

**APPENDIX A:**  
**JULY AND AUGUST 2001**  
**WEST DOCK NOAA STATION DATA**

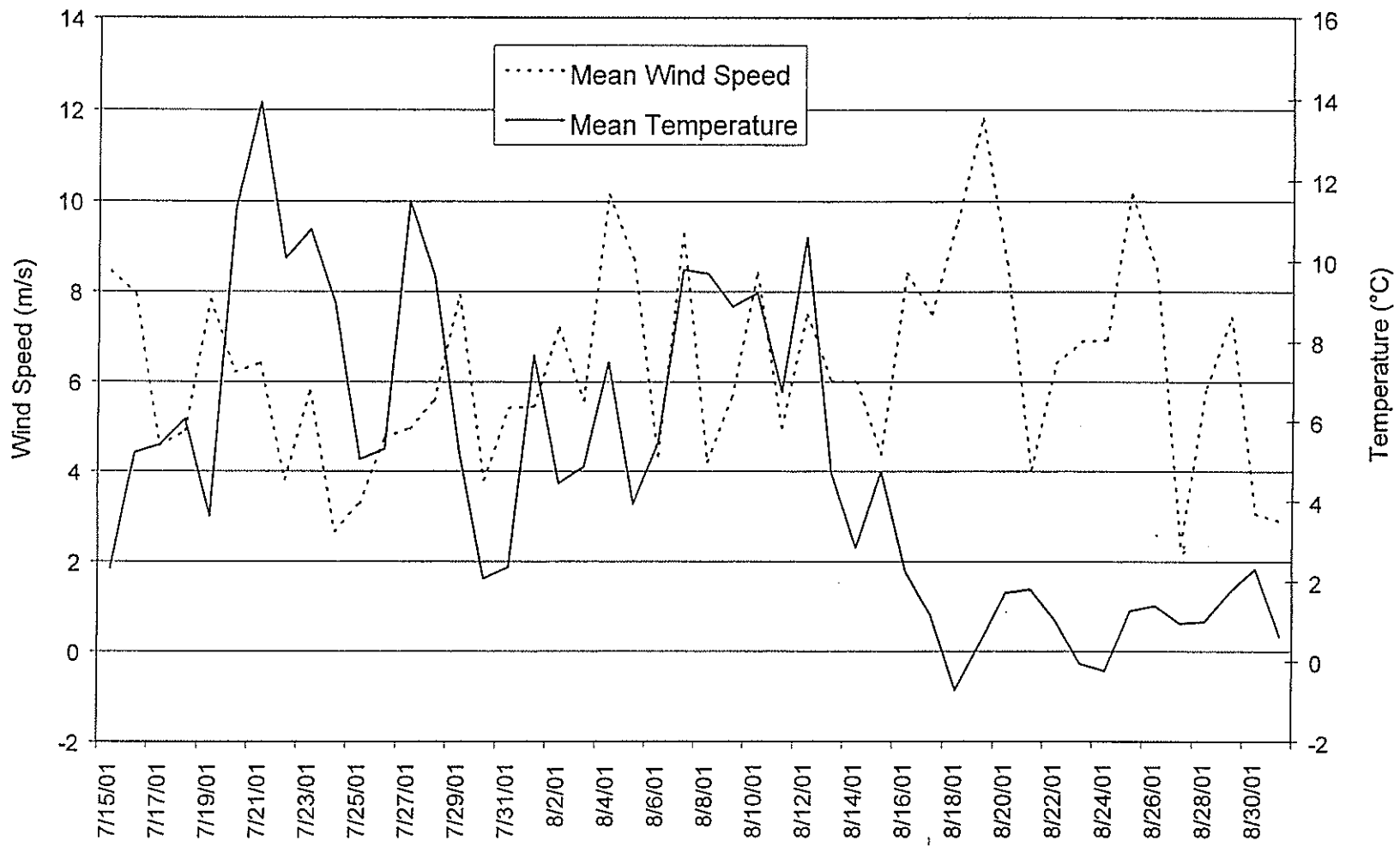


Figure A1. Daily mean temperature and wind speed recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July – 31 August 2001. Data available at <http://co-ops.nos.noaa.gov/co-ops.html>.

NOAA/NOS/CO-OPS  
Water Temperature Plot  
9497645 Prudhoe Bay , AK  
from 07/15/2001 - 08/31/2001

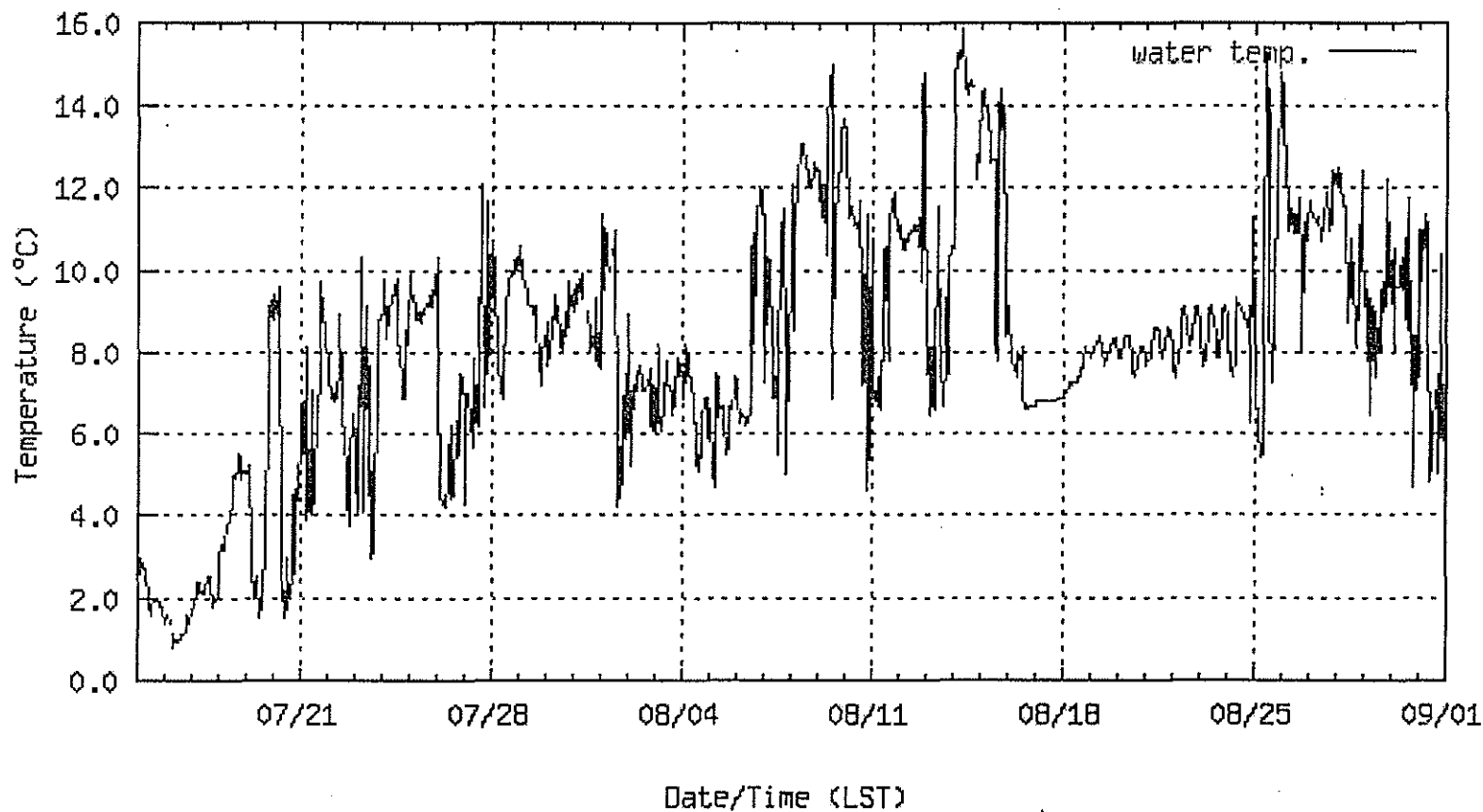


Figure A2. Hourly mean water temperature recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July – 1 September 2001. Data available at <http://co-ops.nos.noaa.gov/co-ops.html>.

NOAA/NOS/CO-OPS  
Wind Speed/Dir  
9497645 Prudhoe Bay, AK  
From 07/15/2001 - 08/31/2001

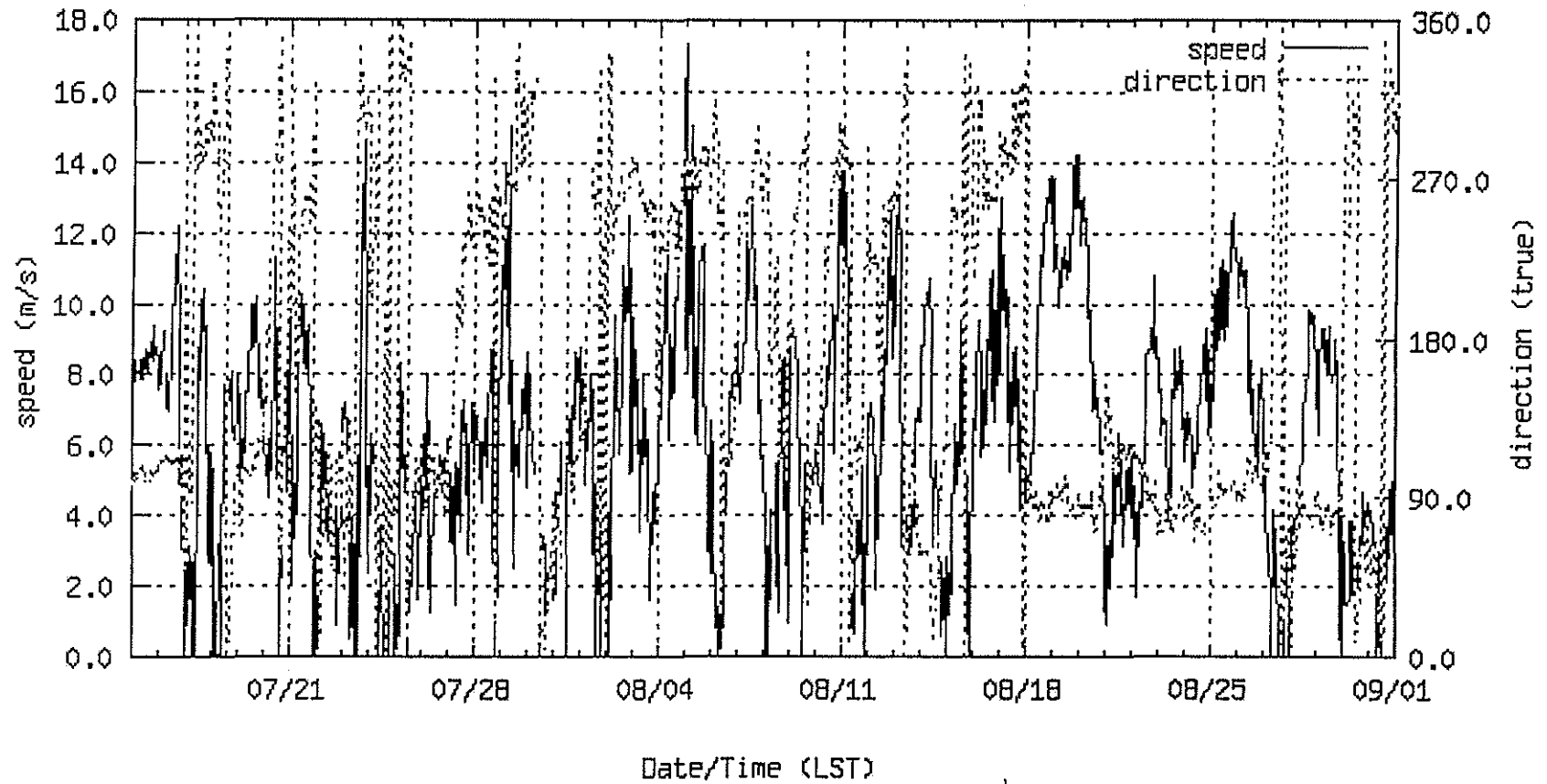


Figure A3. Hourly mean wind speed and direction recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July - 1 September 2001. Data available at <http://co-ops.nos.noaa.gov/co-ops.html>.

NOAA/NOS/CO-OPS  
Air Temperature Plot  
9497645 Prudhoe Bay , AK  
from 07/15/2001 - 08/31/2001

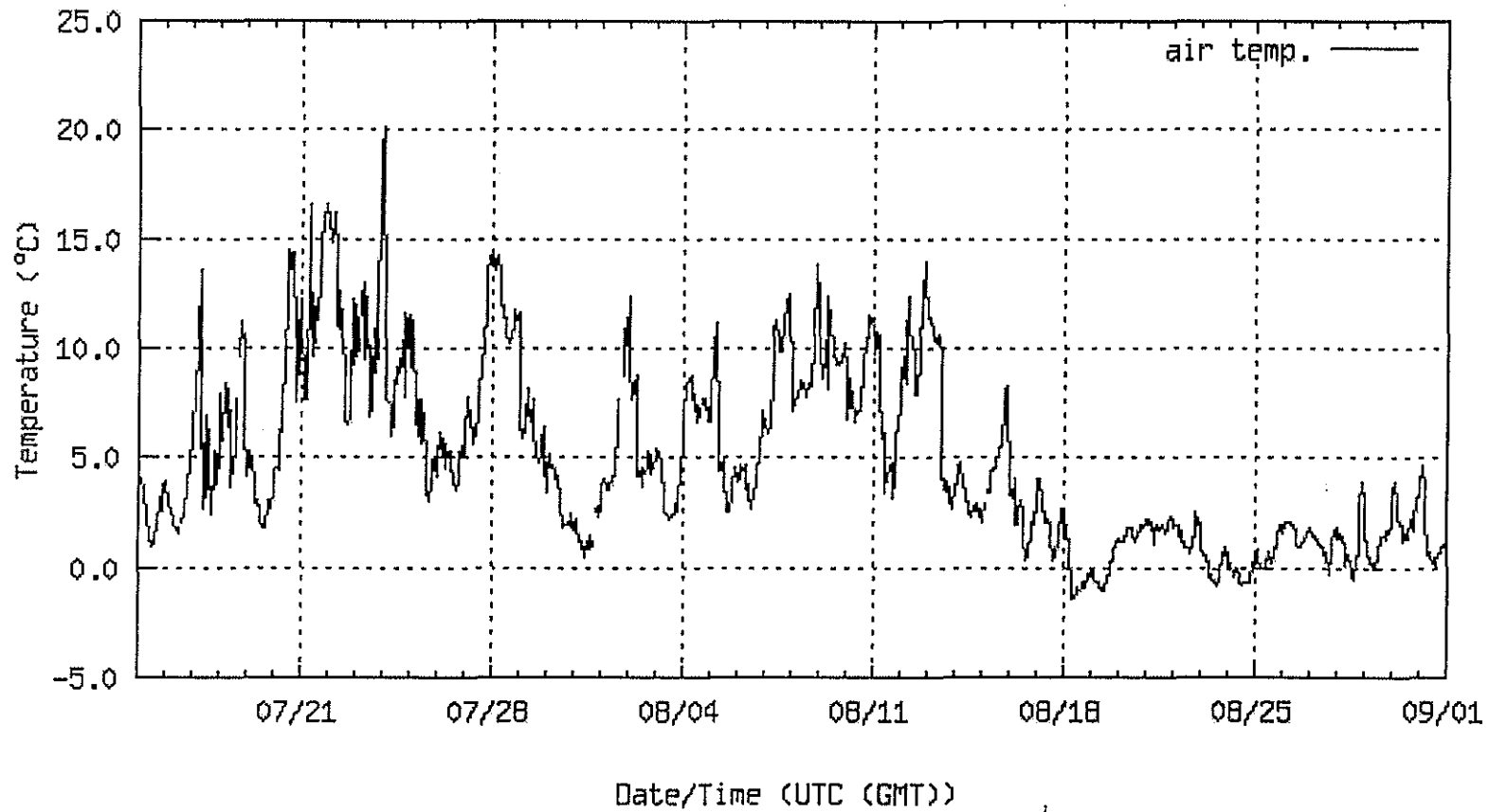


Figure A4. Hourly mean air temperature recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July-1 September 2001. Data available at <http://co-ops.nos.noaa.gov/co-ops.html>.

NOAA/NOS/CO-OPS  
Preliminary 6 Minute Water Level (A1) vs Predictions Plot  
9497645 Prudhoe Bay, AK  
From 07/01/2001 - 07/31/2001

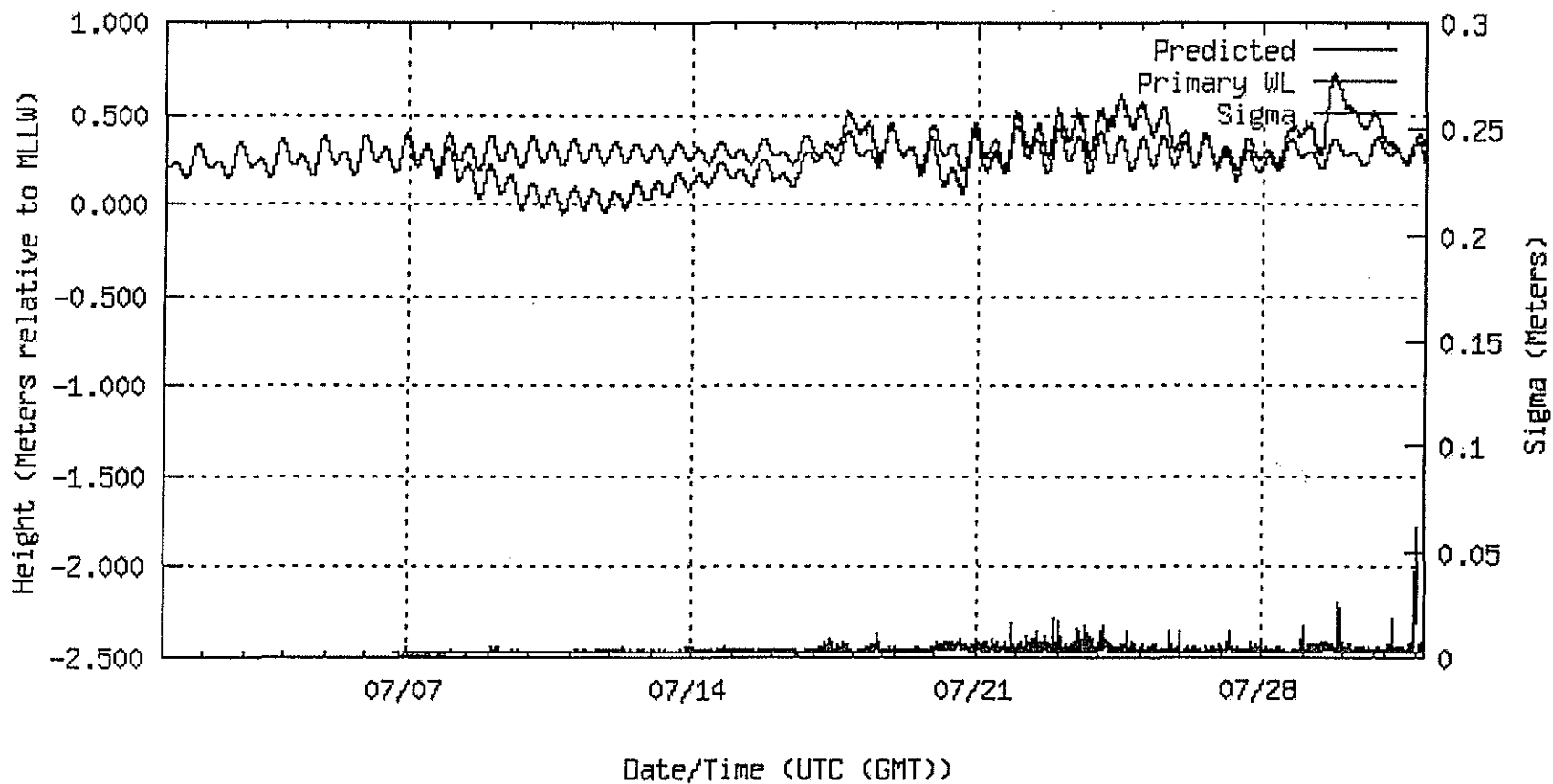


Figure A5. Water level relative to mean low, low water level recorded at 6-min intervals at the Prudhoe Bay NOAA Station at West Dock, Alaska, 1-31 July, 2001. Data downloaded at <http://co-ops.nos.noaa.gov/co-ops.html>.

NOAA/NOS/CO-OPS  
 Preliminary 6 Minute Water Level (A1) vs Predictions Plot  
 9497645 Prudhoe Bay, AK  
 From 08/01/2001 - 08/31/2001

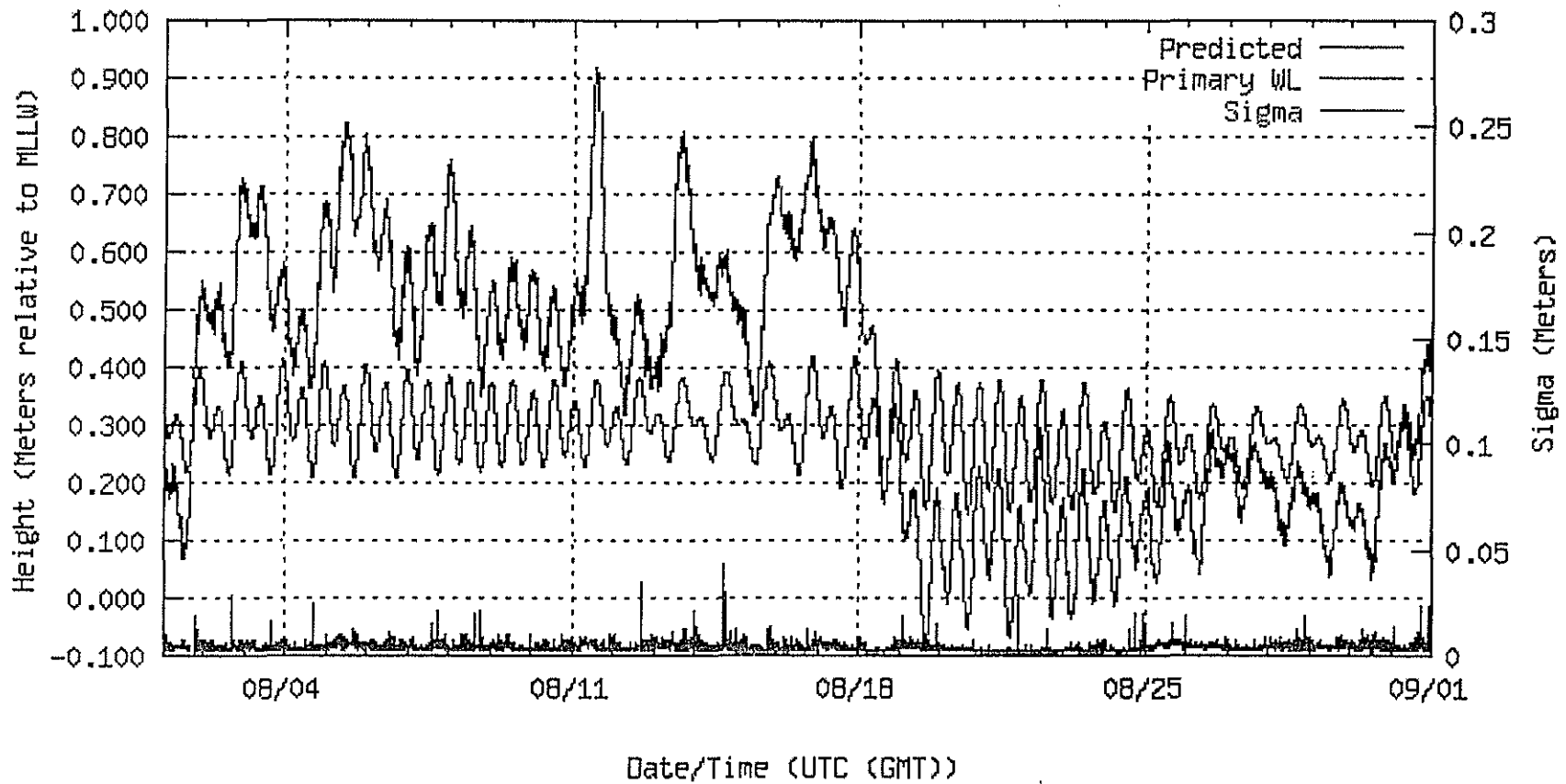


Figure A6. Water level relative to mean low, low water level recorded at 6-min intervals at the Prudhoe Bay NOAA Station at West Dock, Alaska, 1-31 August 2001. Data downloaded at <http://co-ops.nos.noaa.gov/co-ops.html>.

**APPENDIX B:  
2001 LONG-TAILED DUCK DENSITY BY SURVEY  
AND HISTORICAL DATA**



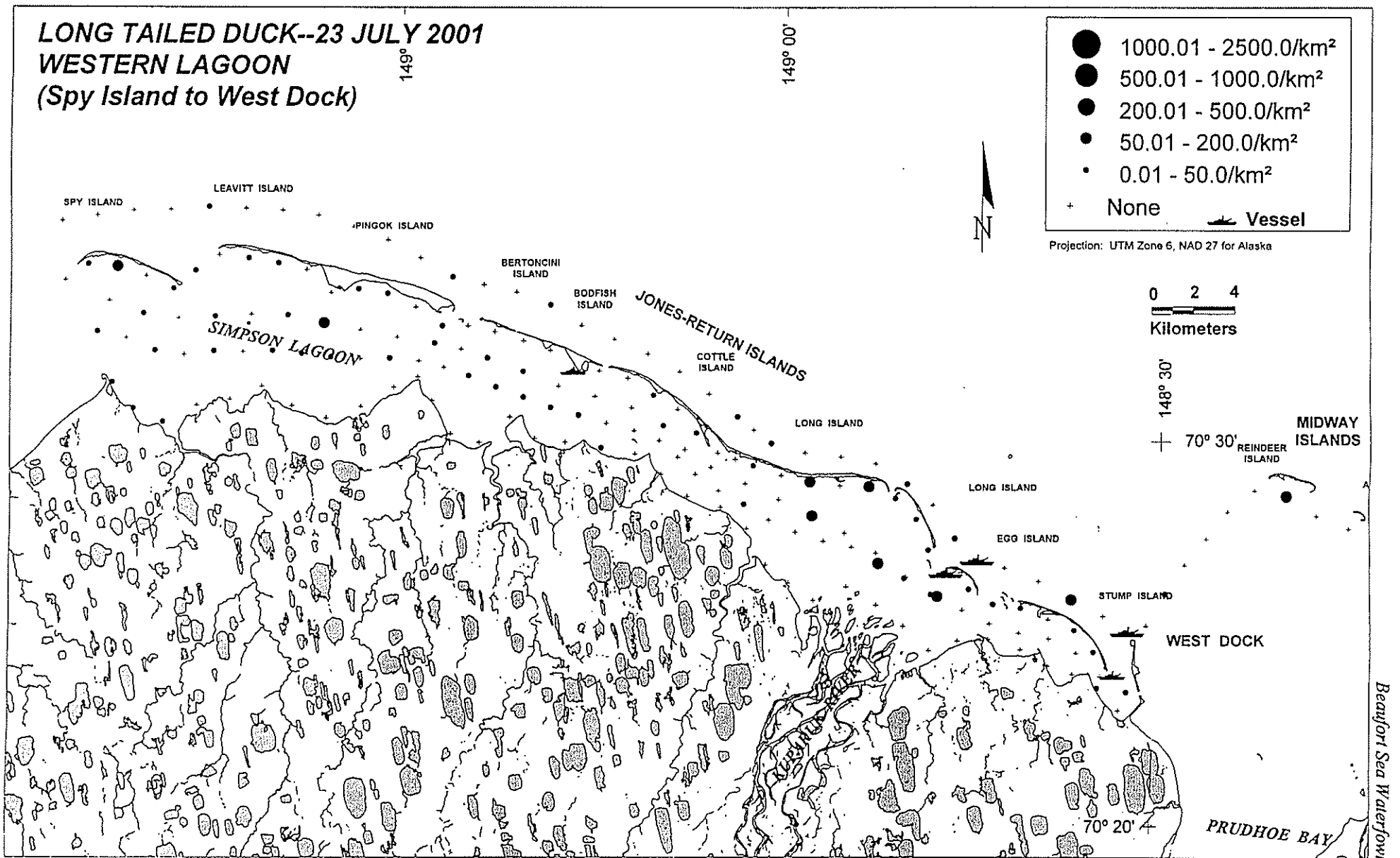


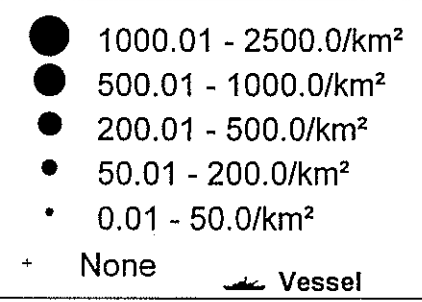
Figure B1. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July 2001.

Beaufort Sea Waterfowl, 2001

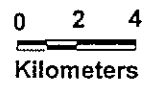
**LONG-TAILED DUCK--8 AUGUST 2001**  
**WESTERN LAGOON**  
*(Spy Island to West Dock)*

149° 00'

149° 00'



Projection: UTM Zone 6, NAD 27 for Alaska



148° 30'

70° 30'

MIDWAY ISLANDS  
REINDEER ISLAND

70° 20' 4"

WEST DOCK

PRUDHOE BAY

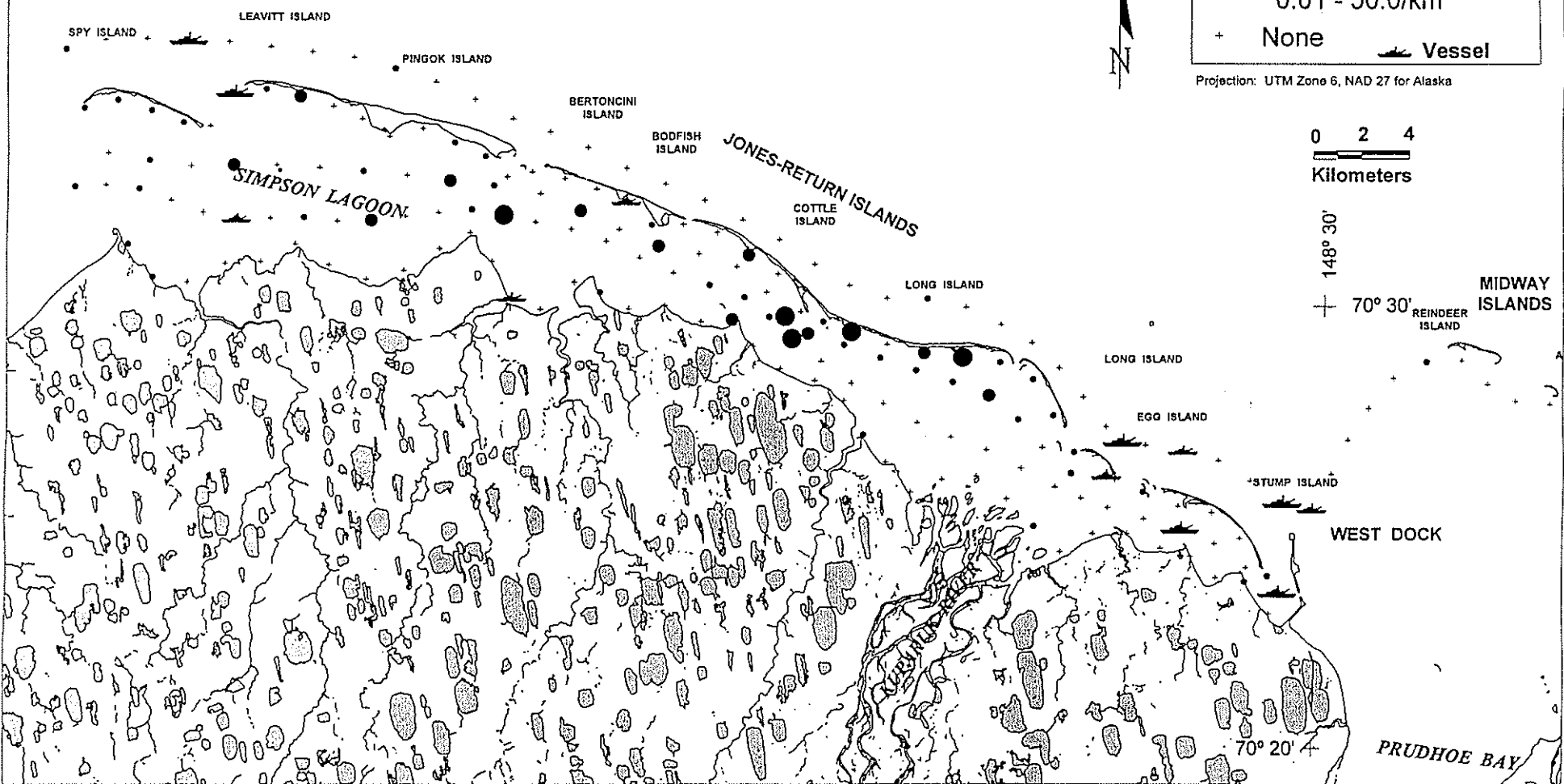


Figure B2. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 8 August 2001.

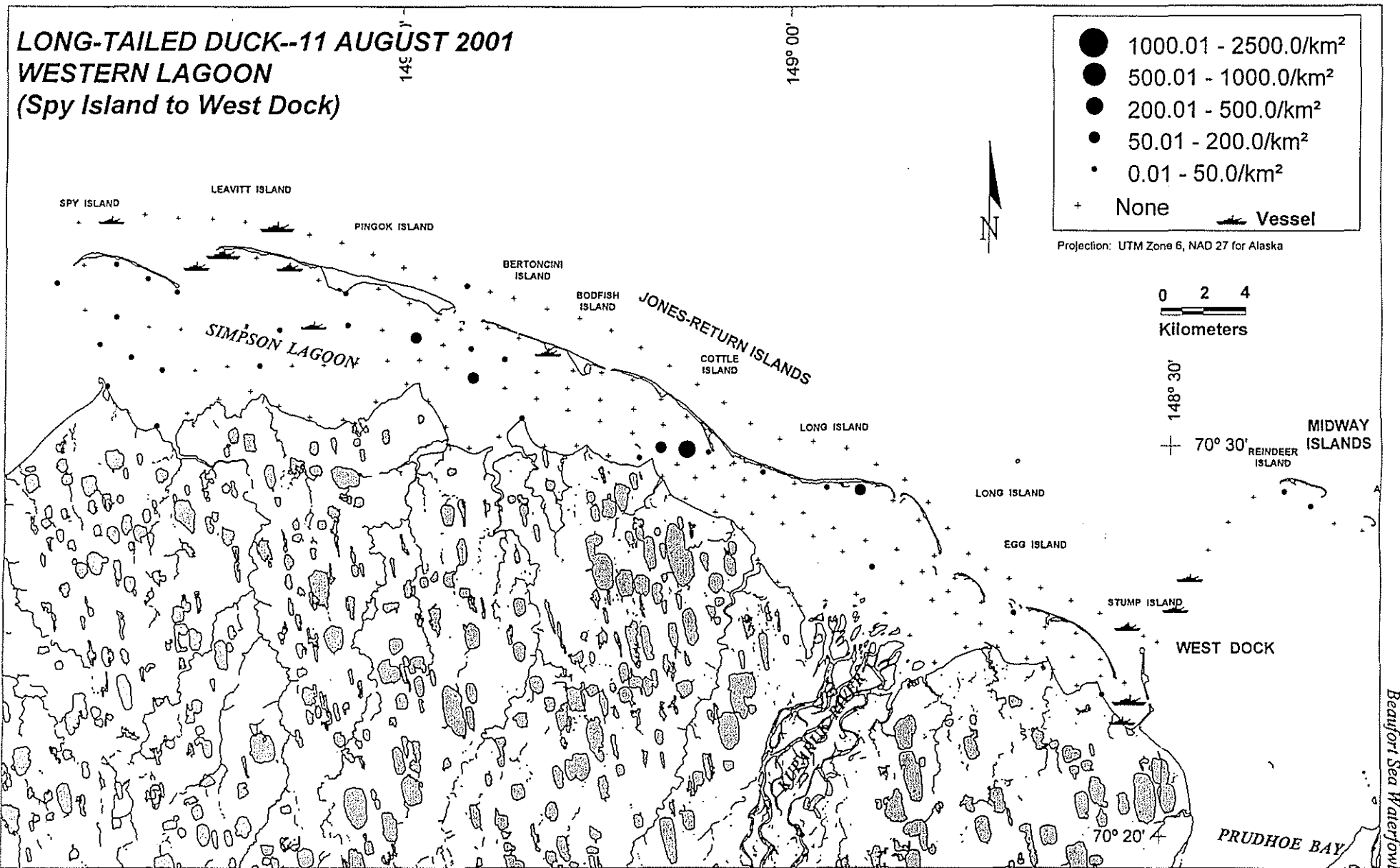


Figure B3. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 11 August 2001.

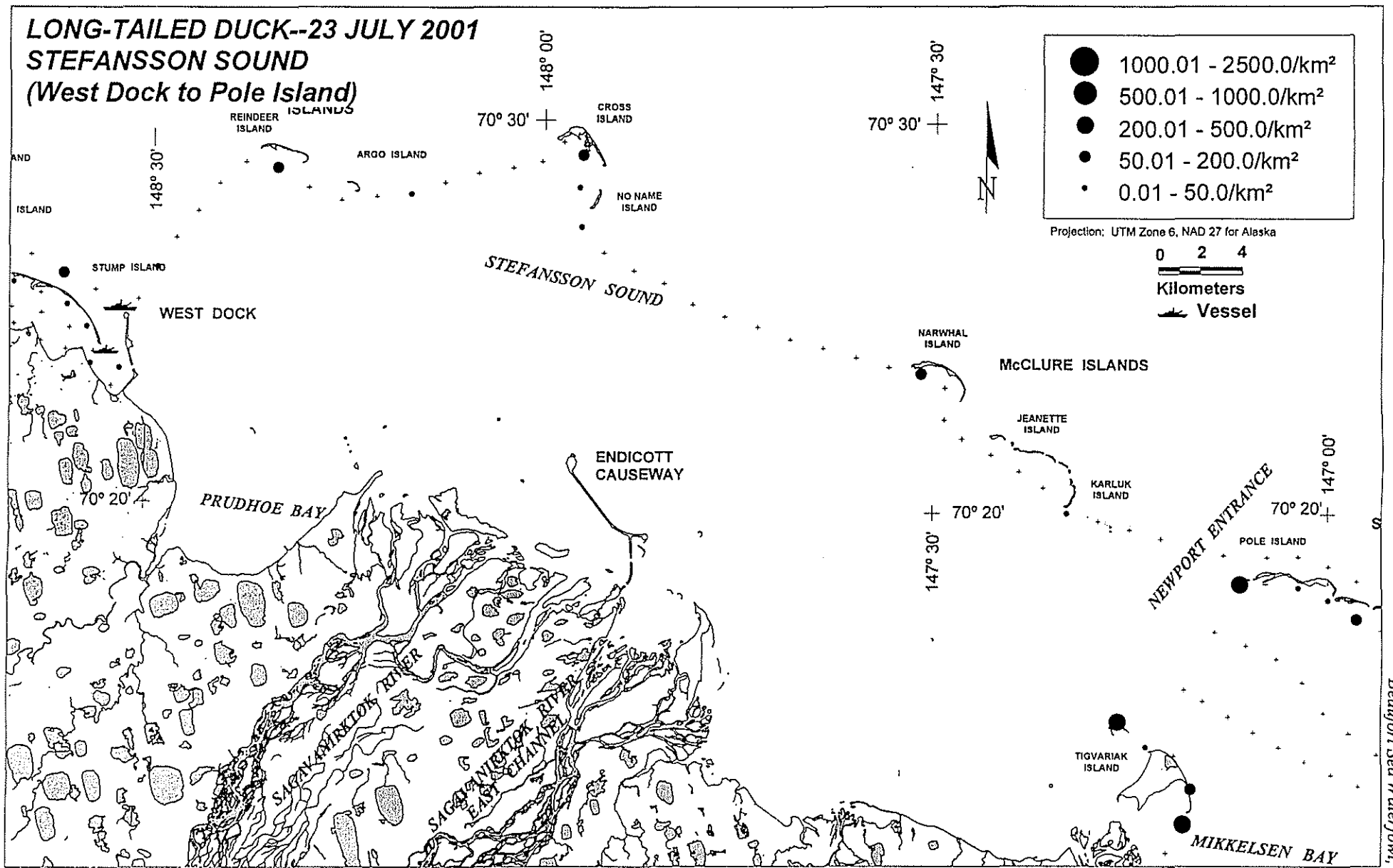


Figure B4. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July 2001.

**LONG-TAILED DUCK--8 AUGUST 2001**  
**STEFANSSON SOUND**  
*(West Dock to Pole Island)*

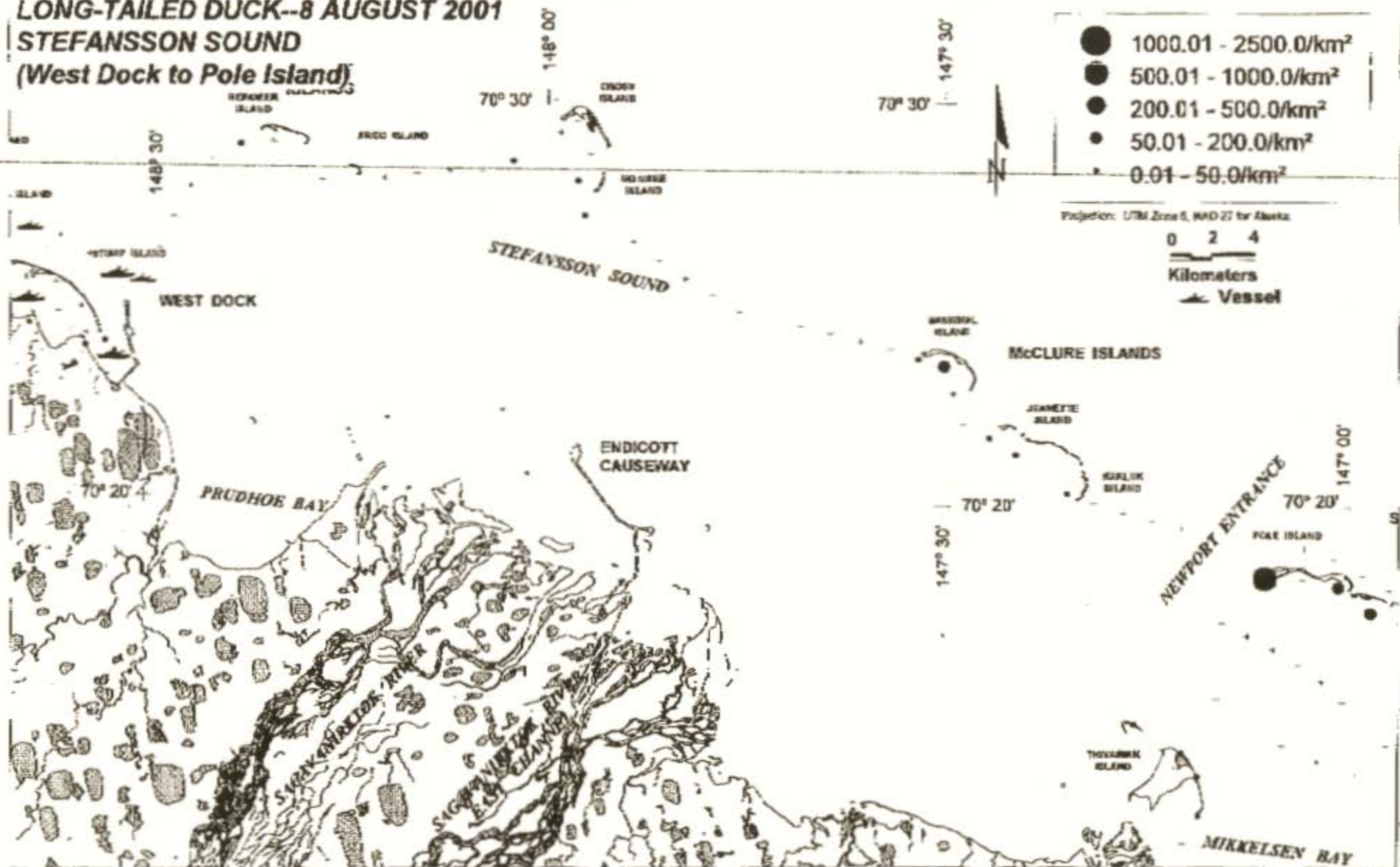


Figure B5. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 8 August 2001.

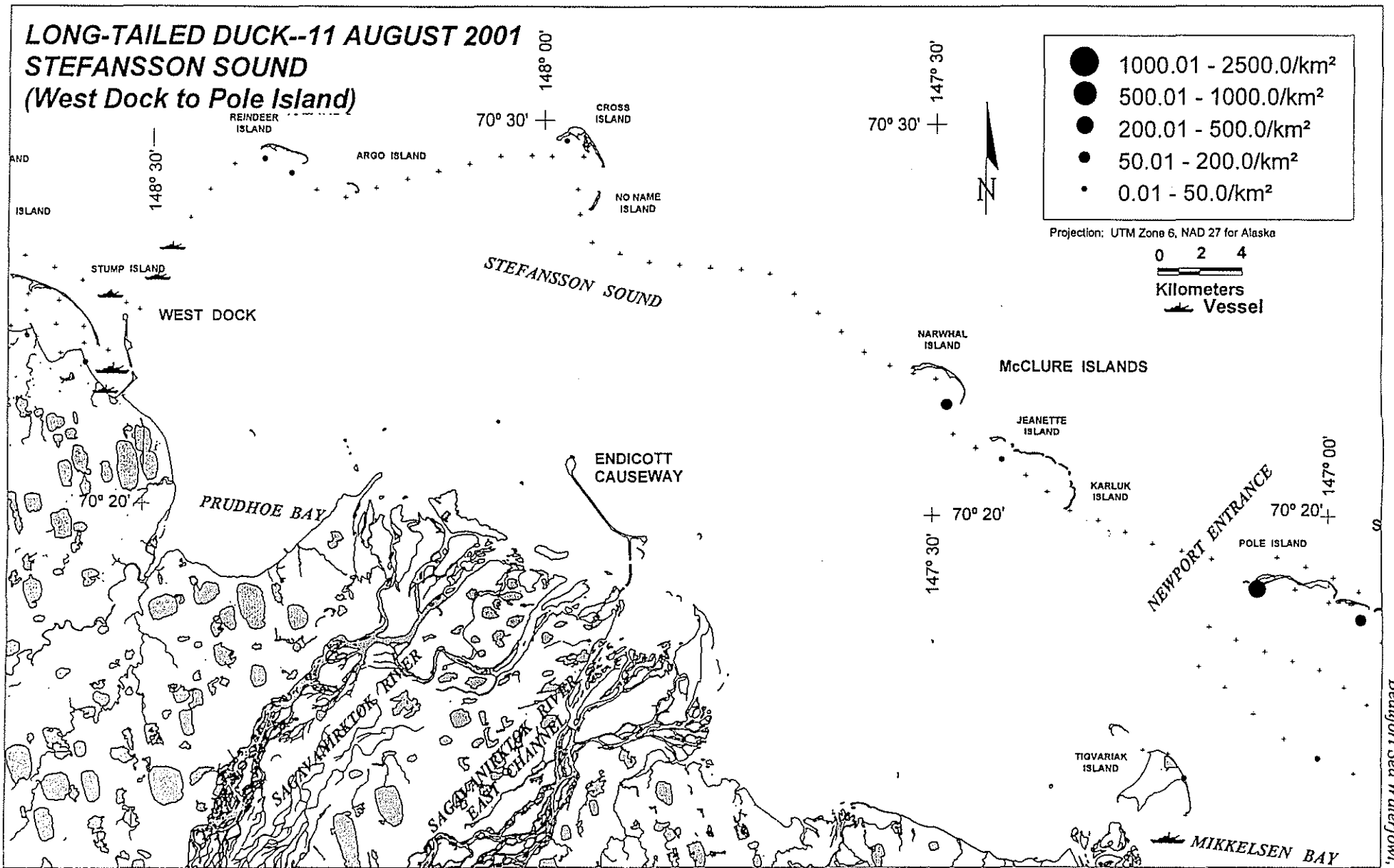


Figure B6. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 11 August 2001.

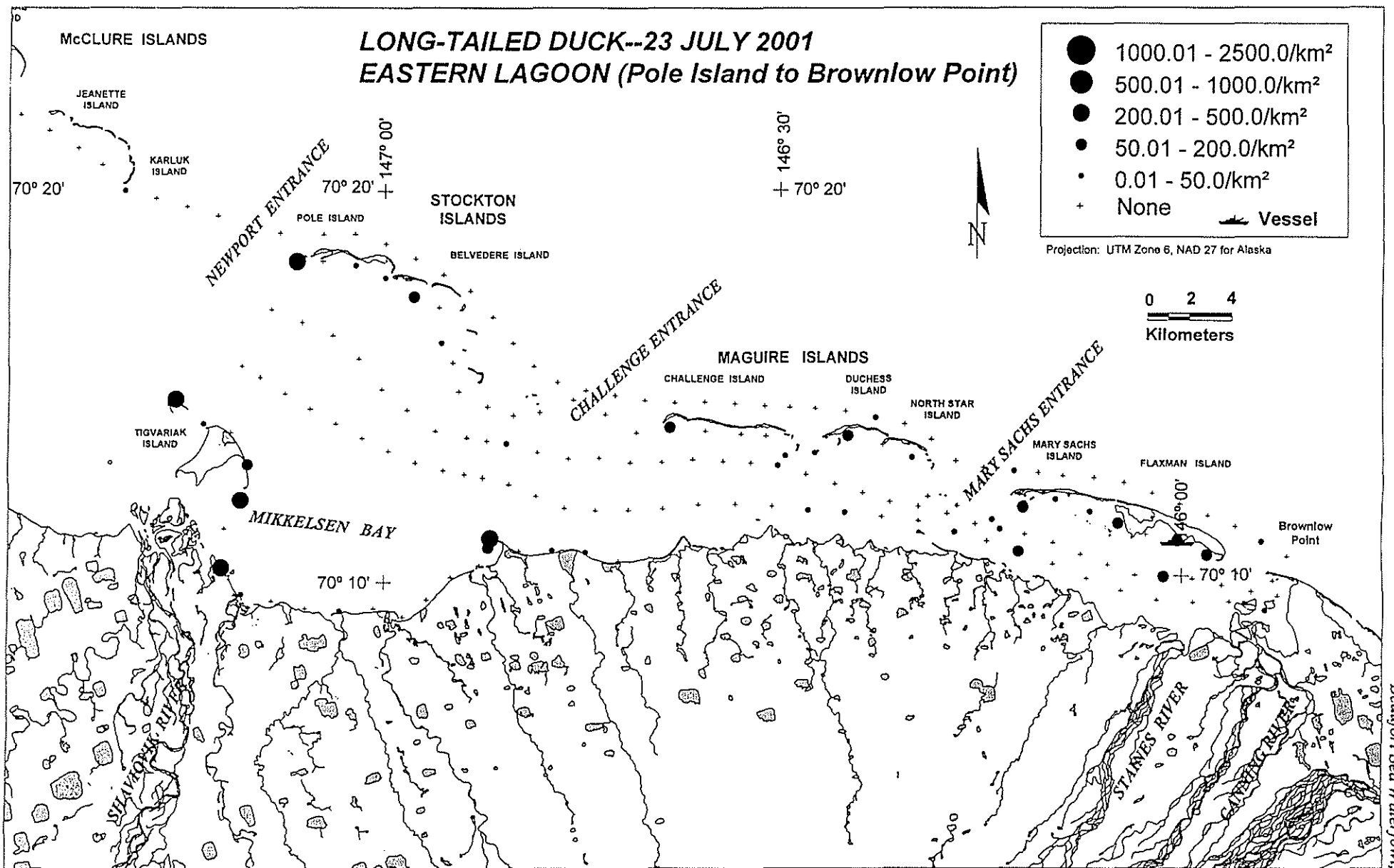


Figure B7. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July 2001.

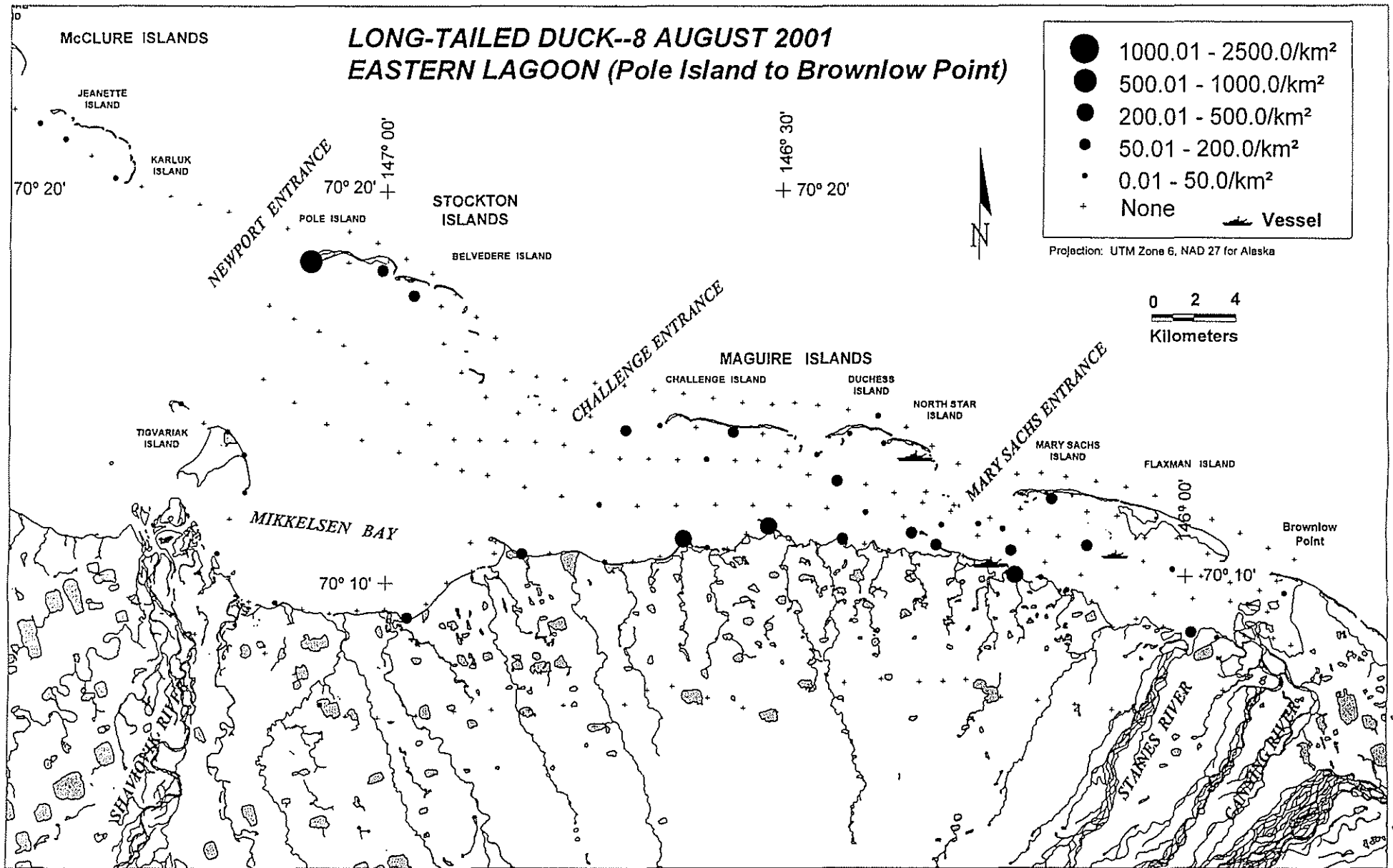


Figure B8. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 8 August 2001.



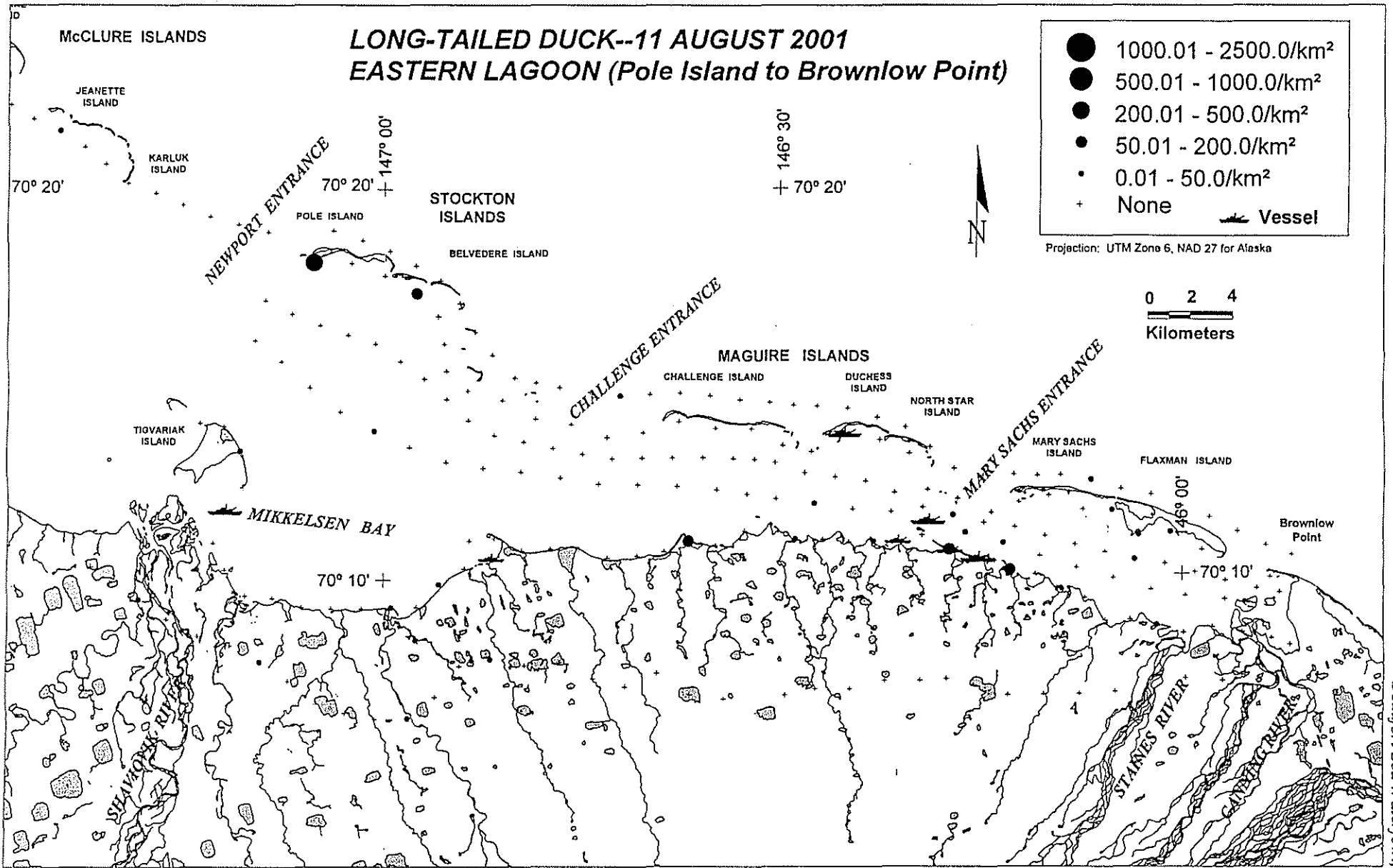


Figure B9. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 11 August 2001.

Table B1. Numbers and percentages of long-tailed ducks counted during aerial surveys in nearshore waters of the central Alaska Beaufort Sea, 1977–1984; 1989–1991; 1998–2001 (Johnson and Gazey 1992; Noel et al. 1999, 2002). Data for 1998 include only the eastern lagoon, 1999–2001 include western and eastern lagoons exclusive of 600 series mid-lagoon transects.

Category*	Survey Year															All Years
	1977	1978	1979	1980	1981	1982	1983	1984	1989	1990	1991	1998	1999	2000	2001	
Numbers																
1	20,695	111,594	28,598	22,777	30,597	31,927	-	21,998	102,968	163,915	31,316	24,455	26,478	17,836	7,355	642,509
2	58,310	141,801	36,157	27,826	48,711	46,964	6,144	28,399	110,975	220,758	61,441	41,344	52,663	35,618	17,560	934,671
3	94,461	215,199	49,456	37,549	65,768	66,794	-	33,987	138,729	277,327	120,397	43,639	57,834	40,862	21,119	1,263,121
4	104,318	231,307	54,049	38,364	71,104	69,775	-	34,972	149,408	312,073	138,408	48,979	67,427	50,787	27,175	1,398,146
Percentages																
5	90.55	93.04	91.50	97.88	92.50	95.73	-	97.18	92.85	88.87	86.99	89.10	85.77	80.46	77.71	91.83
6	55.90	61.30	66.90	72.53	68.51	67.31	-	81.20	74.28	70.74	44.39	84.41	78.10	70.13	64.62	68.80
7	21.91	51.86	57.83	60.66	46.52	47.80	-	64.72	74.22	59.11	26.01	56.04	45.78	43.65	34.83	51.04
8	19.84	48.24	52.91	59.37	43.03	45.76	-	62.90	68.92	52.52	22.63	49.93	39.27	35.12	27.07	47.11
9	61.73	65.89	73.11	74.11	74.06	70.31	-	83.56	79.99	79.60	51.03	94.74	91.06	87.17	83.15	74.93
10	35.49	78.70	79.09	81.86	62.81	67.98	-	77.46	92.78	74.25	50.97	59.15	50.28	50.08	41.88	67.57

- \* 1 = No. of long-tailed ducks on-transect only on barrier island transects during all surveys
- 2 = No. of long-tailed ducks on-transect on all lagoon transects during all surveys
- 3 = No. of long-tailed ducks on- and off-transect on all lagoon transects during all surveys
- 4 = No. of all birds of all species on- and off-transect on all lagoon transects during all surveys
- 5 = Cat. 3/Cat. 4
- 6 = Cat. 2/Cat. 4
- 7 = Cat. 1/Cat. 3
- 8 = Cat. 1/Cat. 4
- 9 = Cat. 2/Cat. 3
- 10 = Cat. 1/Cat. 2

Table B2. Individual on-transect long-tailed duck densities for transects between Spy Island and Brownlow Point, Beaufort Sea, Alaska, 5 June–23 September 1977–1984; 1989–1991; 1998–2001. Transect areas for 1998 to 2001 data in column 2 are totals of transect areas listed in header row 3, transect area based on GPS recorded transect lengths are presented in density calculations for individual transects.

Survey Date Transect Number Transect Area	Overall Study Area*			Barrier Island Transect Nos. and Areas Sampled (km <sup>2</sup> )										Non-barrier Island Transect Nos. and Areas Sampled (km <sup>2</sup> )											
	Total Area (km <sup>2</sup> ) On-transect	Total No. On-transect	Overall Dens. No. km <sup>2</sup>	23	31	201	202	130	131	132	133	134	135	136	10	11	12	13	19	20	21	22	24	25	
				4.52	5.68	8.48	6.08				6.08	4.84	5.40	6.28	9.48	6.04	5.56	3.48				3.64	4.40	4.80	
5 Jun.77	54.08	3	0.06				0.00	0.00																	
20 Jun.77	54.08	34	0.63				7.55	2.30																	
5 Jul.77	54.08	745	13.78				50.00	61.18																	
28-29 Jul.77	54.08	35350	653.66				1090.80	545.07																	
15 Aug.77	28.32	18001	635.63				1894.34	1496.71																	
30 Aug.77	54.08	4287	79.27				443.40	48.68																	
22 Sep.77	54.08	14937	276.20				75.71	0.56																	
23 Jun.78	74.40	107	1.44	15.93	1.76		2.24	0.00																	0.00
5 Jul.78	112.08	3305	29.49	8.85	6.87		92.22	264.14		1.81	10.54	2.22	0.80												0.00
15 Jul.78	74.40	32771	440.47	86.95	1159.74		1655.90	1148.68																	0.45
25 Jul.78	111.44	9695	87.00	0.00	465.49		330.07	236.84		23.19	0.00	48.15	165.45												0.00
5-6 Aug.78	117.72	12141	103.13	36.50	457.04		375.59	271.55		10.53	3.86	464.81	589.17												0.00
15 Aug.78	74.40	18307	246.06	91.81	352.82		1785.97	60.53																	45.45
25 Aug.78	111.44	19369	173.81	606.19	548.13		578.89	18.91		12.99	294.63	1025.00													2.73
5-6 Sep.78	117.72	19951	169.48	23.45	251.94		39.03	313.32		113.98	17.77	244.26	702.55												76.82
15 Sep.78	68.68	4393	63.98	34.07	0.35		11.06	99.01																	74.32
23 Sep.78	117.72	21762	184.86	357.52	13.03		11.79	7.73		125.99	1577.69	364.26	129.62												84.55
22 Jun.79	74.40	388	5.22	18.81	44.37		3.66	0.99																	0.23
28 Jul.79	117.72	24539	208.45	0.44	700.18		404.83	702.30		353.95	22.73	382.22	607.32												3.64
31 Aug.-1 Sep.79	64.28	5560	86.50	5.97	237.85		76.77	84.87																	
22 Sep.79	74.40	5670	76.21	18.36	58.27		280.28	170.23																	5.12
2 Aug.80	117.72	27826	236.37	63.50	1205.63		812.62	438.65		291.45	20.66	162.04	586.62												0.00
18 Jul.81	65.36	1775	27.16	15.49			103.88															1.65	85.23		0.15
29 Jul.81	71.44	10751	150.49	98.45			247.64	892.93														0.00	0.00		0.62
2 Aug.81	95.12	15267	160.50	71.02	154.05		335.61	225.00		106.09	263.43	238.15	294.11												74.55
12 Aug.81	59.96	1090	18.18	67.92			12.38	91.45														0.00	1.38		0.00
29 Aug.81	71.44	1432	20.04	2.03			91.51	52.30														34.07	13.86		0.00
11 Sep.81	71.44	19976	279.62	1596.24			123.00	117.27														137.22	1469.09		510.42
18 Jul.82	95.36	3817	40.03	44.03	124.47		144.34	102.80														6.32	25.45		0.21
31 Jul.82	71.44	9214	128.98	126.99			212.97	383.88														104.40	42.73		2.92
14 Aug.82	77.12	19416	251.76	161.50	1602.46		838.44	1053.62														98.08	10.23		2.08
28 Aug.82	95.36	5650	59.25	141.81	281.51		142.69	73.68														4.40	42.05		72.92
23 Sep.82	95.36	8887	92.98	38.27	15.85		157.31	29.63														0.00	4.09		50.21
29 Jul.83	72.73	6305	86.69	84.96																					10.45
8 Aug.84	133.88	28399	212.12	693.81	263.73		285.73	736.35		347.20	308.26	254.81	872.93									100.00	63.64		0.00
6 Aug.89	176.96	31304	176.90	84.73	1366.90		92.02	13.65		739.64	321.49	703.70	1131.21		0.00	2.48	0.00	0.00				0.00	0.00		0.00
8 Aug.89	176.96	35060	198.12	230.53	2060.21		817.02	505.43		592.43	23.76	269.07	1005.25		0.21	0.00	0.00	0.00				0.00	0.00		0.00
9 Aug.89	176.96	44611	252.10	467.92	2025.00		628.17	370.23		731.25	450.83	435.19	2000.80		0.00	1.82	0.00	0.00				96.15	7.95		0.00
18 Jul.90	186.36	19400	104.10	97.79	156.87		124.77	55.61		234.54	223.55	244.63	396.83									15.38	3.41		1.25
20 Jul.90	186.36	19057	102.47	50.88	151.94		110.33	210.20		353.95	155.79	486.67	434.55									12.36	1.14		1.04
23 Jul.90	186.36	26540	142.41	99.78	394.19		590.38	397.53		281.91	259.30	446.11	599.68									6.87	1.14		0.00
3 Aug.90	186.36	42596	228.57	33.85	264.08		612.91	872.20		532.07	556.61	1146.48	1416.08									0.00	3.18		1.25
4 Aug.90	166.28	20614	123.97	17.04	62.68		188.15	247.20		256.09	52.89	139.44	1218.31									0.00	2.73		0.00
9 Aug.90	143.20	16953	118.39	36.73	91.37		111.74	81.41		888.98	333.47	431.65	348.73												22.73
16 Aug.90	72.28	6657	92.10	26.11	249.30		671.60	18.09																	4.09
20 Aug.90	186.36	34820	186.84	97.57	230.28		211.74	90.79		953.62	1347.11	1285.19	933.92									0.82	31.59		6.25
2 Sep.90	186.36	8685	46.60	4.42	3.52		9.15	35.69		451.48	437.81	129.44	262.28									0.00	0.00		0.00
4 Sep.90	143.20	6728	46.98	0.44	34.15		29.46	17.76		199.51	67.56	165.56	196.18												0.23
5 Sep.90	143.20	18668	130.36	5.09	19.19		27.58	11.18		727.30	244.21	116.67	1466.40												4.32
18 Jul.91	73.42	3759	51.20	17.70	104.05		170.75	238.98																	2.05
19 Jul.91	115.60	7153	61.88	75.00	76.06		174.29	162.99		78.13	20.45	92.04	195.22												9.55
20 Jul.91	115.60	6963	60.23	60.25	105.62		31.26	212.25		29.77	15.91	21.67	108.12												9.55
22 Jul.91	115.60	9673	83.68	67.04	112.68		252.36	83.72		80.43	36.78	149.81	185.19												3.41
4 Aug.91	115.60	8670	75.00	90.27	91.73		98.23	136.68		97.37	113.64	115.00	63.64												7.05
10 Aug.91	115.60	6628	57.34	25.44	28.35		109.91	88.82		131.58	36.16	73.33	39.01												1.38
14 Aug.91	139.00	6883	49.52	21.90	144.19		168.98	162.83		87.17	46.69	35.19	30.00												9.32
16 Aug.91	158.76	6464	40.72	6.19	36.33		86.79	25.00		190.30	12.81	49.63	35.51									2.75	2.27		3.75
21 Aug.91	158.76	5248	33.06	12.83	57.64		35.61	63.82		154.61	30.79	25.56	7.32									5.22	6.36		0.42
5 Aug.98	70.92	5302	74.76							14.77	50.38	88.18	299.69												
14 Aug.98	70.92	9736	137.28							110.58	163.17	253.25	247.65												
16 Aug.98	70.92	12162	171.49							389.61	157.88	181.25	358.55												
31 Aug.98	70.92	4427	62.42							106.63	1.27	34.55	173.84												
3 Sept.98	70.92	14345	202.27							813.70	193.30	271.35	41.56												
30 Jul.99	186.36	18239	97.87	13.79	99.00		214.27	39.07	33.76	43.23	54.15	171.55	300.59												0.80
1 Aug.99	186.36	14051	75.40	4.81	103.30																				





Table B2. Continued.

Survey Date	Tundra Transect Nos. and Areas Sampled (km <sup>2</sup> )						Tundra Transect Nos. and Areas Sampled (km <sup>2</sup> )			
Transect Number	602	603	604	605	606	607	500	501	502	503
Transect Area	5.16	5.64	6.28	4.48	7.00	9.84	6.56	5.42	6.91	5.52
5 Jun.77										
20 Jun.77										
5 Jul.77										
28-29 Jul.77										
15 Aug.77										
30 Aug.77										
22 Sep.77										
23 Jun.78										
5 Jul.78										
15 Jul.78										
25 Jul.78										
5-6 Aug.78										
15 Aug.78										
25 Aug.78										
5-8 Sep.78										
15 Sep.78										
23 Sep.78										
22 Jun.79										
28 Jul.79										
31 Aug.-1 Sep.79										
22 Sep.79										
2 Aug.80										
18 Jul.81										
29 Jul.81										
2 Aug.81										
12 Aug.81										
29 Aug.81										
11 Sep.81										
18 Jul.82										
31 Jul.82										
14 Aug.82										
28 Aug.82										
23 Sep.82										
29 Jul.83										
8 Aug.84										
6 Aug.89										
8 Aug.89										
9 Aug.89										
18 Jul.90										
20 Jul.90										
23 Jul.90										
3 Aug.90										
4 Aug.90										
9 Aug.90										
16 Aug.90										
20 Aug.90										
2 Sep.90										
4 Sep.90										
5 Sep.90										
18 Jul.91										
19 Jul.91										
20 Jul.91										
22 Jul.91										
4 Aug.91										
10 Aug.91										
14 Aug.91										
16 Aug.91										
21 Aug.91										
5 Aug.98							0.00	0.00	0.00	0.00
14 Aug.98							0.00	0.00	0.00	0.00
16 Aug.98							0.00	0.00	0.00	0.00
31 Aug.98							0.00	5.79	0.00	0.00
3 Sept.98							0.00	9.11	0.00	0.00
30 Jul.99	19.51	35.70	76.96	65.98	21.23	188.73	0.00	5.76	0.76	6.16
1 Aug.99	118.21	75.14	0.00	16.60	5.17	151.63	0.00	0.88	0.00	0.00
4 Aug.99										
5 Aug.99	30.66	100.54	0.75	9.23	8.33	31.99	0.00	0.00	0.00	0.00
11 Aug.99	33.01	109.57								
26 Aug.99	16.60	13.83	47.20	111.07	1.87	31.08	0.00	0.00	0.00	0.00
1 Aug.00	8.54	53.16	38.67	39.42	25.41	34.12	0.00	6.41	0.00	2.82
8 Aug.00	75.99	122.22	14.66	31.35	5.28	96.08	0.00	0.00	0.00	1.03
12 Aug.00	41.86	26.12	3.70	17.42	41.60	21.17	0.00	4.17	0.00	2.41
14 Aug.00	60.63	9.19								
24 Aug.00	0.19	50.29	0.00	5.58	19.01	29.41	0.00	3.40	0.00	4.43
23 Jul.01	10.66	32.43	0.00	0.38	2.89	34.38				
8 Aug.01	119.04	40.61	0.00	7.63	73.16	40.26	0.00	0.00	0.00	0.18
11 Aug.01	67.31	29.70	0.00	0.00	11.65	4.48	0.00	0.00	0.92	8.15
3	13	13	11	11	11	11	15	15	15	15
Mean =	48.17	53.73	16.54	27.70	19.60	60.30	0.00	2.37	0.11	1.68
s.d. =	39.34	36.90	26.20	33.97	21.42	59.27	0.00	3.12	0.30	2.63
c.v. =	0.85	0.69	1.58	1.23	1.09	0.98		1.32	2.65	1.56

Table B3. Database records for sightings of human activity during aerial surveys in the barrier island-lagoon systems between Spy Island and Brownlow Point, Alaska, 23 July - 11 August 2001.

proj code	record	trans cd	trans no	scale	loc site	obs no	position	visibl	assoc	species cd	species	no indivd	of type	behaviour	s habitat	g habitat	on or off	ems per	adults	sub adults	yg of yr	males	females	ice	repeat	time	remarks
P598	449	12	23	7/23/2001	001 LN	FR	1			8000 HUMAN	2104	99	10	11	0		6	0	0	0	0	0	0	0		SEVERAL PEOPLE AT C	
P598	456	12	23	7/23/2001	001 LN	FR	1			8000 HUMAN	2104	23	14	11	0		7	0	0	0	0	0	0	0		2 CONNEXS	
P598	479	13	31	7/23/2001	001 LN	FR	1			8000 HUMAN	1101	99	14	11	0		1	0	0	0	0	0	0	0		ONE CONNEX	
P598	561	14	202	7/23/2001	001 LN	FR	1			8000 HUMAN	1101	99	14	11	1		7	0	0	0	0	0	0	0		CAMP W/BUNCH OF TEN	
P598	1780	44	25	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	27	1		3	0	0	0	0	0	0	0	135743	NORTHSTAR PIPELINE	
P598	1793	44	25	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	07	15	27	1		7	0	0	0	0	0	0	0		FYKE NET	
P598	2188	53	31	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	0		5	0	0	0	0	0	0	0		144435 NET-CAPTURE-USGSBRD	
P598	2239	54	202	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	0		1	0	0	0	0	0	0	0		144647 NET-CAPTURE-USGSBRD	
P598	2243	54	202	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		2	0	0	0	0	0	0	0		144729 TOWER WBLIND?	
P598	2247	54	202	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		3	0	0	0	0	0	0	0		144755 TOWER WBLIND?	
P598	2254	54	202	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		7	0	0	0	0	0	0	0		144940 USGSBRD CAMP, E-B T	
P598	2255	54	202	8/8/2001	001 LN	RF	1			8000 HUMAN	6104	15	15	11	0		7	0	0	0	0	0	0	0		144953 6 PEOPLE & BOAT SET	
P598	2320	55	201	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		10	0	0	0	0	0	0	0		145648 TOWER-TELEMETRY	
P598	2421	57	102	8/8/2001	001 LN	RF	1			8000 HUMAN	1101	15	08	13	1		3	0	0	0	0	0	0	0		150758 DOT BRD CAMP (OFF)	
P598	3617	90	25	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	27	1		3	0	0	0	0	0	0	0		140028 NORTHSTAR PIPELINE	
P598	3628	90	25	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	27	1		7	0	0	0	0	0	0	0		140245 FYKE NET	
P598	3598	99	31	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		1	0	0	0	0	0	0	0		BOXES AND ORANGE CO	
P598	3598	99	31	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		2	0001	0	0	0	0	0	0		FISH BOX AT END OF	
P598	3911	99	31	8/11/2001	001 LN	RF	1			8000 HUMAN	2104	15	15	11	0		5	0	0	0	0	0	0	0		TELEMETRY TOWER & C	
P598	3919	99	31	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		6	0	0	0	0	0	0	0		144755 TELEMETRY TOWER WMT	
P598	3941	100	202	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		1	0	0	0	0	0	0	0		144920 TELEMETRY ANTENNA	
P598	3943	100	202	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		2	0	0	0	0	0	0	0		144948 ANTENNA WITH BLIND	
P598	3954	100	202	8/11/2001	001 LN	RF	1			8000 HUMAN	2104	15	15	11	1		6	0	0	0	0	0	0	0		USGSBRD CAMP, 2 PEO	
P598	3983	101	201	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		5	0	0	0	0	0	0	0		145533 TELEMETRY ANTENNA	
P598	4094	101	201	8/11/2001	001 LN	RF	1			8000 HUMAN	1101	15	15	11	1		10	0	0	0	0	0	0	0		145808 TELEMETRY ANTENNA	
P598	1084	27	136	7/23/2001	003 LN	FR	1			8000 HUMAN	1101	15	15	31	1		2	0	0	0	0	0	0	0		BRD CAMP ON FLAXMAN	
P598	1092	27	136	7/23/2001	003 LN	FR	1			8000 HUMAN	1101	15	15	11	0		4	0	0	0	0	0	0	0		165013 CAMP	
P598	1097	27	136	7/23/2001	003 LN	FR	1			8000 HUMAN	2104	21	11	11	0		7	0	0	0	0	0	0	0			
P598	1547	39	193	7/23/2001	003 LN	FR	1			8000 HUMAN	1101	99	15	27	1		10	0	0	0	0	0	0	0		BADAMI CAMP	
P598	2708	65	61	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	08	13	1		4	0	0	0	0	0	0	0		164755 MONITORING STATION	
P598	2710	65	61	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	08	13	1		5	0	0	0	0	0	0	0		164807 ANOTHER ANTENNA	
P598	2739	66	60	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	08	13	1		4	0	0	0	0	0	0	0		USGS BRD CAMP	
P598	2740	66	60	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	08	13	1		7	0	0	0	0	0	0	0		TELEMETRY TOWER E E	
P598	2794	68	135	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	11	1		6	0	0	0	0	0	0	0		170248 MONITORING STATION	
P598	3276	81	191	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	1		5	0	0	0	0	0	0	0		180647 MONITORING STATION	
P598	3280	81	191	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		6	0	0	0	0	0	0	0		180731 FYKE NET	
P598	3295	81	191	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	1		9	0	0	0	0	0	0	0		FYKE NET IN MAINLAN	
P598	3330	82	190	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		1	0	0	0	0	0	0	0		181019 FYKE NET	
P598	3336	82	190	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		3	0	0	0	0	0	0	0		181115 FYKE NET	
P598	3342	82	190	8/8/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	1		6	0	0	0	0	0	0	0		181236 RADIO ANTENNA	
P598	4402	113	136	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	11	1		3	0	0	0	0	0	0	0		165401 TELEMETRY TOWER W/B	
P598	4406	113	136	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	11	1		5	0	0	0	0	0	0	0		165501 TELEMETRY STATION W	
P598	4414	113	136	8/11/2001	003 LN	RF	1			8000 HUMAN	10104	15	15	11	1		4	0	0	0	0	0	0	0		CAMP W/10 TENTS, CL	
P598	4562	119	606	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	09	09	1		8	0	0	0	0	0	0	0		PT THOMSON FISH CAM	
P598	4727	125	193	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		13	0	0	0	0	0	0	0		175126 BADAMI DOCK-NO ACTI	
P598	4759	126	192	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		2	0	0	0	0	0	0	0		175331 FYKE NET	
P598	4807	127	191	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	1		4	0	0	0	0	0	0	0		TELEMETRY TOWER W/1	
P598	4811	127	191	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		6	0	0	0	0	0	0	0		180155 FYKE NET	
P598	4818	127	191	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	1		9	0	0	0	0	0	0	0		180321 FYKE NET IN LAGOON	
P598	4823	127	191	8/11/2001	003 LN	RF	1			8000 HUMAN	2104	22	15	27	0		10	0	0	0	0	0	0	0		180352 2 PEOPLE WALK SHORE	
P598	4846	128	190	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		1	0	0	0	0	0	0	0		180440 FYKE NET	
P598	4850	128	190	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	0		3	0	0	0	0	0	0	0		180537 FYKE NET	
P598	4854	128	190	8/11/2001	003 LN	RF	1			8000 HUMAN	1101	15	15	27	1		6	0	0	0	0	0	0	0		180659 TELEMETRY TOWER W/B	
P598	478	13	31	7/23/2001	001 LN	FR	1			8000 HUMAN	1101	15	15	11	0		1	0	0	0	0	0	0	0			
P598	482	13	31	7/23/2001	001 LN	FR	1			8001 BOAT	1101	02	15	11	0		1	0	0	0	0	0	0	0			
P598	562	14	202	7/23/2001	001 LN	FR	1			8001 BOAT	1101	02	14	11	0		7	0	0	0	0	0	0	0			
P598	791	16	30	7/23/2001	001 LN	FR	1			8001 BOAT	1101	21	08	13	0		8	0	0	0	0	0	0	0		150915 ANCHORED ZODIAC	
P598	1692	42	402	8/8/2001	001 LN	RF	1			8001 BOAT	1101	07	15	27	1		2	0	0	0	0	0	0	0		134706 RUNNING THROUGH BAR	
P598	1714	42	402	8/8/2001	001 RR	LR	1			8001 BOAT	1101	07	15	27	0		2	0	0	0	0	0	0	0		134700 BOAT WAKE, USFWS BO	
P598	2256	54	202	8/8/2001	001 LN	RF	1			8001 BOAT	1101	07	15	11	0		7	0	0	0	0	0	0	0		SMALL MOTOR BOAT MO	
P598	2472	58	30	8/8/2001	001 RR	LR	1			8001 BOAT	2104	07	08	13	0		9	0	0	0	0	0	0	0		144953	
P598	2476	59	22	8/8/2																							





Table B4. Habitat associations of long-tailed ducks during aerial surveys in the barrier island-lagoon systems and tundra transects between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001.

General Habitat Type	Specific Habitat Type	Number of Sightings 23 July 01	Number of Sightings 8 Aug 01	Number of Sightings 11 Aug 01	Total All Surveys	Percent of Total
Lagoon (9)	Smooth fast ice (1)	1	-	-	1	0.1
	Lagoon (9)	91	145	69	305	35.6
	Shoreline (land side) (14)	1	-	-	1	0.1
Barrier Island (11)	Lagoon (9)	2	-	-	2	0.2
	Smooth fast ice (1)	3	-	-	3	0.4
	Island (11)	1	-	-	1	0.1
	Shoreline (land side; 14)	5	-	-	5	0.6
	Shoreline (water side; 15)	166	150	40	356	41.5
Artificial Structure (79)	Shoreline (land side) (14)	1	-	-	1	0.1
	Shoreline (15)	1	-	-	1	0.1
Nearshore Sea <3 mi. (13)	Smooth fast ice (1)	1	-	-	1	0.1
	Ocean (8)	17	7	6	30	3.5
	Lagoon (9)	12	4	-	16	1.9
Unclassified Tundra (24)	Shoreline (waterside) (15)	1	-	-	1	0.1
Wet Tundra (25)	Completely vegetated (25)	-	1	-	1	0.1
	Pond (47)	-	-	1	1	0.1
	Medium lake (51)	-	-	3	3	0.4
Mainland Coast (27)	Spit (10)	1	-	-	1	0.1
	Island (11)	1	-	-	1	0.1
	Shoreline (water side; 15)	21	73	31	125	14.6
River Delta (92)	Tidal flat (13)	-	1	-	1	0.1
<b>ALL HABITATS</b>		<b>326</b>	<b>381</b>	<b>150</b>	<b>857</b>	<b>100</b>

Table B5. Long-tailed duck behavior during aerial surveys in the barrier island-lagoon systems and tundra transects between Spy Island and Browlow Point, Alaska, 23 July-11 August 2001.

Specific Behaviors	Sightings 23 July 01	Sightings 8 Aug 01	Sightings 11 Aug 01	Total All Surveys	Percent of Total
Hauled out on ice (01)	-	-	1	1	0.1
Hauled out on land (02)	1	3	-	4	0.5
Hauled out (general) (03)	-	12	4	16	1.9
Hauled out on land-swim/dive (06)	-	-	-	0	0.0
Swimming (07)	277	359	110	746	87.0
Swimming then diving (08)	12	2	4	18	2.1
Swimming then flying (09)	-	1	-	1	0.1
Flying (11)	2	-	-	2	0.2
Standing (15)	2	1	1	4	0.5
Rest (23)	9	-	-	9	1.1
Incubate (30)	1	-	-	1	0.1
Unknown or unrecorded (99)	22	3	30	55	6.4
<b>TOTAL</b>	<b>326</b>	<b>381</b>	<b>150</b>	<b>857</b>	<b>100</b>

**APPENDIX C:  
2001 DISTRIBUTION MAPS FOR SELECTED SPECIES**

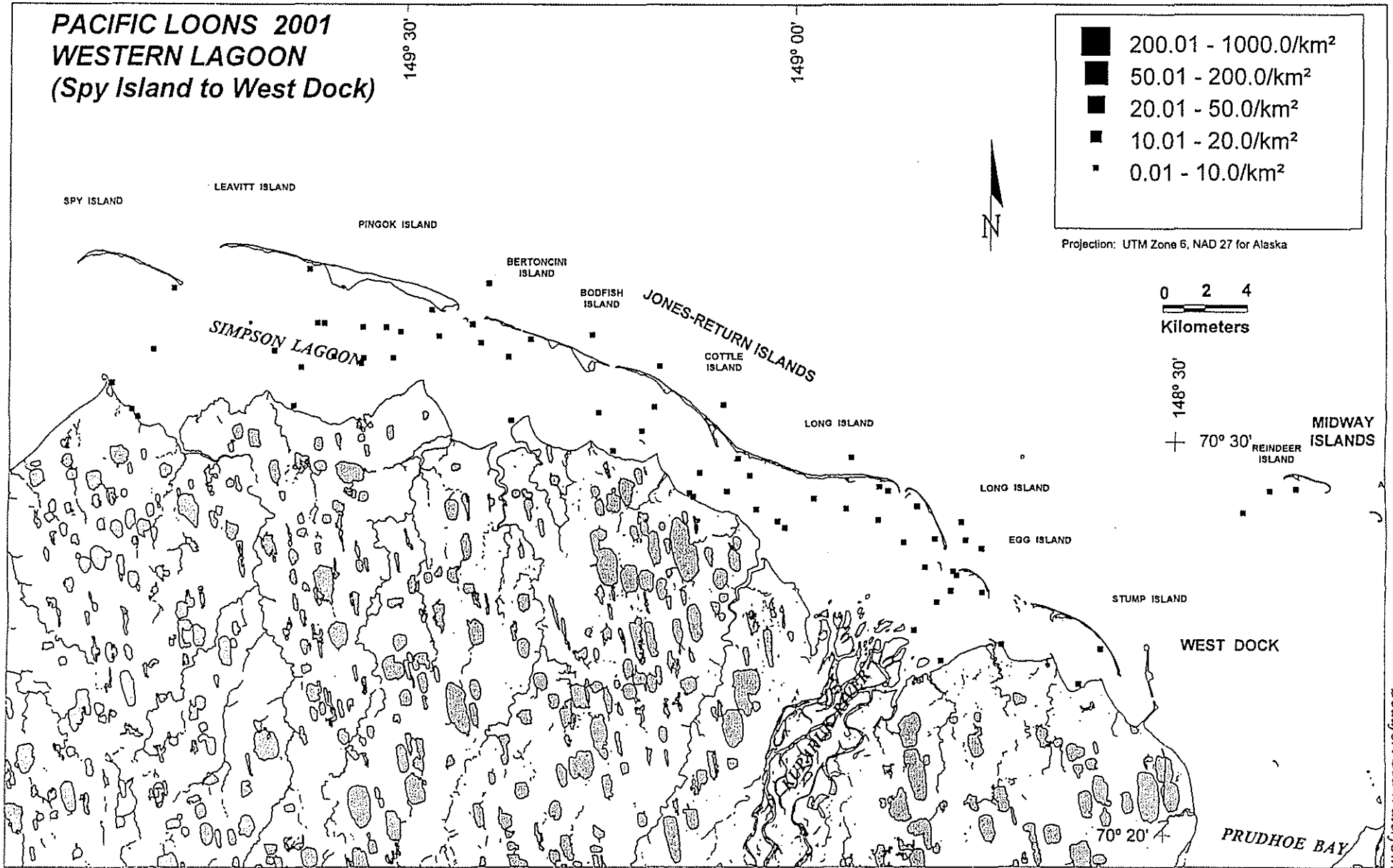


Figure C1. Summary of density for Pacific loons by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

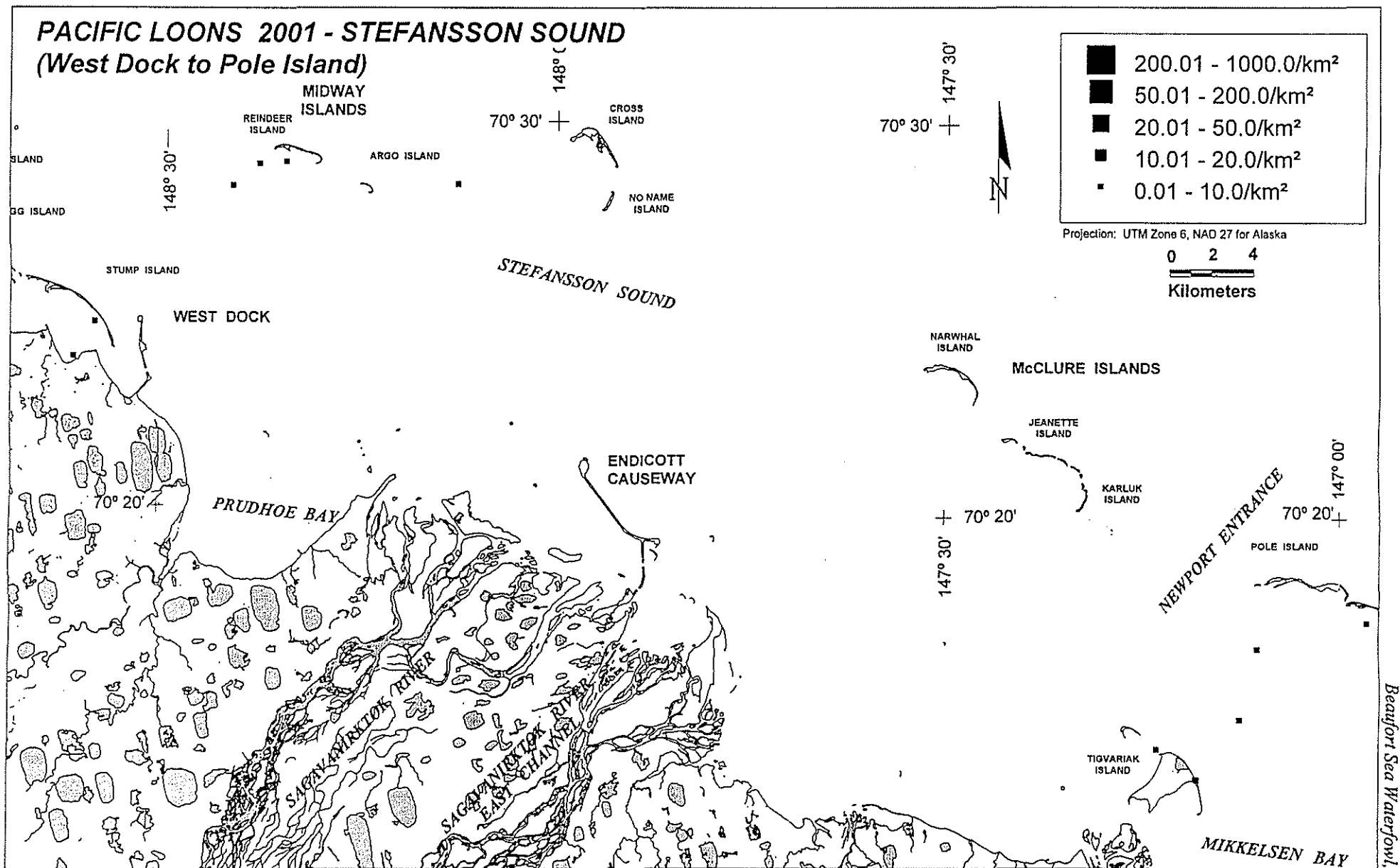


Figure C2. Summary of density for Pacific loons by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

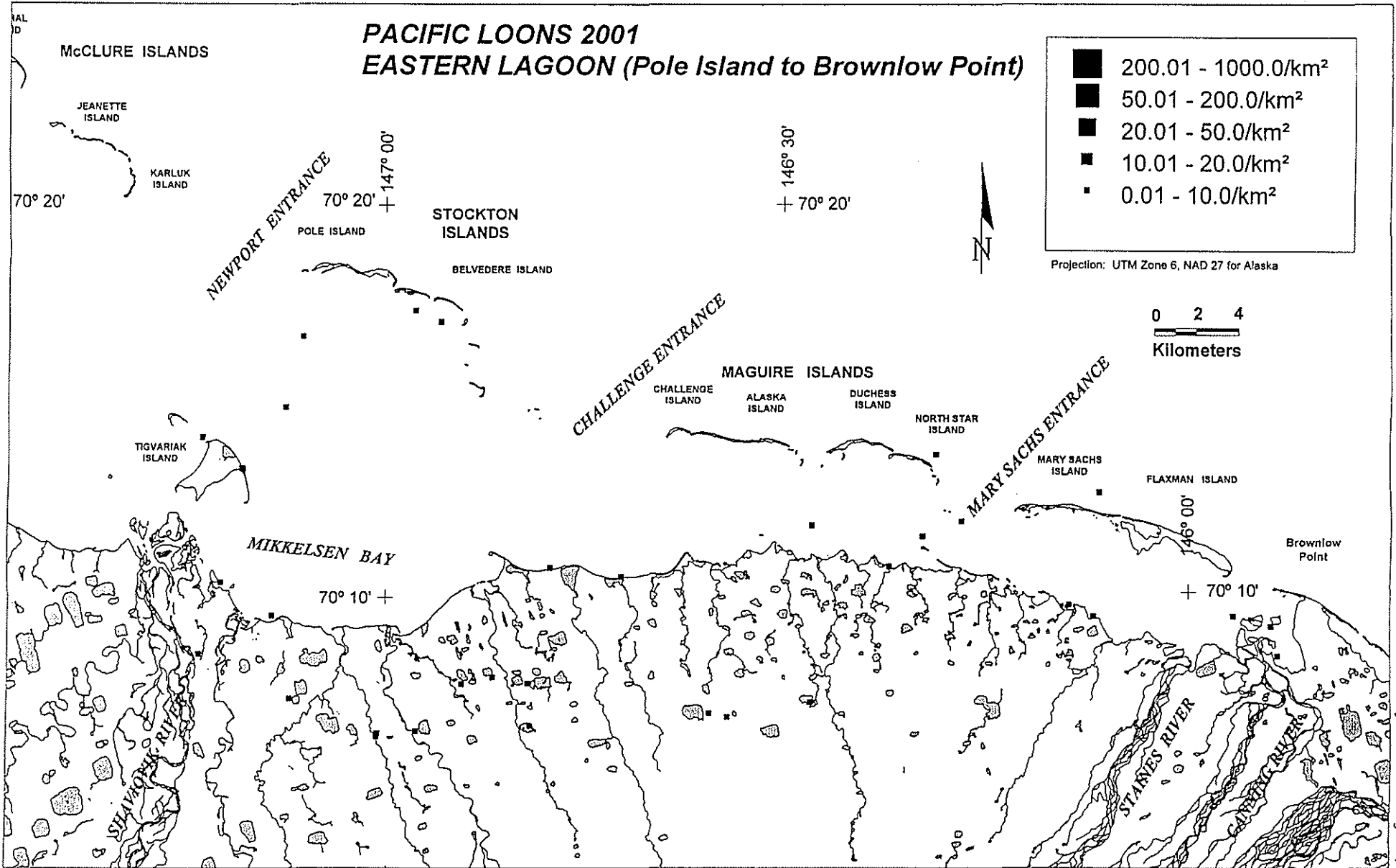


Figure C3. Summary of density for Pacific loons by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

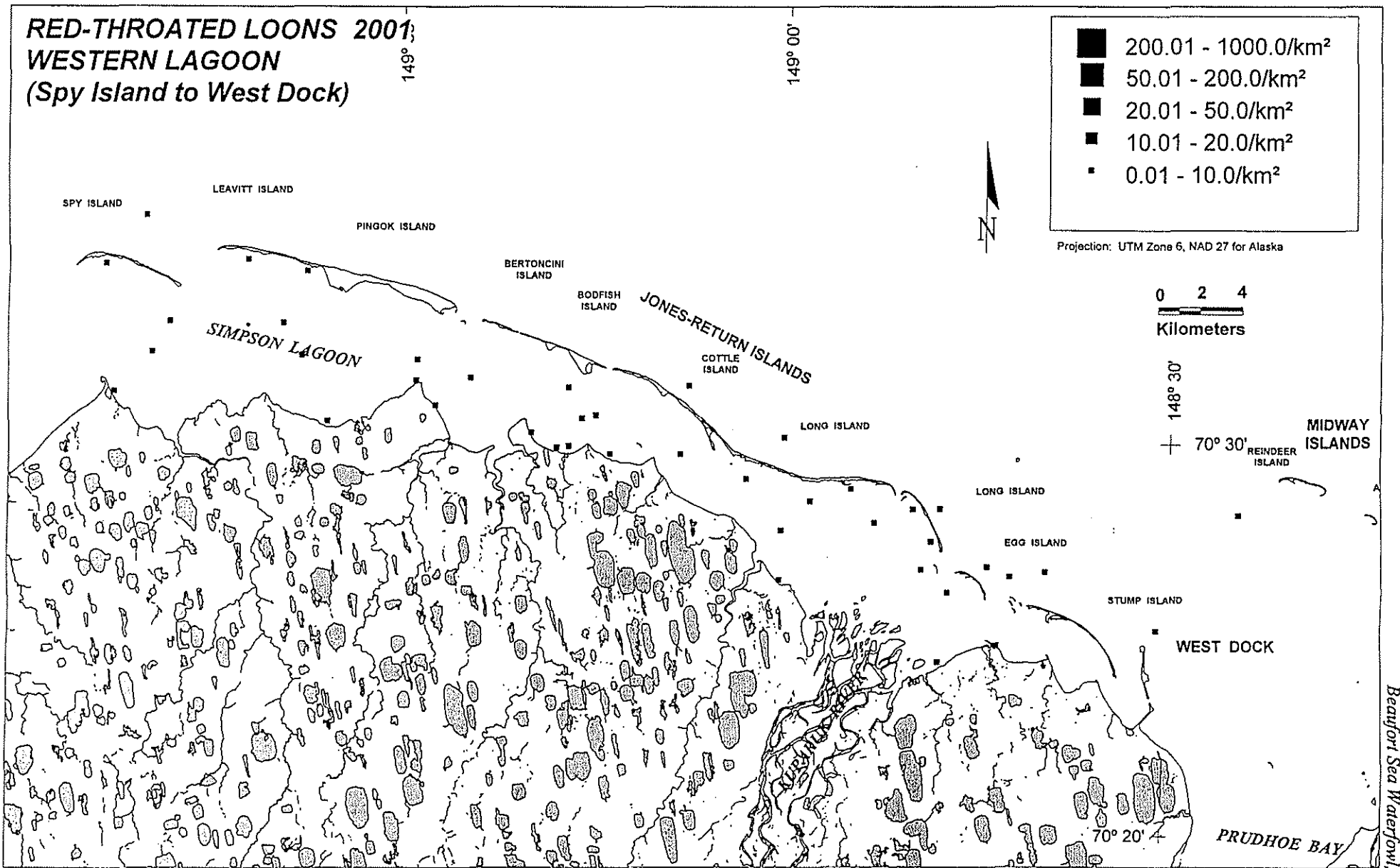


Figure C4. Summary of density for red-throated loons by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

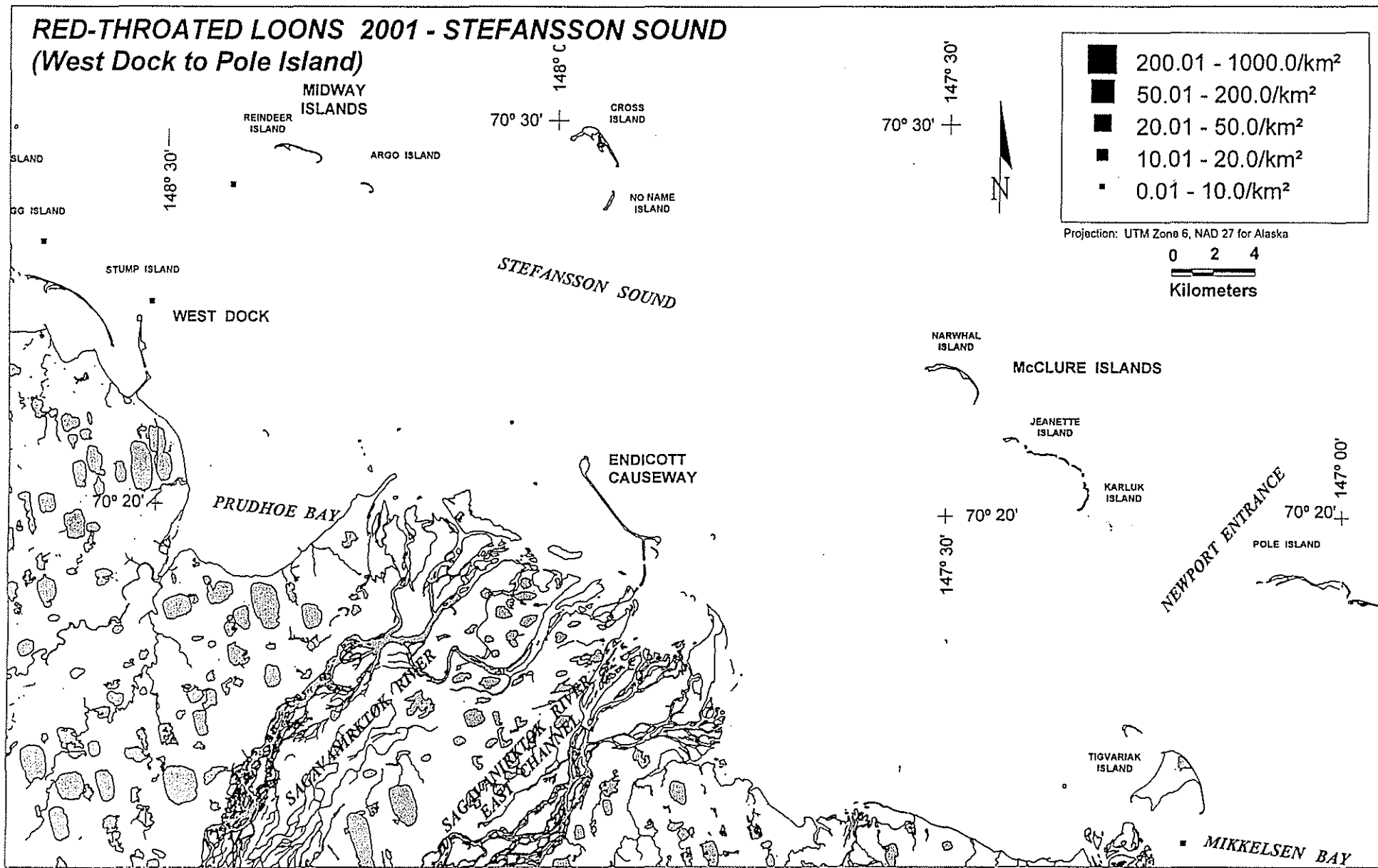


Figure C5. Summary of density for red-throated loons by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.



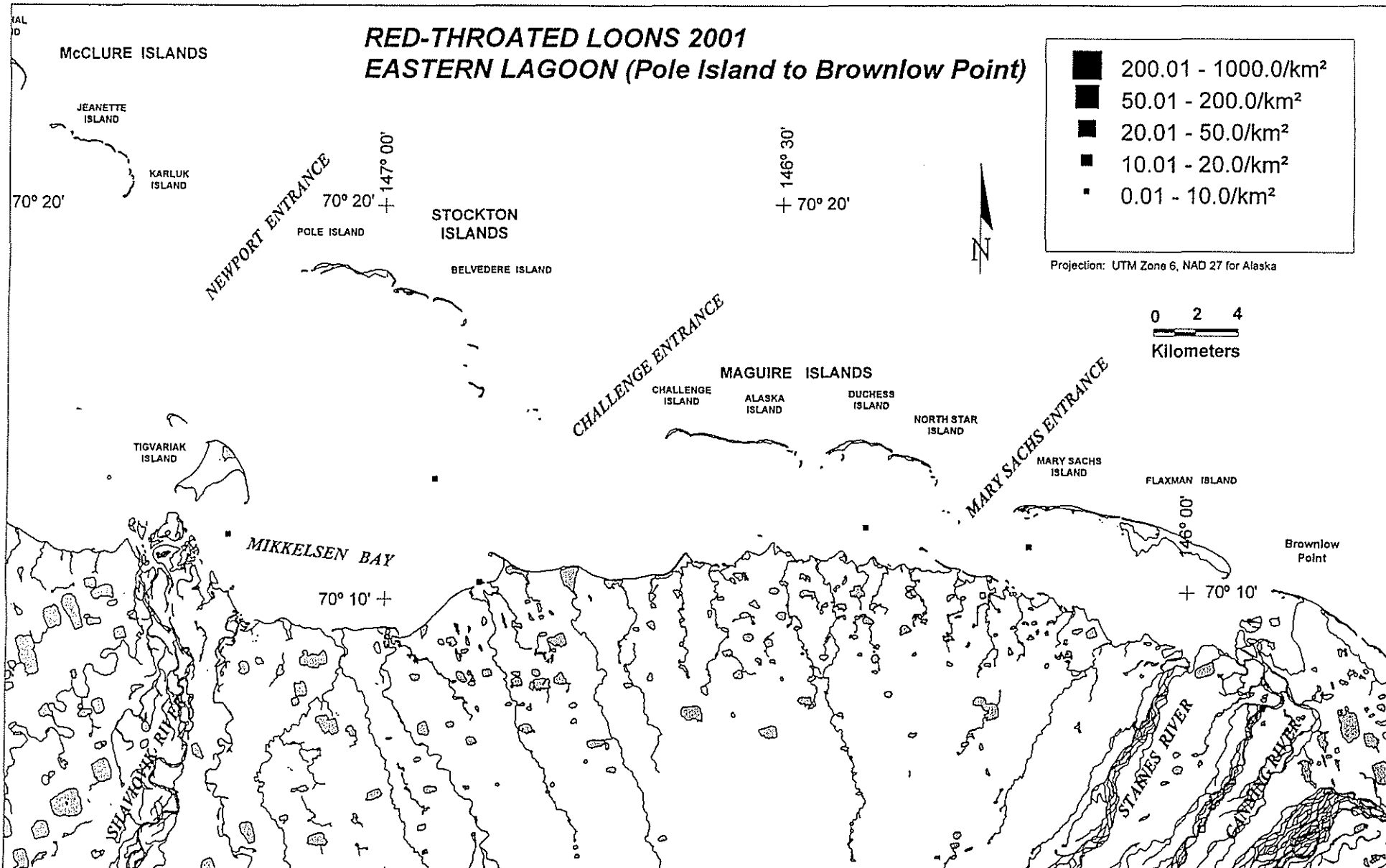


Figure C6. Summary of density for red-throated loons by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

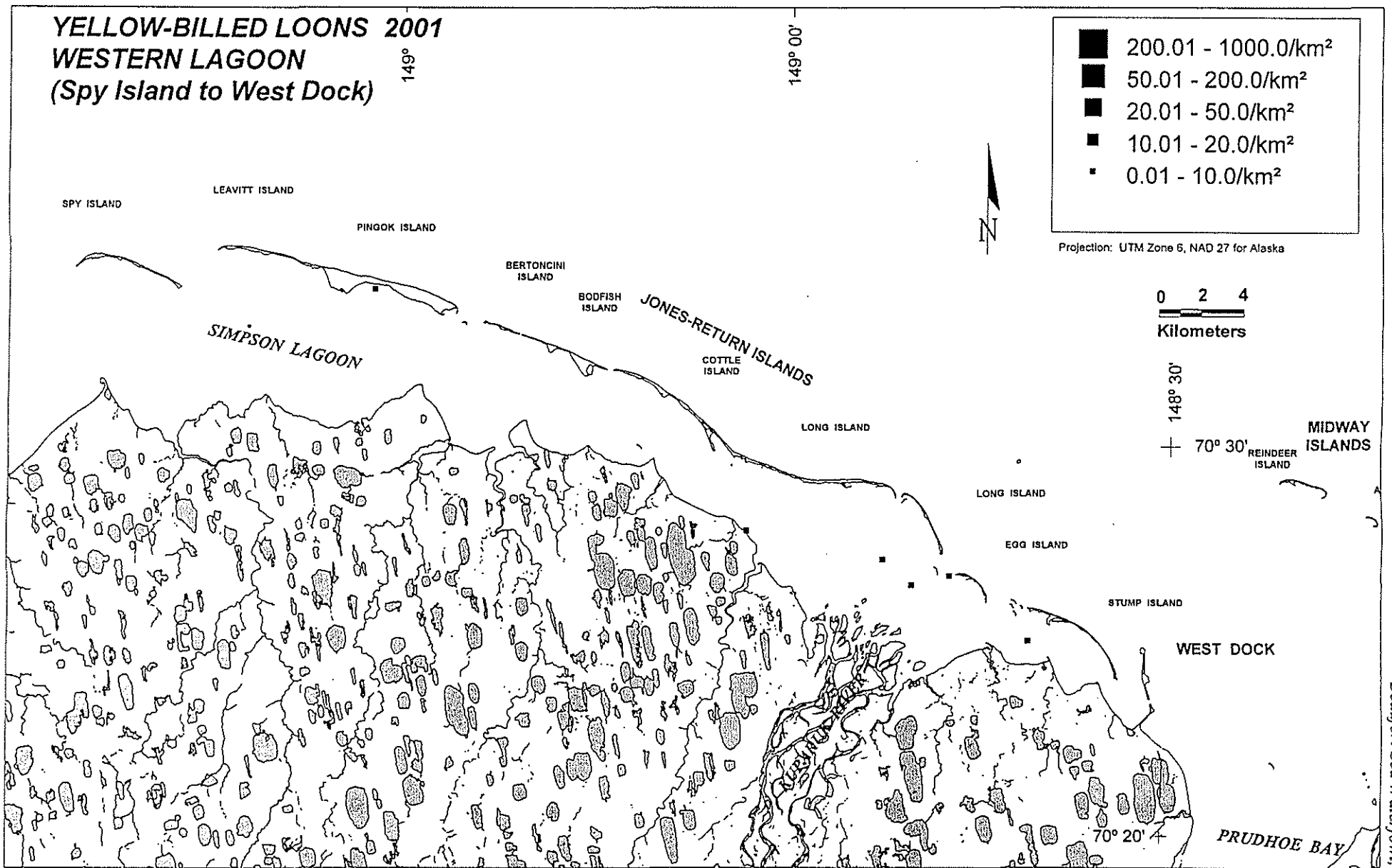


Figure C7. Summary of density for yellow-billed loons by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

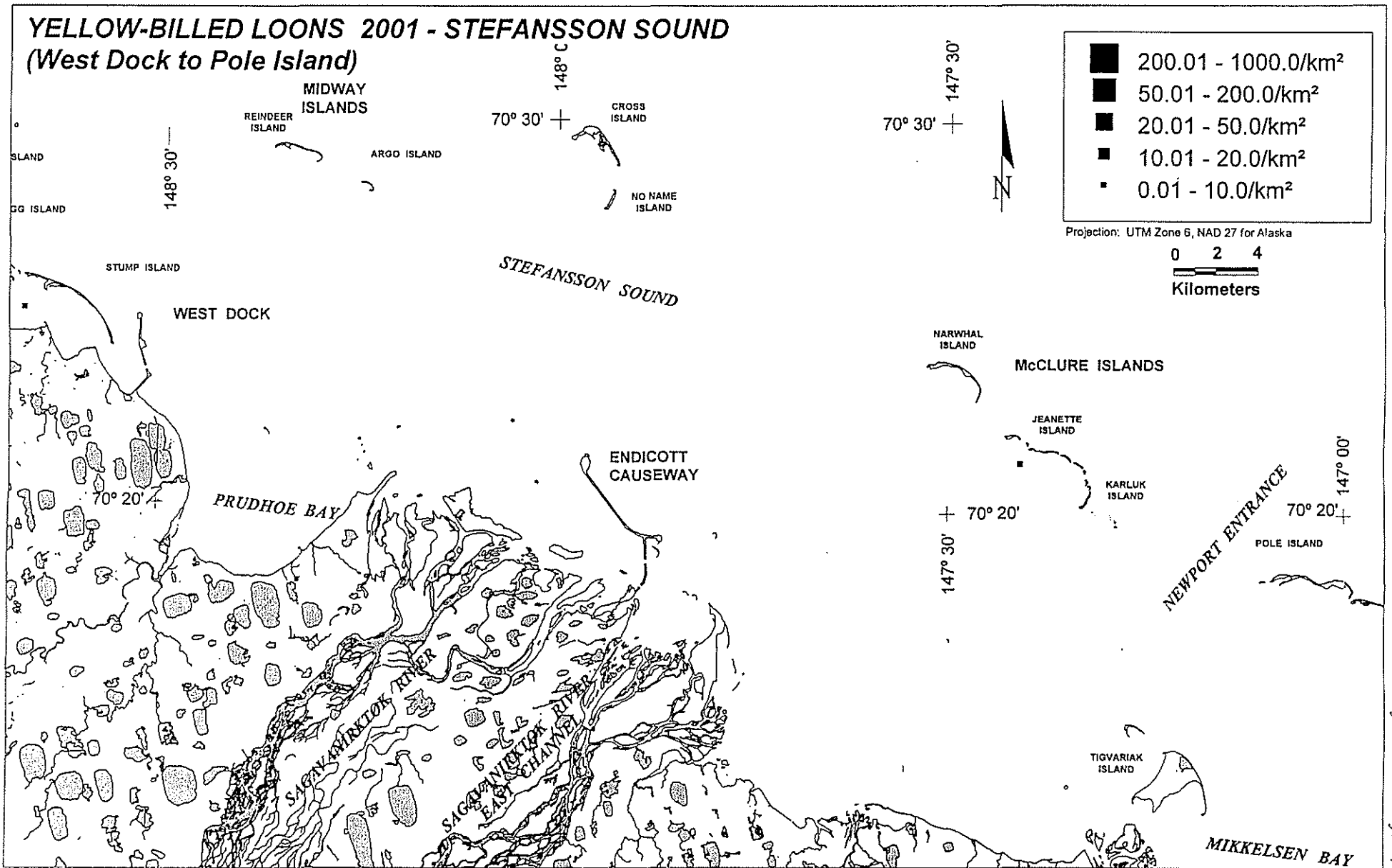


Figure C8. Summary of density for yellow-billed loons by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

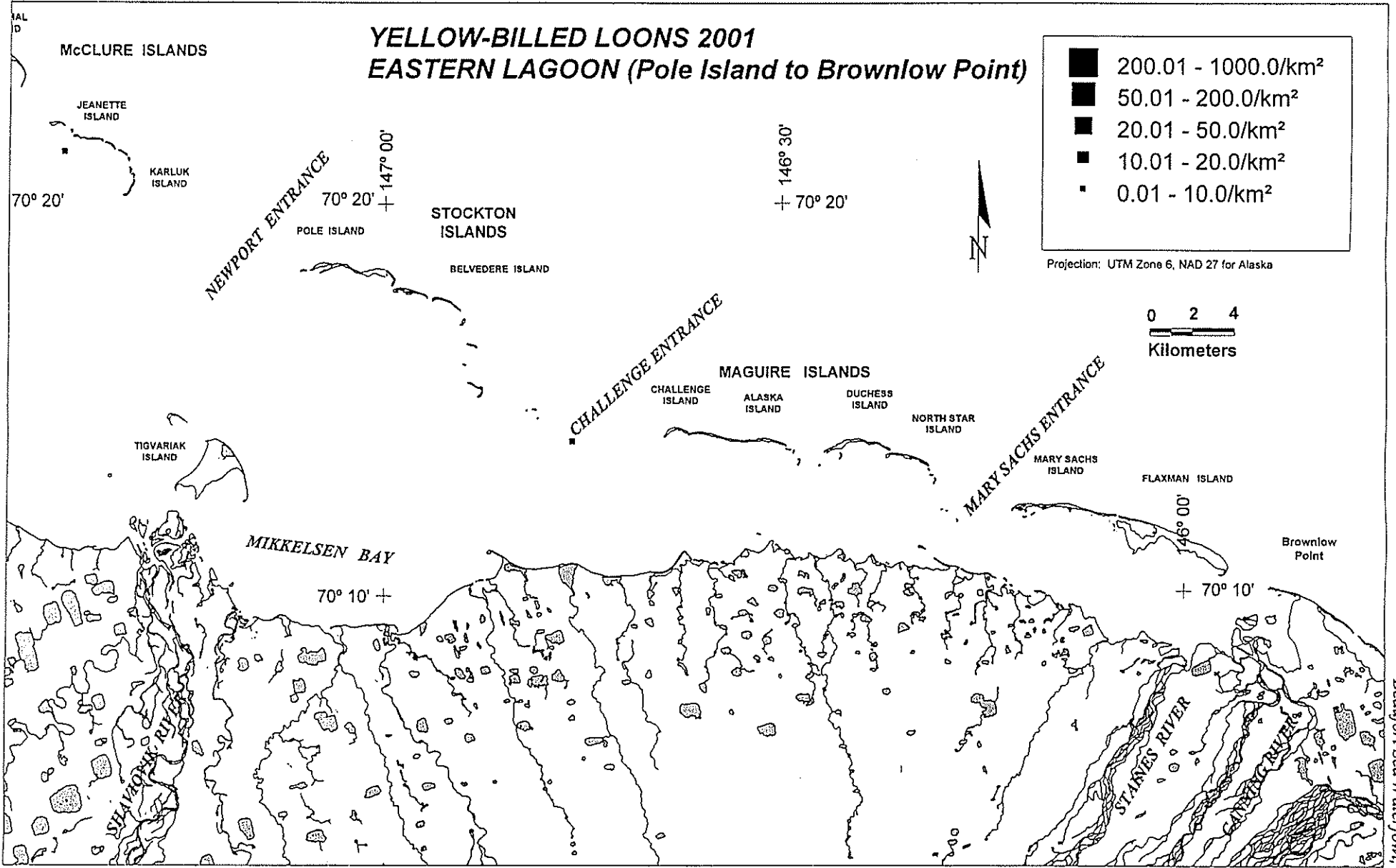


Figure C9. Summary of density for yellow-billed loons by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

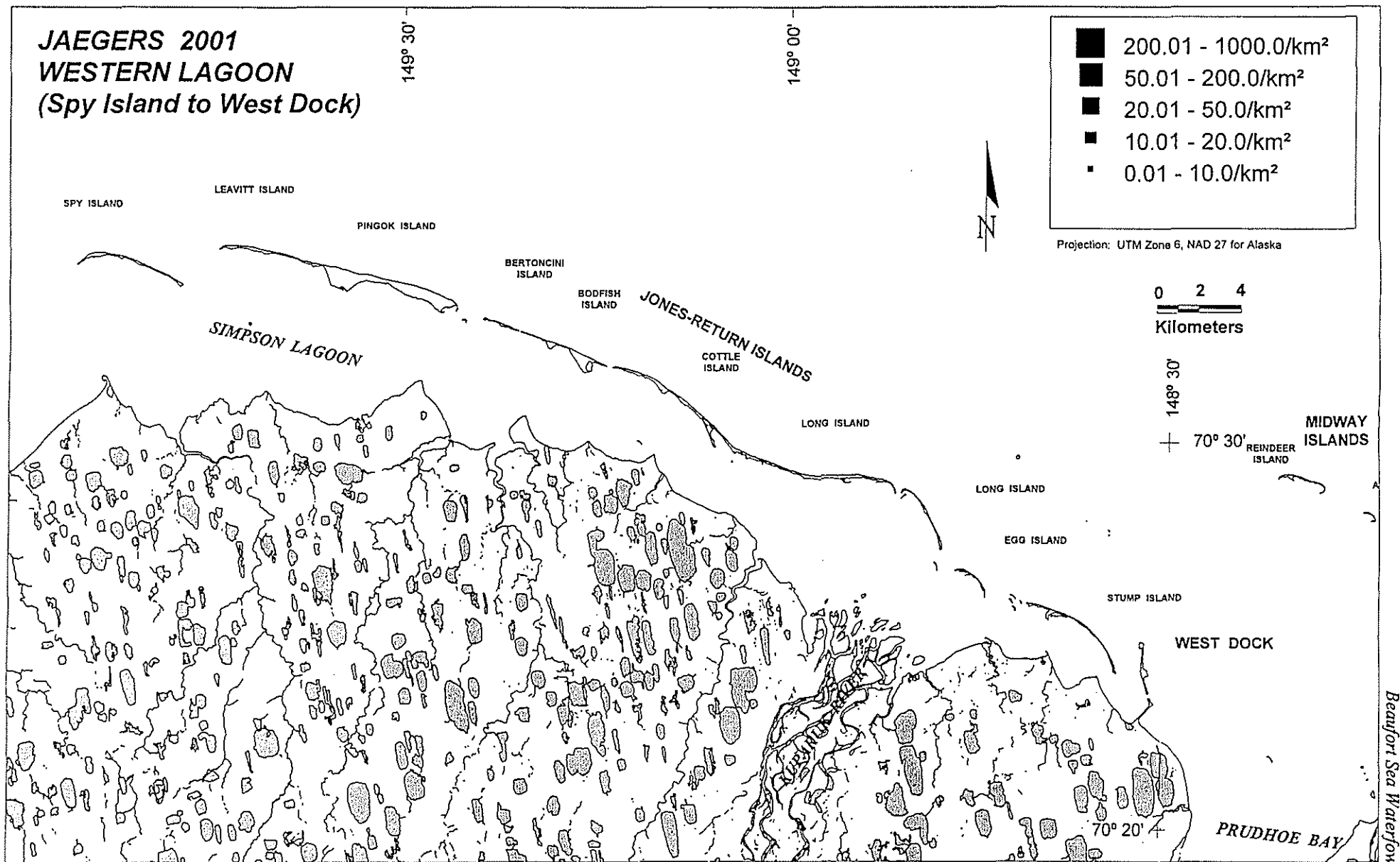


Figure C10. Summary of density for jaegers by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

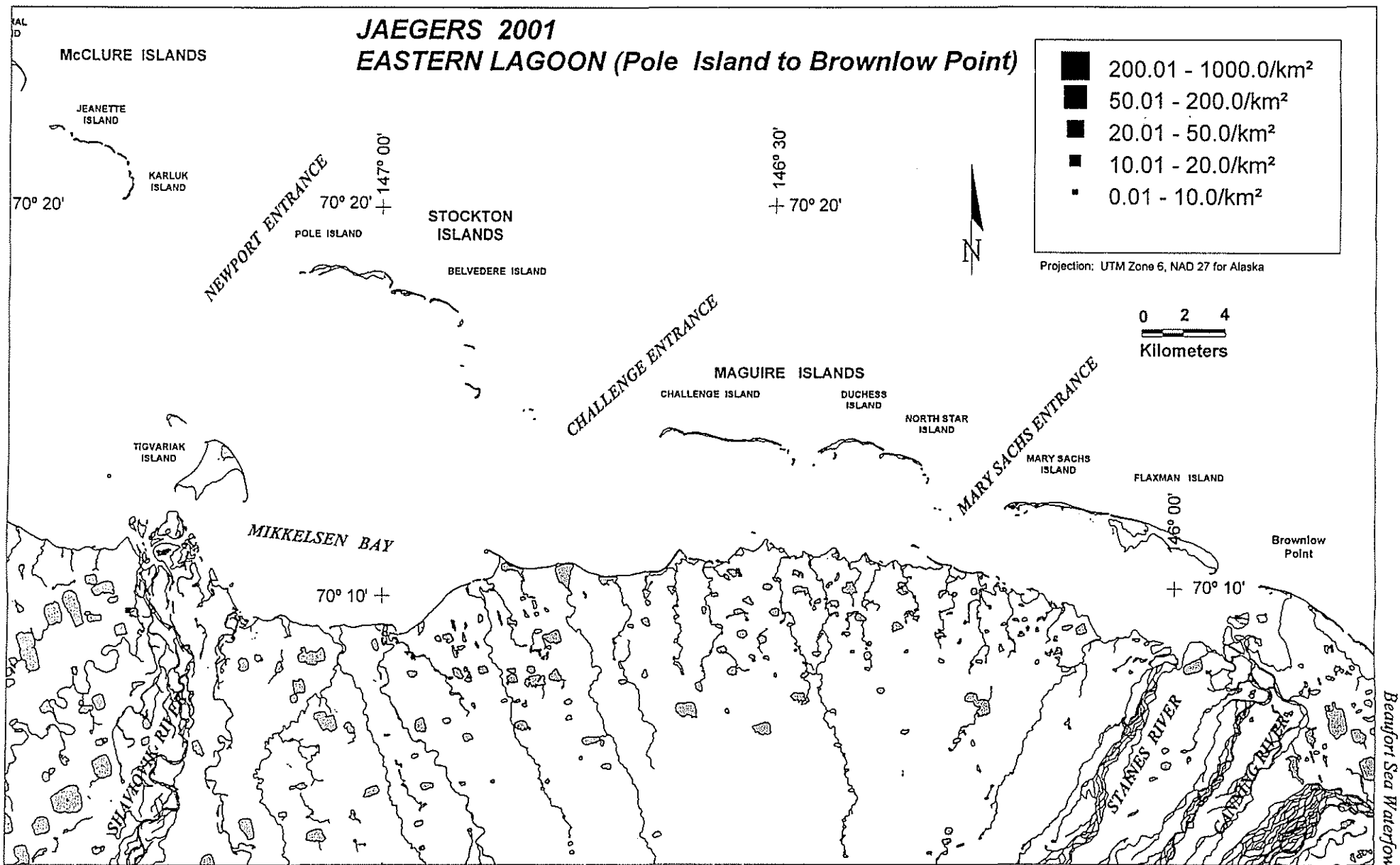


Figure C11. Summary of density for jaegers by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

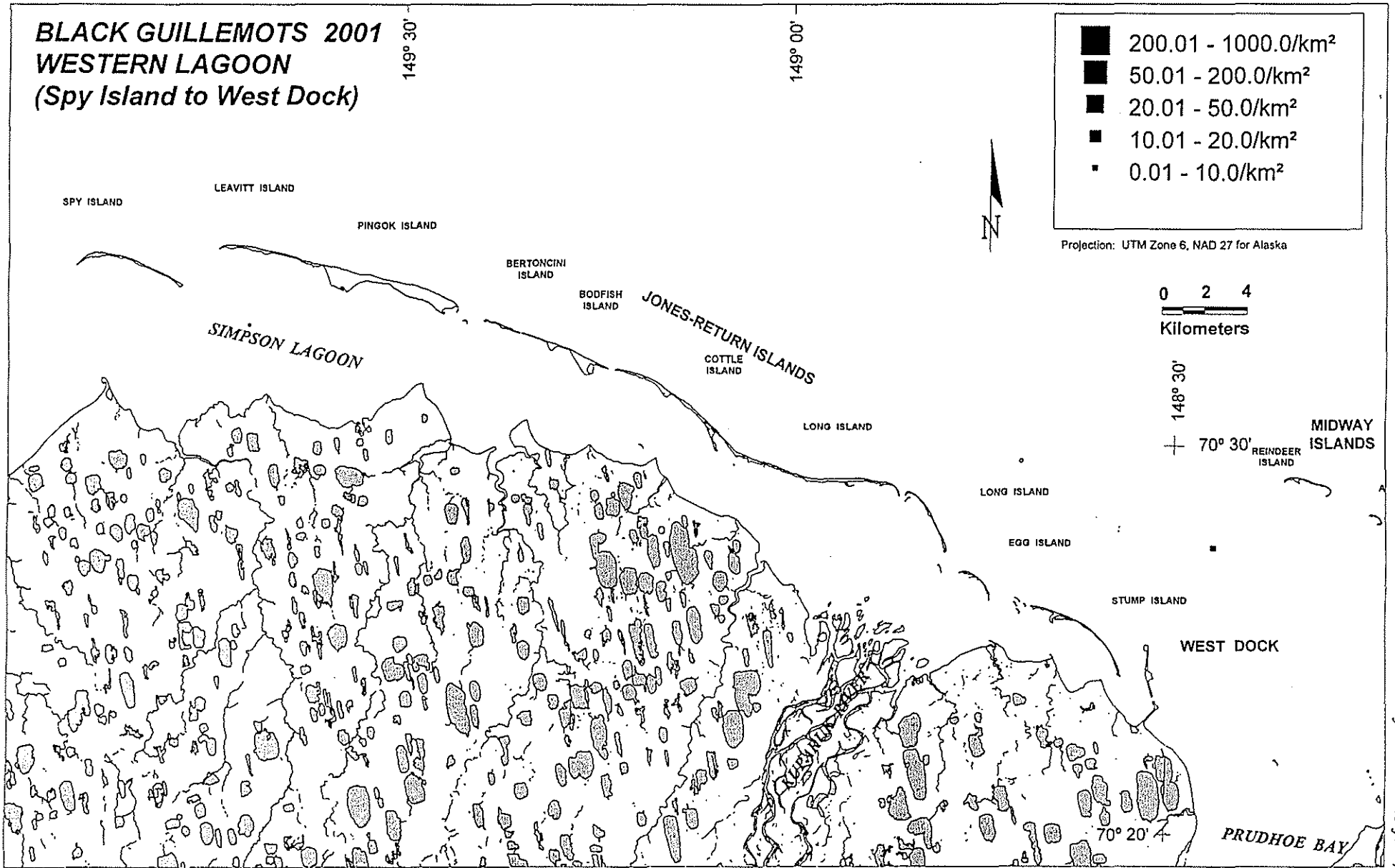


Figure C12. Summary of density for black guillemots by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

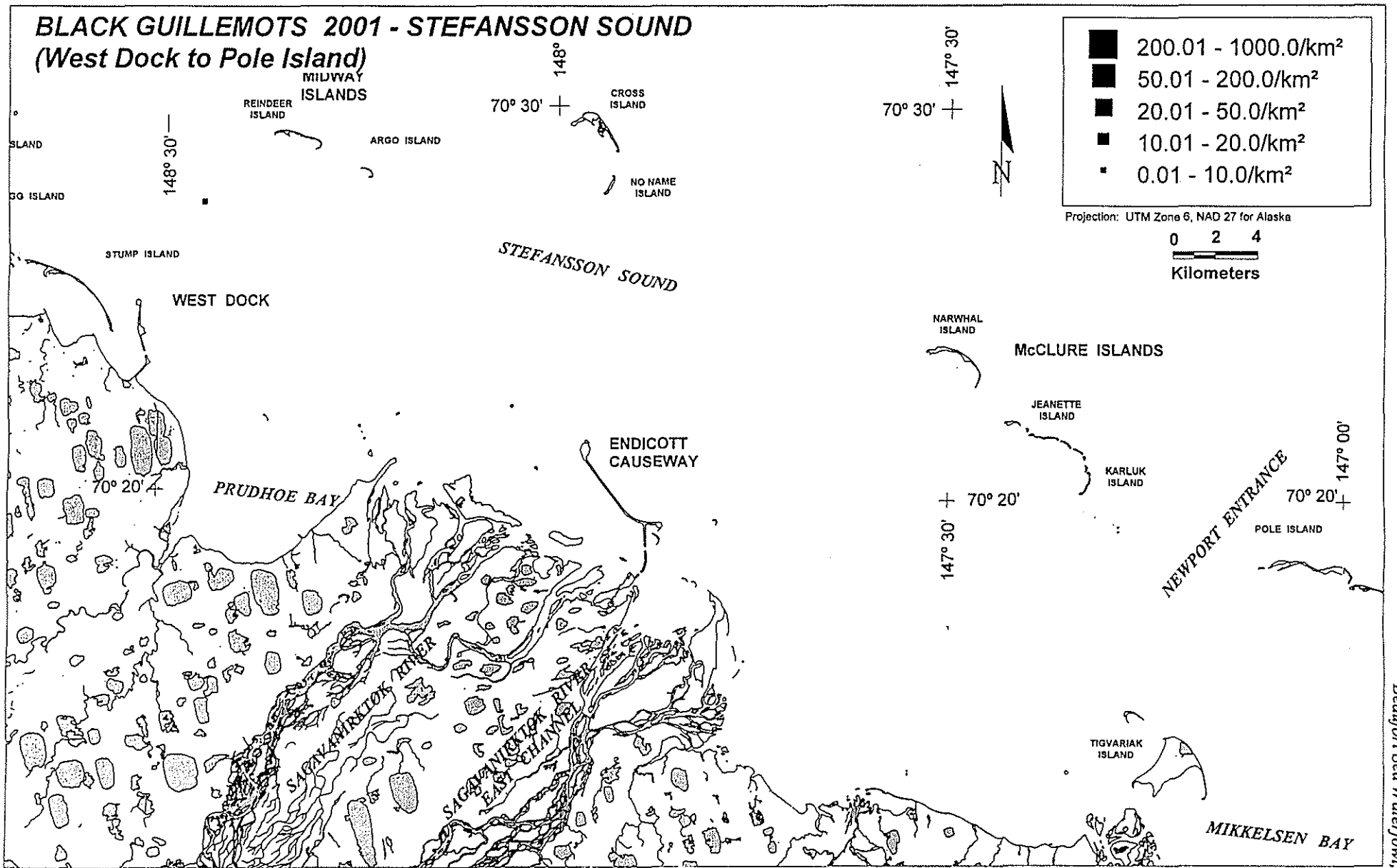


Figure C13. Summary of density for black guillemots by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.



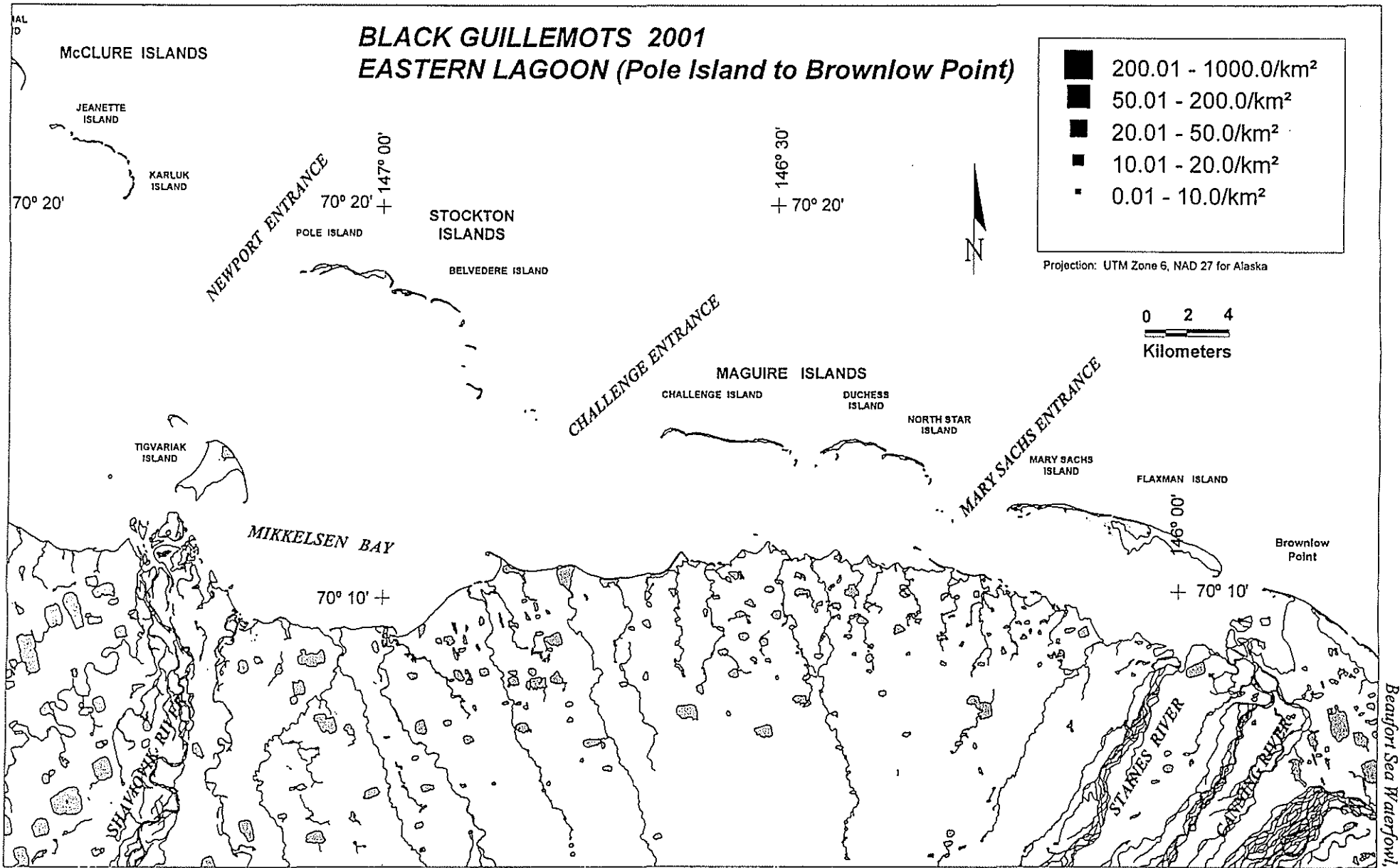


Figure C14. Summary of density for black guillemots by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

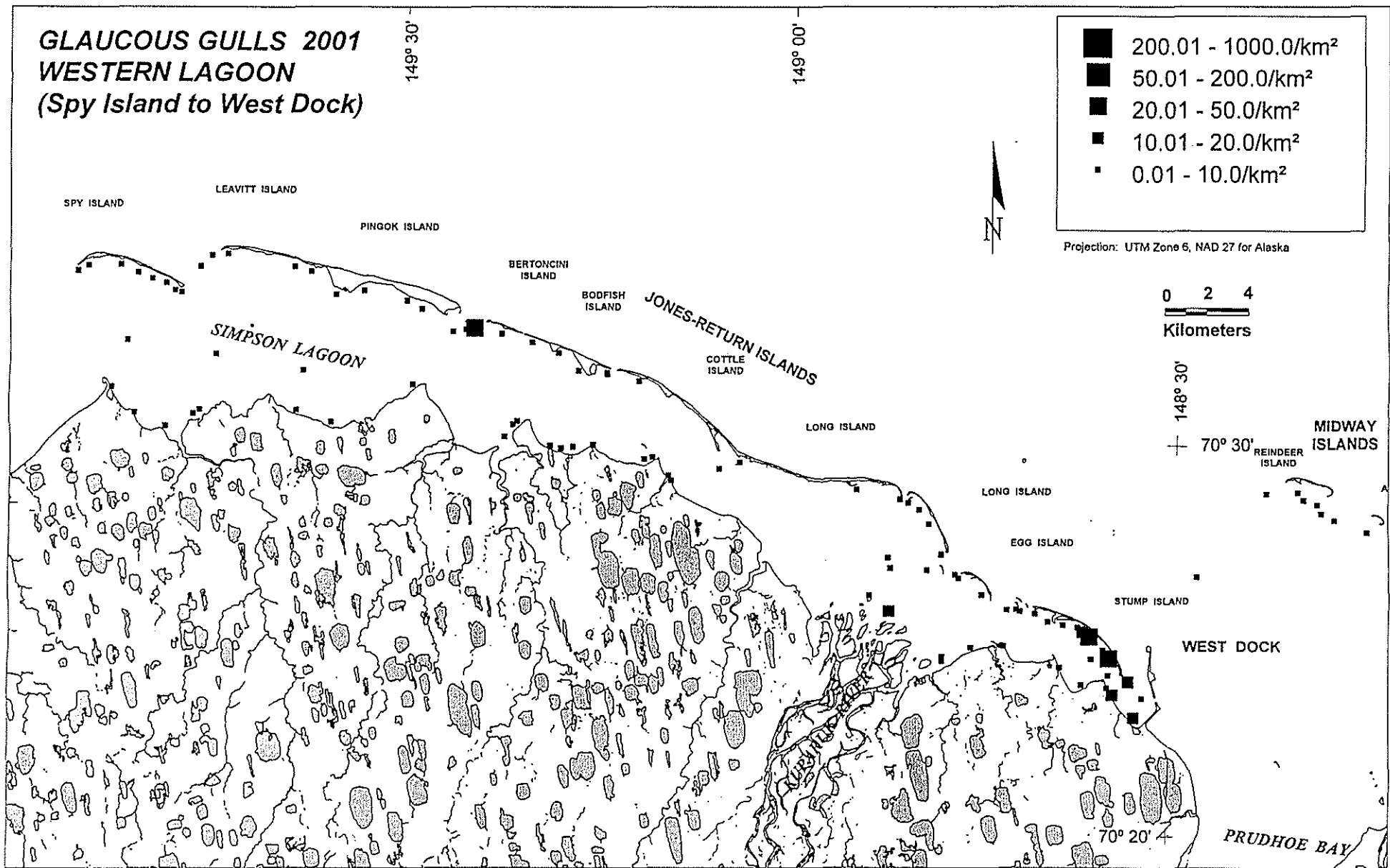


Figure C15. Summary of density for glaucous gulls by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

**GLAUCOUS GULLS 2001 - STEFANSSON SOUND**  
 (West Dock to Pole Island)

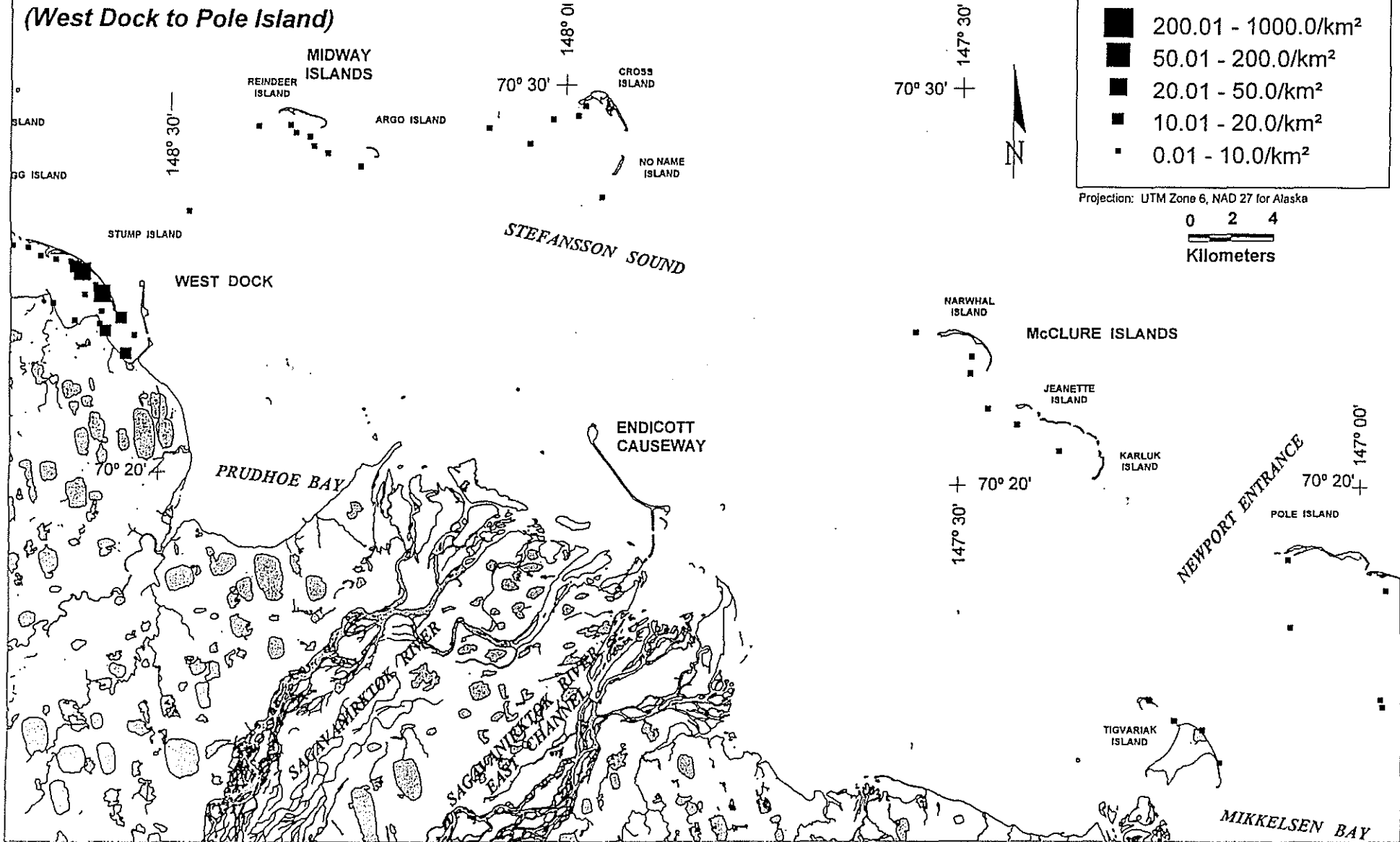


Figure C16. Summary of density for glaucous gulls by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

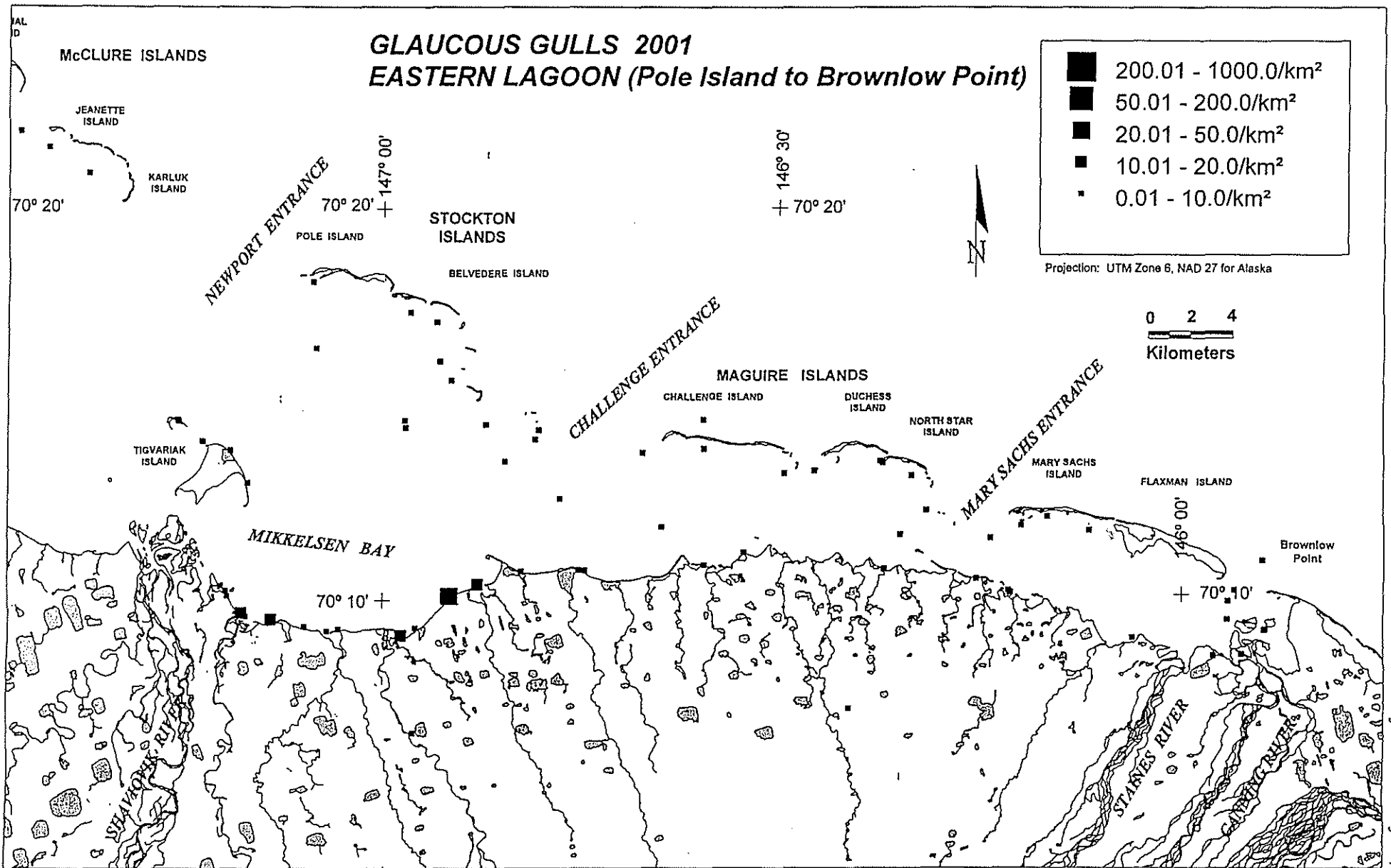


Figure C17. Summary of density for glaucous gulls by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.