

Figure S1. Tagging locations of humpback whales along the Brazilian coast. Animals were tagged from 2003 to 2012. A: Camamú region, Bahia state. B: the Abrolhos Archipelago region. The archipelago location is indicated by a black triangle.

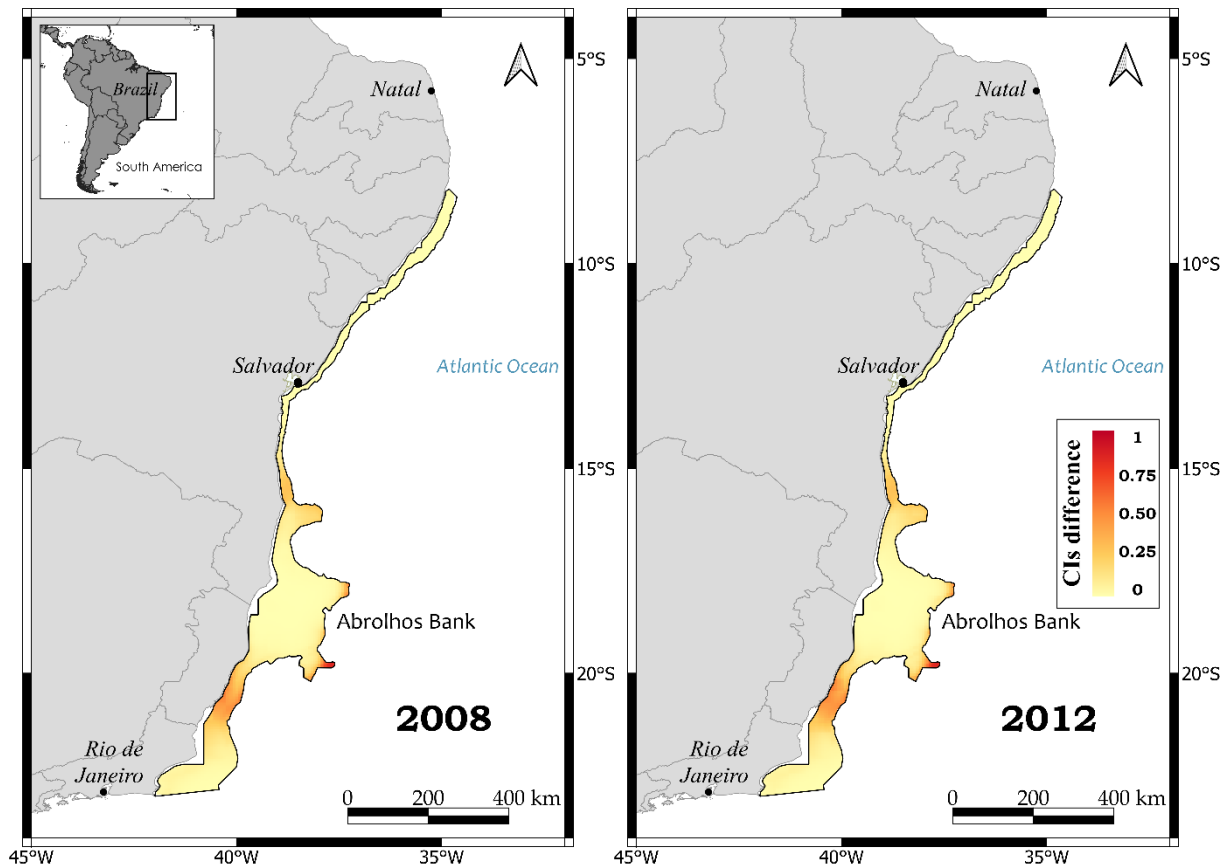


Figure S2. Uncertainty maps for the present Distribution Models (DIMs). “CIs difference” was calculated from the difference between the upper confidence limit (i.e. 97.5% quantile) and the lower confidence interval limit (i.e. 2.5% quantile) of 1,000 bootstrap samples computed for cell predictions using the selected DIM. Bootstrap confidence intervals were calculated following the online vignette for MRSea R package (version 1.3; <https://lindesaysh.github.io/MRSea/>).

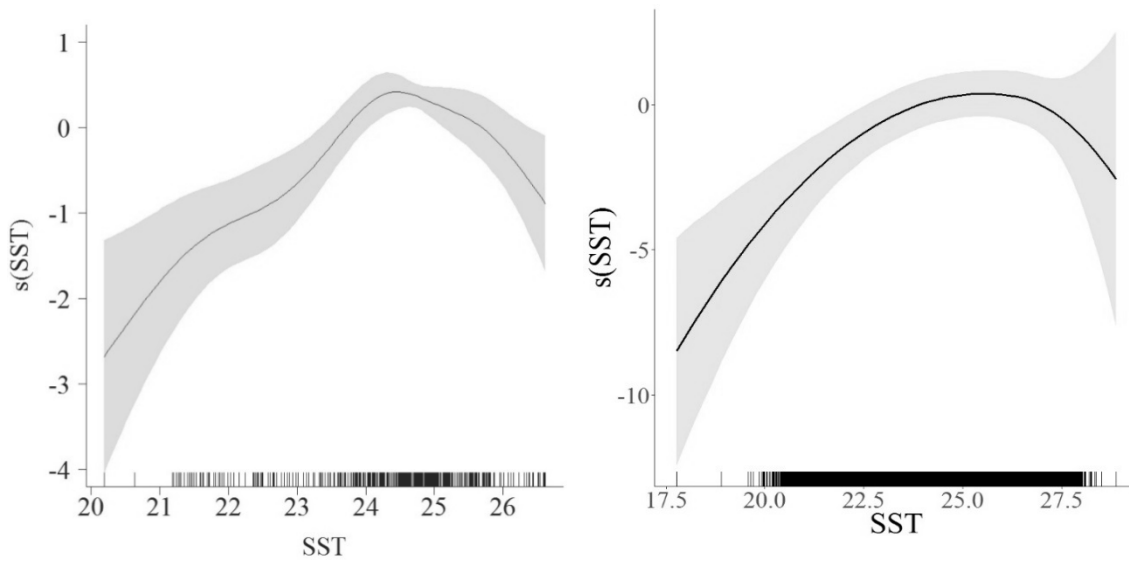


Figure S3. Comparison of smooth functions fitted to SST in the habitat use models from line transect data (left; reproduced from Bortolotto et al. 2017) and present tracking data (right).

Table S1. Information on whale tagging. (Whale ID = unique identification of tag; Area = area of tagging in the coast of Brazil; Group = group composition; Role = social role of whale in the group; Cycle = programmed cycle for attempting transmissions; Transm. = programmed number of attempted transmissions within “Interval” and “Cycle”; Interval = interval within a day, i.e. 24 hours, when transmissions were programmed to be attempted; eod = every other day; all = every day; e4d = every four days; U = undetermined).

Whale ID	Date	Latitude	Longitude	Area	Group	Role	Sex	Transm.	Cycle	Interval
21810.03	18/10/2003	-18.683	-39.483	Abrolhos	mother, calf, escort	escort	M	300	eod	6-21
27261.03	18/10/2003	-18.724	-39.237	Abrolhos	mother, calf, escort	escort	M	300	eod	6-21
24640.03	19/10/2003	-18.548	-39.438	Abrolhos	single	adult	F	300	eod	6-21
27259.03	19/10/2003	-18.516	-39.362	Abrolhos	mother, calf, three adults	escort	M	300	all	6-21
20162.03	19/10/2003	-18.481	-39.372	Abrolhos	mother, calf, three adults	escort	M	300	eod	6-21
24642.03	27/10/2003	-18.520	-39.190	Abrolhos	mother, calf	mother	F	300	eod	6-21
21809.03	27/10/2003	-18.422	-39.209	Abrolhos	mother, calf	mother	F	500	all	0-23
21792.03	27/10/2003	-18.464	-39.329	Abrolhos	mother, calf, escort	escort	M	500	all	0-23
20687.03	27/10/2003	-18.459	-39.319	Abrolhos	mother, calf, escort	mother	F	500	all	0-23
21800.03	28/10/2003	-18.724	-39.242	Abrolhos	mother, calf	mother	F	500	all	0-23
21791.03	28/10/2003	-18.602	-39.479	Abrolhos	mother, calf	mother	F	500	all	0-23
26712.05	11/10/2005	-18.012	-39.068	Abrolhos	mother, calf, escort	mother	F	300	Out-Nov: all; Dec-: e4d	7-22
7617.05	11/10/2005	-18.021	-39.050	Abrolhos	mother, calf, escort	mother	F	300	Out-Nov: eod; Dec-: e4d	0-23
7618.05	11/10/2005	-18.018	-39.065	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	0-23
27261.05	12/10/2005	-17.946	-39.134	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	7-22
27259.05	16/10/2005	-18.062	-39.111	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	7-22

37229.05	16/10/2005	-18.083	-39.110	Abrolhos	mother, calf, escort	mother	F	300	Out-Nov: eod; Dec-: e4d	7-22
37231.05	16/10/2005	-18.068	-39.107	Abrolhos	mother, calf, escort	mother	F	300	Out-Nov: eod; Dec-: e4d	7-22
37234.05	16/10/2005	-18.042	-39.099	Abrolhos	mother, calf, escort	mother	F	300	Out-Nov: eod; Dec-: e4d	7-22
24641.05	19/10/2005	-18.103	-39.026	Abrolhos	mother, calf	mother	F	300	Out-Nov: all; Dec-: e4d	7-22
27258.05	19/10/2005	-18.037	-39.151	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	7-22
10946.05	19/10/2005	-18.009	-39.156	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	0-23
33000.05	19/10/2005	-18.078	-39.083	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	0-23
33001.05	19/10/2005	-18.097	-39.040	Abrolhos	mother, calf	mother	F	300	Out-Nov: eod; Dec-: e4d	0-23
37229.06	12/10/2006	-17.988	-39.156	Abrolhos	two adults	adult	U	300	all	7-22
33000.06	12/10/2006	-18.001	-39.182	Abrolhos	mother, calf, escort	mother	F	300	all	7-22
27259.06	13/10/2006	-17.996	-39.129	Abrolhos	mother, calf	mother	F	300	all	7-22
37282.06	18/10/2006	-18.035	-39.154	Abrolhos	four adults	adult	U	300	eod	7-22
37288.06	20/10/2006	-18.017	-39.159	Abrolhos	mother, calf	mother	F	300	eod	7-22
50682.06	25/10/2006	-18.004	-39.155	Abrolhos	mother, calf	mother	F	300	eod	7-22
33001.06	25/10/2006	-17.993	-39.087	Abrolhos	mother, calf	mother	F	300	all	7-22
37236.06	26/10/2006	-18.187	-39.206	Abrolhos	mother, calf	mother	F	300	eod	7-22
37230.06	26/10/2006	-18.185	-39.169	Abrolhos	mother, calf	mother	F	300	all	7-22
42521.06	26/10/2006	-18.268	-39.096	Abrolhos	U	U	U	300	eod	7-22
37234.06	28/10/2006	-18.022	-39.131	Abrolhos	mother, calf, escort	mother	F	300	eod	7-22
42521.07	08/09/2007	-18.011	-39.099	Abrolhos	mother, calf	mother	F	300	all	0-23
60007.07	08/09/2007	-18.012	-39.096	Abrolhos	mother, calf	mother	F	300	all	0-23
27261.07	12/09/2007	-17.979	-39.083	Abrolhos	mother, calf, escort	mother	F	300	all	0-23

37231.07	12/09/2007	-17.984	-39.093	Abrolhos	mother, calf, escort	escort	M	300	all	0-23
37286.07	14/09/2007	-17.998	-39.140	Abrolhos	mother, calf	mother	F	300	all	0-23
37288.07	14/09/2007	-18.005	-39.147	Abrolhos	mother, calf, escort	mother	F	300	all	0-23
50682.07	15/09/2007	-18.038	-39.176	Abrolhos	mother, calf, escort	mother	F	300	all	0-23
50686.07	15/09/2007	-18.117	-39.140	Abrolhos	mother, calf, escort	mother	F	300	all	0-23
42525.07	16/09/2007	-18.113	-39.157	Abrolhos	mother, calf	mother	F	300	all	0-23
50687.07	16/09/2007	-18.158	-39.106	Abrolhos	mother, calf, escort	mother	F	300	all	0-23
60004.07	16/09/2007	-18.074	-39.225	Abrolhos	single	adult	M	300	all	0-23
87759.08	27/08/2008	-18.499	-38.521	Abrolhos	two adults	adult	M	300	Sep-Nov: all; Dec-: eod	7-22
87760.08	28/08/2008	-15.362	-38.761	Bahia	two adults	adult	U	300	Sep-Nov: all; Dec-: eod	7-22
87761.08	28/08/2008	-15.316	-38.769	Bahia	two adults	adult	M	300	Sep-Nov: all; Dec-: eod	7-22
87762.08	29/08/2008	-12.752	-38.012	Bahia	two adults	adult	M	300	Sep-Nov: all; Dec-: eod	7-22
87763.08	30/08/2008	-9.772	-35.654	Alagoas	mother, calf	mother	F	300	Sep-Nov: all; Dec-: eod	7-22
87764.08	06/09/2008	-10.094	-35.867	Alagoas	mother, calf	mother	F	300	Sep-Nov: all; Dec-: eod	7-22
87765.08	07/09/2008	-10.737	-36.513	Sergipe	mother, calf, four adults	adult	F	300	Sep-Nov: all; Dec-: eod	7-22
87767.08	07/09/2008	-10.708	-36.506	Sergipe	mother, calf	mother	F	300	Sep-Nov: all; Dec-: eod	7-22
87766.08	08/09/2008	-10.732	-36.527	Sergipe	mother, calf, four adults	adult	M	300	Sep-Nov: all; Dec-: eod	7-22
87768.08	12/09/2008	-14.381	-38.918	Bahia	mother, calf, escort	mother	F	300	Sep-Nov: all; Dec-: eod	7-22
87769.08	12/09/2008	-14.366	-38.912	Bahia	two adults	adult	U	300	Sep-Nov: all; Dec-: eod	7-22

87770.08	12/09/2008	-14.368	-38.920	Bahia	mother, calf, escort	escort	M	300	Sep-Nov: all; Dec-: eod	7-22
87773.08	12/09/2008	-14.639	-39.010	Bahia	mother, calf	mother	F	300	Sep-Nov: all; Dec-: eod	7-22
87775.08	16/09/2008	-18.351	-38.673	Abrolhos	four adults	adult	F	300	Sep-Nov: all; Dec-: eod	7-22
87776.08	16/09/2008	-18.350	-38.644	Abrolhos	two adults	adult	F	300	Sep-Nov: all; Dec-: eod	7-22
87777.08	16/09/2008	-18.369	-38.632	Abrolhos	mother, calf, three adults	mother	F	300	Sep-Nov: all; Dec-: eod	7-22
87774.08	17/09/2008	-18.894	-38.166	Abrolhos	two adults	adult	U	300	Sep-Nov: all; Dec-: eod	7-22
87778.08	17/09/2008	-18.910	-38.145	Abrolhos	two adults	adult	M	300	Sep-Nov: all; Dec-: eod	7-22
87771.09	14/09/2009	-13.901	-38.887	Bahia	five adults	adult	U	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
87773.09	15/09/2009	-13.773	-38.784	Bahia	single	adult	U	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
87774.09	15/09/2009	-14.125	-38.834	Bahia	mother, calf	mother	F	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
88719.09	17/09/2009	-13.952	-38.784	Bahia	five adults	adult	U	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
87783.09	18/09/2009	-13.826	-38.767	Bahia	mother, calf, escort	mother	F	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
88727.09	19/09/2009	-13.834	-38.717	Bahia	two adults	adult	F	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
88720.09	24/09/2009	-13.850	-38.834	Bahia	four adults	adult	U	300	Aug-Oct: all, Nov-: eod	5-10, 17-22
81123.09*	24/09/2009	-13.942	-38.834	Bahia	four adults	adult	F	300	Aug-Oct: all, Nov-: eod	5-10, 17-22

81125.09*	24/09/2009	-14.004	-38.834	Bahia	four adults	adult	M	300	Aug-Oct: Nov-: eod	all,	5-10, 17-22
81124.09*	25/09/2009	-13.897	-38.767	Bahia	mother, calf, four adults	adult	M	300	Aug-Oct: Nov-: eod	all,	5-10, 17-22
81126.09*	25/09/2009	-13.887	-38.750	Bahia	mother, calf, four adults	mother	F	300	Aug-Oct: Nov-: eod	all,	5-10, 17-22
81122.09*	27/09/2009	-13.887	-38.765	Bahia	mother, calf, three adults	adult	F	300	Aug-Oct: Nov-: eod	all,	5-10, 17-22
87773.10	18/09/2010	-13.883	-38.843	Bahia	mother, calf, escort	escort	M	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
96380.10	23/09/2010	-13.835	-38.861	Bahia	mother, calf, escort	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
88726.10	28/09/2010	-13.883	-38.818	Bahia	mother, calf, escort	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
87781.10	01/10/2010	-13.869	-38.807	Bahia	mother, calf	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
88724.10	01/10/2010	-13.857	-38.792	Bahia	mother, calf	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
84497.10	01/10/2010	-13.752	-38.786	Bahia	three adults	adult	F	500	Sep-Nov: Dec-: eod	all;	0-23
87759.10	02/10/2010	-13.666	-38.846	Bahia	single	adult	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
87631.10	05/10/2010	-13.904	-38.889	Bahia	mother, calf	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
87777.10	05/10/2010	-14.019	-38.879	Bahia	mother, calf	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
84496.10	06/10/2010	-13.906	-38.871	Bahia	mother, calf	mother	F	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20
87624.10	06/10/2010	-13.996	-38.855	Bahia	five adults	adult	U	300	Sep-Nov: Dec-: eod	all;	2-8, 14-20

87778.10	06/10/2010	-14.056	-38.838	Bahia	five adults	adult	U	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
102211.10	06/10/2010	-14.089	-38.815	Bahia	seven adults	adult	U	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
87776.11	29/09/2011	-13.858	-38.886	Bahia	mother, calf, escort	mother	F	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
87773.11	29/09/2011	-13.926	-38.870	Bahia	mother, calf	mother	F	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
87774.11	30/09/2011	-14.079	-38.827	Bahia	mother, calf, escort	escort	M	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
87769.11	01/10/2011	-13.877	-38.826	Bahia	mother, calf, two adults	mother	F	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
111869.11	07/10/2011	-13.722	-38.830	Bahia	single	adult	U	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
111868.11	10/10/2011	-14.086	-38.861	Bahia	mother, calf, two adults	escort	M	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
87783.11	10/10/2011	-14.175	-38.868	Bahia	mother, calf, two adults	mother	F	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
87768.11	22/10/2011	-13.920	-38.815	Bahia	mother, calf, escort	mother	F	300	Sep-Nov: all; Dec-: eod	2-8, 14-20
112694.12	08/08/2012	-21.837	-40.340	Rio de Janeiro	four adults	adult	U	400	all	5-10, 17-22
112717.12	08/08/2012	-21.785	-40.286	Rio de Janeiro	four adults	adult	U	400	all	5-10, 17-22
112702.12	20/10/2012	-18.085	-39.006	Abrolhos	eight adults	escort	M	400	all	5-10, 17-22
121189.12	20/10/2012	-18.096	-39.044	Abrolhos	pair	adult	M	400	all	5-10, 17-22
121194.12	20/10/2012	-18.061	-39.067	Abrolhos	eight adults	escort	M	400	all	5-10, 17-22
121195.12	20/10/2012	-18.051	-39.114	Abrolhos	mother, calf	mother	F	400	all	5-10, 17-22
112714.12	25/10/2012	-17.970	-39.053	Abrolhos	mother, calf, escort	escort	M	400	all	5-10, 17-22
120947.12	25/10/2012	-17.980	-39.133	Abrolhos	single	adult	M	400	all	5-10, 17-22

121193.12	25/10/2012	-17.969	-39.091	Abrolhos	mother, calf, escort	mother	F	400	all	5-10, 17-22
87632.12	26/10/2012	-18.104	-39.127	Abrolhos	mother, calf, escort	mother	F	400	all	5-10, 17-22
112712.12	26/10/2012	-18.127	-39.137	Abrolhos	mother, calf, escort	escort	M	400	all	5-10, 17-22
121192.12	27/10/2012	-18.089	-39.223	Abrolhos	four adults	adult	M	400	all	5-10, 17-22
121196.12	27/10/2012	-18.068	-39.222	Abrolhos	three adults	adult	M	400	all	5-10, 17-22
87775.12	28/10/2012	-18.009	-39.021	Abrolhos	mother, calf, escort	mother	F	400	all	5-10, 17-22
88480.12	02/11/2012	-18.031	-39.027	Abrolhos	mother, calf	mother	F	400	all	5-10, 17-22
111871.12	02/11/2012	-18.004	-39.040	Abrolhos	mother, calf	mother	F	600	eod	0-23

*Tagged with LIMPET tags.

Table S2. Number of locations, days of duration and metrics of numbers per day, for tracks (n = 87) considered in the distribution analysis of humpback whales.

Track	Total	Duration	Median/day	Min./day	Max./day
20687.03	297	21	14	10	19
21791.03	170	13	13	7	18
21800.03	274	30	9	4	15
21809.03	50	16	3	0	7
21810.03	35	13	3	0	4
24640.03	22	8	2	1	5
24642.03	588	204	2	0	10
27259.03	50	38	1	0	6
7617.05	17	16	0.5	0	4
10946.05	118	56	2	0	8
24641.05	142	56	2	0	7
26712.05	29	16	2	0	4
27258.05	57	29	2	0	6
27259.05	25	18	1	0	3
27261.05	62	46	1	0	6
33000.05	17	25	0	0	4
33001.05	19	6	3.5	0	6
37231.05	18	18	1	0	2
37234.05	26	32	0	0	5
33001.06	52	15	3	2	8
37229.06	51	18	3	0	6
50682.06	22	16	1	0	5
27261.07	36	24	1	0	4
37286.07	35	14	3	1	4
37288.07	102	36	3	0	6
42521.07	72	40	2	0	4
42525.07	57	15	4	0	9
50686.07	72	15	4	2	9
50687.07	15	11	1	0	4
87759.08	75	11	6	5	10
87760.08	252	44	6	1	10
87761.08	189	30	6.5	2	9
87762.08	261	37	7	2	15
87763.08	278	54	5	0	13
87764.08	275	46	6	1	10
87765.08	244	32	8	2	12
87766.08	86	19	5	1	8
87767.08	26	5	5	1	9
87768.08	219	52	5	0	10
87769.08	80	53	1	0	7
87770.08	16	8	1.5	0	5
87773.08	252	41	6	2	10
87774.08	82	18	4	3	8

87775.08	247	35	7	3	12
87776.08	47	26	1	0	6
87778.08	122	34	3	0	11
81123.09	27	7	3	2	6
81125.09	21	7	3	2	5
81126.09	48	10	4.5	3	9
87771.09	383	60	6	1	12
87773.09	230	55	4	0	9
87774.09	233	49	5	0	9
87783.09_2	614	123	5	0	17
88719.09	84	48	2	0	4
88727.09	171	63	3	0	7
84497.10	333	27	12	3	21
87631.10	39	6	6.5	4	9
87773.10	28	12	2	0	7
87777.10	136	22	7	3	10
87778.10	117	21	6	0	10
87781.10	51	10	4	2	9
88724.10	49	8	5.5	5	11
88726.10	99	22	4	2	8
96380.10	92	19	4	3	12
102211.10	214	31	7	4	10
87768.11	272	29	9	6	13
87769.11	25	29	0	0	4
87773.11	205	35	6	0	10
87774.11_2	45	14	3	1	7
87776.11	21	22	1	0	6
87783.11	81	19	3	1	9
111868.11	86	18	5	0	8
111869.11	123	26	6	0	9
84480.12	310	45	7	0	15
87632.12	358	41	9	2	16
87775.12	15	12	1	0	4
111871.12	2492	169	13	1	30
112694.12	75	7	11	7	15
112702.12	172	32	6.5	0	12
112712.12	101	23	4	0	9
112714.12	48	7	6	2	15
112717.12	127	17	7	4	14
120947.12	84	9	10	6	12
121189.12	567	96	6	0	14
121189.12_6	49	8	6.5	2	9
121193.12	290	35	8	3	18
121195.12	52	7	6	5	10

Table S3. Selected habitat use model (HUM) coefficient results. (co = cold, mo = moderate, wa = warm, li = light, Curr.sp = current speed, SST = sea surface temperature, Wind.sp = wind speed, Coast.dist = distance to the coast, Shelf.dist = distance to the shelf break, SE = standard error, Wald = Wald statistic, Sign = significance).

Parameter	Estimate	SE	Wald	p-value	Sign ($\alpha = 0.05$)
Intercept	-9.173	1.985	21.345	< 0.001	*
Shelter.co.mo	0.364	0.151	5.824	0.016	*
Shelter.co.st	0.380	0.171	4.926	0.026	*
Shelter.wa.li	0.011	0.172	0.004	0.951	
Shelter.wa.mo	0.010	0.219	0.002	0.963	
Shelter.wa.st	0.279	0.219	1.614	0.204	
bs(Curr.sp)1	-0.749	0.331	5.112	0.024	*
bs(Curr.sp)2	-0.552	0.259	4.522	0.033	*
bs(Curr.sp)3	-1.377	0.320	18.554	< 0.001	*
bs(Curr.sp)4	-0.638	0.326	3.829	0.050	
bs(Curr.sp)5	-1.930	0.685	7.926	0.005	*
bs(Curr.sp)6	0.554	1.266	0.192	0.662	
bs(SST)1	9.770	2.509	15.159	< 0.001	*
bs(SST)2	8.440	1.812	21.686	< 0.001	*
bs(SST)3	5.888	3.437	2.935	0.087	
bs(Wind.sp)1	0.719	0.359	4.010	0.045	*
bs(Wind.sp)2	-0.063	0.238	0.069	0.793	
bs(Wind.sp)3	0.428	0.391	1.198	0.274	
bs(Wind.sp)4	0.950	0.776	1.498	0.221	
bs(Coast.dist)1	0.834	0.429	3.777	0.052	
bs(Coast.dist)2	0.134	0.280	0.229	0.632	
bs(Coast.dist)3	1.508	0.547	7.594	0.006	*
bs(Coast.dist)4	-1.754	0.824	4.536	0.033	*
bs(Shelf.dist)1	0.675	0.277	5.950	0.015	*
bs(Shelf.dist)2	0.237	0.212	1.254	0.263	
bs(Shelf.dist)3	1.228	0.232	28.095	< 0.001	*
bs(Shelf.dist)4	1.379	0.266	26.810	< 0.001	*
bs(Shelf.dist)5	1.999	0.390	26.214	< 0.001	*
bs(Shelf.dist)6	0.147	0.581	0.064	0.801	

Table S4. Selected Distribution Model (DIM) coefficient results. (Curr.sp = current speed, Coast.dist = distance to the coast, SE = standard error, Wald = Wald statistic, Sign = significance).

Parameter	Estimate	SE	Wald	p-value	Sign ($\alpha = 0.05$)
Intercept	-5.605	0.674	69.185	< 0.001	*
bs(Curr.sp)1	-0.547	0.335	2.660	0.103	
bs(Curr.sp)2	-0.643	0.262	6.005	0.014	*
bs(Curr.sp)3	-0.570	0.290	3.856	0.050	*
bs(Curr.sp)4	-1.100	0.836	1.731	0.188	
bs(Curr.sp)5	-1.020	0.287	12.644	< 0.001	*
bs(Curr.sp)6	-0.402	0.484	0.690	0.406	
bs(Curr.sp)7	-1.093	0.928	1.385	0.239	
bs(Coast.dist)1	1.434	0.288	24.701	< 0.001	*
bs(Coast.dist)2	0.512	0.296	2.994	0.084	
bs(Coast.dist)3	0.042	0.527	0.006	0.937	
bs(Coast.dist)4	-5.109	1.293	15.615	< 0.001	*
bs(Shelf.dist)1	0.702	0.233	9.061	0.003	*
bs(Shelf.dist)2	0.643	0.183	12.304	< 0.001	*
bs(Shelf.dist)3	3.099	0.379	66.943	< 0.001	*
bs(Shelf.dist)4	1.748	0.455	14.773	< 0.001	*
XY.1	12.740	1.847	47.568	< 0.001	*
XY.2	2.689	0.305	77.781	< 0.001	*
XY.3	4.599	0.819	31.563	< 0.001	*
XY.4	-7.539	1.353	31.072	< 0.001	*
XY.5	2.771	0.708	15.329	< 0.001	*

Table S5. Comparison of the two spatial modelling methods considered here, of line transect data and satellite telemetry tracking data (as presences and pseudo-absences).

Feature	Line-transect	Satellite telemetry
Sampling/data	<p><u>Pro</u>: spatial data are sampled from places visited by the observation platform, therefore controlled in the survey design</p> <p><u>Con</u>: survey must cover a representative portion of the area</p>	<p><u>Pro</u>: spatial data is sampled from places visited by the animals</p> <p><u>Con</u>: no information about places not visited by the tracked animals</p>
Modelling	<p><u>Pro</u>: potentially more precise outputs; more well consolidated model fitting procedures available</p> <p><u>Con</u>: Data points along the same line are correlated in space and time.</p>	<p><u>Con</u>: data points highly correlated in space and time within each individual; requires arbitrary number of pseudo-absences to be created; potentially large uncertainty in fitted smooth terms because of high spatiotemporal correlation (within GEEs framework).</p>
Coverage/ Survey area	<p><u>Pro</u>: can be controlled in the survey design</p> <p><u>Con</u>: limited temporally by the period of the survey and restricted spatially by survey platform limitations</p>	<p><u>Pro</u>: animals may visit areas not assessable to survey platforms</p> <p><u>Con</u>: limited temporally by tag longevity and restricted spatially by animal displacement restrictions</p>
Type of information	<p><u>Pro</u>: relatively larger sample size can better represent the population in general</p> <p><u>Con</u>: data are an instant “snapshots” of animal occurrence</p>	<p><u>Pro</u>: data can incorporate behavioral states</p> <p><u>Con</u>: repeated observations of relatively fewer individuals; sample size restricted to tracked individuals</p>