

APPENDIX A

Densities of ringed seals

The tables present the lines flown and the unadjusted densities of observed ringed seals by sector for fast ice, pack ice, and all ice combined for aerial surveys conducted in the Alaska Beaufort Sea during 1985-1987 and 1996-1999.

Table A.1. Dates and lines surveyed for aerial surveys conducted in May-June 1985-1987 and 1996-1999. All surveys were flown at an altitude of 91 m with a strip width of 0.41 km on each side of the aircraft.

Date	Sector (Lines flown)
<u>1985</u>	
6/9/85	B3 (18,20,21,22,23,24,26,27,28,29,31,32,33,34)
6/11/85	B3 (1,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17) B2 (27,29,30,31,32,33)
6/12/85	B3 (35,36,37,38) B4 (1,2,5,6,7,9,14,15,17,18,19,20,21,22)
6/13/85	B2 (2,4,5,8,10,11,12,13) B1 (18,19,20,24,26,27,28,29,33,34)
<u>1986</u>	
5/31/86	B1 (1,2,4,5,8,10,12,13,14,15,16,21,22,24)
6/1/86	B1 (28,29,30,31,32,34)
6/4/86	B2 (1,4,6,7,9,12,13,14,15,17,18,19,20,23,26,27,30,31)
6/6/86	B2 (28,29,34) B3 (1,3,5,7,8,10,12,15,17,19,23,25,28,31,33)
6/12/86	B3 (38,37,36) B4 (8,10,11,12,13,14,16,18,1111119,20,23,24)
<u>1987</u>	
6/2/87	B1 (2,3,5,7,9,10,11,14,15,17,18,20,23,24,25,27,28,30,32,33,34)
6/3/87	B2 (4,5,6,7,10,11,14,16,17,18,19,20,22,23,25,26,27)
6/5/87	B2 (29,30,32,34)
6/6/87	B3 (3,4,5,6,8,11,14,15,16,17,19,20,21,23,24,25,28,29,32,33)
6/7/87	B3 (34,35,37) B4 (2,5,6,9,11,12, 13,15,16,18,19,20,22,23,24)
<u>1996</u>	
29 May	B2 (33) B3 (4, 5, 6, 6.5, 8.5, 12, 14, 14.5,15, 23, 25, 30, 31, 32, 33, 35,36 ,37 ,38)
30 May	B2 (32, 34) B3 (1, 2, 3, 5.5, 7, 7.5, 8, 9, 9.5, 10, 10.5, 11, 11.5, 12.5, 13, 13.5, 16, 20, 21, 24, 30)
31 May	B3 (17, 18, 19, 22) B4 (1, 2, 3, 4, 5, 6, 7, 8, 9, 10,11,12,14,15,17,20,22,23)
<u>1997</u>	
25 May	B1 (1, 3, 5, 6, 7, 9, 11, 12, 13, 15, 17, 19, 21, 22, 23, 25, 27, 28, 29)
26 May	B1 (31, 33) B2 (1, 3, 4, 5, 7, 8, 9, 11, 13, 15, 17, 18, 19, 21, 23, 25, 27)
27 May	B3 (5.5, 6.5, 7.5, 8.5, 9.5, 10.5, 11.5, 12.5, 13.5, 14.5, 22.5, 23.5, 24.5, 25.5, 26.5, 27.5, 28.5, 29.5, 30.5)
28 May	B3 (17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 30, 31, 32)
29 May	B2 (28, 29, 31, 33) B3 (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)
31 May	B4 (5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24) B3 (27, 29)
1 June	B4 (1, 2, 3, 4, 9.5, 10.5, 11.5, 12.5, 13.5, 14.5, 15.5) B3 (33, 34, 35, 36, 37, 38)
2 June	B1 (15, 17, 19, 21, 22, 23, 25, 27, 28, 29)
<u>1998</u>	
27 May	B3 (1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38) B4 (2)
28 May	B3 (4, 6, 7, 9, 11, 21, 23, 25, 27) B4 (4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24)
<u>1999</u>	
29 May	B2 (7, 8, 9, 11, 13, 15, 17, 18, 19, 21, 23, 25, 27, 28, 29, 31, 33) B3 (1, 2, 3)
30 May	B3 (4, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 24, 26, 27, 28, 29, 30, 31)
31 May	B3 (5, 5.5, 6.5, 7, 7.5, 8.5, 9.5, 10.5, 11.5, 12.5, 13.5, 14.5, 19, 21, 22.5, 23, 23.5, 24.5, 25, 25.5, 26.5, 27.5, 28.5, 29.5)
1 June	B1 (7, 11, 12, 13, 15, 17, 19, 21, 23, 27, 29, 33) B2 (1, 3, 5)
3 June	B1 (25, 28, 29, 31) B4 (4, 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24)
4 June	B3 (30.5, 31, 33, 34, 35, 36, 37, 38) B4 (2, 3, 5, 7, 9, 9.5, 10.5, 11.5, 12.5, 13.5, 14.5, 15.5)

Table A.2. Unadjusted densities of observed ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on May-June 1985 aerial surveys.

1985	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B1 (n=10)									
density	0.73	0.11	0.83	0.34	0	0.34	0.72	0.10	0.83
SE	0.10	0.05	0.13	0.36	0	0.36	0.09	0.05	0.13
LCL	0.55	0.01	0.60	0	0	-1.91	0.55	0.01	0.59
UCL	0.90	0.20	1.07	2.58	0	2.58	0.90	0.20	1.06
B2 (n=14)									
density	0.69	0.20	0.89	-	-	-	0.69	0.20	0.89
SE	0.09	0.07	0.11	-	-	-	0.09	0.07	0.11
LCL	0.54	0.08	0.70	-	-	-	0.54	0.08	0.70
UCL	0.85	0.32	1.08	-	-	-	0.85	0.32	1.08
B3 (n=34)									
density	0.56	0.61	1.16	-	-	-	0.56	0.61	1.16
SE	0.04	0.13	0.14	-	-	-	0.04	0.13	0.14
LCL	0.48	0.39	0.92	-	-	-	0.48	0.39	0.92
UCL	0.63	0.82	1.40	-	-	-	0.63	0.82	1.40
B4 (n=14)									
density	0.49	0.11	0.60	0.46	0.15	0.61	0.48	0.11	0.60
SE	0.04	0.04	0.05	0.11	0.06	0.15	0.04	0.03	0.05
LCL	0.42	0.04	0.51	0.22	0.03	0.29	0.42	0.05	0.51
UCL	0.55	0.17	0.68	0.69	0.27	0.93	0.55	0.17	0.69

Table A.3. Unadjusted densities of observed ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on May-June 1986 aerial surveys.

1986	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B1 (n=20)									
density	0.63	0	0.63	0.07	0.01	0.08	0.54	0	0.54
SE	0.06	0	0.06	0.04	0.01	0.04	0.07	0	0.07
LCL	0.54	0	0.54	0	0	0	0.42	0	0.42
UCL	0.73	0	0.73	0.15	0.02	0.16	0.65	0	0.65
B2 (n=21)									
density	1.17	0.01	1.18	-	-	-	1.17	0.01	1.18
SE	0.07	0.01	0.07	-	-	-	0.07	0.01	0.07
LCL	1.05	0	1.05	-	-	-	1.05	0	1.05
UCL	1.28	0.03	1.30	-	-	-	1.28	0.03	1.30
B3 (n=18)									
density	1.18	0.10	1.28	0.20	1.10	1.30	1.05	0.24	1.29
SE	0.08	0.06	0.11	0.05	0.39	0.43	0.10	0.10	0.12
LCL	1.04	0	1.09	0.04	0	0.03	0.88	0.06	1.08
UCL	1.33	0.21	1.48	0.35	2.24	2.57	1.22	0.42	1.49
B4 (n=12)									
density	1.20	1.50	2.70	0.23	0.37	0.60	0.71	0.93	1.64
SE	0.20	0.56	0.45	0.04	0.10	0.10	0.11	0.33	0.29
LCL	0.85	0.49	1.89	0.15	0.19	0.42	0.52	0.33	1.11
UCL	1.56	2.50	3.51	0.30	0.55	0.78	0.90	1.52	2.16

Table A.4. Unadjusted densities of observed ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on May-June 1987 aerial surveys.

1987	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B1 (n=21)									
density	0.94	0.03	0.97	0.62	0.20	0.82	0.92	0.04	0.96
SE	0.06	0.02	0.06	0.14	0.16	0.19	0.05	0.02	0.06
LCL	0.84	0.00	0.87	0.35	-0.11	0.45	0.82	0.01	0.86
UCL	1.04	0.06	1.08	0.90	0.51	1.19	1.01	0.08	1.06
B2 (n=21)									
density	1.41	0.01	1.42	0.86	0.21	1.07	1.37	0.02	1.39
SE	0.08	0.01	0.08	0.44	0.22	0.66	0.09	0.02	0.10
LCL	1.26	0	1.27	0.01	0	0	1.21	0	1.22
UCL	1.55	0.02	1.56	1.71	0.64	2.35	1.53	0.06	1.56
B3 (n=47)									
density	1.06	1.34	2.41	0.49	0.98	1.47	0.77	1.16	1.93
SE	0.10	0.43	0.45	0.10	0.20	0.26	0.09	0.22	0.23
LCL	0.89	0.60	1.64	0.31	0.64	1.02	0.62	0.78	1.54
UCL	1.24	2.09	3.18	0.66	1.32	1.91	0.92	1.54	2.32
B4 (n=15)									
density	1.06	1.94	3.00	0.38	0.69	1.06	0.61	1.13	1.74
SE	0.15	1.26	1.29	0.07	0.20	0.23	0.08	0.49	0.51
LCL	0.80	0	0.72	0.25	0.33	0.66	0.46	0.27	0.85
UCL	1.31	4.17	5.28	0.50	1.04	1.47	0.76	1.99	2.63

Table A.5. Unadjusted densities of observed ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on 28-31 May 1996 aerial surveys.

1996	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B2 (n=3)									
Density/km ²	0.73	0.03	0.76	2.03	0	2.03	1.08	0.02	1.10
SE	0.13	0.03	0.15	0.33	0	0.33	0.09	0.02	0.08
LCL	0.34	0	0.31	1.08	0	1.08	0.82	0	0.87
UCL	1.11	0.11	1.20	2.98	0	2.98	1.34	0.08	1.34
B3 (n=43)									
Density/km ²	0.48	0.06	0.54	0.66	0.19	0.85	0.57	0.13	0.70
SE	0.05	0.04	0.06	0.16	0.04	0.16	0.08	0.03	0.09
LCL	0.40	0	0.44	0.39	0.12	0.58	0.44	0.08	0.55
UCL	0.57	0.12	0.65	0.92	0.26	1.12	0.70	0.17	0.84
B4 (n=18)									
Density/km ²	0.64	0.05	0.69	0.52	0.67	1.19	0.55	0.52	1.07
SE	0.10	0.03	0.10	0.13	0.15	0.24	0.10	0.12	0.18
LCL	0.47	0	0.53	0.30	0.41	0.77	0.38	0.32	0.75
UCL	0.81	0.11	0.86	0.75	0.92	1.61	0.72	0.73	1.39

Table A.6. Densities of ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on May/June 1997 aerial surveys. (This table uses 2 June data for lines in B1, where it is available and 31 May data for the remaining lines in B1.)

1997	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B1 (n=30)									
Density/km ²	0.39	0	0.39	0.05	0.01	0.07	0.34	0	0.34
SE	0.04	0	0.04	0.03	0.01	0.03	0.04	0	0.04
LCL	0.32	0	0.32	0	0.00	0.02	0.26	0	0.26
UCL	0.46	0	0.46	0.10	0.03	0.11	0.42	0.01	0.42
B2 (n=21)									
Density/km ²	0.61	0	0.61	--	--	--	0.61	0	0.61
SE	0.06	0	0.06	--	--	--	0.06	0	0.06
LCL	0.50	0	0.50	--	--	--	0.50	0	0.50
UCL	0.71	0	0.71	--	--	--	0.71	0	0.71
-B3 (n=57)									
Density/km ²	0.76	0.01	0.77	0.54	0.42	0.96	0.73	0.07	0.80
SE	0.07	0.01	0.07	0.12	0.08	0.15	0.06	0.02	0.06
LCL	0.65	0	0.66	0.35	0.28	0.72	0.62	0.04	0.69
UCL	0.87	0.03	0.89	0.74	0.56	1.21	0.83	0.11	0.91
B4 (n=31)									
Density/km ²	1.23	0.03	1.26	0.42	1.17	1.59	0.92	0.47	1.39
SE	0.10	0.02	0.11	0.12	0.35	0.44	0.10	0.10	0.17
LCL	1.05	0	1.07	0.21	0.57	0.84	0.74	0.30	1.09
UCL	1.40	0.06	1.44	0.63	1.76	2.34	1.09	0.64	1.68

Table A.7. Unadjusted density estimates of ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on May 1998 aerial surveys.

1998	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B3 (n=28)									
Density/km ²	0.53	0.22	0.76	0.49	0.35	0.84	0.51	0.31	0.81
SE	0.06	0.21	0.23	0.06	0.07	0.08	0.04	0.08	0.08
LCL	0.43	0	0.37	0.39	0.24	0.70	0.43	0.17	0.67
UCL	0.63	0.59	1.14	0.59	0.46	0.98	0.58	0.44	0.96
B4 (n=12)									
Density/km ²	0.91	0.45	1.36	0.63	0.46	1.09	0.73	0.46	1.19
SE	0.20	0.41	0.41	0.15	0.14	0.18	0.12	0.13	0.19
LCL	0.56	0	0.62	0.36	0.22	0.76	0.52	0.22	0.85
UCL	1.26	1.19	2.10	0.90	0.71	1.42	0.94	0.69	1.52

Table A.8. Unadjusted densities of observed ringed seals, by sector, for fast ice, pack ice, and all ice combined within 40 km of shore based on May-June 1999 aerial surveys.

1999	Fast Ice			Pack Ice			All Ice		
	Hole	Crack	All	Hole	Crack	All	Hole	Crack	All
B1 (n=15)									
density	0.77	0	0.77	0.36	0.05	0.41	0.60	0.02	0.62
SE	0.08	0	0.08	0.07	0.03	0.07	0.07	0.01	0.07
LCL	0.62	0	0.62	0.24	0	0.28	0.48	0	0.50
UCL	0.91	0	0.91	0.49	0.09	0.54	0.72	0.04	0.73
B2 (n=20)									
density	0.69	0	0.69	0.67	0.01	0.68	0.68	0	0.69
SE	0.06	0	0.06	0.08	0.01	0.08	0.06	0	0.06
LCL	0.58	0	0.58	0.53	0	0.54	0.57	0	0.57
UCL	0.80	0	0.80	0.82	0.02	0.82	0.79	0.01	0.80
B3 (n=57)									
density	0.77	0.11	0.87	0.69	0.37	1.06	0.73	0.23	0.96
SE	0.04	0.04	0.06	0.05	0.06	0.09	0.03	0.03	0.05
LCL	0.70	0.05	0.77	0.61	0.28	0.92	0.68	0.18	0.88
UCL	0.83	0.17	0.98	0.78	0.46	1.21	0.79	0.28	1.05
B4 (n=31)									
density	1.36	0.57	1.93	0.69	0.71	1.40	0.92	0.66	1.58
SE	0.20	0.24	0.29	0.13	0.14	0.19	0.11	0.13	0.17
LCL	1.02	0.16	1.43	0.47	0.48	1.08	0.73	0.44	1.29
UCL	1.69	0.98	2.42	0.91	0.94	1.72	1.11	0.88	1.87

APPENDIX B

Maps of Beaufort Sea study area showing sightings of ringed seals during 1985-1987 and 1996-1999.

These figures show sightings of seals in all sectors (B1-B4) surveyed during 1985-1987 and 1996-1999. Only lines included in the selected dataset are included. Temporal replicates and lines flown at altitudes greater than 91 m are not included.

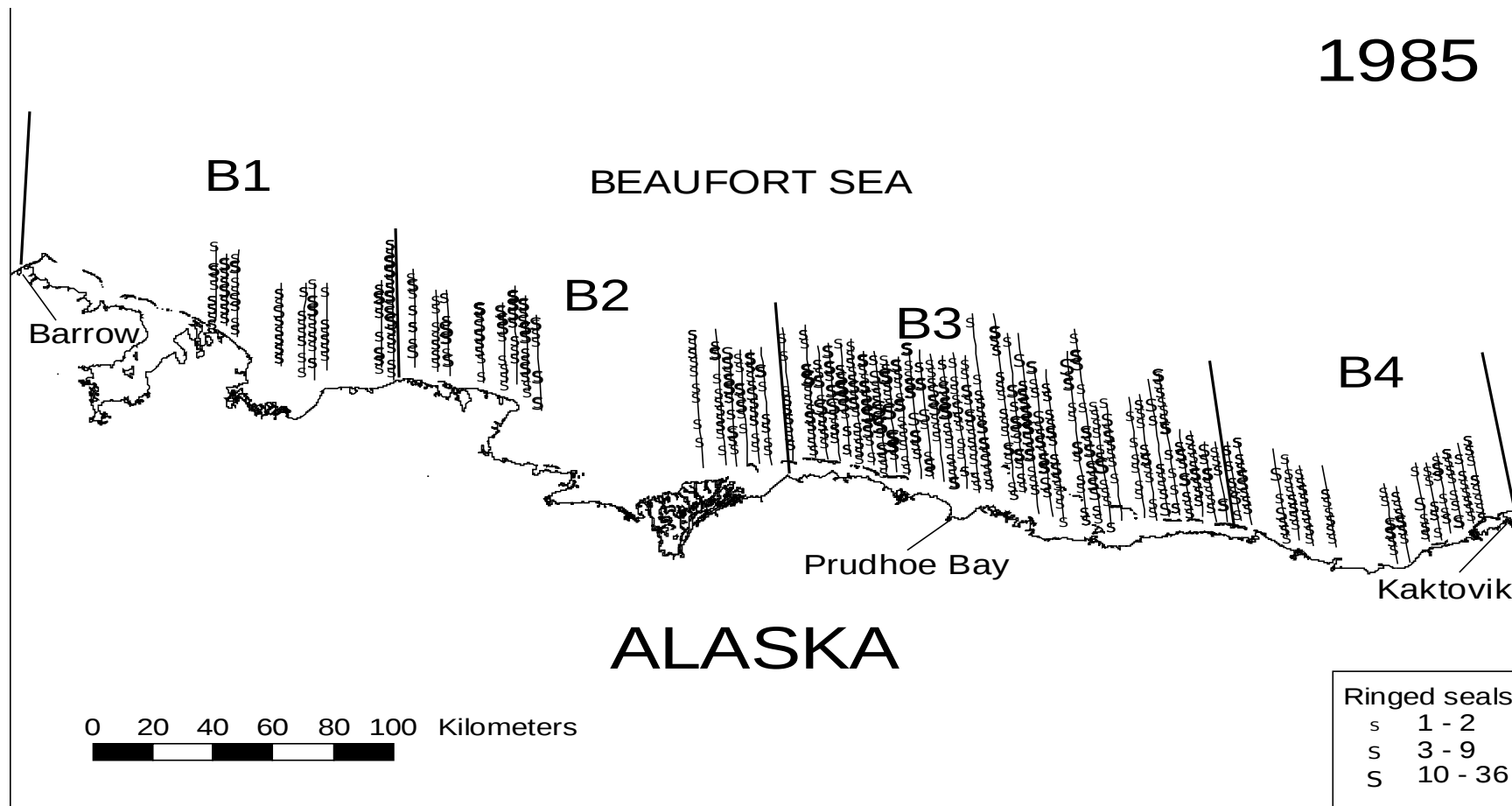


Figure B.1. Map of the Beaufort Sea study area showing sightings of ringed seals made during 9-13 June 1985.

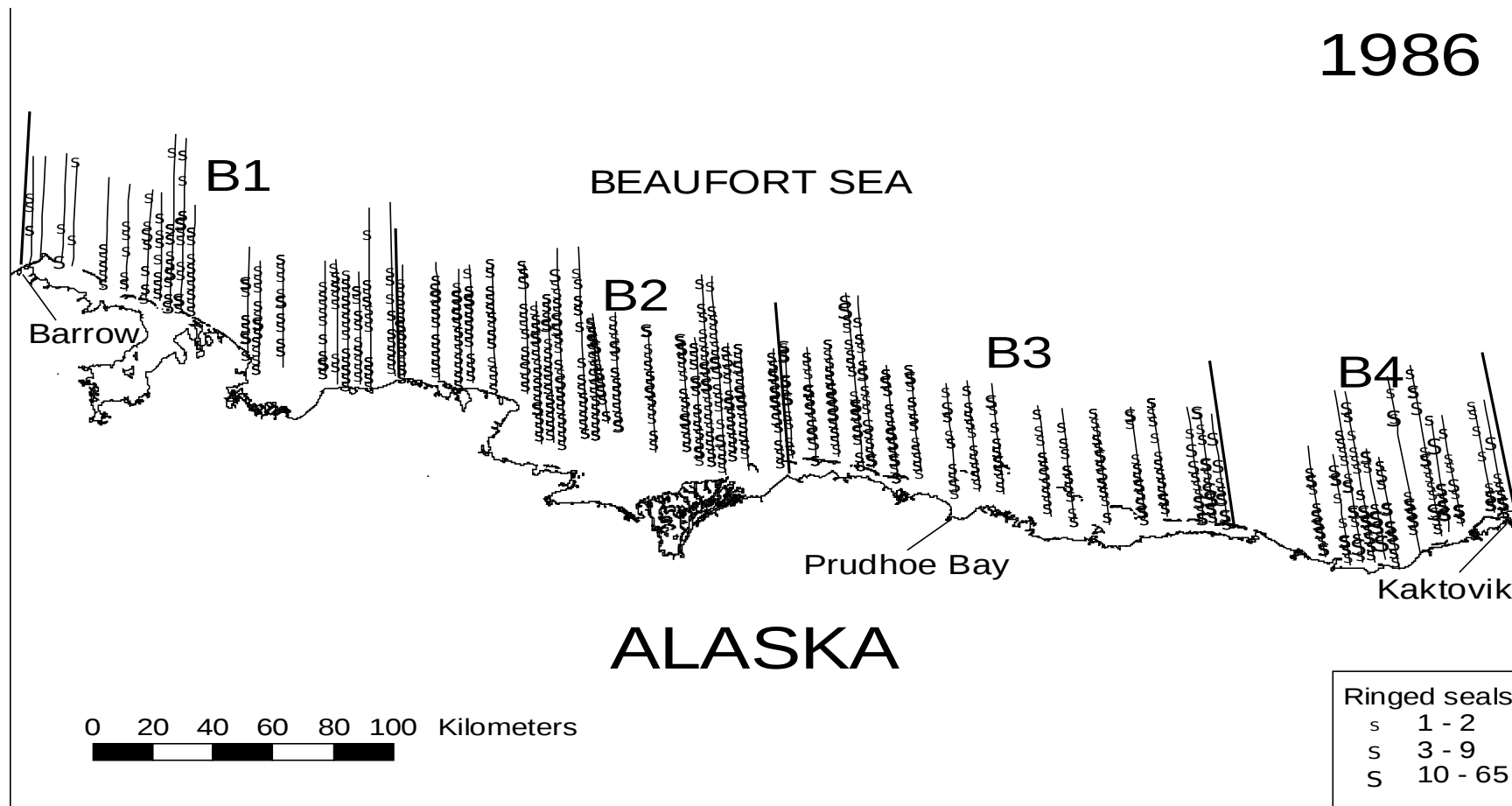


Figure B.2. Map of the Beaufort Sea study area showing sightings of ringed seals made during 31 May-12 June 1986.

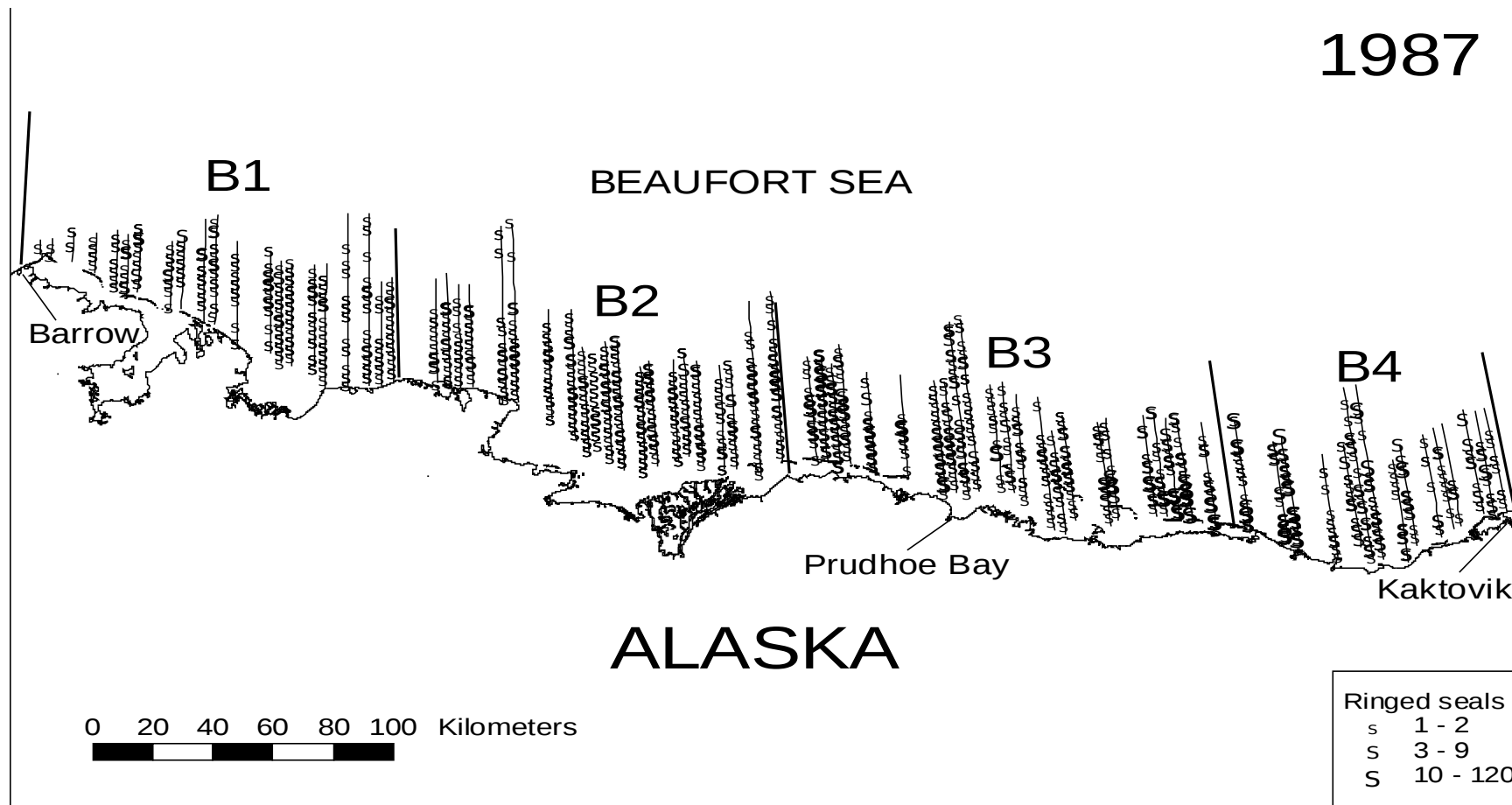


Figure B.3. Map of the Beaufort Sea study area showing sightings of ringed seals made during 2-7 June 1987.

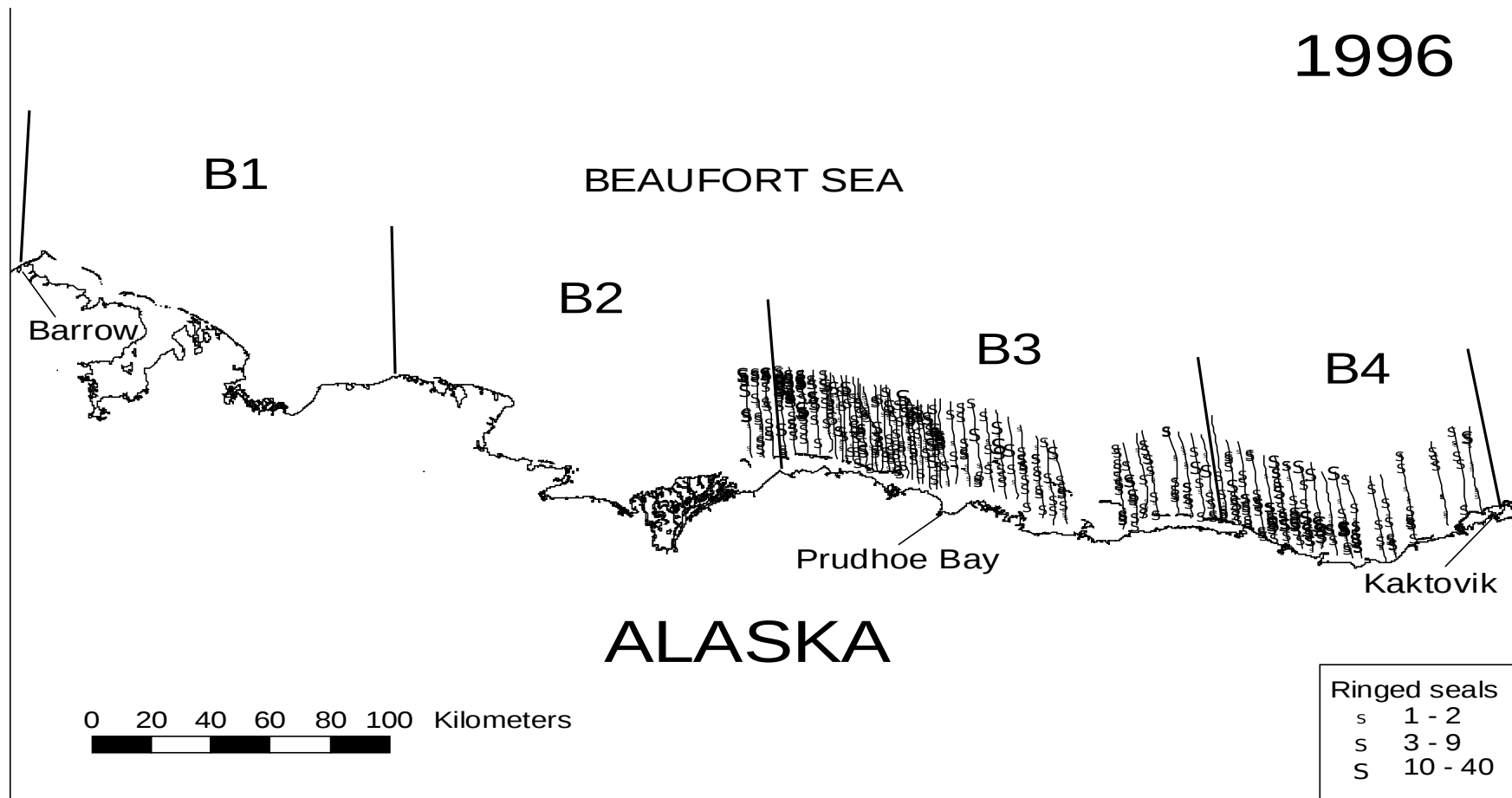


Figure B.4. Map of the Beaufort Sea study area showing sightings of ringed seals made during 29-31 May 1996.

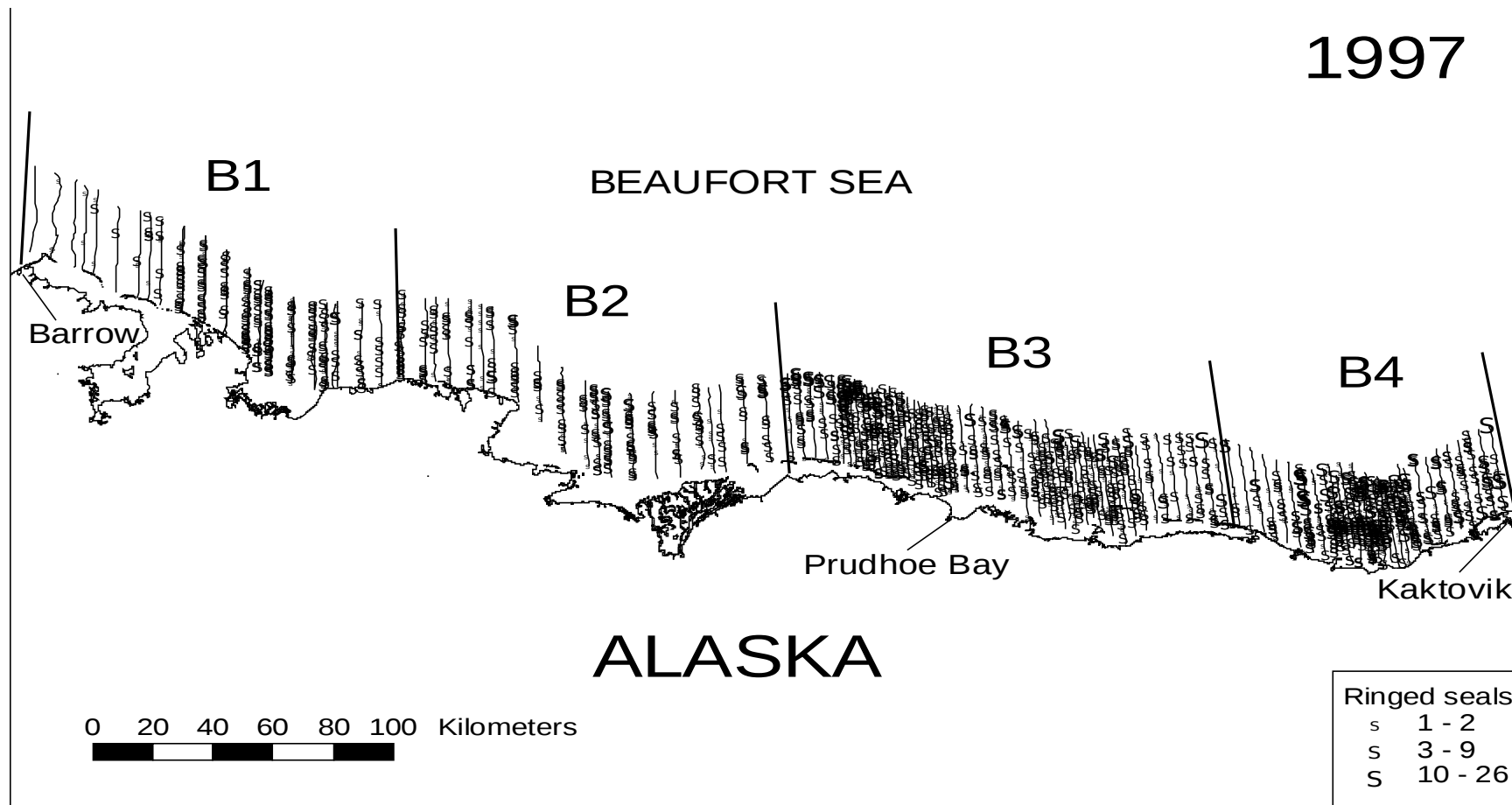


Figure B.5. Map of the Beaufort Sea study area showing sightings of ringed seals made during 25 May-2 June 1997.

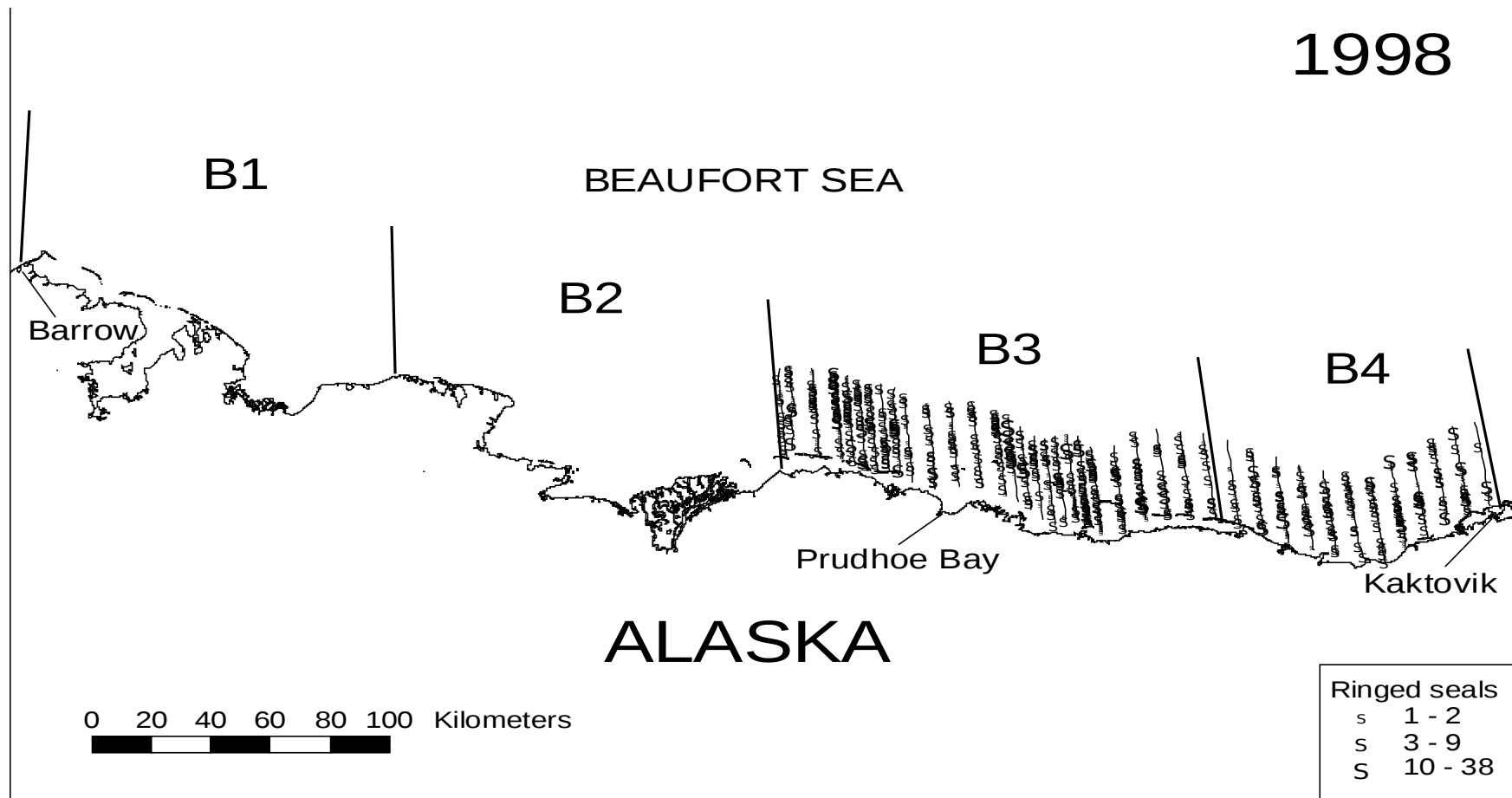


Figure B.6. Map of the Beaufort Sea study area showing sightings of ringed seals made during 27-28 May 1998.

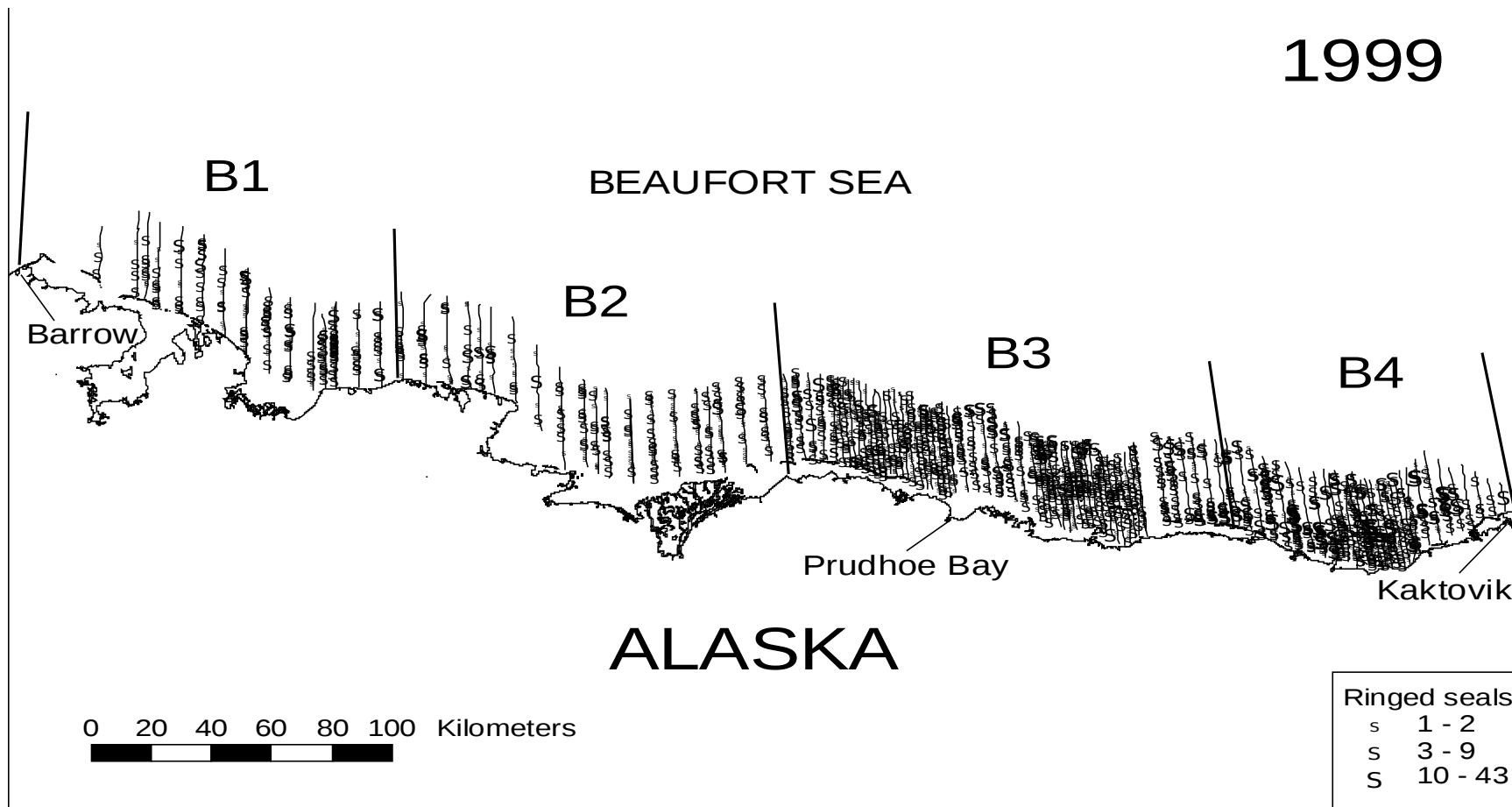


Figure B.7. Map of the Beaufort Sea study area showing sightings of ringed seals made during 29 May-4 June 1999.

APPENDIX C

Statistical tables for aerial surveys of ringed seals

The tables present the results of chi-square goodness-of-fit tests and Bonferonni-corrected 95% confidence intervals used to assess the significance of observed differences in ringed seal densities in relation to water depth, distance from the ice edge, ice deformation, longitude, time of day, melt water, cloud cover, temperature, and wind speed. Statistics are shown for sightings of individual seals.

Table C.1. Water depth versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	Depth (meters)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	5	166.31	0.11	59	153.81	0.04	0.03	0.05	39.62	78.38	<exp	0.35
	15	534.76	0.34	464	494.55	0.32	0.29	0.35	418.20	509.80	within	0.87
	25	548.46	0.35	693	507.22	0.48	0.44	0.51	643.91	742.09	>exp	1.26
	35	292.37	0.19	217	270.39	0.15	0.13	0.17	182.00	252.00	<exp	0.74
	45	32.48	0.02	23	30.04	0.02	0.01	0.02	10.74	35.26	within	0.71
1986	5	111.32	0.11	117	150.66	0.08	0.06	0.10	89.12	144.88	<exp	1.05
	15	335.83	0.32	682	454.52	0.48	0.44	0.51	631.22	732.78	>exp	2.03
	25	303.04	0.29	452	410.14	0.32	0.28	0.35	404.72	499.28	within	1.49
	35	233.38	0.22	150	315.87	0.11	0.08	0.13	118.83	181.17	<exp	0.64
	45	53.21	0.05	24	72.01	0.02	0.01	0.03	10.93	37.07	<exp	0.45
	55	13.43	0.01	2	18.17	0.00	0.00	0.00	-1.80	5.80	<exp	0.15
	>55	4.90	0.00	1	6.63	0.00	0.00	0.00	-1.69	3.69	<exp	0.20
1987	5	176.88	0.13	182	311.50	0.08	0.06	0.09	147.14	216.86	<exp	1.03
	15	406.16	0.30	1325	715.29	0.56	0.54	0.59	1260.24	1389.76	>exp	3.26
	25	372.85	0.28	510	656.62	0.22	0.19	0.24	456.23	563.77	<exp	1.37
	35	282.31	0.21	299	497.17	0.13	0.11	0.15	255.54	342.46	<exp	1.06
	45	73.92	0.06	36	130.19	0.02	0.01	0.02	19.98	52.02	<exp	0.49
	55	19.96	0.01	3	35.16	0.00	0.00	0.00	-1.66	7.66	<exp	0.15
	>55	5.16	0.00	0	9.08	0.00	0.00	0.00	0.00	0.00	<exp	0.00
1996	5	282.53	0.15	101	227.95	0.07	0.05	0.08	75.99	126.01	<exp	0.36
	15	654.12	0.35	652	527.76	0.43	0.40	0.46	602.43	701.57	>exp	1.00
	25	662.46	0.35	626	534.49	0.41	0.38	0.45	576.70	675.30	>exp	0.94
	35	238.88	0.13	122	192.73	0.08	0.06	0.10	94.72	149.28	<exp	0.51
	45	32.31	0.02	8	26.07	0.01	0.00	0.01	0.73	15.27	<exp	0.25

Table C.1. Depth continued.

Year	Depth (meters)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. Per Interval	95% Bonferroni Confidence Limits on <u>Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1997	5	433.52	0.16	284	436.66	0.10	0.09	0.12	241.93	326.07	<exp	0.66
	15	965.20	0.36	770	972.18	0.28	0.26	0.31	708.02	831.98	<exp	0.80
	25	861.33	0.32	1109	867.56	0.41	0.38	0.43	1041.39	1176.61	>exp	1.29
	35	381.54	0.14	492	384.30	0.18	0.16	0.20	439.04	544.96	>exp	1.29
	45	57.36	0.02	44	57.78	0.02	0.01	0.02	26.64	61.36	within	0.77
	55	0.52	0.00	20	0.53	0.01	0.00	0.01	8.24	31.76	>exp	38.30
1998	5	218.36	0.18	109	202.59	0.10	0.07	0.12	82.84	135.16	<exp	0.50
	15	434.14	0.36	457	402.79	0.41	0.37	0.45	413.74	500.26	>exp	1.05
	25	367.30	0.31	377	340.78	0.34	0.30	0.38	335.37	418.63	within	1.03
	35	145.32	0.12	158	134.83	0.14	0.11	0.17	127.29	188.71	within	1.09
	45	31.08	0.03	9	28.84	0.01	0.00	0.02	1.12	16.88	<exp	0.29
	55	0.19	0.00	0	0.17	0.00	0.00	0.00	0.00	0.00	<exp	0.00
1999	5	504.47	0.19	374	591.64	0.12	0.10	0.13	327.28	420.72	<exp	0.74
	15	949.52	0.36	1256	1113.59	0.41	0.38	0.43	1185.56	1326.44	>exp	1.32
	25	841.75	0.32	1095	987.20	0.35	0.33	0.38	1026.42	1163.58	>exp	1.30
	35	338.45	0.13	380	396.93	0.12	0.11	0.14	332.96	427.04	within	1.12
	45	13.33	0.01	0	15.64	0.00	-	-	-	-	<exp	0.00
All	5	1893.38	0.15	1226	2092.44	0.09	0.08	0.10	1136.13	1315.87	<exp	0.65
	15	4279.73	0.35	5606	4729.67	0.41	0.40	0.42	5451.25	5760.75	>exp	1.31
	25	3957.19	0.32	4862	4373.22	0.36	0.34	0.37	4711.40	5012.60	>exp	1.23
	35	1912.25	0.15	1818	2113.29	0.13	0.13	0.14	1711.19	1924.81	<exp	0.95
	45	293.70	0.02	144	324.58	0.01	0.01	0.01	111.89	176.11	<exp	0.49
	55	34.10	0.00	25	37.68	0.00	0.00	0.00	11.56	38.44	within	0.73
	>55	10.06	0.00	1	11.11	0.00	0.00	0.00	-1.69	3.69	<exp	0.10

Table C.2. Distance from fast ice edge versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	Distance from ice edge (km)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	<-35	656.61	0.42	438	607.24	0.30	0.27	0.34	387.42	488.58	<exp	0.67
	-35	168.62	0.11	244	155.94	0.17	0.14	0.20	202.81	285.19	>exp	1.45
	-30	187.17	0.12	176	173.09	0.12	0.10	0.15	140.05	211.95	within	0.94
	-25	155.01	0.10	188	143.35	0.13	0.10	0.15	151.01	224.99	>exp	1.21
	-20	150.78	0.10	186	139.44	0.13	0.10	0.15	149.18	222.82	>exp	1.23
	-15	96.21	0.06	93	88.98	0.06	0.05	0.08	66.03	119.97	within	0.97
	-10	63.45	0.04	61	58.68	0.04	0.03	0.06	38.90	83.10	within	0.96
	-5	50.47	0.03	44	46.67	0.03	0.02	0.04	25.12	62.88	within	0.87
	5	27.61	0.02	14	25.54	0.01	0.00	0.02	3.24	24.76	<exp	0.51
	10	8.65	0.01	1	8.00	0.00	0.00	0.00	-1.89	3.89	<exp	0.12
	15	4.25	0.00	6	3.93	0.00	0.00	0.01	-1.07	13.07	within	1.41
	20	4.94	0.00	3	4.57	0.00	0.00	0.01	-2.00	8.00	within	0.61
	25	0.61	0.00	2	0.57	0.00	0.00	0.00	-2.08	6.08	within	3.26
1986	<-35	196.59	0.19	224	266.08	0.16	0.13	0.19	183.39	264.61	<exp	1.14
	-35	52.69	0.05	74	71.31	0.05	0.03	0.07	49.25	98.75	within	1.40
	-30	72.86	0.07	108	98.62	0.08	0.05	0.10	78.47	137.53	within	1.48
	-25	70.58	0.07	79	95.53	0.06	0.04	0.07	53.47	104.53	within	1.12
	-20	94.26	0.09	298	127.58	0.21	0.18	0.24	252.62	343.38	>exp	3.16
	-15	82.17	0.08	106	111.21	0.07	0.05	0.09	76.73	135.27	within	1.29
	-10	92.72	0.09	183	125.49	0.13	0.10	0.15	145.67	220.33	>exp	1.97
	-5	75.33	0.07	142	101.96	0.10	0.08	0.12	108.58	175.42	>exp	1.88
	5	68.10	0.06	63	92.17	0.04	0.03	0.06	40.07	85.93	<exp	0.93
	10	54.14	0.05	30	73.27	0.02	0.01	0.03	13.98	46.02	<exp	0.55
	15	54.31	0.05	29	73.50	0.02	0.01	0.03	13.25	44.75	<exp	0.53
	20	57.50	0.05	59	77.83	0.04	0.03	0.06	36.77	81.23	within	1.03
	25	34.26	0.03	17	46.37	0.01	0.00	0.02	4.89	29.11	<exp	0.50
	30	29.17	0.03	13	39.48	0.01	0.00	0.02	2.39	23.61	<exp	0.45
	35	17.69	0.02	3	23.94	0.00	0.00	0.01	-2.11	8.11	<exp	0.17
	>35	2.71	0.00	0	3.66	0.00	0.00	0.00	0.00	0.00	<exp	0.00

Table C.2. Distance from edge continued.

Year	Distance from ice edge (km)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1987	<-35	9.18	0.01	6	16.17	0.00	0.00	0.01	-1.23	13.23	<exp	0.65
	-35	3.44	0.00	3	6.07	0.00	0.00	0.00	-2.12	8.12	within	0.87
	-30	20.07	0.02	30	35.35	0.01	0.01	0.02	13.92	46.08	within	1.49
	-25	34.05	0.03	19	59.97	0.01	0.00	0.01	6.17	31.83	<exp	0.56
	-20	84.14	0.06	93	148.17	0.04	0.03	0.05	65.07	120.93	<exp	1.11
	-15	107.90	0.08	351	190.01	0.15	0.13	0.17	299.93	402.07	>exp	3.25
	-10	118.71	0.09	280	209.06	0.12	0.10	0.14	233.58	326.42	>exp	2.36
	-5	177.01	0.13	652	311.72	0.28	0.25	0.30	587.83	716.17	>exp	3.68
	5	176.23	0.13	304	310.35	0.13	0.11	0.15	255.92	352.08	within	1.73
	10	131.46	0.10	131	231.51	0.06	0.04	0.07	98.13	163.87	<exp	1.00
	15	127.32	0.10	157	224.23	0.07	0.05	0.08	121.23	192.77	<exp	1.23
	20	152.41	0.11	193	268.41	0.08	0.07	0.10	153.66	232.34	<exp	1.27
	25	87.59	0.07	53	154.25	0.02	0.01	0.03	31.73	74.27	<exp	0.61
	30	70.20	0.05	71	123.63	0.03	0.02	0.04	46.48	95.52	<exp	1.01
	35	29.93	0.02	8	52.71	0.00	0.00	0.01	-0.34	16.34	<exp	0.27
	>35	7.60	0.01	4	13.38	0.00	0.00	0.00	-1.91	9.91	<exp	0.53
1996	-30	1.67	0.00	0	1.35	-	-	-	-	-	<exp	
	-25	20.62	0.01	6	16.63	0.00	0.00	0.01	-1.12	13.12	<exp	0.29
	-20	125.84	0.07	23	101.51	0.02	0.01	0.02	9.13	36.87	<exp	0.18
	-15	175.03	0.09	67	141.19	0.04	0.03	0.06	43.69	90.31	<exp	0.38
	-10	214.02	0.11	125	172.64	0.08	0.06	0.10	93.80	156.20	<exp	0.58
	-5	244.12	0.13	221	196.92	0.15	0.12	0.17	180.98	261.02	within	0.91
	5	254.18	0.14	392	205.04	0.26	0.23	0.29	342.37	441.63	>exp	1.54
	10	249.84	0.13	309	201.54	0.20	0.17	0.24	263.33	354.67	>exp	1.24
	15	247.12	0.13	208	199.35	0.14	0.11	0.16	168.98	247.02	within	0.84
	20	170.86	0.09	59	137.82	0.04	0.02	0.05	37.06	80.94	<exp	0.35

Table C.2. Distance from edge continued.

Year	Distance from ice edge (km)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
96 cont	25	89.03	0.05	72	71.82	0.05	0.03	0.06	47.87	96.13	within	0.81
	30	55.85	0.03	26	45.05	0.02	0.01	0.03	11.27	40.73	<exp	0.47
	35	17.63	0.01	1	14.22	0.00	0.00	0.00	-1.91	3.91	<exp	0.06
1997	<-35	21.94	0.01	9	22.10	0.00	0.00	0.01	0.27	17.73	<exp	0.41
	-35	150.41	0.06	89	151.48	0.03	0.02	0.04	61.97	116.03	<exp	0.59
	-30	230.80	0.09	152	232.45	0.06	0.04	0.07	117.10	186.90	<exp	0.66
	-25	272.89	0.10	203	274.83	0.07	0.06	0.09	163.07	242.93	<exp	0.74
	-20	320.44	0.12	307	322.73	0.11	0.10	0.13	258.92	355.08	within	0.96
	-15	343.13	0.13	421	345.57	0.15	0.13	0.18	366.04	475.96	>exp	1.23
	-10	366.55	0.14	357	369.16	0.13	0.11	0.15	305.69	408.31	within	0.97
	-5	359.16	0.13	346	361.72	0.13	0.11	0.15	295.37	396.63	within	0.96
	5	276.54	0.10	467	278.51	0.17	0.15	0.19	409.70	524.30	>exp	1.69
	10	161.85	0.06	150	163.01	0.06	0.04	0.07	115.31	184.69	within	0.93
	15	106.23	0.04	105	106.98	0.04	0.03	0.05	75.73	134.27	within	0.99
	20	57.72	0.02	48	58.13	0.02	0.01	0.03	27.99	68.01	within	0.83
	25	27.42	0.01	44	27.62	0.02	0.01	0.02	24.83	63.17	within	1.60
	30	4.68	0.00	21	4.72	0.01	0.00	0.01	7.70	34.30	>exp	4.49
1998	-25	4.35	0.00	1	4.03	0.00	0.00	0.00	-1.86	3.86	<exp	0.23
	-20	34.97	0.03	16	32.44	0.01	0.00	0.02	4.62	27.38	<exp	0.46
	-15	86.70	0.07	36	80.43	0.03	0.02	0.05	19.09	52.91	<exp	0.42
	-10	124.71	0.10	126	115.69	0.11	0.09	0.14	95.72	156.28	within	1.01
	-5	156.30	0.13	201	145.00	0.18	0.15	0.21	164.24	237.76	>exp	1.29
	5	158.70	0.13	132	147.23	0.12	0.09	0.15	101.10	162.90	within	0.83
	10	162.76	0.14	162	151.00	0.15	0.12	0.18	128.30	195.70	within	1.00
	15	161.40	0.13	186	149.73	0.17	0.14	0.20	150.35	221.65	>exp	1.15
	20	140.61	0.12	129	130.44	0.12	0.09	0.14	98.41	159.59	within	0.92
	25	96.88	0.08	64	89.87	0.06	0.04	0.08	41.75	86.25	<exp	0.66
	30	57.00	0.05	53	52.88	0.05	0.03	0.07	32.64	73.36	within	0.93
	35	12.14	0.01	4	11.27	0.00	0.00	0.01	-1.72	9.72	<exp	0.33

Table C.2. Distance from edge continued.

Year	Distance from ice edge (km)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1999	-35	3.07	0.00	0	3.63	-	-	-	-	-	<exp	
	-30	43.38	0.02	14	51.27	0.00	0.00	0.01	3.12	24.88	<exp	0.32
	-25	85.76	0.03	45	101.35	0.01	0.01	0.02	25.60	64.40	<exp	0.52
	-20	147.87	0.06	89	174.75	0.03	0.02	0.04	61.91	116.09	<exp	0.60
	-15	246.76	0.09	209	291.62	0.07	0.05	0.08	168.33	249.67	<exp	0.85
	-10	329.53	0.13	381	389.44	0.12	0.11	0.14	327.75	434.25	within	1.16
	-5	351.45	0.13	669	415.35	0.22	0.19	0.24	602.29	735.71	>exp	1.90
	5	362.86	0.14	589	428.83	0.19	0.17	0.21	525.38	652.62	>exp	1.62
	10	333.06	0.13	360	393.61	0.12	0.10	0.13	308.04	411.96	within	1.08
	15	283.88	0.11	215	335.49	0.07	0.06	0.08	173.79	256.21	<exp	0.76
	20	231.67	0.09	318	273.78	0.10	0.09	0.12	268.79	367.21	within	1.37
	25	149.86	0.06	177	177.10	0.06	0.05	0.07	139.36	214.64	within	1.18
	30	39.90	0.02	19	47.16	0.01	0.00	0.01	6.34	31.66	<exp	0.48
	35	5.60	0.00	5	6.62	0.00	0.00	0.00	-1.51	11.51	within	0.89
All	<-35	884.32	0.07	677	978.76	0.05	0.04	0.06	602.04	751.96	<exp	0.77
	-35	378.23	0.03	410	418.62	0.03	0.03	0.03	351.07	468.93	within	1.08
	-30	555.95	0.05	480	615.32	0.04	0.03	0.04	416.40	543.60	<exp	0.86
	-25	643.26	0.05	541	711.96	0.04	0.03	0.04	473.64	608.36	<exp	0.84
	-20	958.3	0.08	1012	1060.64	0.07	0.07	0.08	921.54	1102.46	within	1.06
	-15	1137.9	0.09	1283	1259.42	0.09	0.09	0.10	1182.24	1383.76	within	1.13
	-10	1309.69	0.11	1513	1449.55	0.11	0.10	0.12	1404.60	1621.40	within	1.16
	-5	1413.84	0.11	2275	1564.83	0.17	0.16	0.18	2146.31	2403.69	>exp	1.61
	5	1324.22	0.11	1961	1465.64	0.14	0.13	0.15	1839.89	2082.11	>exp	1.48
	10	1101.76	0.09	1143	1219.42	0.08	0.08	0.09	1047.36	1238.64	within	1.04
	15	984.51	0.08	906	1089.65	0.07	0.06	0.07	820.05	991.95	<exp	0.92
	20	815.7	0.07	809	902.81	0.06	0.05	0.07	727.47	890.53	<exp	0.99
	25	485.65	0.04	429	537.51	0.03	0.03	0.04	368.76	489.24	<exp	0.88
	30	256.8	0.02	203	284.22	0.01	0.01	0.02	161.21	244.79	<exp	0.79
	35	82.99	0.01	21	91.85	0.00	0.00	0.00	7.47	34.53	<exp	0.25
	>35	15.18	0.00	4	16.80	0.00	0.00	0.00	-1.91	9.91	<exp	0.26

Table C.3. Ice deformation versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	% Ice-deformation	Area Surveyed (km2)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. /Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	10	407.60	0.27	233	415.57	0.15	0.13	0.17	195.89	270.12	<exp	0.57
	20	208.00	0.14	372	212.06	0.24	0.21	0.27	327.65	416.35	>exp	1.79
	30	335.78	0.22	422	342.34	0.27	0.24	0.30	375.78	468.22	>exp	1.26
	40	291.99	0.19	319	297.70	0.21	0.18	0.23	277.02	360.98	within	1.09
	50	122.72	0.08	107	125.11	0.07	0.05	0.09	80.67	133.33	within	0.87
	>50	151.27	0.10	94	154.22	0.06	0.04	0.08	69.21	118.79	<exp	0.62
1986	10	322.17	0.32	643	459.73	0.45	0.42	0.49	593.40	692.60	>exp	2.00
	20	261.76	0.26	454	373.53	0.32	0.29	0.35	407.57	500.43	>exp	1.73
	30	244.04	0.24	174	348.24	0.12	0.10	0.14	141.39	206.61	<exp	0.71
	40	141.97	0.14	138	202.59	0.10	0.08	0.12	108.54	167.46	<exp	0.97
	50	25.30	0.03	17	36.11	0.01	0.00	0.02	6.19	27.81	<exp	0.67
	>50	5.47	0.01	2	7.81	0.00	0.00	0.00	-1.73	5.73	<exp	0.37
1987	10	268.51	0.21	768	498.06	0.33	0.30	0.35	707.98	828.03	>exp	2.86
	20	309.76	0.24	706	574.58	0.30	0.27	0.32	647.34	764.66	>exp	2.28
	30	348.18	0.27	525	645.84	0.22	0.20	0.25	471.71	578.29	<exp	1.51
	40	269.15	0.21	311	499.25	0.13	0.11	0.15	267.65	354.35	<exp	1.16
	50	58.22	0.05	42	107.99	0.02	0.01	0.03	25.06	58.95	<exp	0.72
	>50	16.33	0.01	4	30.28	0.00	0.00	0.00	-1.27	9.27	<exp	0.25
1996	10	451.42	0.24	451	364.14	0.30	0.27	0.33	404.09	497.91	>exp	1.00
	20	420.42	0.22	386	339.14	0.26	0.23	0.29	341.28	430.72	>exp	0.92
	30	533.71	0.29	394	430.53	0.26	0.23	0.29	348.98	439.02	within	0.74
	40	270.32	0.14	194	218.06	0.13	0.11	0.15	159.70	228.30	within	0.72
	50	125.05	0.07	63	100.87	0.04	0.03	0.06	42.50	83.50	<exp	0.50
	>50	69.75	0.04	21	56.26	0.01	0.01	0.02	8.99	33.01	<exp	0.30

Table C.3. Ice deformation continued.

Year	% Ice-deformation	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. /Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1997	10	1358.14	0.50	1641	1367.82	0.60	0.58	0.63	1573.71	1708.29	>exp	1.21
	20	812.22	0.30	810	818.01	0.30	0.27	0.32	747.08	872.92	within	1.00
	30	387.71	0.14	223	390.47	0.08	0.07	0.10	185.25	260.75	<exp	0.58
	40	121.71	0.05	33	122.57	0.01	0.01	0.02	17.94	48.06	<exp	0.27
	50	18.93	0.01	11	19.06	0.00	0.00	0.01	2.27	19.73	within	0.58
	>50	1.06	0.00	1	1.07	0.00	0.00	0.00	-1.64	3.64	within	0.94
1998	10	663.01	0.55	657	615.07	0.59	0.55	0.63	613.80	700.20	within	0.99
	20	255.29	0.21	227	236.84	0.20	0.17	0.24	191.55	262.45	within	0.89
	30	158.61	0.13	132	147.14	0.12	0.09	0.14	103.55	160.45	within	0.83
	40	86.51	0.07	81	80.26	0.07	0.05	0.09	58.14	103.86	within	0.94
	50	23.06	0.02	9	21.39	0.01	0.00	0.02	1.12	16.88	<exp	0.39
	>50	10.02	0.01	4	9.30	0.00	0.00	0.01	-1.27	9.27	<exp	0.40
1999	10	1500.11	0.57	1651	1759.23	0.53	0.51	0.56	1577.64	1724.36	<exp	1.10
	20	832.32	0.31	1207	976.08	0.39	0.37	0.41	1135.34	1278.66	>exp	1.45
	30	276.39	0.10	235	324.14	0.08	0.06	0.09	196.12	273.88	<exp	0.85
	40	28.63	0.01	8	33.57	0.00	0.00	0.00	0.55	15.45	<exp	0.28
	50	8.22	0.00	4	9.64	0.00	0.00	0.00	-1.27	9.27	<exp	0.49
	>50	1.99	0.00	0	2.33						<exp	0.00
All Years	10	4970.96	0.41	6044	5611.00	0.44	0.43	0.45	5890.35	6197.65	>exp	1.22
	20	3099.77	0.25	4162	3498.88	0.30	0.29	0.31	4019.82	4304.18	>exp	1.34
	30	2284.42	0.19	2105	2578.55	0.15	0.14	0.16	1993.59	2216.41	<exp	0.92
	40	1210.28	0.10	1084	1366.11	0.08	0.07	0.08	1000.63	1167.37	<exp	0.90
	50	381.5	0.03	253	430.62	0.02	0.02	0.02	211.42	294.58	<exp	0.66
	>50	255.89	0.02	126	288.84	0.01	0.01	0.01	96.52	155.48	<exp	0.49

Table C.4. Longitude speed versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	Longitude (degrees)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. in Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	-149	235.37	0.16	370	239.97	0.24	0.21	0.27	324.87	415.14	>exp	1.57
	-148	330.90	0.22	438	337.37	0.28	0.25	0.31	390.33	485.67	>exp	1.32
	-147	285.72	0.19	333	291.31	0.22	0.19	0.24	289.51	376.49	within	1.17
	-146	269.68	0.18	168	274.95	0.11	0.09	0.13	135.08	200.92	<exp	0.62
	-145	173.20	0.11	112	176.58	0.07	0.05	0.09	84.58	139.42	<exp	0.65
	-144	195.14	0.13	109	198.96	0.07	0.05	0.09	81.92	136.08	<exp	0.56
	-143	27.34	0.02	17	27.87	0.01	0.00	0.02	5.97	28.03	within	0.62
1986	-149	165.87	0.17	251	236.70	0.18	0.15	0.20	212.31	289.69	within	1.51
	-148	138.51	0.14	140	197.65	0.10	0.08	0.12	109.77	170.23	<exp	1.01
	-147	128.84	0.13	163	183.85	0.11	0.09	0.14	130.68	195.33	within	1.27
	-146	167.32	0.17	219	238.76	0.15	0.13	0.18	182.37	255.63	within	1.31
	-145	66.43	0.07	81	94.80	0.06	0.04	0.07	57.49	104.51	within	1.22
	-144	267.86	0.27	508	382.23	0.36	0.32	0.39	459.33	556.67	>exp	1.90
	-143	65.89	0.07	66	94.02	0.05	0.03	0.06	44.66	87.34	<exp	1.00
1987	-149	165.25	0.13	405	306.52	0.17	0.15	0.19	355.74	454.27	>exp	2.45
	-148	184.87	0.15	261	342.92	0.11	0.09	0.13	220.02	301.98	<exp	1.41
	-147	249.39	0.20	328	462.61	0.14	0.12	0.16	282.80	373.20	<exp	1.32
	-146	167.04	0.13	486	309.84	0.21	0.18	0.23	433.17	538.84	>exp	2.91
	-145	134.55	0.11	558	249.58	0.24	0.21	0.26	502.49	613.51	>exp	4.15
	-144	267.37	0.21	245	495.96	0.10	0.09	0.12	205.14	284.86	<exp	0.92
	-143	101.66	0.08	73	188.57	0.03	0.02	0.04	50.38	95.63	<exp	0.72

Table C.4. Longitude continued.

Year	Longitude (degrees W)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1996	-149	388.09	0.21	394	312.93	0.26	0.23	0.29	348.09	439.91	>exp	1.02
	-148	479.35	0.26	279	386.51	0.18	0.16	0.21	238.43	319.57	<exp	0.58
	-147	204.04	0.11	90	164.53	0.06	0.04	0.08	65.25	114.75	<exp	0.44
	-146	259.00	0.14	165	208.84	0.11	0.09	0.13	132.39	197.61	<exp	0.64
	-145	299.02	0.16	374	241.11	0.25	0.22	0.28	328.88	419.12	>exp	1.25
	-144	181.32	0.10	179	146.20	0.12	0.10	0.14	145.21	212.79	within	0.99
	-143	61.85	0.03	29	49.88	0.02	0.01	0.03	14.65	43.35	<exp	0.47
1997	-149	385.64	0.14	482	387.91	0.18	0.16	0.20	428.43	535.57	>exp	1.25
	-148	489.29	0.18	383	492.16	0.14	0.12	0.16	334.20	431.80	<exp	0.78
	-147	531.35	0.20	355	534.47	0.13	0.11	0.15	307.74	402.26	<exp	0.67
	-146	370.20	0.14	184	372.38	0.07	0.05	0.08	148.77	219.23	<exp	0.50
	-145	351.07	0.13	366	353.13	0.13	0.12	0.15	318.12	413.88	within	1.04
	-144	476.44	0.18	831	479.24	0.31	0.28	0.33	766.38	895.62	>exp	1.74
	-143	99.12	0.04	118	99.70	0.04	0.03	0.05	89.42	146.58	within	1.19
	Total	2703.12	1	2719	2719	1						1.01
1998	-149	209.77	0.18	171	194.61	0.15	0.12	0.18	138.64	203.36	within	0.82
	-148	191.26	0.16	121	177.43	0.11	0.08	0.13	93.07	148.93	<exp	0.63
	-147	275.77	0.23	200	255.83	0.18	0.15	0.21	165.55	234.45	<exp	0.73
	-146	152.43	0.13	182	141.41	0.16	0.13	0.19	148.81	215.19	>exp	1.19
	-145	153.09	0.13	194	142.02	0.17	0.14	0.21	159.96	228.04	>exp	1.27
	-144	154.23	0.13	177	143.07	0.16	0.13	0.19	144.18	209.82	>exp	1.15
	-143	61.04	0.05	66	56.63	0.06	0.04	0.08	44.80	87.20	within	1.08

Table C.4. Longitude continued.

Year	Longitude (degrees W)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1999	-149	393.74	0.15	367	461.80	0.12	0.10	0.13	318.61	415.39	<exp	0.93
	-148	495.84	0.19	448	581.55	0.14	0.13	0.16	395.33	500.67	<exp	0.90
	-147	523.53	0.20	557	614.03	0.18	0.16	0.20	499.49	614.51	within	1.06
	-146	362.64	0.14	340	425.33	0.11	0.09	0.12	293.19	386.81	<exp	0.94
	-145	366.43	0.14	555	429.77	0.18	0.16	0.20	497.57	612.43	>exp	1.51
	-144	462.61	0.17	818	542.57	0.26	0.24	0.28	751.97	884.03	>exp	1.77
	-143	42.58	0.02	20	49.94	0.01	0.00	0.01	8.01	31.99	<exp	0.47
All Years	-149	1943.73	0.16	2440	2193.22	0.18	0.17	0.19	2319.46	2560.54	>exp	1.26
	-148	2310.01	0.19	2070	2606.51	0.15	0.14	0.16	1957.18	2182.82	<exp	0.90
	-147	2198.65	0.18	2026	2480.86	0.15	0.14	0.16	1914.17	2137.83	<exp	0.92
	-146	1748.32	0.14	1744	1972.72	0.13	0.12	0.13	1639.01	1848.99	<exp	1.00
	-145	1543.79	0.13	2240	1741.94	0.16	0.15	0.17	2123.49	2356.51	>exp	1.45
	-144	2004.97	0.16	2867	2262.32	0.21	0.20	0.22	2738.82	2995.18	>exp	1.43
	-143	459.47	0.04	389	518.45	0.03	0.02	0.03	336.70	441.30	<exp	0.85

Table C.5. Time of day versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	Time of Day (hour)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. Per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	11	239.62	0.16	187	244.30	0.12	0.10	0.14	152.51	221.49	<exp	0.78
	12	268.02	0.18	206	273.26	0.13	0.11	0.16	170.05	241.95	<exp	0.77
	13	311.76	0.21	473	317.85	0.31	0.27	0.34	424.25	521.75	>exp	1.52
	14	331.67	0.22	386	338.16	0.25	0.22	0.28	340.21	431.79	>exp	1.16
	15	167.40	0.11	176	170.67	0.11	0.09	0.14	142.40	209.60	within	1.05
	16	100.32	0.07	59	102.29	0.04	0.03	0.05	38.74	79.27	<exp	0.59
	17	98.56	0.06	60	100.49	0.04	0.03	0.05	39.57	80.43	<exp	0.61
1986	11	99.35	0.10	87	141.78	0.06	0.04	0.08	62.69	111.32	<exp	0.88
	12	90.95	0.09	155	129.79	0.11	0.09	0.13	123.38	186.62	within	1.70
	13	227.36	0.23	451	324.43	0.32	0.28	0.35	403.75	498.25	>exp	1.98
	14	186.78	0.19	271	266.54	0.19	0.16	0.22	231.14	310.86	within	1.45
	15	128.11	0.13	129	182.80	0.09	0.07	0.11	99.86	158.14	<exp	1.01
	16	210.42	0.21	270	300.27	0.19	0.16	0.22	230.20	309.81	within	1.28
	17	57.74	0.06	65	82.40	0.05	0.03	0.06	43.81	86.19	within	1.13
1987	10	9.16	0.01	40	16.99	0.02	0.01	0.02	23.13	56.87	>exp	4.37
	11	245.06	0.19	849	454.56	0.36	0.33	0.39	786.31	911.69	>exp	3.46
	12	217.87	0.17	587	404.13	0.25	0.23	0.27	530.52	643.48	>exp	2.69
	13	194.11	0.15	250	360.05	0.11	0.09	0.12	209.79	290.21	<exp	1.29
	14	232.49	0.18	185	431.26	0.08	0.06	0.09	149.88	220.12	<exp	0.80
	15	264.25	0.21	286	490.16	0.12	0.10	0.14	243.36	328.64	<exp	1.08
	16	107.20	0.08	159	198.84	0.07	0.05	0.08	126.24	191.76	<exp	1.48

Table C.5. Time of day continued.

Year	Time of Day (hour)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. Per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1996	11	37.59	0.02	15	30.32	0.01	0.00	0.02	4.63	25.37	<exp	0.40
	12	306.13	0.16	397	246.94	0.26	0.23	0.29	350.99	443.01	>exp	1.30
	13	426.25	0.23	490	343.84	0.32	0.29	0.36	441.07	538.93	>exp	1.15
	14	384.38	0.21	236	310.06	0.16	0.13	0.18	198.04	273.96	<exp	0.61
	15	373.35	0.20	198	301.17	0.13	0.11	0.15	162.72	233.28	<exp	0.53
	16	314.59	0.17	150	253.76	0.10	0.08	0.12	118.73	181.27	<exp	0.48
	17	28.39	0.02	23	22.90	0.02	0.01	0.02	10.20	35.80	within	0.81
1997	10	52.11	0.02	17	52.49	0.01	0.00	0.01	5.94	28.06	<exp	0.33
	11	379.01	0.14	454	381.71	0.17	0.15	0.19	401.68	506.32	>exp	1.20
	12	501.17	0.19	682	504.74	0.25	0.23	0.27	621.19	742.81	>exp	1.36
	13	625.74	0.23	620	630.20	0.23	0.21	0.25	561.15	678.85	within	0.99
	14	501.27	0.19	478	504.84	0.18	0.16	0.20	424.61	531.39	within	0.95
	15	375.04	0.14	312	377.72	0.11	0.10	0.13	267.29	356.71	<exp	0.83
	16	265.42	0.10	156	267.31	0.06	0.05	0.07	123.38	188.62	<exp	0.59
1998	11	32.72	0.03	3	30.36	0.00	0.00	0.01	-1.65	7.65	<exp	0.09
	12	183.85	0.15	212	170.56	0.19	0.16	0.22	176.77	247.23	>exp	1.15
	13	262.76	0.22	234	243.76	0.21	0.18	0.24	197.44	270.56	within	0.89
	14	202.47	0.17	182	187.83	0.16	0.13	0.19	148.82	215.18	within	0.90
	15	211.87	0.18	160	196.55	0.14	0.12	0.17	128.52	191.48	<exp	0.76
	16	251.11	0.21	278	232.96	0.25	0.22	0.29	239.17	316.83	>exp	1.11
	17	51.73	0.04	41	47.99	0.04	0.02	0.05	24.10	57.90	within	0.79

Table C.5. Time of day continued.

Year	Time of Day (hour)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. Per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1999	10	63.18	0.02	49	74.09	0.02	0.01	0.02	30.01	67.99	<exp	0.78
	11	395.55	0.15	374	463.87	0.12	0.10	0.14	324.41	423.59	<exp	0.95
	12	259.45	0.10	280	304.26	0.09	0.08	0.10	236.36	323.64	within	1.08
	13	358.13	0.14	416	420.00	0.13	0.12	0.15	364.10	467.90	within	1.16
	14	483.37	0.18	604	566.87	0.19	0.18	0.21	543.69	664.31	within	1.25
	15	536.25	0.20	578	628.88	0.19	0.17	0.21	518.69	637.31	within	1.08
	16	322.08	0.12	386	377.71	0.12	0.11	0.14	335.73	436.27	within	1.20
	17	229.65	0.09	418	269.32	0.13	0.12	0.15	365.99	470.01	>exp	1.82
All Years	10	124.45	0.01	106	140.47	0.01	0.01	0.01	77.96	134.04	<exp	0.85
	11	1428.9	0.12	1969	1612.88	0.14	0.13	0.15	1856.67	2081.33	>exp	1.38
	12	1827.44	0.15	2519	2062.73	0.18	0.17	0.19	2394.95	2643.05	>exp	1.38
	13	2406.11	0.20	2934	2715.91	0.21	0.20	0.22	2802.61	3065.39	>exp	1.22
	14	2322.43	0.19	2342	2621.46	0.17	0.16	0.18	2221.45	2462.55	<exp	1.01
	15	2056.27	0.17	1839	2321.03	0.13	0.13	0.14	1729.85	1948.15	<exp	0.89
	16	1571.14	0.13	1458	1773.43	0.11	0.10	0.11	1359.27	1556.73	<exp	0.93
	17	466.07	0.04	607	526.08	0.04	0.04	0.05	541.13	672.87	>exp	1.30

Table C.6. Melt water versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	% Melt Water	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion of Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	0-10	79.95	0.05	43	81.51	0.03	0.02	0.04	25.94	60.06	<exp	0.54
	11-20	678.71	0.45	788	691.97	0.51	0.48	0.54	736.13	839.87	>exp	1.16
	21-30	318.27	0.21	428	324.49	0.28	0.25	0.31	381.58	474.42	>exp	1.34
	31-40	261.83	0.17	200	266.95	0.13	0.11	0.15	165.18	234.82	<exp	0.76
	41-50	121.09	0.08	73	123.46	0.05	0.03	0.06	51.00	95.00	<exp	0.60
	>50	57.5	0.04	15	58.62	0.01	0.00	0.02	4.83	25.17	<exp	0.26
1986	0-10	979.34	0.98	1361	1397.49	0.95	0.94	0.97	1341.04	1380.96	<exp	1.39
	11-20	7.62	0.01	62	10.87	0.04	0.03	0.06	42.76	81.24	>exp	8.14
	21-30	10.68	0.01	3	15.24	0.00	0.00	0.01	-1.32	7.32	<exp	0.28
	31-40	3.08	0.00	2	4.40	0.00	0.00	0.00	-1.53	5.53	within	0.65
1987	0-10	1270.12	1.00	2356	2356.00	1.00	-	-	-	-	-	1.85
1996	0-10	1158.71	0.62	1063	934.69	0.70	0.67	0.74	1016.24	1109.76	>exp	0.92
	11-20	341.13	0.18	198	275.18	0.13	0.11	0.15	163.40	232.60	<exp	0.58
	21-30	132.63	0.07	75	106.99	0.05	0.03	0.06	52.73	97.27	<exp	0.57
	31-40	73.38	0.04	69	59.19	0.05	0.03	0.06	47.59	90.41	within	0.94
	41-50	22.87	0.01	19	18.45	0.01	0.01	0.02	7.57	30.43	within	0.83
	>50	141.95	0.08	85	114.51	0.06	0.04	0.07	61.37	108.63	<exp	0.60
1997	0-10	2683.95	0.99	2714	2703.08	1.00	1.00	1.00	2708.11	2719.89	>exp	1.01
	11-20	13.42	0.00	5	13.52	0.00	0.00	0.00	-0.89	10.89	<exp	0.37
	21-30	0.4	0.00	0	0.40	0.00	0.00	0.00	0.00	0.00	<exp	0.00
	31-40	0.3	0.00	0	0.30	0.00	0.00	0.00	0.00	0.00	<exp	0.00
	41-50	0.26	0.00	0	0.26	0.00	0.00	0.00	0.00	0.00	<exp	0.00
	>50	1.43	0.00	0	1.44	0.00	0.00	0.00	0.00	0.00	<exp	0.00

Table C.6. Melt water continued.

Year	% Melt Water	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion of Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1998	0-10	318.94	0.27	190	295.88	0.17	0.14	0.20	156.89	223.11	<exp	0.60
	11-20	65.46	0.05	45	60.73	0.04	0.02	0.06	27.66	62.34	within	0.69
	21-30	134.65	0.11	132	124.91	0.12	0.09	0.14	103.55	160.45	within	0.98
	31-40	185.38	0.15	273	171.98	0.25	0.21	0.28	235.15	310.85	>exp	1.47
	41-50	103.76	0.09	101	96.26	0.09	0.07	0.11	75.72	126.28	within	0.97
	>50	388.32	0.32	369	360.24	0.33	0.30	0.37	327.59	410.41	within	0.95
1999	0-10	2640.24	1.00	3089	3096.30	0.99	0.99	1.00	3079.45	3098.55	within	1.17
	11-20	5.72	0.00	16	6.71	0.01	0.00	0.01	6.45	25.55	within	2.80
	21-30	1.7	0.00	0	1.99	0.00	0.00	0.00	0.00	0.00	<exp	0.00
All Years	10	9131.25	0.75	10816	10306.97	0.79	0.78	0.79	10688.85	10943.15	>exp	1.18
	20	1112.06	0.09	1114	1255.25	0.08	0.07	0.09	1029.58	1198.42	<exp	1.00
	30	598.33	0.05	638	675.37	0.05	0.04	0.05	572.92	703.08	within	1.07
	40	523.97	0.04	544	591.44	0.04	0.04	0.04	483.69	604.31	within	1.04
	50	247.98	0.02	193	279.91	0.01	0.01	0.02	156.61	229.39	<exp	0.78
	>50	589.2	0.05	469	665.06	0.03	0.03	0.04	412.85	525.15	<exp	0.80

Table C.7. Cloud cover versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	% Cloud Cover	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	60	134.21	0.09	164	136.83	0.11	0.09	0.12	135.01	192.99	within	1.22
	80	332.42	0.22	578	338.92	0.37	0.34	0.40	532.45	623.55	>exp	1.74
	100	1050.71	0.69	805	1071.25	0.52	0.49	0.55	757.96	852.04	<exp	0.77
1986	0	1000.72	1.00	1428	1428.00	1.00	1.00	1.00	1573.00	1573.00	within	1.43
1987	0	1270.12	1	2356	2356	1	1.00	1.00	2508.00	2508.00	within	1.85
1996	0	484.68	0.26	296	390.97	0.20	0.17	0.22	257.47	334.53	<exp	0.61
	10	210.89	0.11	144	170.12	0.10	0.08	0.11	115.49	172.51	within	0.68
	70	31.10	0.02	21	25.08	0.01	0.01	0.02	9.63	32.37	within	0.68
	100	1144.01	0.61	1048	922.83	0.69	0.66	0.72	1003.31	1092.69	>exp	0.92
1997	0	243.07	0.09	136	244.80	0.05	0.04	0.06	105.42	166.58	<exp	0.56
	10	179.76	0.07	163	181.05	0.06	0.05	0.07	129.70	196.30	within	0.91
	20	369.08	0.14	310	371.71	0.11	0.10	0.13	265.42	354.58	<exp	0.84
	40	657.72	0.24	903	662.41	0.33	0.31	0.36	836.94	969.06	>exp	1.37
	50	182.91	0.07	272	184.22	0.10	0.08	0.12	229.91	314.09	>exp	1.49
	80	169.52	0.06	252	170.73	0.09	0.08	0.11	211.32	292.68	>exp	1.49
	100	897.69	0.33	683	904.09	0.25	0.23	0.27	622.16	743.84	<exp	0.76
1998	0	674.22	0.56	528	625.47	0.48	0.44	0.52	484.10	571.90	<exp	0.78
	20	10.32	0.01	23	9.58	0.02	0.01	0.03	10.48	35.52	>exp	2.23
	40	153.39	0.13	163	142.30	0.15	0.12	0.17	131.89	194.11	within	1.06
	50	61.73	0.05	88	57.26	0.08	0.06	0.10	64.25	111.75	>exp	1.43
	80	61.61	0.05	60	57.15	0.05	0.04	0.07	40.12	79.88	within	0.97
	100	235.25	0.20	248	218.24	0.22	0.19	0.26	211.39	284.61	within	1.05

Table C.7. Cloud cover continued.

Year	% Cloud Cover	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits on Prop. of Occur.		95% Bonferroni Confidence Limits on Observed Seals		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1999	0	12.00	0.005	22	14.07	0.01	0.00	0.01	9.43	34.57	within	1.83
	20	16.11	0.01	13	18.89	0.00	0.00	0.01	3.32	22.68	within	0.81
	30	151.41	0.06	120	177.56	0.04	0.03	0.05	91.11	148.89	<exp	0.79
	50	513.89	0.19	606	602.66	0.20	0.18	0.21	546.59	665.41	within	1.18
	80	123.02	0.05	118	144.27	0.04	0.03	0.05	89.34	146.66	within	0.96
	90	138.78	0.05	132	162.76	0.04	0.03	0.05	101.76	162.24	<exp	0.95
	100	1692.45	0.64	2094	1984.79	0.67	0.65	0.70	2023.76	2164.24	>exp	1.24
All Years	0	3684.81	0.30	4766	4159.26	0.35	0.33	0.36	4607.58	4924.42	>exp	1.29
	10	390.65	0.03	307	440.95	0.02	0.02	0.03	257.84	356.16	<exp	0.79
	20	395.51	0.03	346	446.44	0.03	0.02	0.03	293.88	398.12	<exp	0.87
	30	151.41	0.01	120	170.91	0.01	0.01	0.01	89.05	150.95	<exp	0.79
	40	811.11	0.07	1066	915.55	0.08	0.07	0.08	977.01	1154.99	>exp	1.31
	50	758.53	0.06	966	856.20	0.07	0.06	0.08	880.95	1051.05	>exp	1.27
	60	134.21	0.01	164	151.49	0.01	0.01	0.01	127.88	200.12	within	1.22
	70	31.1	0.00	21	35.10	0.00	0.00	0.00	8.01	33.99	<exp	0.68
	80	686.57	0.06	1008	774.97	0.07	0.07	0.08	921.27	1094.73	>exp	1.47
	90	138.78	0.01	132	156.65	0.01	0.01	0.01	99.56	164.44	within	0.95
	100	5020.11	0.41	4878	5666.49	0.35	0.34	0.37	4718.73	5037.27	<exp	0.97

Table C.8. Air temperature versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	Temperature (deg C)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	-5 to 0	1019.09	0.6716	1228	1039.01	0.79	0.77	0.82	1192.33	1263.67	>exp	1.20
	0 to 4	498.26	0.3284	319	507.99	0.21	0.18	0.23	283.33	354.67	<exp	0.64
1986	-5 to 0	33.57	0.0335	42	47.90	0.03	0.02	0.04	26.72	57.28	within	1.25
	0 to 4	866.81	0.8662	1253	1236.92	0.88	0.86	0.90	1223.33	1282.67	within	1.45
	4 to 8	100.34	0.1003	133	143.18	0.09	0.07	0.11	106.71	159.29	within	1.33
1987	-5 to 0	968.52	0.7625	1946	1796.55	0.83	0.81	0.84	1904.75	1987.25	>exp	2.01
	0 to 4	301.6	0.2375	410	559.45	0.17	0.16	0.19	368.75	451.25	<exp	1.36
1996	0 to 4	150.71	0.08	220	121.57	0.15	0.12	0.17	187.18	252.82	>exp	1.46
	4 to 8	1599.23	0.85	1224	1290.04	0.81	0.79	0.84	1187.60	1260.40	<exp	0.77
	8 to 11	120.74	0.06	65	97.39	0.04	0.03	0.06	46.12	83.88	<exp	0.54
1997	≤ -9	137.46	0.05	190	138.44	0.07	0.06	0.08	155.76	224.24	>exp	1.38
	-9 to -5	1055.03	0.39	1278	1062.55	0.47	0.45	0.49	1210.96	1345.04	>exp	1.21
	-5 to 0	924.96	0.34	778	931.55	0.29	0.26	0.31	717.30	838.70	<exp	0.84
	0 to 4	213.22	0.08	163	214.74	0.06	0.05	0.07	131.11	194.89	<exp	0.76
	4 to 8	369.08	0.14	310	371.71	0.11	0.10	0.13	267.31	352.69	<exp	0.84
1998	0 to 4	138.08	0.12	136	128.10	0.12	0.10	0.15	108.71	163.29	within	0.98
	4 to 8	843.41	0.70	732	782.43	0.66	0.62	0.69	692.57	771.43	<exp	0.87
	8 to 11	91.68	0.08	94	85.06	0.08	0.06	0.11	70.83	117.17	within	1.03
	> 11	123.33	0.10	148	114.41	0.13	0.11	0.16	119.71	176.29	>exp	1.20
1999	-5 to 0	2159.05	0.82	2194	2531.99	0.71	0.69	0.72	2137.13	2250.87	<exp	1.02
	0 to 4	488.61	0.18	911	573.01	0.29	0.28	0.31	854.13	967.87	>exp	1.86

Table C.8. Air temperature continued.

Year	Temperature (deg C)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
All Years	≤ -9	137.46	0.01	190	155.16	0.01	0.01	0.02	153.18	226.82	within	1.38
	-9 to -5	1055.03	0.09	1278	1190.87	0.09	0.09	0.10	1186.40	1369.60	within	1.21
	-5 to 0	5105.19	0.42	6188	5762.53	0.45	0.44	0.46	6030.96	6345.04	>exp	1.21
	0 to 4	2657.29	0.22	3412	2999.44	0.25	0.24	0.26	3275.71	3548.29	>exp	1.28
	4 to 8	2912.06	0.24	2399	3287.01	0.17	0.17	0.18	2279.26	2518.74	<exp	0.82
	8 to 11	212.42	0.02	159	239.77	0.01	0.01	0.01	125.28	192.72	<exp	0.75
	> 11	123.33	0.01	148	139.21	0.01	0.01	0.01	115.45	180.55	within	1.20

Table C.9. Wind speed versus observed and expected numbers of ringed seals counted during aerial surveys in the central Beaufort Sea, 1985-1987 and 1996-1999.

Year	Windspeed (km/hr)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1985	15-20	1086.09	0.72	1266	1107.31	0.82	0.79	0.84	1229.70	1302.30	>exp	1.17
	20-25	32.73	0.02	43	33.37	0.03	0.02	0.04	27.52	58.48	within	1.31
	25-30	398.53	0.26	238	406.32	0.15	0.13	0.18	204.03	271.97	<exp	0.60
1986	15-20	66.93	0.07	41	95.51	0.03	0.02	0.04	24.75	57.25	<exp	0.61
	20-25	315.74	0.32	434	450.56	0.30	0.27	0.34	389.23	478.77	within	1.37
	25-30	457.75	0.46	681	653.19	0.48	0.44	0.51	632.38	729.62	within	1.49
	30-35	126.73	0.13	230	180.84	0.16	0.14	0.19	194.22	265.78	>exp	1.81
	35-40	33.57	0.03	42	47.90	0.03	0.02	0.04	25.55	58.45	within	1.25
1987	20-25	66.84	0.05	289	123.98	0.12	0.11	0.14	249.23	328.77	>exp	4.32
	25-30	434.91	0.34	549	806.74	0.23	0.21	0.25	497.75	600.25	<exp	1.26
	30-35	501.65	0.39	1137	930.54	0.48	0.46	0.51	1076.42	1197.58	>exp	2.27
	35-40	266.72	0.21	381	494.74	0.16	0.14	0.18	336.36	425.64	<exp	1.43
1996	<15	1175.11	0.63	1069	947.91	0.71	0.68	0.74	1024.90	1113.10	>exp	0.91
	15-20	120.74	0.06	65	97.39	0.04	0.03	0.06	45.30	84.70	<exp	0.54
	25-30	273.67	0.15	189	220.76	0.13	0.10	0.15	156.88	221.12	within	0.69
	30-35	301.16	0.16	186	242.93	0.12	0.10	0.14	154.10	217.90	<exp	0.62
1997	<15	213.22	0.08	163	214.74	0.06	0.05	0.07	131.11	194.89	<exp	0.76
	15-20	963.24	0.36	827	970.10	0.30	0.28	0.33	765.21	888.79	<exp	0.86
	20-25	1214.98	0.45	1488	1223.64	0.55	0.52	0.57	1421.14	1554.86	>exp	1.22
	25-30	246.59	0.09	228	248.35	0.08	0.07	0.10	190.77	265.23	within	0.92
	30-35	61.72	0.02	13	62.16	0.00	0.00	0.01	3.73	22.27	<exp	0.21
1998	<15	429.11	0.36	479	398.08	0.43	0.39	0.47	437.78	520.22	>exp	1.12
	15-20	171.18	0.14	131	158.80	0.12	0.09	0.14	104.15	157.85	<exp	0.77
	25-30	152.91	0.13	93	141.86	0.08	0.06	0.10	69.94	116.06	<exp	0.61
	30-35	443.31	0.37	407	411.26	0.37	0.33	0.40	366.90	447.10	within	0.92

Table C.9. Wind continued.

Year	Windspeed (km/hr)	Area Surveyed (km ²)	Proportion Total Area Surveyed	Observed Number of Seals	Expected Number of Seals	Proportion Total Obs. per Interval	95% Bonferroni Confidence Limits <u>on Prop. of Occur.</u>		95% Bonferroni Confidence Limits <u>on Observed Seals</u>		Observed Proportion Relative to CI	Observed Density of Seals/km ²
							Lower	Upper	Lower	Upper		
1999	<15	215.87	0.08	210	253.16	0.07	0.06	0.08	173.08	246.92	<exp	0.97
	15-20	872.82	0.33	1032	1023.58	0.33	0.31	0.35	962.75	1101.25	within	1.18
	20-25	1127.74	0.43	1485	1322.54	0.48	0.45	0.50	1411.56	1558.44	>exp	1.32
	25-30	92.64	0.03	77	108.64	0.02	0.02	0.03	54.14	99.86	<exp	0.83
	30-35	243.44	0.09	228	285.50	0.07	0.06	0.09	189.65	266.35	<exp	0.94
	35-40	95.16	0.04	73	111.59	0.02	0.02	0.03	50.73	95.27	<exp	0.77
All Years	<15	2033.31	0.17	1921	2295.11	0.14	0.13	0.15	1813.73	2028.27	<exp	0.94
	15-20	3280.99	0.27	3362	3703.44	0.24	0.23	0.25	3229.00	3495.00	<exp	1.02
	20-25	2910.94	0.24	3832	3285.75	0.28	0.27	0.29	3693.25	3970.75	>exp	1.32
	25-30	2347.4	0.19	2369	2649.65	0.17	0.16	0.18	2252.15	2485.85	<exp	1.01
	30-35	1234.71	0.10	1794	1393.69	0.13	0.12	0.14	1689.79	1898.21	>exp	1.45
	35-40	395.44	0.03	496	446.36	0.04	0.03	0.04	438.31	553.69	within	1.25