

Supplementary material: Eeva, T., Espín, S., Sánchez-Virosta, P. and Rainio, M. 2020: Weather effects on breeding parameters of two insectivorous passerines in a polluted area

Figure S1. Wing length growth curves (5th order polynoms) for great tit (*Parus major*) and pied flycatcher (*Ficedula hypoleuca*) nestlings with known hatching date (day = 0). Wing were measured with the maximum method. Numbers below the means ($\pm$ SD) show rounded predicted wing length (mm) values for each age.

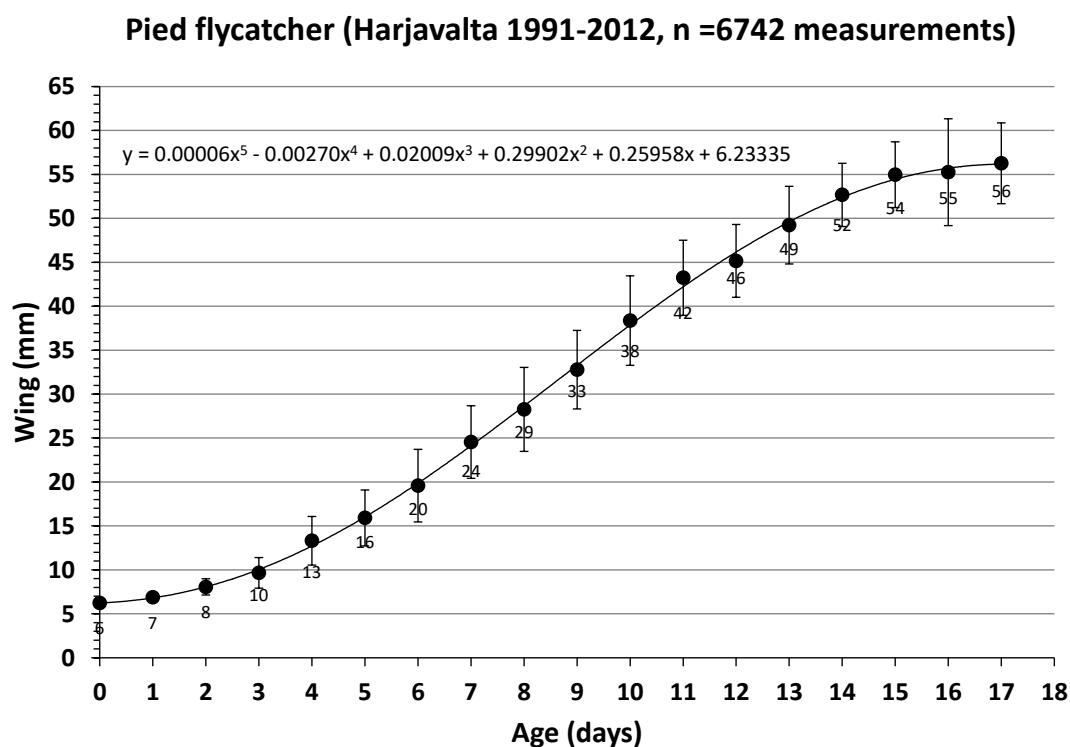
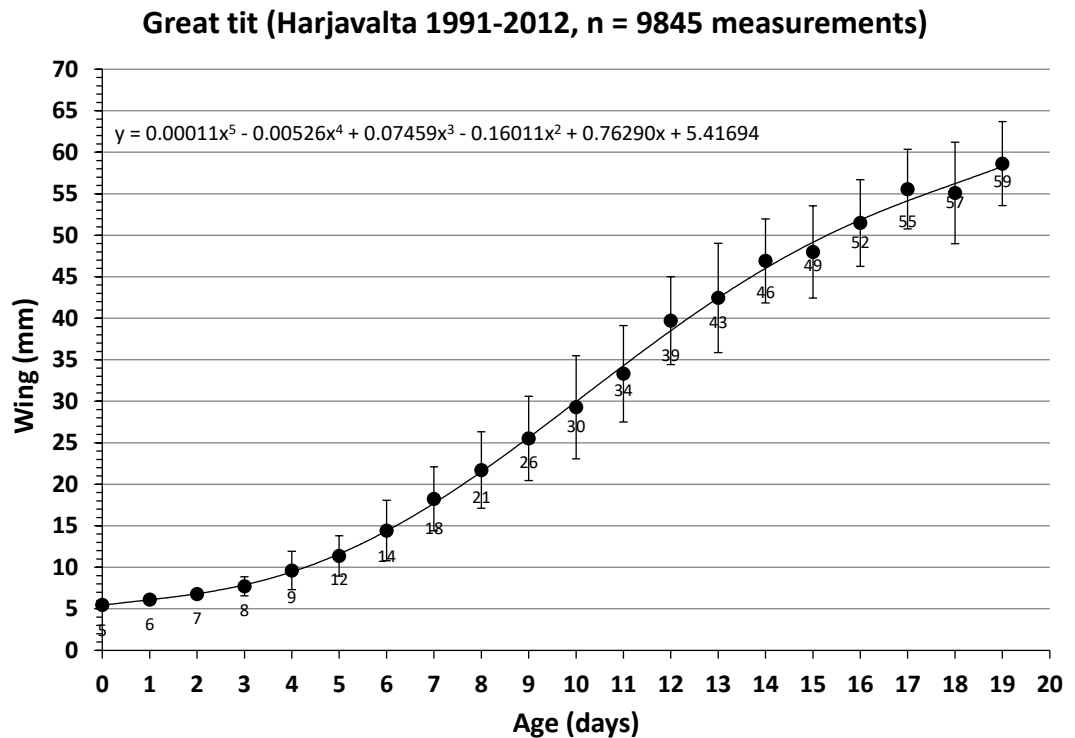


Table S1. Annual mean ($\pm$ SE) clutch sizes (CS), hatchling numbers (HN), fledgling numbers (FN) and proportional wing length residuals (WLR: % deviation from an overall mean at a certain age) for the pied flycatcher (*Ficedula hypoleuca*) and great tit (*Parus major*) for polluted and control zones around a Cu-Ni smelter in Harjavalta, Finland. N = 5720 clutches for *F. hypoleuca* and 2489 clutches for *P. major*. The values of breeding parameters affected by predation, human disturbance or manipulations were not included.

Table S1		<i>Ficedula hypoleuca</i>												<i>Parus major</i>											
Year	Zone	n CS	Mean CS	SE CS	n HN	Mean HN	SE HN	n FN	Mean FN	SE FN	n WLR	Mean WLR	SE WLR	n CS	Mean CS	SE CS	n HN	Mean HN	SE HN	n FN	Mean FN	SE FN	n WLR	Mean WLR	SE WLR
1991	Polluted	28	5.54	0.25	28	5.11	0.30	28	3.93	0.43	26	-3.05	1.41	13	9.15	0.50	13	7.77	1.01	8	4.25	0.67	11	1.93	5.93
1992	Polluted	31	5.00	0.30	31	4.26	0.39	28	3.36	0.45	25	-0.95	2.89	18	8.94	0.39	18	8.06	0.76	15	5.13	0.41	11	2.36	3.12
1993	Polluted	26	5.58	0.25	26	4.85	0.39	25	2.88	0.48	22	-1.32	2.53	16	8.75	0.51	16	7.88	0.82	13	3.23	0.63	13	-3.88	4.38
1994	Polluted	30	5.67	0.26	30	4.87	0.29	18	3.28	0.55	2	-6.45	8.88	9	9.11	0.39	9	8.11	0.56	9	3.56	0.65	5	-9.33	4.80
1995	Polluted	65	5.62	0.13	65	4.82	0.18	63	3.86	0.23	36	4.07	1.33	3	9.33	1.33	3	8.67	1.20	2	7.00	1.00	1	11.95	
1996	Polluted	68	5.69	0.17	68	5.01	0.23	45	4.33	0.30	59	3.24	1.38	29	9.45	0.29	29	8.83	0.39	10	3.80	0.81	22	-8.18	2.95
1997	Polluted	78	5.56	0.14	78	4.87	0.20	64	4.52	0.22	22	1.39	1.68	25	9.60	0.22	25	9.04	0.29	21	5.76	0.40	12	2.21	4.10
1998	Polluted	62	6.02	0.18	62	4.79	0.29	45	4.56	0.26	47	2.23	1.80	7	7.71	0.99	7	7.00	1.31	25	3.96	0.40	2	13.14	15.01
1999	Polluted	90	6.04	0.10	90	5.42	0.18	50	4.86	0.22	25	2.34	1.86	46	8.24	0.24	46	7.33	0.30	29	4.34	0.44	29	4.68	2.88
2000	Polluted	124	5.98	0.12	124	5.29	0.17	111	4.32	0.19	24	6.06	2.70	43	8.49	0.25	43	7.63	0.33	41	4.32	0.37	17	-0.94	3.13
2002	Polluted	87	5.69	0.14	87	5.02	0.20	67	4.19	0.25	0			30	9.40	0.26	30	8.00	0.45	28	5.29	0.55	14	1.32	4.69
2003	Polluted	66	6.18	0.13	66	5.65	0.17	55	4.20	0.27	11	2.48	2.53	35	8.17	0.31	35	7.51	0.35	34	3.00	0.32	0		
2004	Polluted	92	5.85	0.15	92	4.68	0.20	82	4.10	0.20	29	7.98	2.82	0			0			0			24	-13.27	3.42
2005	Polluted	96	6.30	0.12	96	5.33	0.23	81	5.31	0.20	18	2.65	2.45	44	7.82	0.28	44	5.82	0.40	37	2.97	0.37	34	-4.25	2.73
2006	Polluted	96	6.34	0.10	96	5.71	0.16	81	5.47	0.15	15	-1.09	2.78	47	8.21	0.24	47	7.28	0.36	33	3.73	0.44	2	7.05	5.62
2007	Polluted	100	5.98	0.11	100	5.54	0.15	92	3.93	0.22	24	-2.87	1.44	37	8.35	0.24	37	7.19	0.44	34	5.29	0.42	18	7.33	3.50
2008	Polluted	106	5.94	0.13	106	4.65	0.23	85	4.01	0.25	33	-9.46	2.41	42	7.88	0.28	42	6.07	0.48	35	3.26	0.31	25	-9.09	3.13
2009	Polluted	100	5.95	0.12	100	4.78	0.22	72	4.00	0.23	66	1.41	1.87	28	8.21	0.28	28	7.43	0.47	17	1.71	0.50	17	-9.22	4.07
2010	Polluted	99	6.20	0.10	99	5.46	0.17	88	5.42	0.15	67	0.42	1.55	24	9.25	0.28	24	8.25	0.55	21	6.24	0.56	12	-3.67	3.45
2011	Polluted	101	5.86	0.13	101	4.92	0.22	87	4.57	0.20	72	7.28	1.58	33	8.39	0.28	33	6.82	0.56	23	2.74	0.48	20	-0.16	3.00
2012	Polluted	128	6.32	0.07	128	5.82	0.11	126	5.33	0.14	43	0.87	1.84	37	9.32	0.14	37	8.30	0.30	36	4.06	0.44	22	-9.39	3.46
2013	Polluted	106	5.97	0.09	106	5.47	0.14	98	4.88	0.19	52	-0.65	1.18	45	8.71	0.24	45	8.20	0.27	42	4.17	0.37	23	-2.20	3.98
2014	Polluted	69	5.83	0.13	69	5.19	0.21	61	2.72	0.29	54	-8.16	1.89	14	8.36	0.34	14	7.43	0.48	13	2.77	0.59	34	-3.95	2.90
2015	Polluted	95	6.17	0.09	95	5.23	0.21	85	3.85	0.24	55	-3.79	1.82	52	8.08	0.13	52	6.77	0.31	44	1.14	0.22	27	-16.01	2.18
2016	Polluted	53	6.00	0.11	53	5.58	0.16	52	5.25	0.16	48	2.80	1.06	34	8.82	0.24	34	8.32	0.30	34	4.53	0.44	35	-1.57	2.86
2017	Polluted	81	5.95	0.08	81	5.28	0.19	75	4.20	0.24	61	-3.89	1.67	47	8.09	0.20	47	6.91	0.36	42	1.98	0.33	31	-15.83	2.59
2018	Polluted	72	6.08	0.12	72	5.26	0.23	66	4.98	0.19	45	5.52	1.54	45	8.64	0.32	45	7.36	0.49	36	5.06	0.38	25	-9.98	3.27
1991	Control	175	6.01	0.05	175	5.71	0.07	171	4.90	0.12	142	-0.77	0.83	66	9.58	0.15	66	8.95	0.18	53	5.17	0.30	52	4.00	2.17
1992	Control	272	6.09	0.05	272	5.81	0.07	246	4.60	0.11	239	-3.26	0.84	97	9.09	0.15	97	8.71	0.17	95	7.22	0.19	97	9.02	0.95
1993	Control	219	6.41	0.05	219	5.90	0.08	211	4.77	0.12	196	-2.88	0.80	89	9.67	0.14	89	9.01	0.23	83	6.08	0.29	75	7.96	1.36
1994	Control	160	6.19	0.06	160	5.41	0.12	118	4.52	0.18	12	-11.91	5.25	80	8.89	0.18	80	6.98	0.32	64	3.52	0.27	21	-11.91	4.77
1995	Control	100	6.28	0.07	100	5.84	0.10	90	5.53	0.12	38	0.37	1.17	19	8.74	0.44	19	8.05	0.42	16	6.13	0.75	14	13.87	2.14
1996	Control	109	6.40	0.08	109	5.94	0.14	87	5.29	0.18	68	3.52	1.33	52	9.81	0.21	52	8.92	0.31	34	6.74	0.50	35	5.21	3.01
1997	Control	88	6.02	0.09	88	5.63	0.11	78	5.49	0.13	47	7.05	1.43	35	9.11	0.22	35	8.11	0.35	23	7.26	0.37	17	10.22	2.25
1998	Control	64	6.20	0.11	64	5.55	0.20	53	5.15	0.20	36	5.12	1.58	4	8.00	1.41	4	5.00	2.61	19	4.79	0.54	3	9.17	2.40
1999	Control	131	6.39	0.08	131	5.99	0.10	68	5.49	0.15	36	4.64	1.63	88	8.82	0.15	88	7.81	0.23	66	6.33	0.26	36	6.12	2.69
2000	Control	199	6.49	0.07	199	6.11	0.08	187	5.43	0.12	12	6.44	2.78	70	8.97	0.18	70	7.81	0.25	65	5.62	0.31	19	1.22	2.73
2002	Control	112	6.28	0.08	112	5.92	0.11	76	5.01	0.23	0			61	9.90	0.13	61	9.08	0.25	55	7.67	0.25	26	6.29	2.04
2003	Control	91	6.38	0.08	91	6.01	0.13	78	5.51	0.14	14	2.36	3.74	60	8.50	0.16	60	8.10	0.20	53	4.72	0.30	0		
2004	Control	116	6.67	0.08	116	5.99	0.12	110	5.26	0.16	31	5.65	3.14	10	9.50	0.31	10	7.20	0.83	9	4.67	1.03	38	-0.64	3.32
2005	Control	127	6.24	0.07	127	5.85	0.10	119	5.66	0.10	9	-2.04	1.72	64	8.66	0.16	64	7.11	0.23	59	4.54	0.28	51	-2.14	1.85
2006	Control	147	6.44	0.08	147	6.14	0.10	112	5.28	0.19	9	-3.07	2.15	58	9.29	0.17	58	8.45	0.26	40	6.13	0.37	1	13.65	
2007	Control	120	6.38	0.07	120	6.06	0.10	113	5.38	0.12	20	-0.15	2.23	69	9.22	0.17	69	8.16	0.29	64	6.34	0.29	22	6.52	3.11
2008	Control	122	6.41	0.07	122	5.89	0.09	119	4.64	0.17	48	1.79	1.51	82	8.88	0.16	82	7.80	0.27	75	5.47	0.25	40	1.66	1.70
2009	Control	142	6.20	0.07	142	5.46	0.14	122	4.75	0.18	78	-0.47	1.51	74	8.34	0.18	74	7.20	0.29	55	4.07	0.41	26	-3.49	3.21
2010	Control	162	6.44	0.07	162	6.05	0.10	158	5.63	0.11	97	1.20	1.04	55	10.00	0.20	55	9.16	0.30	54	7.35	0.35	36	5.78	2.09
2011	Control	164	6.27	0.06	164	5.83	0.09	155	5.23	0.13	104	5.66	1.13	60	9.33	0.16	60	8.63	0.22	56	5.96	0.32	47	10.28	2.23
2012	Control	174	6.33	0.06	174	5.93	0.09	166	5.34	0.12	29	-3.97	3.18	45	9.73	0.17	45	8.69	0.35	44	6.39	0.35	23	2.57	3.07
2013	Control	145	6.21	0.07	145	5.86	0.10	142	5.45	0.12	41	3.74	1.81	82	9.12	0.14	82	8.46	0.23	79	6.14	0.28	46	-1.06	1.27
2014	Control	81	6.09	0.08	81	5.78	0.11	60	3.03	0.31	62	-7.52	1.50	59	8.97	0.18	59	7.53	0.37	51	5.04	0.36	60	4.17	1.96
2015	Control	106	6.20	0.08	106	5.66	0.13	102	5.25	0.14	75	-0.56	1.25	82	8.37	0.15	82	7.24	0.25	41	3.32	0.29	31	-8.03	1.73
2016	Control	72	6.39	0.09	72	6.11	0.13	72	5.61	0.16	72	2.04	0.97	63	9.13	0.22	63	8.30	0.28	60	5.95	0.34	59	3.96	2.00
2017	Control	88	6.14	0.07	88	5.66	0.10	82	4.90	0.15	62	-4.80	1.43	82	8.52	0.17	82	7.09	0.30	76	4.17	0.27	61	-4.46	1.66