

SUPPLEMENTARY INFORMATION

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2 Title: Abundance estimates and habitat preferences of bottlenose dolphins reveal the importance of two gulfs in South Australia

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14 Supplementary Table S1a and S1b:

15 Summary statistics of the Mark-Recapture Distance Sampling (MRDS) analyses in DISTANCE 7, for A: the summer/autumn survey; and B: the
16 winter/spring survey. The most suitable model is marked with a black frame: DS and MR model components were fitted by systematically adding
17 covariates one by one to build more complex models. Choice of model with 'best fit' was based on lowest AIC, lowest %CV and by assessing quantile-
18 quantile (q-q) plots, Kolmogorov-Smirnov tests, and Cramer von Mises statistics. AIC = Akaike Information Criterion; D = Density; N = Abundance
19 estimate over the study area; CV = Coefficient of Variance; df = degrees of freedom.

20 Supplementary Table S1a:

Analysis Engine_Key Function_DS Model_MR Model_Truncations	Delta AIC	AIC	D	95% Confidence Interval		CV	N	%CV	df	95% Confidence Interval	
MRDS_Hr_MCDS_beaufort-cloudcover_MR_distance_LT71_RT570	0.00	1097	0.08	0.055	0.124	0.21	3493	20.70	101.53	2327	5244
MRDS_Hr_MCDS_beaufort-cloudcover_MR_distance_glare_LT71_RT570	0.00	1097	0.08	0.055	0.124	0.21	3493	20.70	101.53	2327	5244
MRDS_Hr_MCDS_beaufort-cloudcover-glare_MR_distance_LT71_RT570	1.28	1099	0.08	0.054	0.122	0.21	3448	20.57	101.65	2303	5163
MRDS_Hr_MCDS_beaufort-cloudcover-turbidity_MR_distance_LT71_RT570	1.96	1099	0.08	0.055	0.123	0.21	3485	20.70	101.22	2321	5232
MRDS_Hr_MCDS_beaufort_MR_distance_LT71_RT570	2.64	1100	0.08	0.053	0.121	0.21	3416	20.90	102.65	2267	5147
MRDS_Hr_MCDS_beaufort-cloudcover-side_MR_distance_LT71_RT570	3.89	1101	0.08	0.022	0.320	0.76	3522	76.42	78.61	913	13586
MRDS_Hr_MCDS_beaufort-glare_MR_distance_LT71_RT570	3.91	1101	0.08	0.053	0.120	0.21	3397	20.63	103.55	2266	5093
MRDS_Hr_MCDS_beaufort-trubidity_MR_distance_LT71_RT570	4.60	1102	0.08	0.053	0.121	0.21	3413	20.90	102.23	2265	5144
MRDS_Hn_MCDS_beaufort-cloudcover_MR_distance_LT71_RT570	5.81	1103	0.13	0.077	0.204	0.25	5316	25.01	118.84	3264	8658
MRDS_Hn_MCDS_beaufort-cloudcover_MR_distance_glare_LT71_RT570	5.81	1103	0.13	0.077	0.204	0.25	5316	25.01	118.84	3264	8658
MRDS_Hr_MCDS_beaufort-cloudcover-turbidity-side_MR_distance_LT71_RT570	5.86	1103	0.08	0.021	0.320	0.77	3509	76.64	77.46	907	13584
MRDS_Hr_MCDS_cloudcover_MR_distance_LT71_RT570	6.54	1104	0.09	0.059	0.139	0.22	3839	21.81	102.75	2504	5887
MRDS_Hr_MCDS_beaufort-side_MR_distance_LT71_RT570	6.54	1104	0.08	0.018	0.358	0.88	3383	87.56	77.96	753	15190
MRDS_Hn_MCDS_beaufort-cloudcover-glare_MR_distance_LT71_RT570	7.34	1105	0.13	0.077	0.202	0.25	5303	24.74	119.33	3273	8592
MRDS_Hn_MCDS_beaufort_MR_distance_LT71_RT570	7.46	1105	0.12	0.073	0.193	0.25	5053	24.86	123.29	3112	8205
MRDS_Hn_MCDS_cloudcover_MR_distance_LT71_RT570	7.56	1105	0.12	0.076	0.188	0.23	5091	23.05	110.95	3243	7991
MRDS_Hn_MCDS_beaufort-cloudcover-turbidity_MR_distance_LT71_RT570	7.77	1105	0.13	0.077	0.204	0.25	5300	25.12	118.14	3248	8650
MRDS_Hn_MCDS_beaufort-glare_MR_distance_LT71_RT570	8.22	1105	0.12	0.074	0.193	0.25	5067	24.58	125.05	3138	8183
MRDS_Hr_CDS_MR_distance_LT71_RT570	8.96	1106	0.09	0.055	0.133	0.22	3634	22.28	93.32	2347	5625

Analysis Engine_Key Function_DS Model_MR Model_Truncations	Delta AIC	AIC	D	95% Confidence Interval		CV	N	%CV	df	95% Confidence Interval	
MRDS_Hn_MCDS_beaufort-turbidity_MR_distance_LT71_RT570	9.46	1107	0.12	0.073	0.194	0.25	5055	24.90	122.45	3111	8214
MRDS_Hr_MCDS_glare_MR_distance_LT71_RT570	9.67	1107	0.09	0.056	0.131	0.22	3617	21.78	98.60	2360	5545
MRDS_Hn_MCDS_glare_MR_distance_LT71_RT570	10.64	1108	0.11	0.073	0.176	0.23	4802	22.69	109.28	3080	7487
MRDS_Hr_MCDS_turbidity_MR_distance_LT71_RT570	10.96	1108	0.09	0.055	0.133	0.22	3633	22.29	93.12	2346	5625
MRDS_Hn_MCDS_beaufort-side_MR_distance_LT71_RT570	11.33	1109	0.12	0.005	2.897	3.45	5088	344.61	74.33	211	122956
MRDS_Hn_CDS_MR_distance_LT71_RT570	11.34	1109	0.11	0.072	0.178	0.23	4808	22.95	98.62	3067	7537
MRDS_Hn_MCDS_beaufort-cloudcover-turbidity-side_MR_distance_LT71_RT570	11.76	1109	0.13	0.005	3.024	3.44	5314	343.94	72.33	220	128322
MRDS_Hr_MCDS_side_MR_distance_LT71_RT570	12.61	1110	0.09	0.011	0.754	1.47	3778	146.95	76.06	446	31985
MRDS_Hn_MCDS_turbidity_MR_distance_LT71_RT570	13.10	1110	0.11	0.072	0.177	0.23	4795	23.04	99.41	3053	7530
MRDS_Hn_MCDS_side_MR_distance_LT71_RT570	15.29	1113	0.11	0.004	3.178	3.93	4811	393.06	75.27	172	134864

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22 Supplementary Table S1b:

Analysis Engine_Key Function_DS Model_MR Model_Truncations	Delta AIC	AIC	D	95% Confidence Interval		CV	N	%CV	df	95% Confidence Interval	
MRDS_Hn_MCDS_glare-cloudcover_MR_distance_LT71_RT660	0.00	1613	0.09	0.063	0.142	0.21	4006	20.60	83.48	2671	6009
MRDS_Hn_MCDS_glare-cloudcover_MR_distance_beaufort_LT71_RT660	0.00	1613	0.09	0.063	0.142	0.21	4006	20.60	83.48	2671	6009
MRDS_Hn_MCDS_glare-cloudcover_MR_distance_turbidity_LT71_RT660	0.00	1613	0.09	0.063	0.142	0.21	4006	20.60	83.48	2671	6009
MRDS_Hn_MCDS_glare-cloudcover_MR_distance_side_LT71_RT660	0.00	1613	0.09	0.063	0.142	0.21	4006	20.60	83.48	2671	6009
MRDS_Hr_MCDS_glare-cloudcover_MR_distance_LT71_RT660	0.06	1613	0.08	0.051	0.113	0.20	3213	20.36	75.77	2151	4801
MRDS_Hr_MCDS_glare-cloudcover_MR_distance_beaufort_LT71_RT660	0.06	1613	0.08	0.051	0.113	0.20	3213	20.36	75.77	2151	4801
MRDS_Hr_MCDS_glare-cloudcover_MR_distance_turbidity_LT71_RT660	0.06	1613	0.08	0.051	0.113	0.20	3213	20.36	75.77	2151	4801
MRDS_Hr_MCDS_glare-cloudcover_MR_distance_side_LT71_RT660	0.06	1613	0.08	0.051	0.113	0.20	3213	20.36	75.77	2151	4801
MRDS_Hr_MCDS_glare_MR_distance_LT71_RT660	0.09	1613	0.08	0.051	0.117	0.21	3276	21.10	75.22	2162	4964
MRDS_Hn_MCDS_glare-side_MR_distance_LT71_RT660	0.59	1614	0.10	0.062	0.150	0.22	2007	22.21	83.08	1325	3040
MRDS_Hn_MCDS_glare_MR_distance_LT71_RT660	1.22	1614	0.09	0.062	0.142	0.21	3987	20.90	72.86	2640	6020
MRDS_Hr_MCDS_glare-side_MR_distance_LT71_RT660	1.48	1615	0.08	0.050	0.114	0.21	3197	20.89	70.89	2117	4828
MRDS_Hr_MCDS_glare-turbidity_MR_distance_LT71_RT660	1.83	1615	0.08	0.051	0.118	0.21	3291	21.10	77.49	2172	4987
MRDS_Hr_MCDS_glare-beaufort_MR_distance_LT71_RT660	2.09	1615	0.08	0.051	0.117	0.21	3275	21.09	75.17	2161	4962
MRDS_Hn_MCDS_glare-turbidity_MR_distance_LT71_RT660	2.69	1616	0.09	0.062	0.141	0.21	3988	20.73	74.43	2650	6001
MRDS_Hn_MCDS_glare-beaufort_MR_distance_LT71_RT660	3.22	1616	0.09	0.062	0.142	0.21	3984	20.88	73.03	2640	6013
MRDS_Hr_MCDS_cloudcover_MR_distance_LT71_RT660	8.53	1622	0.07	0.048	0.106	0.20	3023	20.19	72.41	2029	4503
MRDS_Hn_CDS_MR_distance_LT71_RT660	8.61	1622	0.09	0.059	0.135	0.21	3803	20.80	69.06	2523	5734
MRDS_Hr_CDS_MR_distance_LT71_RT660	8.61	1622	0.09	0.059	0.135	0.21	3803	20.80	69.06	2523	5734
MRDS_Hn_MCDS_cloudcover_MR_distance_LT71_RT660	8.88	1622	0.09	0.060	0.134	0.20	3801	20.23	73.13	2550	5666

Analysis Engine_Key Function_DS Model_MR Model_Truncations	Delta AIC	AIC	D	95% Confidence Interval		CV	N	%CV	df	95% Confidence Interval	
MRDS_Hn_MCDS_side_MR_distance_LT71_RT660	9.36	1623	0.09	0.060	0.137	0.21	3842	20.86	71.32	2546	5799
MRDS_Hr_MCDS_side_MR_distance_LT71_RT660	10.09	1623	0.07	0.046	0.103	0.20	2927	20.45	66.46	1954	4385
MRDS_Hn_MCDS_beaufort_MR_distance_LT71_RT660	10.61	1624	0.09	0.059	0.135	0.21	3802	20.78	69.20	2523	5729
MRDS_Hn_MCDS_turbidity_MR_distance_LT71_RT660	10.61	1624	0.09	0.059	0.135	0.21	3801	20.89	70.32	2517	5740
MRDS_Hr_MCDS_turbidity_MR_distance_LT71_RT660	10.74	1624	0.07	0.049	0.111	0.21	3129	20.97	74.16	2070	4731
MRDS_Hr_MCDS_beaufort_MR_distance_LT71_RT660	11.00	1624	0.07	0.047	0.106	0.21	2992	20.59	68.58	1993	4492

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