	20 (0.6%)	18 (0.4%)	13 (5.3%)
Coleoptera	45 (1.4%)	51 (1.0%)	9 (3.7%)
Diptera	2414 (75.3%)	3967 (79.7%)	178 (72.4%)
Heteroptera	643 (20.1%)	781 (15.7%)	30 (12.2%)
Hymenoptera	45 (1.4%)	113 (2.3%)	1 (0.4%)
Other	37 (1.2%)	45 (0.9%)	15 (6.1%)

Table A1.9. Variation in taxonomic distribution of major prey Orders from sampling nets over the duration of the study period by habitat.

	Crop	Pasture	Non-agriculture
Total insects	9764	13838	913
Aranae	61 (0.6%)	87 (0.6%)	48 (5.3%)
Coleoptera	145 (1.5%)	247 (1.8%)	39 (4.3%)
Diptera	6710 (68.7%)	10315 (74.5%)	594 (65.1%)
Heteroptera	2545 (26.1%)	2679 (19.4%)	153 (16.8%)
Hymenoptera	211 (2.2%)	350 (2.5%)	30 (3.3%)
Other	92 (0.9%)	160 (1.2%)	49 (5.4%)