Supplementary material

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L.B. Jacobsen, M. Chrenková, K. Thorup, Center for Macroecology, Evolution and Climate, Natural History Museum of Denmark, University of Copenhagen, Copenhagen, Denmark.

* Corresponding author's e-mail: lbjacobsen@snm.ku.dk

M. Chrenková, Department of Zoology, Faculty of Science, University of South Bohemia, Branišovská 31, 370 05 České Budějovice, Czech Republic

P. Sunde, Department of Bioscience – Wildlife Ecology, Aarhus University; Grenåvej 14, 8410 Rønde, Denmark

M. Šálek, Institute of Vertebrate Biology v.v.i, Academy of Sciences of the Czech Republic, Květná 8, 603 65 Brno, Czech Republic

Supplement 1. The complete dataset (n = 200; 60-min surveys) of telemetry based movement data from five breeding pairs (both mates tagged) studied in breeding seasons with and without food provisioning and/or provisioning of short sward vegetation (management).

id	owlID	Sex	Territory_ID	Breedingphase	Jul_day	year	MFD	log_MFD	DN	log_DN	Manageme	Feeding
961	1	1	1	1	132	2005	3407	2,53	493	1,70121	0	0
972	1	1	1	1	132	2005	2200	2,34	286	1,471138	0	0
953	1	1	1	1	133	2005	613	1,79	129	1,142558	0	0
70	1	1	1	1	151	2005	0	0,00	990	1,999912	0	0
84	1	1	1	1	154	2005	1991	2,30	784	1,89974	0	0
71	1	1	1	1	154	2005	2405	2,38	576	1,767637	0	0
160	1	1	1	2	171	2005	4882	2,69	681	1,839487	0	0
237	10	2	1	2	172	2005	545	1,74	141	1,180324	0	0
3022	1	1	1	2	175	2005	4228	2,63	418	1,631344	0	0
3033	10	2	1	2	175	2005	1570	2,20	170	1,255825	0	0
2996	10	2	1	2	184	2005	688	1,84	98	1,031614	0	0
3003	1	1	1	2	185	2005	1661	2,22	740	1,874827	0	0
2950	1	1	1	2	190	2005	2513	2,40	351	1,557685	0	0
2957	10	2	1	2	191	2005	1648	2,22	102	1,049443	0	0
2972	1	1	1	3	194	2005	510	1,72	185	1,289469	0	0
2978	10	2	1	3	195	2005	583	1,77	78	0,942544	0	0
2925	1	1	1	1	120	2006	210	1,34	45	0,740986	0	0
2744	1	1	1	2	161	2006	285	1,47	74	0,924631	0	0
2685	1	1	1	2	163	2006	3087	2,49	314	1,51115	0	0
2845	1	1	1	2	166	2006	3012	2,48	706	1,854886	0	0
2843	10	2	1	2	166	2006	0	0,00	0	0	0	0
1217	10	2	1	2	175	2006	977	1,99	44	0,735958	0	0
1237	1	1	1	2	176	2006	5676	2,75	943	1,979257	0	0
1252	10	2	1	2	176	2006	3892	2,59	224	1,369891	0	0
1349	1	1	1	3	180	2006	1214	2,09	124	1,126644	0	0
1362	10	2	1	3	180	2006	1017	2,01	144	1,186725	0	0
1582	1	1	1	3	187	2006	3573	2,55	128	1,139107	0	0
1568	10	2	1	3	188	2006	1812	2,26	91	1,004154	0	0
1722	10	2	1	3	191	2006	639	1,81	88	0,989521	0	0
1717	1	1	1	3	192	2006	2688	2,43	849	1,934153	0	0
1819	1	1	1	3	198	2006	4783	2,68	629	1,80548	0	0
1827	10	2	1	3	198	2006	1016	2,01	60	0,847733	0	0
1983	1	1	1	3	207	2006	608	1,79	987	1,998609	0	0
1987	10	2	1	3	207	2006	871	1,94	140	1,176256	0	0
3	1	1	1	1	143	2011	321	1,52	67	0,887016	1	1
9	1	1	1	1	150	2011	340	1,54	79	0,949491	1	1
18	1	1	1	1	151	2011	487	1,70	62	0,859906	1	1
36	1	1	1	1	153	2011	869	1,94	190	1,300969	1	1
47	1	1	1	1	155	2011	516	1,72	184	1,287505	1	1
54	1	1	1	1	155	2011	1076	2,04	86	0,982053	1	1
64	1	1	1	2	156	2011	398	1,61	106	1,065951	1	1
71	10	2	1	2	156	2011	0	0,00	2	0,088441	1	1
77	1	1	1	2	157	2011	405	1,62	48	0,76359	1	1
74	10	2	1	2	157	2011	0	0,00	2	0,084976	1	1
91	1	1	1	2	159	2011	801	1,91	76	0,936405	1	1
88	10	2	1	2	159	2011	0	0,00	4	0,130607	1	1
106	1	1	1	2	160	2011	136	1,16	73	0,919089	1	1
103	10	2	1	2	160	2011	0	0,00	0	0,01413	1	1
114	1	1	1	2	162	2011	328	1,53	74	0,921717	1	1
121	10	2	1	2	162	2011	486	1,70	114	1,092312	1	1
130	1	1	1	2	163	2011	212	1,35	48	0,762192	1	1
127	10	2	1	2	163	2011	0	0,00	1	0,059666	1	1
142	1	1	1	2	166	2011	344	1,55	22	0,501045	1	1
152	10	2	1	2	167	2011	239	1,40	18	0,442367	1	1
172	1	1	1	2	172	2011	1044	2,02	100	1,042355	1	1
325	10	2	1	2	172	2011	515	1,72	44	0,730385	1	1
192	1	1	1	2	175	2011	686	1,84	77	0,938469	1	1
334	10	2	1	2	175	2011	360	1,57	47	0,756455	1	1
203	1	1	1	2	176	2011	2745	2,44	178	1,274398	1	1
228	1	1	1	2	176	2011	1771	2,25	133	1,156628	1	1
217	10	2	1	2	176	2011	945	1,98	138	1,171657	1	1
340	10	2	1	2	176	2011	594	1,78	72	0,913857	1	1
247	1	1	1	2	179	2011	1255	2,10	294	1,482536	1	1
260	10	2	1	2	179	2011	580	1,77	93	1,012875	1	1
272	1	1	1	2	180	2011	1191	2,08	101	1,045104	1	1
348	10	2	1	2	180	2011	964	1,99	86	0,98434	1	1
287	1	1	1	2	182	2011	1201	2,08	250	1,414851	1	1
309	1	1	1	2	182	2011	407	1,62	70	0,90093	1	1
296a	10	2	1	2	182	2011	1221	2,09	59	0,839556	1	1
318	10	2	1	2	182	2011	286	1,47	35	0,652312	1	1
366	1	1	1	3	195	2011	90	1,00	10	0,309044	1	1
2544	7	1	7	1	117	2006	0	0,00	22	0,510022	0	0

2640	7	1	7	2	149	2006	438	1,65	197	1,316352	0	0
1115	7	1	7	2	152	2006	1605	2,21	275	1,454729	0	0
2726	7	1	7	2	155	2006	1375	2,14	319	1,516853	0	0
2736	7	1	7	2	160	2006	1020	2,01	378	1,589274	0	0
2734	70	2	7	2	160	2006	0	0,00	0	0	0	0
2671	7	1	7	2	164	2006	589	1,78	72	0,916122	0	0
2669	70	2	7	2	164	2006	0	0,00	0	0	0	0
2833	7	1	7	2	166	2006	688	1,84	55	0,810226	0	0
2831	70	2	7	2	166	2006	0	0,00	0	0	0	0
2881	7	1	7	2	168	2006	2040	2,31	213	1,348056	0	0
2879	70	2	7	2	168	2006	0	0,00	0	0	0	0
5	70	2	7	2	154	2011	195	1,31	22	0,505162	1	1
15	70	2	7	2	155	2011	474	1,68	93	1,011323	1	1
26	7	1	7	2	156	2011	1252	2,10	140	1,175556	1	1
36	70	2	7	2	156	2011	539	1,74	55	0,811115	1	1
46	7	1	7	2	157	2011	402	1,61	121	1,117533	1	1
54	70	2	7	2	157	2011	305	1,50	58	0,835566	1	1
65	7	1	7	2	159	2011	259	1,43	45	0,739955	1	1
72	70	2	7	2	159	2011	176	1,27	84	0,97417	1	1
77	70	2	7	2	160	2011	243	1,40	55	0,811689	1	1
89	7	1	7	2	161	2011	474	1,68	65	0,872532	1	1
104	7	1	7	2	163	2011	293	1,48	37	0,671806	1	1
114	70	2	7	2	163	2011	166	1,25	19	0,466654	1	1
146	7	1	7	2	171	2011	315	1,51	62	0,854435	1	1
135	70	2	7	2	171	2011	511	1,72	40	0,695044	1	1
157	7	1	7	2	172	2011	237	1,39	33	0,636494	1	1
165	70	2	7	3	173	2011	255	1,42	63	0,863641	1	1
185	7	1	7	3	174	2011	300	1,49	30	0,605799	1	1
173	70	2	7	3	174	2011	712	1,86	67	0,883914	1	1
197	7	1	7	3	175	2011	220	1,36	38	0,68509	1	1
203	70	2	7	3	175	2011	539	1,74	50	0,77648	1	1
217	7	1	7	3	176	2011	173	1,26	27	0,570514	1	1
225	70	2	7	3	176	2011	318	1,52	38	0,678127	1	1
251	7	1	7	3	180	2011	466	1,68	30	0,597062	1	1
242	70	2	7	3	180	2011	211	1,34	31	0,614751	1	1
278	7	1	7	3	182	2011	144	1,19	44	0,729986	1	1
270	70	2	7	3	182	2011	154	1,21	43	0,72385	1	1
284	7	1	7	3	183	2011	136	1,16	37	0,674129	1	1
291	70	2	7	3	183	2011	107	1,07	18	0,451492	1	1
315	7	1	7	3	195	2011	147	1,20	33	0,638376	1	1
307	70	2	7	3	195	2011	211	1,34	42	0,712175	1	1
1091	8	1	8	1	151	2006	1406	2,15	164	1,23971	0	0
2708	8	1	8	1	154	2006	967	1,99	175	1,267369	0	0
2667	8	1	8	1	164	2006	0	0,00	10	0,30103	0	0
2874	8	1	8	1	167	2006	60	0,85	25	0,544068	0	0
-45911339	80	2	8	2	173	2007	0	0,00	22	0,510022	0	0
106138076	80	2	8	2	173	2007	535	1,74	55	0,815312	0	0
-20100327	80	2	8	2	176	2007	855	1,94	52	0,789827	0	0
8	8	1	8	2	154	2011	45	0,74	200	1,321542	1	1
12	8	1	8	2	154	2011	220	1,36	193	1,308538	1	1
17	8	1	8	2	155	2011	0	0,00	19	0,469451	1	1
20	80	2	8	2	155	2011	47	0,76	10	0,300819	1	1
34	8	1	8	2	156	2011	109	1,07	20	0,48118	1	1
27	80	2	8	2	156	2011	130	1,15	17	0,43114	1	1
43	8	1	8	2	157	2011	544	1,74	66	0,880846	1	1
54	80	2	8	2	157	2011	64	0,87	12	0,336388	1	1
62	8	1	8	2	159	2011	85	0,98	17	0,43153	1	1
70	80	2	8	2	159	2011	56	0,82	23	0,517038	1	1
84	8	1	8	2	162	2011	177	1,27	39	0,692556	1	1
81	80	2	8	2	162	2011	0	0,00	9	0,273404	1	1
96	8	1	8	2	163	2011	372	1,58	115	1,096777	1	1
110	8	1	8	2	164	2011	0	0,00	29	0,592907	1	1
104	80	2	8	2	164	2011	120	1,12	97	1,02937	1	1
142	8	1	8	2	172	2011	810	1,91	141	1,179063	1	1
133	80	2	8	2	172	2011	1110	2,05	121	1,117886	1	1
165	8	1	8	3	175	2011	653	1,82	148	1,198297	1	1
159	80	2	8	3	175	2011	294	1,48	107	1,067684	1	1
177	8	1	8	3	176	2011	743	1,88	67	0,887445	1	1
186	80	2	8	3	176	2011	161	1,23	37	0,668005	1	1
196	8	1	8	3	179	2011	169	1,25	24	0,536146	1	1
207	80	2	8	3	179	2011	133	1,16	19	0,455545	1	1
223	8	1	8	3	183	2011	471	1,68	43	0,721297	1	1
232	80	2	8	3	183	2011	231	1,38	137	1,166284	1	1
244	8	1	8	3	197	2011	285	1,47	54	0,806579	1	1
253	80	2	8	3	197	2011	27	0,56	22	0,499984	1	1
1285	140	2	14	2	175	2006	365	1,57	44	0,731355	1	0
1463	14	1	14	2	183	2006	92	1,01	32	0,623363	1	0

1468	140	2	14	2	184	2006	120	1,11	32	0,623011	1	0
1629	14	1	14	2	190	2006	628	1,80	27	0,567509	1	0
1647	140	2	14	2	190	2006	158	1,23	22	0,501073	1	0
1734	14	1	14	2	192	2006	414	1,63	34	0,641137	1	0
2898	140	2	14	2	192	2006	24	0,53	28	0,582552	1	0
1899	14	1	14	3	200	2006	254	1,42	29	0,588373	1	0
1906	140	2	14	3	200	2006	479	1,69	23	0,517776	1	0
1929	14	1	14	3	203	2006	624	1,80	30	0,602429	1	0
1942	140	2	14	3	203	2006	0	0,00	14	0,382773	1	0
-12274114	14	1	14	2	173	2007	411	1,62	42	0,714137	1	1
-96246710	14	1	14	2	174	2007	817	1,92	54	0,804358	1	1
-17600129	14	1	14	2	177	2007	32	0,62	86	0,980821	1	1
1276	150	2	15	3	174	2006	300	1,49	314	1,510721	1	0
1310	15	1	15	3	180	2006	1991	2,30	103	1,05279	1	0
1327	150	2	15	3	180	2006	4051	2,61	87	0,985795	1	0
1492	15	1	15	3	184	2006	1365	2,14	96	1,024013	1	0
1507	150	2	15	3	184	2006	1839	2,27	42	0,712498	1	0
1681	15	1	15	3	191	2006	637	1,81	51	0,785714	1	0
1691	150	2	15	3	191	2006	476	1,69	32	0,620552	1	0
1864	15	1	15	3	199	2006	657	1,82	123	1,124181	1	0
1869	150	2	15	3	199	2006	1986	2,30	228	1,376754	1	0
3	15	1	15	1	151	2011	30	0,60	17	0,434741	1	1
16	150	2	15	2	157	2011	700	1,85	71	0,909296	1	1
27	150	2	15	2	158	2011	14	0,37	5	0,183227	1	1
31	15	1	15	2	159	2011	24	0,53	15	0,397963	1	1
36	150	2	15	2	159	2011	15	0,39	8	0,261622	1	1
42	15	1	15	2	161	2011	49	0,77	26	0,558005	1	1
51	15	1	15	2	161	2011	476	1,69	199	1,319278	1	1
47	150	2	15	2	161	2011	12	0,33	10	0,291934	1	1
60	150	2	15	2	161	2011	386	1,60	51	0,781838	1	1
70	150	2	15	2	164	2011	64	0,87	18	0,448422	1	1
91	15	1	15	2	168	2011	1398	2,15	191	1,303635	1	1
79	150	2	15	2	168	2011	855	1,94	149	1,201299	1	1
113	15	1	15	2	171	2011	714	1,86	73	0,921562	1	1
122	150	2	15	2	171	2011	395	1,61	63	0,862145	1	1
132	15	1	15	2	173	2011	422	1,64	178	1,274988	1	1
143	150	2	15	2	173	2011	7	0,23	25	0,545334	1	1
157	15	1	15	2	176	2011	140	1,18	109	1,077248	1	1
151	150	2	15	2	176	2011	84	0,98	10	0,299031	1	1
165	15	1	15	2	180	2011	277	1,46	56	0,820871	1	1
176	150	2	15	2	180	2011	857	1,94	105	1,059761	1	1
185	15	1	15	2	181	2011	346	1,55	192	1,305834	1	1
194	150	2	15	2	181	2011	13	0,35	41	0,710376	1	1
198	15	1	15	2	182	2011	584	1,77	149	1,202022	1	1
210	150	2	15	2	182	2011	74	0,92	18	0,445529	1	1
219	15	1	15	2	183	2011	28	0,58	17	0,423616	1	1
227	150	2	15	2	183	2011	45	0,74	15	0,394513	1	1
241	15	1	15	3	195	2011	648	1,82	130	1,146079	1	1
255	150	2	15	3	195	2011	20	0,48	215	1,352215	1	1
265	15	1	15	3	196	2011	782	1,90	89	0,993652	1	1
279	150	2	15	3	196	2011	178	1,28	228	1,376853	1	1

Supplement 2. Coefficients of fixed effects (feeding vs. non-feeding, habitat improvement initiatives vs. controls, and males vs. females) on minimum flight distance per hour (MFD) and distance from nest (DN) of breeding, radio-tagged Little Owls. The antilog of the coefficients (10^b) expresses the magnitude of the difference in response values as a function of the fixed effect (e.g. $10^b = 0.38$ as an effect of feeding on MFD in males, indicates that males that receive food during the breeding season reduce their MFD to 38 % of the level when not fed). The estimates are based on mixed models that control for variation between territories (random effect), breeding phase (B), and in some cases also habitat improvement initiatives (H), food-provisioning (F) and/or the other covariate for movement effort (cov: DN in MFD and MFD in DN). Significance levels; º : $p < 0.1$, *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$, ****:$p < 0.0001$.

			Minimum Flight Distance per hour (MFD)						Mean Distance from nest (DN)					
Effect	Group	controlling for:	b	SE(b)	df	t	Sign	10^b	b	SE(b)	df	t	Sign	10^b
Feeding	Males	B	-0.422	0.134	82.2	3.14	**	0.38	-0.448	0.078	97.6	5.75	****	0.36
	Females	B	-0.158	0.156	42.8	1.01		0.70	-0.072	0.090	64.2	0.79		0.85
	Males	B, H	-0.250	0.330	23.8	0.76		0.56	0.093	0.184	32.6	0.50		1.24
	Females	B, H	-0.318	0.319	21.5	1.00		0.48	0.012	0.177	29.9	0.07		1.03
	Males	B, cov	-0.197	0.097	103	2.03	*	0.64	-0.106	0.067	106	1.59		0.78
	Females	B cov.	-0.290	0.094	83.3	3.07	**	0.51	0.004	0.065	77.1	0.07		1.01
Habitat	Males	B	-0.501	0.149	138	3.37	***	0.32	-0.586	0.081	139	7.20	*	0.26
	Females	B	-0.007	0.182	75	0.04		0.98	-0.023	0.098	85.9	0.24		0.95
	Males	B, F	-0.246	0.354	27.9	0.70		0.57	-0.678	0.197	37.9	3.44	**	0.21
	Females	B, F	0.288	0.353	24.9	0.82		1.94	-0.044	0.196	33.8	0.22		0.90
	Males	B, cov	-0.070	0.120	106	0.55		0.85	-0.258	0.074	104	3.51	***	0.55
	Females	B cov.	-0.210	0.113	82.9	1.86	º	0.62	-0.018	0.072	80.9	0.26		0.96
sex (M)	not fed	B	0.655	0.169	66.2	3.88	***	4.52	0.515	0.099	66.2	5.19	****	3.27
	Fed	B	0.315	0.099	122	3.16	***	2.06	0.209	0.058	123	3.61	***	1.62
	Control	B or B,F	0.859	0.220	48	3.91	***	7.23	0.771	0.121	47.8	6.35	****	5.90
	Habitat	B	0.307	0.095	123	3.22	**	2.03	0.186	0.053	140	3.50	***	1.53
	Habitat	B, F	0.286	0.131	138	2.17	*	1.93	0.109	0.075	140	1.45		1.28