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Assessment of impacts and potential mitigation for icebreaking vessels transiting pupping areas of an ice-breeding seal

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Supplementary material: Appendix C

Model tables C1 – C11

Table C1. Results of binary logistic regression for single predictors for seal displacement. df – degrees of freedom, AIC – Akaike Information Criterion, LRT – Likelihood ratio test.

Predictor	Model	Null deviance, df	Residual deviance, df	AIC	p-value (LRT)
Distance from side of vessel (Continuous)	glm(Move.away ~ sov.cat, family=binomial(link = "logit"))	558.3, 630	447.3, 629	451.3	2.2x10 ⁻¹⁶
	Coefficients:				
		Estimate	Std. Error	z value	Pr(> z)
	(Intercept)	4.1861	0.3331	12.567	<2e-16
	sov.cat	-1.0351	0.1090	-9.495	<2e-16
Habitat type (Categorical: Featured ice, Flat ice)	glm(Move.away ~ Habitat1, family=binomial(link = "logit"))	354.31, 317	313.45, 316	317.5	1.6x10 ⁻¹⁰
	Coefficients:				
		Estimate	Std. Error	z value	Pr(> z)
	(Intercept)	0.4700	0.1581	2.973	0.00295
	Habitat1flat	1.8777	0.3306	5.680	1.35e-08
Seal type (Categorical: Lone pup (LP), Mother- Pup pair (MP))	glm(Move.away ~ Seal.type, family=binomial(link = "logit"))	564.41, 638	563.79, 637	567.8	0.4303
	Coefficients:				
		Estimate	Std. Error	z value	Pr(> z)
	(Intercept)	1.5079	0.2052	7.348	2.02e-13
	Seal.typeMP	0.1919	0.2410	0.796	0.426
Vessel prior speed (Continuous)	glm(Move.away ~ V.prior, family=binomial(link = "logit"))	249.25, 268	248.35, 267	252.4	0.3421
	Coefficients:				
		Estimate	Std. Error	z value	Pr(> z)
	(Intercept)	1.86895	0.37914	4.929	8.25e-07
	V.prior	-0.06387	0.06767	-0.944	0.345

Light (Categorical: Dark, Light)	glm(Move.away ~ Light, family=binomial(link = "logit")) Coefficients:	560.75, 637	551.89, 636	555.9	0.0029
	Estimate Std. Error z value Pr(> z)				
	(Intercept) 2.6741 0.4221 6.336 2.37e-10				
	LightL -1.1315 0.4368 -2.590 0.00959				
Vessel type (Categorical: A, B, C, D)	glm(Move.away ~ Vessel, family=binomial(link = "logit")) Coefficients:	564.41, 638	546.35, 635	554.4	0.0004
	Estimate Std. Error z value Pr(> z)				
	(Intercept) 1.7887 0.1457 12.279 < 2e-16				
	VesselB 0.4800 0.3792 1.266 0.205609				
	VesselC -0.8897 0.2478 -3.590 0.000331				
	VesselD 0.3513 0.5483 0.641 0.521645				
Channel (Categorical: New channel, Old channel, Open water)	glm(Move.away ~ Channel, family=binomial(link = "logit")) Coefficients:	552.7, 633	552.0, 631	558	0.7029
	Estimate Std. Error z value Pr(> z)				
	(Intercept) 1.65099 0.19004 8.687 <2e-16				
	ChannelOld 0.03042 0.23199 0.131 0.896				
	Channelopen.water 12.91508 624.19386 0.021 0.983				
Year (Categorical: 2006, 2008, 2009, 2010, 2011, 2012, 2013)	glm(Move.away ~ (Year), family=binomial(link="logit")) Coefficients:	564.41, 638	533.68, 632		2.8x10 ⁻⁰⁵
	Estimate Std. Error z value Pr(> z)				
	(Intercept) 1.73573 0.15040 11.541 < 2e-16				
	as.factor(Year)2008 1.03686 0.61383 1.689 0.0912				
	as.factor(Year)2009 12.83034 624.19384 0.021 0.9836				
	as.factor(Year)2010 -1.15842 0.26723 -4.335 1.46e-05				
	as.factor(Year)2011 0.34371 0.40404 0.851 0.3949				
	as.factor(Year)2012 0.55005 0.45413 1.211 0.2258				
	as.factor(Year)2013 -0.03098 0.78328 -0.040 0.9684				

Table C2. Ranked binary logistic regression models for seal displacement (data: daylight observations only, with complete records for sov.cat, Seal.type, Channel, Habitat, Year and Vessel). AIC – Akaike Information Criterion, df – degrees of freedom, LRT – Likelihood ratio test, sov.cat – distance from side of vessel, Seal.type – Mother-Pup pair/Lone pup.

Rank	Model call family=binomial(link="logit")	Null deviance, df	Residual deviance, df	p-value (LRT)	AIC	AIC df	Δ-AIC	Evidence Ratio
1	glm(Move.away ~ sov.cat + Seal.type + Habitat1 + as.factor(Year))	336.24, 305	222.43, 298	1.484E-21	238.431	8	0.000	1.000
2	glm(Move.away ~ sov.cat + Habitat1 + as.factor(Year))	336.24, 305	225.30, 299	1.294E-21	239.301	7	0.870	1.545
3	glm(Move.away ~ sov.cat + Seal.type + Habitat1 + Channel + as.factor(Year))	336.24, 305	222.02, 297	5.148E-21	240.019	9	1.588	2.212
4	glm(Move.away ~ sov.cat + Habitat1 + as.factor(Year) + Vessel)	336.24, 305	223.32, 297	9.543E-21	241.321	9	2.890	4.242
5	glm(Move.away ~ sov.cat + Seal.type + Habitat1 + Channel + as.factor(Year) + Vessel)	336.24, 305	220.19, 295	3.198E-20	242.193	11	3.762	6.560
6	glm(Move.away ~ sov.cat + Seal.type + Habitat1 + Vessel)	336.24, 305	228.78, 299	6.907E-21	242.775	7	4.344	8.776
7	glm(Move.away ~ sov.cat + as.factor(Year))	336.24, 305	233.96, 300	1.748E-20	245.965	6	7.533	43.232
8	glm(Move.away ~ sov.cat + Seal.type + as.factor(Year))	336.24, 305	232.50, 299	4.146E-20	246.498	7	8.067	56.445
9	glm(Move.away ~ sov.cat + as.factor(Year) + Vessel)	336.24, 305	231.95, 298	1.396E-19	247.947	8	9.516	116.505
10	glm(Move.away ~ sov.cat + Seal.type + as.factor(Year) + Vessel)	336.24, 305	230.66, 296	1.164E-18	250.662	10	12.230	452.664
11	glm(Move.away ~ sov.cat + Seal.type + Vessel)	336.24, 305	239.37, 300	2.411E-19	251.372	6	12.940	645.562
12	glm(Move.away ~ sov.cat + Seal.type + Habitat1 + Channel)	336.24, 305	241.98, 301	1.639E-19	251.985	5	13.553	877.124
13	glm(Move.away ~ sov.cat + Seal.type + Habitat1)	336.24, 305	244.25, 302	8.156E-20	252.246	4	13.814	999.411
14	glm(Move.away ~ sov.cat + Habitat1)	336.24, 305	249.82, 303	1.712E-19	255.821	3	17.389	5971.110
15	glm(Move.away ~ sov.cat + Seal.type)	336.24, 305	252.03, 303	5.156E-19	258.025	3	19.594	17978.65
16	glm(Move.away ~ sov.cat)	336.24, 305	254.63, 304	1.654E-19	258.629	2	20.198	24314.69

Table C3. Analysis of Deviance table for the best fit displacement model including Habitat data: glm(Move.away ~ sov.cat + Seal.type + Habitat1 + as.factor(Year)).

	Df	Deviance	Resid.Df	Resid.Dev	Pr(>Chi)
NULL			305	336.24	
sov.cat	1	81.614	304	254.63	< 2.2e-16
Seal.type	1	2.604	303	252.03	0.1066084
Habitat1	1	7.780	302	244.25	0.0052841
as.factor(Year)	4	21.814	298	222.43	0.0002182

Table C4. Ranked binary logistic regression models for seal displacement (data: daylight observations only, with complete records, for sov.cat, Seal.type, Channel, Year and Vessel, excluding Habitat). AIC – Akaike Information Criterion, df – degrees of freedom, LRT – Likelihood ratio test, sov.cat – distance from side of vessel, Seal.type – Mother-Pup pair/Lone pup.

Rank	Model call family=binomial(link="logit")	Null deviance, df	Residual deviance, df	p-value (LRT)	AIC	AIC df	Δ-AIC	Evidence Ratio
1	glm(Move.away ~ sov.cat + Seal.type + as.factor(Year))	494.24, 534	359.90, 526	3.56E-25	377.903	9	0.000	1.000
2	glm(Move.away ~ sov.cat + Seal.type + Channel + as.factor(Year))	494.24, 534	358.27, 525	6.98E-25	378.268	10	0.364	1.200
3	glm(Move.away ~ sov.cat + Seal.type + as.factor(Year) + Vessel)	494.24, 534	355.22, 523	2.57E-24	379.221	12	1.318	1.933
4	glm(Move.away ~ sov.cat + Seal.type + Channel + as.factor(Year) + Vessel)	494.24, 534	354.26, 522	6.02E-24	380.256	13	2.353	3.243
5	glm(Move.away ~ sov.cat + as.factor(Year))	494.24, 534	369.61, 527	8.28E-24	385.607	8	7.703	47.075
6	glm(Move.away ~ sov.cat + as.factor(Year) + Vessel)	494.24, 534	364.46, 524	5.16E-23	386.457	11	8.554	72.014
7	glm(Move.away ~ sov.cat + Channel + as.factor(Year) + Vessel)	494.24, 534	363.46, 523	1.21E-22	387.459	12	9.556	118.845
8	glm(Move.away ~ sov.cat + Seal.type + Vessel)	494.24, 534	379.88, 529	4.90E-23	391.883	6	13.980	1085.625
9	glm(Move.away ~ sov.cat + Seal.type)	494.24, 534	389.62, 532	1.91E-23	395.617	3	17.714	7023.177
10	glm(Move.away ~ sov.cat + Vessel)	494.24, 534	386.61, 530	2.32E-22	396.609	5	18.706	11531.128
11	glm(Move.away ~ sov.cat + Seal.type + Channel)	494.24, 534	389.45, 531	1.45E-22	397.453	4	19.549	17582.641
12	glm(Move.away ~ sov.cat + Channel + Vessel)	494.24, 534	386.60, 529	1.29E-21	398.603	6	20.700	31253.422
13	glm(Move.away ~ sov.cat)	494.24, 534	395.13, 533	2.38E-23	399.126	2	21.223	40591.104
14	glm(Move.away ~ sov.cat + Channel)	494.24, 534	395.12, 532	2.98E-22	401.115	3	23.212	109750.902

Table C5. Coefficients and Analysis of Deviance table for the best fit displacement model excluding Habitat data: glm(Move.away ~ sov.cat + Seal.type + as.factor(Year)).

Coefficients:					Analysis of Deviance:					
	Estimate	Std. Error	z value	Pr(> z)		Df	Deviance	Resid.Df	Resid.Dev	Pr(>Chi)
sov.cat	-1.1113	0.1325	-8.387	< 2e-16	NULL			534	494.24	
Seal.typeMP	1.0562	0.3389	3.117	0.00183	sov.cat	1	99.118	533	395.13	<2.2e-16
as.factor(Year)2008	15.9412	725.9297	0.022	0.98248	Seal.type	1	5.509	532	389.62	0.01892
as.factor(Year)2009	15.9464	3956.1803	0.004	0.99678	Year	6	29.714	526	359.90	4.455e-05
as.factor(Year)2010	-1.0557	0.3240	-3.258	0.00112						
as.factor(Year)2011	-0.3773	0.5329	-0.708	0.47890						
as.factor(Year)2012	0.2865	0.5775	0.496	0.61977						
as.factor(Year)2013	-20.2970	3956.1803	-0.005	0.99591						

Null deviance: 494.24 on 534 degrees of freedom
Residual deviance: 359.90 on 526 degrees of freedom
AIC: 377.9

Table C6. Results of binary logistic regression for single predictors for Mother-Pup separation >20m. df – degrees of freedom, AIC – Akaike Information Criterion, LRT – Likelihood ratio test.

Predictor	Model	Null deviance, df	Residual deviance, df	AIC	p-value (LRT)	
Distance from side of vessel (Continuous)	glm(Sep.20m ~ sov.cat, family = binomial(link = "logit"))	373.06, 413	349.34, 412	353.3	1.1x10 ⁻⁶	
	Coefficients:					
		Estimate	Std. Error	z value	Pr(> z)	
	(Intercept)	-0.4574	0.2652	-1.725	0.0846	
	sov.cat	-0.6116	0.1398	-4.376	1.21e-05	
Habitat type (Categorical: Featured ice, Flat ice)	glm(Sep.20m ~ Habitat1, family = binomial(link = "logit"))	190.18, 245	179.67, 244	183.7	0.0012	
	Coefficients:					
		Estimate	Std. Error	z value	Pr(> z)	
	(Intercept)	-2.5802	0.3280	-7.867	3.64e-15	
	Habitat1flat	1.2645	0.4065	3.111	0.00186	
Vessel prior speed (Continuous)	glm(Sep.20m ~ V.prior, family = binomial(link = "logit"))	170.92, 155	170.89, 154	174.9	0.88	
	Coefficients:					
		Estimate	Std. Error	z value	Pr(> z)	
	(Intercept)	-1.11745	0.38540	-2.899	0.00374	
	V.prior	-0.01073	0.07141	-0.150	0.88053	
Vessel encounter speed (Continuous)	glm(Move.away ~ V.enc, family=binomial(link = "logit"))	255.04, 275	250.9, 274	254.9	0.0029	
	Coefficients:					
		Estimate	Std. Error	z value	Pr(> z)	
	(Intercept)	2.06271	0.31332	6.583	4.6e-11	
	V.enc	-0.11395	0.05695	-2.001	0.0454	
Light (Categorical: Dark, Light)	glm(Sep.20m ~ Light, family = binomial(link = "logit"))	380.93, 417	366.53, 416	370.5	0.0001	
	Coefficients:					
		Estimate	Std. Error	z value	Pr(> z)	
	(Intercept)	-0.2877	0.3416	-0.842	0.4	
	LightL	-1.4769	0.3709	-3.982	6.84e-05	
Vessel type (Categorical: A, B, C, D)	glm(Sep.20m ~ Vessel, family = binomial(link = "logit"))	381.30, 418	363.41, 415	371.4	0.0005	
	Coefficients:					
		Estimate	Std. Error	z value	Pr(> z)	
		(Intercept)	-1.8652	0.1816	-10.268	< 2e-16
		VesselB	0.8066	0.3350	2.408	0.016055
	VesselC	0.1160	0.3617	0.321	0.748455	
	VesselD	2.4248	0.6526	3.716	0.000203	

Channel	glm(Sep.20m ~ Channel, family = binomial(link = "logit"))				379.81, 414	375.58, 412	381.6	0.121
(Categorical: New channel, Old channel, Open water)	Coefficients:							
		Estimate	Std. Error	z value	Pr(> z)			
	(Intercept)	-1.2040	0.2194	-5.487	4.09e-08			
	ChannelOld	-0.5452	0.2735	-1.993	0.0462			
	Channelopen.water	-13.3621	882.7434	-0.015	0.9879			
Year	glm(Sep.20m ~ Year, family=binomial(link="logit"))				381.3, 418	353.3, 414	363.3	1.2x10 ⁻⁵
(Categorical: 2006, 2008, 2009, 2010, 2011, 2012, 2013)	Coefficients:							
		Estimate	Std. Error	z value	Pr(> z)			
	(Intercept)	-1.94591	0.18898	-10.297	< 2e-16			
	as.factor(Year)2008	-0.04652	0.64381	-0.072	0.94240			
	as.factor(Year)2010	0.10536	0.38934	0.271	0.78669			
	as.factor(Year)2011	1.18377	0.37480	3.158	0.00159			
	as.factor(Year)2012	2.23359	0.47975	4.656	3.23e-06			

Table C7. Ranked binary logistic regression models for Mother-pup separations >20m (data: daylight observations only, with complete records for sov.cat, Channel Habitat, Year and Vessel). AIC – Akaike Information Criterion, df – degrees of freedom, LRT – Likelihood ratio test, sov.cat – distance from side of vessel.

Rank	Model call family = binomial(link = "logit")	Null deviance, df	Residual deviance, df	p-value (LRT)	AIC	AIC df	Δ-AIC	Evidence Ratio
1	glm(Sep.20m ~ sov.cat + Habitat1 + Vessel)	180.04, 236	146.91, 231	3.54E-06	158.910	6	0.000	1.000
2	glm(Sep.20m ~ sov.cat + Habitat1 + as.factor(Year))	180.04, 236	145.08, 230	4.37E-06	159.076	7	0.166	1.087
3	glm(Sep.20m ~ sov.cat + Habitat1 + Channel + as.factor(Year))	180.04, 236	144.16, 229	7.64E-06	160.162	8	1.253	1.871
4	glm(Sep.20m ~ sov.cat + Habitat1 + as.factor(Year) + Vessel)	180.04, 236	143.22, 228	1.24E-05	161.218	9	2.308	3.171
5	glm(Sep.20m ~ sov.cat + Habitat1 + Channel + as.factor(Year) + Vessel)	180.04, 236	142.36, 227	1.99E-05	162.359	10	3.450	5.612
6	glm(Sep.20m ~ sov.cat + Channel + as.factor(Year))	180.04, 236	152.68, 230	0.0001	166.682	7	7.772	48.713
7	glm(Sep.20m ~ sov.cat + Vessel)	180.04, 236	158.06, 232	0.0002	168.062	5	9.152	97.138
8	glm(Sep.20m ~ sov.cat + as.factor(Year))	180.04, 236	156.47, 231	0.0003	168.467	6	9.557	118.955
9	glm(Sep.20m ~ sov.cat + Channel + as.factor(Year) + Vessel)	180.04, 236	150.92, 228	0.0003	168.918	9	10.008	149.024
10	glm(Sep.20m ~ sov.cat + Channel + Vessel)	180.04, 236	157.44, 231	0.0004	169.439	6	10.529	193.365
11	glm(Sep.20m ~ sov.cat + as.factor(Year) + Vessel)	180.04, 236	154.26, 229	0.0005	170.256	8	11.346	290.954
12	glm(Sep.20m ~ sov.cat + Habitat1 + Channel)	180.04, 236	164.91, 233	0.0017	172.913	4	14.003	1098.209
13	glm(Sep.20m ~ sov.cat + Channel)	180.04, 236	169.33, 234	0.0047	175.328	3	16.418	3674.304
14	glm(Sep.20m ~ sov.cat + Habitat1)	180.04, 236	170.94, 234	0.0106	176.942	3	18.032	8233.645
15	glm(Sep.20m ~ sov.cat)	180.04, 236	173.70, 235	0.0118	177.701	2	18.791	12036.300

Table C8. Analysis of Deviance table for the best fit Mother-pup separation >20m model: glm(Sep.20 ~ sov.cat + Habitat1 + Vessel).

Analysis of Deviance:						
	Df	Deviance	Resid. Df	Resid. Dev	Pr(>Chi)	
NULL			236	180.04		
sov.cat	1	6.3420	235	173.70	0.01179	
Habitat1	1	2.7594	234	170.94	0.09668	
Vessel	3	24.0320	231	146.91	2.46e-05	

Table C9. Results of binary logistic regression for single predictors for Vessel-seal collisions. df – degrees of freedom, AIC – Akaike Information Criterion, LRT – Likelihood ratio test.

Predictor	Model	Null deviance, df	Residual deviance, df	AIC	p-value (LRT)
Vessel prior speed (Continuous)	glm(Collision~ V.prior, family=binomial(link="logit")) Coefficients: Estimate Std. Error z value Pr(> z) (Intercept) -4.4964 1.1675 -3.851 0.000117 V.prior 0.5135 0.1865 2.753 0.005904	73.052, 85	63.265, 84	67.2	0.002
Light (Categorical: Dark, Light)	glm(Collision ~ Light, family=binomial(link="logit")) Coefficients: Estimate Std. Error z value Pr(> z) (Intercept) -1.2879 0.2824 -4.561 5.10e-06 LightL -2.7812 0.5779 -4.813 1.49e-06	148.58, 311	117.89, 310	121.9	3x10 ⁻⁸
Vessel type (Categorical: A, B, C, D)	glm(Collision ~ Vessel, family=binomial(link="logit")) Coefficients: Estimate Std. Error z value Pr(> z) (Intercept) -2.9618 0.2960 -10.005 < 2e-16 VesselB -0.0339 0.7827 -0.043 0.96545 VesselC 2.0455 0.6615 3.092 0.00199 VesselD 1.3524 0.8292 1.631 0.10291	148.58, 311	139.34, 308	147.3	0.026
Channel (Categorical: New channel, Old channel, Open water)	glm(Collision ~ Channel, family=binomial(link="logit")) Coefficients: Estimate Std. Error z value Pr(> z) (Intercept) -1.4018 0.2791 -5.023 5.09e-07 ChannelOld -2.6236 0.5765 -4.551 5.34e-06 Channelopen.water -14.1643 1029.1215 -0.014 0.989	148.45, 310	120.78, 308	126.8	9.8x10 ⁻⁷
Seal type (Categorical: Lone pup (LP), Mother-Pup pair (MP))	glm(Collision ~ Seal.type, family=binomial(link="logit")) Coefficients: Estimate Std. Error z value Pr(> z) (Intercept) -1.8045 0.2993 -6.029 1.65e-09 Seal.typeMP -1.6109 0.4870 -3.308 0.00094	148.58, 311	136.99, 310	140.9	0.0007
Year (Categorical: 2006, 2008, 2009, 2010, 2011, 2012, 2013)	glm(Collision ~ Year, family=binomial(link="logit")) Coefficients: Estimate Std. Error z value Pr(> z) (Intercept) -5.308 1.002 -5.295 1.19e-07	148.58, 311	108.17, 305	122.1	3.8x10 ⁻⁷

as.factor(Year)2008	3.922	1.502	2.612	0.00901
as.factor(Year)2009	-10.258	1455.398	-0.007	0.99438
as.factor(Year)2010	3.804	1.271	2.992	0.00277
as.factor(Year)2011	3.541	1.083	3.270	0.00107
as.factor(Year)2012	3.188	1.174	2.715	0.00662
as.factor(Year)2013	4.797	1.128	4.254	2.10e-05

Table C10. Ranked binary logistic regression models including speed for Vessel-seal collisions. AIC – Akaike Information Criterion, df – degrees of freedom, LRT – Likelihood ratio test, V.prior – Vessel speed prior to collision.

Rank	Model call family=binomial(link="logit")	Null deviance, df	Residual deviance, df	p-value (LRT)	AIC	AIC df	Δ-AIC	Evidence Ratio
1	glm(Collision ~ V.prior + Seal.type)	73.052, 85	59.360, 82	0.002	66.491	3	0.000	1.000
2	glm(Collision ~ V.prior)	73.052, 85	63.265, 84	0.002	67.265	2	0.773	1.472
3	glm(Collision ~ V.prior + Seal.type + Light)	73.052, 85	59.360, 62	0.003	67.360	4	0.868	1.544
4	glm(Collision ~ V.prior + Light)	73.052, 85	61.470, 83	0.003	67.470	3	0.979	1.632
5	glm(Collision ~ V.prior + Light + Channel + Vessel + as.factor(Year))	73.052, 85	41.504, 73	0.002	67.504	13	1.012	1.659
6	glm(Collision ~ V.prior + Seal.type + Channel + Light)	73.052, 85	56.931, 80	0.007	68.931	6	2.440	3.387
7	glm(Collision ~ V.prior + Seal.type + Channel + Light + as.factor(Year) + Vessel)	73.052, 85	41.174, 72	0.003	69.174	14	2.682	3.823
8	glm(Collision ~ V.prior + Vessel)	73.052, 85	59.403, 81	0.009	69.403	5	2.912	4.288
9	glm(Collision ~ V.prior + Light + Channel + Vessel)	73.052, 85	53.599, 78	0.007	69.599	8	3.108	4.730
10	glm(Collision ~ V.prior + Light + Channel)	73.052, 85	59.677, 81	0.010	69.677	5	3.186	4.917
11	glm(Collision ~ V.prior + Channel)	73.052, 85	62.142, 82	0.012	70.142	4	3.650	6.203
12	glm(Collision ~ V.prior + as.factor(Year))	73.052, 85	56.585, 79	0.011	70.585	7	4.094	7.743
13	glm(Collision ~ V.prior + Seal.type + Channel + Light + Vessel)	73.052, 85	52.741, 77	0.009	70.741	9	4.250	8.371

Table C11. Analysis of Deviance table for the best fit for Vessel-seal collisions model. AIC – Akaike Information Criterion, df – degrees of freedom, LRT – Likelihood ratio test.

	Df	Deviance	Resid. Df	Resid. Dev	Pr(>Chi)
NULL			85	73.052	
V.prior	1	9.7874	84	63.265	0.001757
Seal.type	1	2.7731	83	60.491	0.095861