

Table S1. List of Eastern Imperial Eagle nestlings tracked with GPS/GSM devices in the Czech Republic between 2017-2021. Abbreviations: * – tagging of an individual placed in a rescue centre and fostered to a foreign nest; Tagging – date of tagging; Date from – beginning of the dataset, date of the first occurrence in longer distance than 200 m from the native nest; Date to – date of the last locations; Max no. of days – total number of tracking days; No. of days – number of days used in the analysis (with regard to „Date from“); No. of loc. – number of locations after data filtering (e.g. the first location after midnight in every day without first continuous locations closer than 200 m from the native nest).

ID	Ring	Device	Sex	Tagging	Date from	Date to	Max no. of days	No. of days	No. of loc.
1	LX523	Skua H LF	M	30.06.2017	19.07.2017	03.10.2017	95	77	77
2	LX522	Skua H LF	M	30.06.2017	14.07.2017	08.12.2020	1257	1244	767
3	LX521	Skua H LF	M	30.06.2017	24.07.2017	25.02.2018	240	217	215
4*	LX035	Skua H LF	M	03.07.2017	08.07.2017	17.09.2017	76	72	72
5	LX034	Skua H LF	M	03.07.2017	27.07.2017	31.12.2021	1642	1619	1610
6	LX528	Saker H LF	M	16.07.2018	07.08.2018	26.02.2020	590	569	569
7	LX527	Saker H LF	M	16.07.2018	08.08.2018	27.10.2019	468	446	446
8	LX529	OT-E50B-3GC	M	26.06.2019	10.07.2019	31.12.2021	919	906	906
9	LX530	OT-E50B-3GC	F	26.06.2019	19.07.2019	31.12.2021	919	897	876
10	LX531	OT-E50B-3GC	F	18.07.2019	29.08.2019	31.12.2021	897	856	855
11	LX533	OT-E50B-3GC	M	14.07.2020	13.08.2020	31.12.2021	535	506	445
12	LX532	OT-E50B-3GC	F	14.07.2020	27.07.2020	29.07.2020	15	3	3
13	LX536	OT-E50B-3GC	M	14.07.2020	05.08.2020	04.04.2021	264	243	201
14	LX535	OT-E50B-3GC	F	14.07.2020	16.08.2020	14.11.2021	488	456	358
15	LX547	OT-E25B-3GC	M	01.07.2021	24.07.2021	31.12.2021	183	161	161
16	LX548	OT-E25B-3GC	M	01.07.2021	29.07.2021	31.12.2021	183	156	153
17	LX545	OT-E25B-3GC	F	01.07.2021	28.07.2021	31.12.2021	183	157	157
18	LX546	OT-E25B-3GC	F	01.07.2021	29.07.2021	31.12.2021	183	156	156
19	LX549	OT-E25B-3GC	F	12.07.2021	29.08.2021	31.12.2021	172	125	121

Table S2. Breeding population size of Eastern Imperial Eagle in the Czech Republic and number of ringed nestlings between 1997-2022.

Year	Territorial pairs	Nesting pairs	Breeding pairs	Pairs with chicks	Successful pairs	Fledglings	Ringed
1997	1	1	0	0	0	0	0
1998	1	1	1	1	1	2	2
1999	1	1	1	1	1	2	2
2000	1	1	1	1	1	2	3
2001	2	2	2	1	1	3	3
2002	2	2	2	2	2	4	4
2003	2	2	2	1	1	2	2
2004	3	3	2	2	2	2	2
2005	2	2	2	2	2	3	3
2006	2	2	2	1	1	1	0
2007	2	2	2	1	1	1	2
2008	2	2	2	1	1	2	0
2009	3	3	3	2	1	3	0
2010	5	5	5	4	2	2	0
2011	4	4	3	3	3	5	2
2012	3	3	3	3	3	9	9
2013	4	3	3	3	3	5	6
2014	6	3	3	3	1	3	0
2015	8	8	6	4	4	9	8
2016	10	8	6	6	6	12	3
2017	11	8	7	6	5	10	10
2018	8	6	3	3	2	4	2
2019	10	8	6	5	5	6	3
2020	13	11	9	7	6	8	7
2021	14	11	9	8	7	11	10
2022	18	17	14	12	11	19	12

Table S3. The longest recorded distances of 19 tracked Eastern Imperial Eagles from the native nest (km) in different calendar years of life. (Abbreviations: Age – age in calendar years, P – partial data from the year (e.g. individual 1CYP did not survived the whole first calendar year of life), Dist. – distance from the natal nest to the farthest night location; Date – date of reaching the farthestmost point from the native nest; the longest recorded distance for every individual during all years is marked in bold.

Ring	Age	Year 1		Year 2		Year 3		Year 4		Year 5	
		Dist.	Date	Dist.	Date	Dist.	Date	Dist.	Date	Dist.	Date
LX523	1CYP	133.9	30.09.								
LX035	1CYP	233.1	16.09.								
LX532	1CYP	0.4	27.07.								
LX547	1CY	253.3	14.10.								
LX548	1CY	249.1	18.12.								
LX545	1CY	412.1	29.09.								
LX546	1CY	414.4	16.10.								
LX549	1CY	192.2	17.10.								
LX521	2CYP	137.2	30.08.	181.8	31.01.						
LX527	2CYP	1671.1	02.12.	1669.7	18.03.						
LX536	2CYP	83	19.11.	262.8	30.03.						
LX535	2CYP	98.5	27.01.	488.4	20.03.						
LX533	2CY	25.1	29.12.	314.2	19.10.						
LX528	3CYP	158.7	13.10.	728.3	09.06.	198.8	10.02.				
LX529	3CY	282	30.12.	563.1	03.07.	621.6	13.02.				
LX530	3CY	83.3	29.09.	464.8	10.04.	363.6	21.01.				
LX531	3CY	104.9	03.11.	465.5	08.10.	488.7	24.02.				
LX522	4CYP	1459.6	05.11.	1379.7	26.01.	53.8	21.07.	51.8	09.08.		
LX034	5CY	201.8	08.09.	394	03.04.	627.8	04.04.	110.8	18.01.	93.8	20.04.

Table S4. Sizes of 100% MCP (km²) based on night roosting sites in particular calendar years (CY1-5), number of points for creation of the polygon (no.) and azimuth of the most distant night location from the natal nest to north (for the whole individual dataset, in degrees).

Device	Ring	Age	Sex	Azimuth	CY1		CY2		CY3		CY4		CY5	
					MCP	No.	MCP	No.	MCP	No.	MCP	No.	MCP	No.
Auki68	LX523	1CYP	M	285.3	2888.6	95								
Auki71	LX035	1CYP	M	194.2	3552.6	76								
Orn133-B	LX532	1CYP	F	165.2	-	-								
Orn55-B	LX547	1CY	M	146.0	28815.8	183								
Orn77-B	LX548	1CY	M	184.8	37836.1	180								
Orn166-B	LX545	1CY	F	173.6	120344.0	183								
Orn181-B	LX546	1CY	F	193.0	59589.9	183								
Orn154-C	LX549	1CY	F	112.2	26477.1	168								
Auki70	LX521	2CYP	M	87.8	16474.9	182	32547.5	56						
Kite44	LX527	2CYP	M	151.5	413877.5	168	410848.9	300						
Orn134	LX536	2CYP	M	248.3	9634.4	141	56255.4	81						
Orn136	LX535	2CYP	F	129.3	945.0	75	162767.3	291						
Orn132-B	LX533	2CY	M	97.9	432.3	155	49755.1	319						
Kite30	LX528	3CYP	M	45.0	38648.6	168	480990.7	365	22980.9	57				
Orn121	LX529	3CY	M	151.6	19049.7	188	181964.0	366	129363.4	365				
Orn122	LX530	3CY	F	112.9	5492.6	188	201854.5	366	37883.5	344				
Orn123	LX531	3CY	F	135.8	2022.4	166	106132.4	365	86700.2	365				
Auki69	LX522	4CYP	M	139.2	564089.6	169	389218.5	289	363.8	226	159.3	83		
Auki72	LX034	5CY	M	316.2	42915.2	179	182207.2	364	179910.9	365	4430.5	366	85.9	359