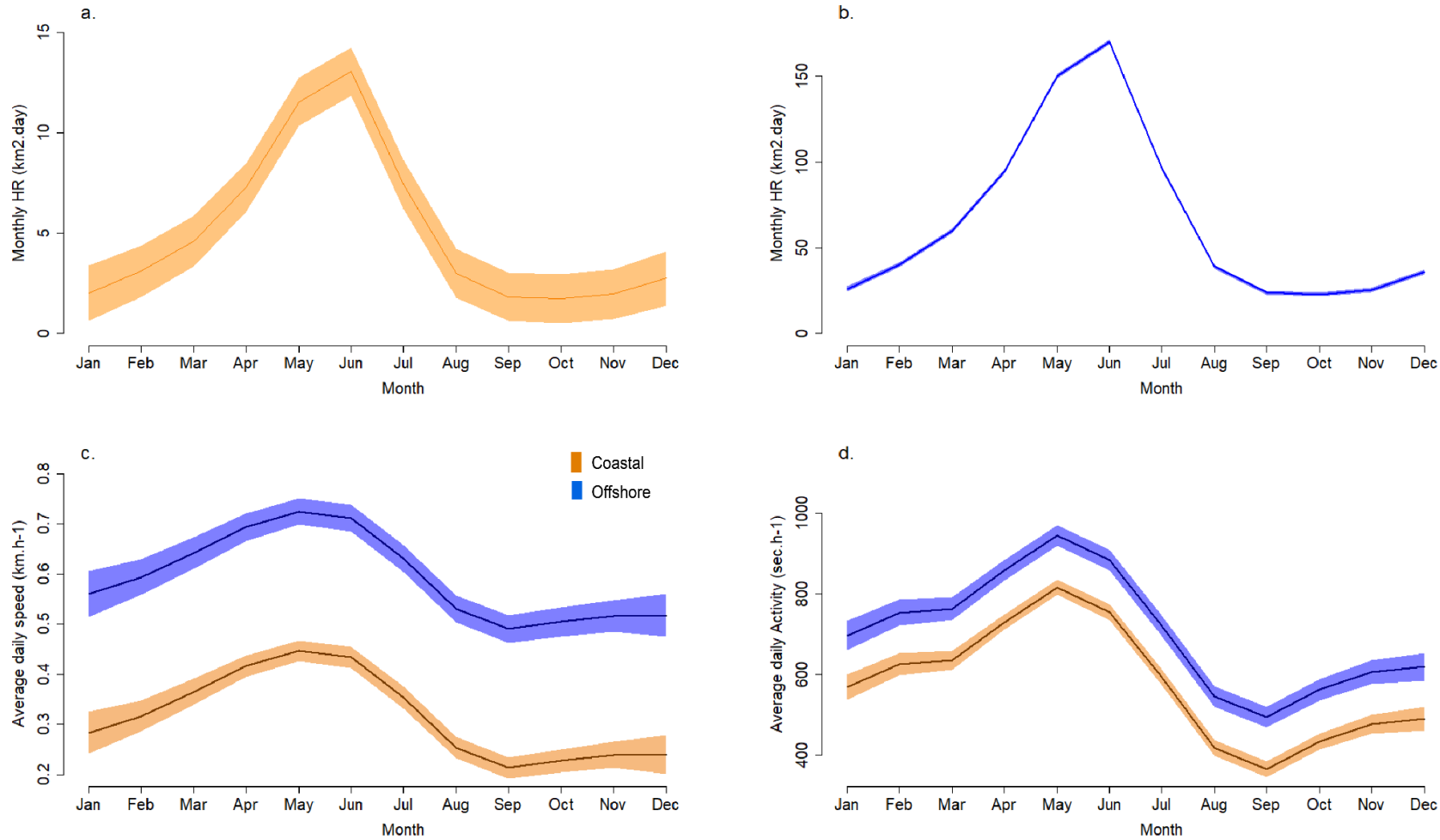
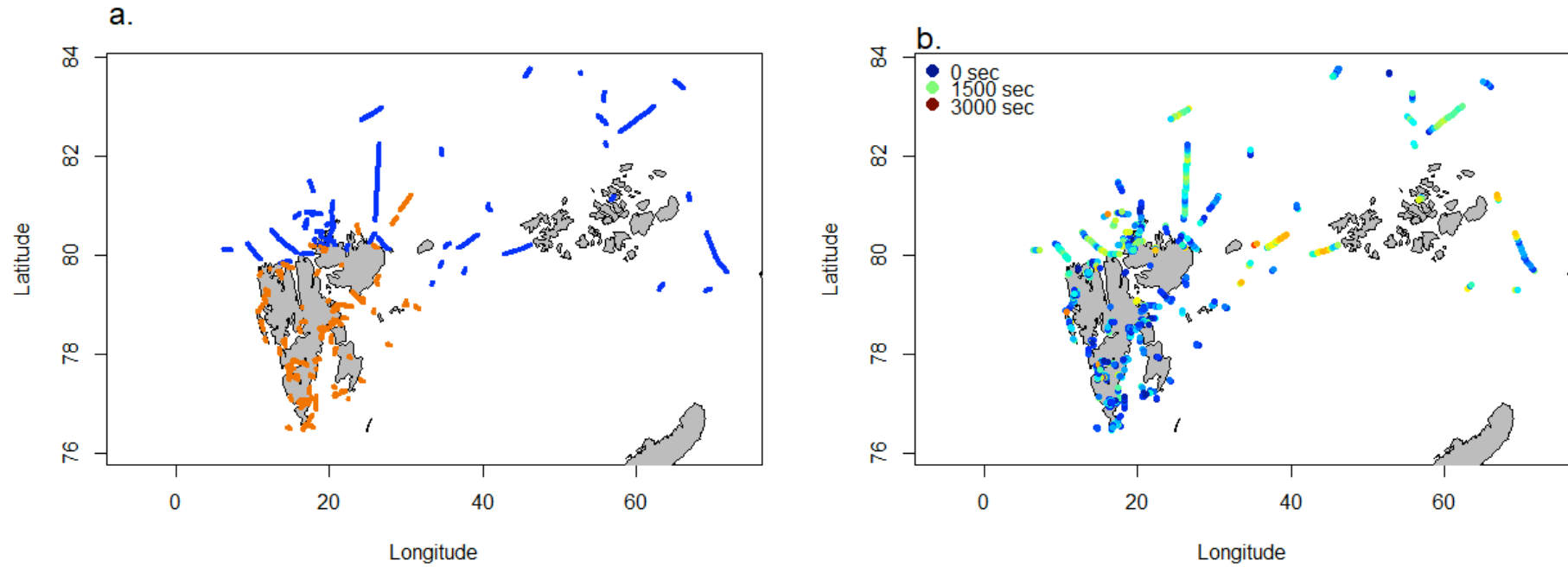


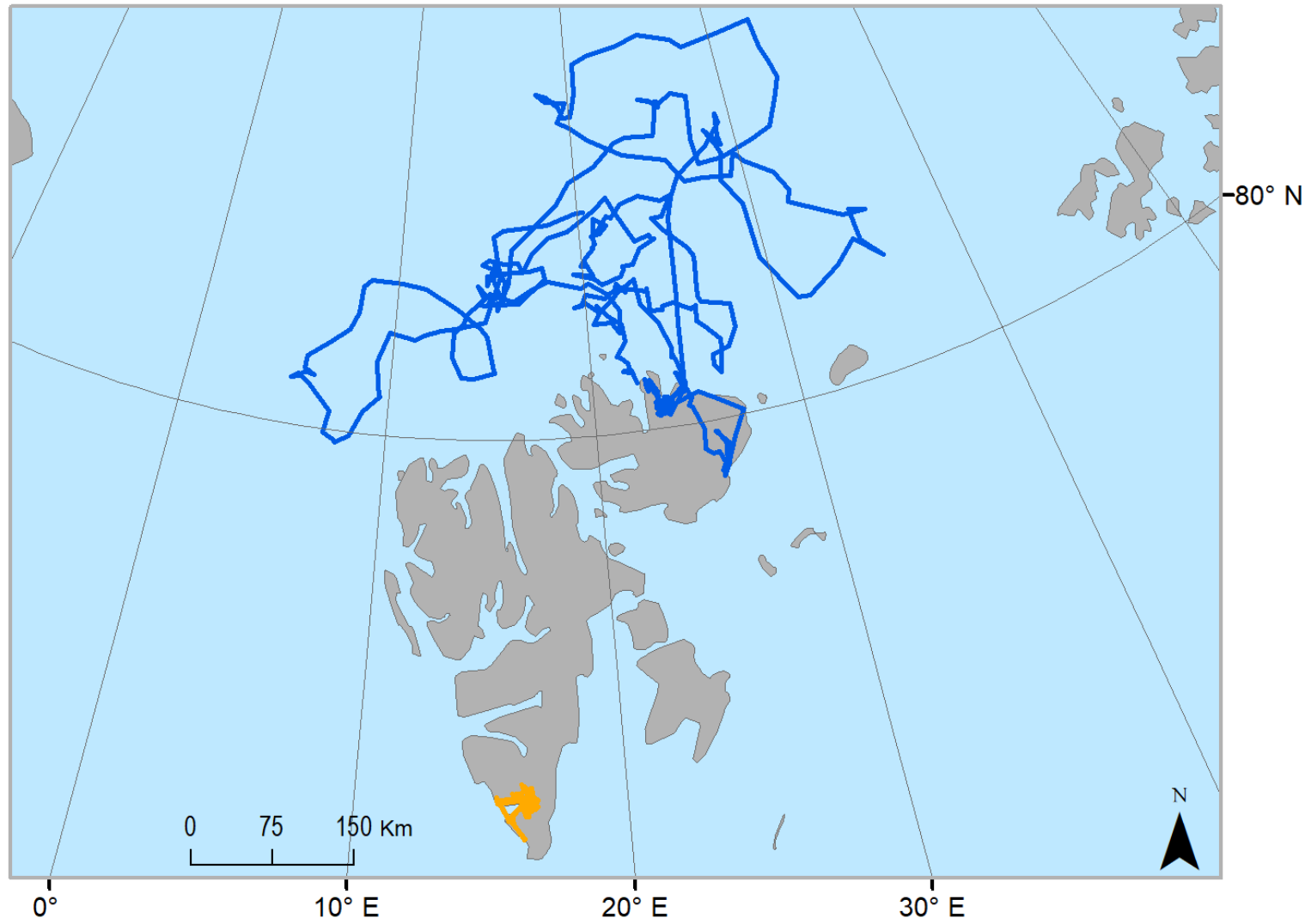
**Figure S1:** Predicted values for a) and b) monthly HR area size ( $\text{km}^2 \cdot \text{day}^{-1}$ ) and c) monthly average speed ( $\text{km} \cdot \text{h}^{-1}$ ) and d) monthly average hourly activity ( $\text{sec} \cdot \text{h}^{-1}$ ) for 84 polar bears instrumented on the Archipelago of Svalbard 2011-2018 for each ecotype, offshore (in blue) or coastal (in orange). The lines represent the predicted curves from a fitted Generalized Additive Mixed Model (GAMM) with 95 % CI (shaded areas). All the calculations are based on records excluding denning periods. Predicted curves for monthly HR size per day are presented separately for each ecotype due to large numerical differences.



**Figure S2:** Maps of the study area with trips colour-coded a) according to the ecotype (blue = offshore and orange = coastal) and b) according to the average hourly activity duration (s). The warmer the colour the greater the activity duration.



**Figure S3:** Examples of two extreme differences between coastal (orange) and offshore (blue) ecotypes. Both bears were tracked for one year.



**Table S1:** Summary statistics of movement data and biological information for each polar bear female instrumented in the Coastal Archipelago between 2011 and 2018. The age of cub is a categorical variable with c = cub of the year, y = yearling and 2yrs = 2 year old.

Bear ID	Spatial Strategy	Age (years)	Year of capture	Collar ID	Start (dd.mm.yyyy)	End (dd.mm.yyyy)	Duration (d)	Home-range (km <sup>2</sup> )	Total track distance (km)	Average hourly activity per day (sec/hour)	Daily speed (km/day)	Max. distance from capture (km)	Weight (kg)	n Cub	Age Cub
7951	Coastal	26	2013	669454	15.04.2013	04.09.2013	142	5763	1075	464	7.57	123	197	0	NA
23219	Offshore	20	2014	676478	25.04.2014	19.04.2017	1090	21442	11955	587	10.97	1000	198	0	NA
23423	Offshore	25	2011	649810	24.04.2011	08.12.2012	595	74367	4743	568	7.97	923	154	0	NA
23479	Coastal	17	2015	683524	29.04.2015	14.11.2015	199	483	926	583	4.65	80	152	2	c
23500	Coastal	13	2013	670054	07.09.2013	10.04.2015	580	5468	3356	467	5.79	342	127	1	y
23500	Coastal	15	2015	683537	11.04.2015	20.08.2016	497	1633	4682	754	9.42	560	129	2	c
23500	Coastal	17	2017	695437	23.04.2017	19.04.2018	361	1163	1033	322	2.86	113	168	0	NA
23500	Coastal	18	2018	700866	17.04.2018	27.10.2018	193	1047	1158	535	6.00	78	149	2	c
23637	Coastal	12	2013	659123	12.04.2013	12.01.2014	276	803	1505	449	5.45	70	223	0	NA
23637	Coastal	15	2016	676487	14.04.2016	16.08.2016	124	424	910	652	7.34	57	246	0	NA
23688	Coastal	16	2011	649726	09.04.2011	07.04.2012	364	2310	2531	466	6.95	96	170	2	c
23688	Coastal	20	2015	683542	15.04.2015	02.04.2016	353	603	1475	320	4.18	129	179	0	NA
23688	Coastal	21	2016	689058	04.04.2016	13.06.2016	70	1764	452	359	6.46	83	148	1	c
23689	Coastal	13	2015	683538	15.04.2015	05.04.2016	356	2333	1917	514	5.38	96	145	1	c
23689	Coastal	14	2016	689059	05.04.2016	11.12.2016	250	2083	1682	620	6.73	86	202	0	NA
23703	Coastal	20	2013	670057	04.09.2013	07.03.2015	549	1843	2658	492	4.84	101	179	1	y
23703	Coastal	24	2017	695419	07.04.2017	28.10.2018	569	1189	3346	516	5.88	156	180	0	NA
23732	Coastal	8	2011	649715	24.04.2011	02.06.2012	405	68	824	616	2.03	40	146	1	c
23732	Coastal	12	2015	683527	28.04.2015	26.03.2016	333	70	1146	597	3.44	41	152	2	c
23732	Coastal	15	2018	700861	26.04.2018	29.10.2018	185	95	611	484	3.30	26	186	0	NA
23802	Coastal	15	2018	700870	24.04.2018	27.10.2018	186	4549	1238	611	6.66	131	186	0	NA
23803	Coastal	11	2015	683528	21.04.2015	04.04.2016	349	505	824	352	2.36	77	144	0	NA
23803	Coastal	12	2016	689050	05.04.2016	30.04.2016	25	563	129	233	5.16	47	104	1	c
23811	Coastal	9	2015	683540	28.04.2015	03.12.2015	219	602	818	580	3.74	46	139	2	c
23811	Coastal	11	2017	695426	13.04.2017	04.04.2018	356	204	1617	617	4.54	85	138	2	c

23811	Coastal	12	2018	695435	06.04.2018	27.10.2018	204	1500	1219	664	5.98	131	177	2	y
23831	Coastal	9	2011	641291	08.04.2011	15.05.2011	37	37	170	555	4.59	42	163	2	c
23872	Coastal	21	2014	676444	14.04.2014	14.10.2014	184	2109	1371	718	7.45	157	209	0	NA
23872	Coastal	22	2015	683543	25.04.2015	30.11.2015	219	4256	1047	388	4.78	108	157	1	c
23881	Coastal	11	2014	676475	23.04.2014	25.04.2016	733	97	2450	519	3.34	40	143	1	c
23882	Coastal	9	2013	669455	14.04.2013	09.04.2014	360	1269	2037	532	5.66	99	151	1	y
23882	Coastal	10	2014	676462	13.04.2014	07.11.2015	573	471	2404	648	4.20	86	218	0	NA
23882	Coastal	12	2016	689057	04.04.2016	03.11.2016	213	1903	1464	615	6.87	149	167	1	y
23882	Coastal	13	2017	695418	22.04.2017	22.04.2018	365	603	1390	365	3.81	82	207	0	NA
23906	Coastal	10	2013	670059	01.09.2013	31.12.2014	486	3752	2098	409	4.32	123	138	0	NA
23918	Coastal	19	2018	700875	15.04.2018	27.10.2018	195	6340	1325	512	6.79	194	141	2	y
23935	Coastal	11	2015	683539	25.04.2015	08.03.2016	318	735	1813	628	5.70	87	153	2	c
23937	Coastal	6	2011	649843	09.04.2011	25.03.2012	351	733	2501	553	7.13	102	188	0	NA
23937	Coastal	8	2013	670056	01.09.2013	16.10.2014	410	2168	3142	488	7.66	149	209	1	c
23939	Coastal	7	2011	649701	09.04.2011	08.09.2011	153	781	1364	690	8.92	146	153	0	NA
23939	Coastal	11	2015	683532	21.04.2015	30.09.2015	162	4256	1326	735	8.19	145	165	1	c
23940	Coastal	8	2016	689054	06.04.2016	31.08.2016	147	881	1473	845	10.02	99	203	0	NA
23940	Coastal	10	2018	700868	24.04.2018	27.10.2018	186	809	1195	668	6.42	100	135	2	c
23944	Coastal	15	2018	695424	03.04.2018	27.10.2018	206	247	898	607	4.36	74	175	2	c
23952	Coastal	6	2014	676443	01.04.2014	13.03.2015	346	596	1781	601	5.15	73	132	0	NA
23952	Coastal	7	2015	683533	03.04.2015	30.04.2016	393	813	1887	613	4.80	73	149	0	NA
23952	Coastal	10	2018	700859	11.04.2018	27.10.2018	199	479	944	583	4.74	41	173	1	c
23956	Coastal	9	2014	676483	27.04.2014	10.04.2016	714	442	2837	499	3.97	58	159	0	NA
23956	Coastal	12	2017	695430	24.04.2017	28.10.2018	552	600	2508	425	4.54	87	168	0	NA
23977	Coastal	11	2018	700864	10.04.2018	25.10.2018	198	620	1465	635	7.40	124	153	0	NA
23979	Coastal	19	2015	683541	17.04.2015	30.09.2016	532	3018	3528	508	6.63	202	147	2	2yr
23980	Coastal	7	2013	669450	11.04.2013	30.09.2013	172	773	1309	625	7.61	117	176	0	NA
23980	Coastal	8	2014	676459	03.04.2014	28.12.2014	269	2078	1912	630	7.11	178	150	2	c
23980	Coastal	9	2015	683536	19.04.2015	05.03.2016	320	745	2455	595	7.67	164	187	2	y
23980	Coastal	10	2016	676485	24.04.2016	30.11.2016	221	3318	1469	418	6.65	164	144	0	NA
23980	Coastal	11	2017	695434	27.03.2017	21.05.2018	420	1022	2659	616	6.33	170	172	2	c

23992	Coastal	12	2017	695420	28.03.2017	25.04.2018	393	1899	2707	732	6.89	163	209	2	c
26010	Coastal	10	2018	695431	08.04.2018	27.10.2018	202	135	810	618	4.01	85	143	0	NA
26018	Coastal	20	2011	649717	20.04.2011	21.04.2012	367	12682	2777	604	7.57	330	200	3	c
26018	Coastal	24	2015	683529	21.04.2015	18.02.2017	669	10657	5144	606	7.69	245	166	3	c
26044	Offshore	11	2011	649840	11.04.2011	18.06.2012	434	30558	5085	718	11.72	351	135	2	c
26047	Offshore	9	2011	649716	11.04.2011	31.03.2013	720	16749	8206	648	11.40	452	163	0	NA
26050	Coastal	5	2011	649727	20.04.2011	01.08.2012	469	1887	3197	704	6.82	220	154	0	NA
26052	Coastal	6	2017	695428	25.03.2017	04.05.2017	40	31	52	276	1.30	20	223	0	NA
26052	Coastal	7	2018	700872	22.04.2018	27.10.2018	188	2503	1211	705	6.44	176	198	1	c
26054	Offshore	13	2011	649839	20.04.2011	11.08.2011	114	8065	1578	711	13.84	348	216	0	NA
26084	Coastal	12	2016	689056	09.04.2016	06.06.2016	58	83	259	845	4.47	21	191	1	c
26088	Coastal	12	2017	695433	01.04.2017	13.04.2018	377	2282	4072	687	10.80	313	152	1	c
26095	Coastal	6	2013	659121	11.04.2013	12.03.2014	335	1688	1855	638	5.54	135	164	0	NA
26103	Coastal	21	2018	695438	03.04.2018	27.10.2018	207	4939	799	464	3.86	103	191	0	NA
26110	Coastal	6	2018	700871	04.04.2018	27.10.2018	206	1172	1185	582	5.75	111	132	0	NA
26113	Coastal	7	2014	676484	27.04.2014	09.12.2014	227	887	1610	556	7.09	133	183	0	NA
26113	Coastal	8	2015	683535	03.04.2015	31.10.2015	212	5263	1429	719	6.74	177	157	0	NA
26117	Coastal	16	2015	683530	04.04.2015	01.06.2016	424	12113	4436	732	10.46	367	130	1	c
26131	Coastal	11	2017	695423	10.04.2017	14.05.2018	399	14333	4025	717	10.09	321	217	2	y
26132	Offshore	18	2013	669452	11.04.2013	06.06.2013	56	6289	634	372	11.32	361	152	1	y
26135	Offshore	9	2013	666177	12.04.2013	20.01.2014	283	223460	4616	604	16.31	1624	217	0	NA
26137	Coastal	5	2013	669539	11.04.2013	19.04.2014	373	9738	3596	573	9.64	321	118	2	c
26141	Offshore	7	2013	659122	12.04.2013	18.05.2013	37	68929	1257	1171	33.97	988	179	0	NA
26143	Offshore	11	2013	669532	12.04.2013	31.07.2013	111	66701	2347	733	21.14	1010	203	0	NA
26153	Coastal	10	2013	669533	16.04.2013	02.06.2013	48	289	305	375	6.35	37	147	2	c
26165	Coastal	14	2015	683531	22.04.2015	05.12.2016	593	217	1679	374	2.83	36	225	0	NA
26171	Coastal	10	2015	676490	11.08.2015	05.09.2016	391	3210	1422	272	3.64	185	242	0	NA
26175	Coastal	5	2016	689052	07.04.2016	30.06.2016	84	377	507	882	6.04	53	197	0	NA
26179	Coastal	11	2014	676479	25.04.2014	31.12.2014	251	948	1234	477	4.92	112	123	0	NA
26179	Coastal	14	2017	695427	02.04.2017	28.10.2018	574	723	3241	548	5.65	166	130	1	c
26180	Coastal	17	2013	670053	04.09.2013	08.04.2015	581	5613	3014	379	5.19	241	202	0	NA

26185	Coastal	22	2018	700874	18.04.2018	27.10.2018	192	17155	2084	481	10.85	265	218	0	NA
26200	Offshore	19	2014	676448	01.04.2014	16.09.2014	168	31743	2205	675	13.13	388	195	0	NA
26204	Offshore	8	2014	676452	04.04.2014	08.12.2014	249	92836	4215	831	16.93	530	129	0	NA
26205	Coastal	14	2017	695432	07.04.2017	19.08.2018	499	7580	3085	530	6.18	263	172	0	NA
26209	Coastal	14	2017	695421	30.03.2017	08.04.2018	374	7105	2005	425	5.36	284	187	0	NA
26217	Offshore	10	2014	676460	16.04.2014	30.11.2014	228	15311	3586	825	15.73	365	184	0	NA
26219	Offshore	6	2014	676447	17.04.2014	05.11.2014	202	10971	3164	903	15.66	176	170	0	NA
26220	Offshore	8	2014	676476	17.04.2014	27.05.2017	1136	167529	17573	727	15.47	1133	177	0	NA
26224	Coastal	6	2014	676477	25.04.2014	14.08.2014	112	4986	1090	579	9.73	131	160	0	NA
26225	Offshore	19	2014	676486	27.04.2014	16.07.2014	81	26660	1519	990	18.75	551	204	0	NA
26225	Offshore	21	2016	689051	14.04.2016	30.07.2016	107	19973	1275	794	11.92	317	200	0	NA
26241	Offshore	8	2015	683523	22.04.2015	28.07.2018	1193	1705	9261	486	7.76	251	158	0	NA
26243	Offshore	8	2015	683526	24.04.2015	04.10.2016	529	744	2980	563	5.63	261	123	2	c
26253	Coastal	6	2018	700860	19.04.2018	27.10.2018	191	756	725	530	3.80	82	145	1	c
26256	Offshore	5	2015	683525	02.08.2015	10.05.2016	282	20203	2037	353	7.22	338	162	0	NA
26257	Coastal	22	2015	683534	02.08.2015	27.10.2015	86	1563	375	254	4.36	191	NA	1	c
26259	Offshore	12	2015	676481	04.08.2015	03.10.2017	791	97660	11723	632	14.82	678	201	0	NA
26263	Coastal	7	2016	689053	07.04.2016	29.08.2016	144	68	625	611	4.34	42	206	0	NA
26265	Offshore	15	2016	689055	08.04.2016	14.06.2016	67	71337	1201	859	17.93	494	192	0	NA
26269	Offshore	6	2016	676488	11.04.2016	05.10.2016	178	45933	2647	887	14.87	612	198	0	NA
26271	Offshore	14	2016	676480	11.04.2016	22.06.2016	73	14149	879	822	12.04	205	237	0	NA
26279	Coastal	21	2016	676482	17.04.2016	31.12.2016	259	1797	1222	344	4.72	244	181	0	NA
26302	Offshore	6	2017	695425	07.04.2017	29.09.2017	174	104208	3279	958	18.84	560	169	0	NA
26305	Offshore	11	2017	695422	11.04.2017	07.11.2017	210	81122	3198	859	15.23	919	199	1	y
26315	Offshore	NA	2018	695436	02.04.2018	27.10.2018	208	72237	3305	715	15.89	1015	na	1	y
26325	Offshore	NA	2018	700855	14.04.2018	27.10.2018	196	68400	2594	674	13.23	1130	182	1	2y
26327	Offshore	NA	2018	700869	14.04.2018	27.10.2018	195	168521	3298	759	16.91	1308	172	0	NA
26328	Offshore	NA	2018	700857	15.04.2018	27.10.2018	195	148716	3441	802	17.65	1069	191	0	NA
26335	Coastal	NA	2018	700873	20.04.2018	27.10.2018	190	267	524	438	2.76	33	153	2	c

**Table S2:** Parameters estimates based on linear mixed effect models including ecotype as an explanatory variable. Individual identification and year of tagging were included as random effects. The 95 % confidence intervals (CI) are given. The reference level is the coastal ecotype.

Effect of space use strategy on	Intercept [95% CI]	Estimate [95% CI]
log(yearly HR size)	7.34 [6.75 ; 7.9]	2.85 [1.63 ; 4.07]
sqrt(speed)	0.45 [0.42 ; 0.47]	0.27 [0.23 ; 0.32]
log(max distance from capture)	4.70 [4.54 ; 4.87]	1.63 [1.33 ; 1.93]
% spent on land	0.72 [0.67 ; 0.76]	-0.53 [-0.62 ; -0.45]
Daily activity (sec.h-1)	580 [549 ; 611]	181 [122 ; 239]
log(FMR)	5.56 [5.52 ; 5.59]	0.26 [0.21 ; 0.30]
log(FMR corrected)	5.58 [5.52 ; 5.564]	0.26 [0.12 ; 0.40]
log(trip duration)	2.51 [2.35 ; 2.66]	0.32 [0.15 ; 0.50]
log(trip distance)	3.03 [2.51 ; 3.55]	1.09 [1.69 ; 0.49]
log(time difference between trips)	5.59 [5.06 ; 6.12]	0.61 [ 0.02 ; 1.24]
log(hourly activity per trip)	6.67 [6.47 ; 6.87]	0.56 [0.79 ; 0.33]