Table 7. Total number of bird sightings and individuals seen on- and off-transect for aerial survey transects (total length = 122.5 km) on tundra between Brownlow Point and the Shaviovik River, Alaska, 8 and 11 August 2001.

Species Code	*TUNDRA* Species Name	Number of Sightings	Percent of Sightings	Number of Individuals	Percent of Individuals	Percent of Classified for Group
PALO	Pacific Loon (*Gavia pacifica*)	17	36.2	28	8.0	93.3
RTLO	Red-throated Loon (*Gavia stellata*)	1	2.1	2	0.6	6.7
Loons		**18**	**38.3**	**30**	**8.6**	
POJA	Pomarine Jaeger (*Stercorarius pomarinus*)	1	2.1	2	0.6	100.0
Jaegers		**1**	**2.1**	**2**	**0.6**	
GLGU	Glaucous Gull (*Larus hyperboreus*)	3	6.4	3	0.9	100.0
Gulls		**3**	**6.4**	**3**	**0.9**	
SEABIRDS (Jaegers, Gulls, and Terns)		**4**	**8.5**	**5**	**1.4**	
EISP	Eider Species (*Somateria* spp.)	1	2.1	5	1.4	
Eiders		**1**	**2.1**	**5**	**1.4**	
OLDS	Long-tailed Duck (*Clangula hyemalis*)	5	10.6	52	14.9	
SCAUP	Scaup Species (*Aythya* spp.)	1	2.1	2	0.6	
Ducks		**7**	**14.9**	**59**	**17.0**	
CAGO	Canada Goose (*Branta canadensis*)	6	12.8	111	31.9	54.7
GWGO	Greater White-fronted Goose (*Anser albifrons*)	2	4.3	80	23.0	39.4
TUSW	Tundra Swan (*Cygnus columbianus*)	4	8.5	12	3.4	5.9
Geese & Swans		**12**	**25.5**	**203**	**58.3**	
WATERFOWL (Ducks, Geese & Swans)		**19**	**40.4**	**262**	**75.3**	
PHSP	Phalarope Species (*Phalaropus* spp.)	2	4.3	41	11.8	
SMSH	Small Shorebirds	3	6.4	9	2.6	
SHOREBIRDS		**5**	**10.6**	**50**	**14.4**	
SNBU	Snow Bunting (*Plectrophenax nivalis*)	1	2.1	1	0.3	
ALL BIRDS		**47**	**100**	**348**	**100**	

Table 8. Long-tailed duck density (number of individuals/km^2) by aerial survey transect in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July - 11 August 2001.

	Transect Numbers																		
	Barrier Islands				Mid-Lagoon							Mainland Shore				Off Shore			
Date	23	31	202	201	24	32	301	302	601	602	603	25	33	401	402	22	30	101	102
Molt (15 July - 21 August)																			
23 Jul 01	15.50	124.44	34.18	41.25	3.29	32.57	27.92	28.48	55.21	10.66	32.43	0.44	0.00	3.69	0.71	24.06	7.46	2.67	3.15
8 Aug 01	21.36	218.39	27.04	36.84	0.72	68.18	45.08	182.79	91.03	119.04	40.61	6.53	0.53	9.39	45.18	0.00	0.38	2.75	0.00
11 Aug 01	1.25	34.79	0.97	4.13	0.00	0.84	9.04	34.76	0.00	90.26	29.70	2.16	0.00	6.32	6.08	1.58	0.00	0.12	0.00
Average Density	12.70	125.87	20.73	27.41	1.34	33.86	27.35	82.01	48.75	73.32	34.25	3.04	0.18	6.47	17.32	8.55	2.61	1.85	1.05

Table 9. Long-tailed duck density (number of individuals/km^2) by aerial survey transect in the barrier island-lagoon system and on tundra between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

	Transect Numbers															
	Barrier Islands				Mid-lagoon								Mainland Shore			
Date	133	134	135	136	180	181	182	183	604	605	606	607	190	191	192	193
MOLT 23 July - 11 August																
23 Jul 01	133.22	49.80	42.19	95.92	35.46	9.96	0.00	0.00	0.00	0.38	2.89	34.38	-	-	118.75	206.34
8 Aug 01	211.25	56.65	5.87	28.08	20.95	5.20	7.96	0.00	0.00	7.63	73.16	40.26	133.59	235.64	123.63	44.35
11 Aug 01	68.35	0.00	0.00	10.78	3.08	8.61	0.00	0.20	0.00	0.00	11.65	4.46	25.31	34.20	42.11	9.09
Average Density	137.61	35.48	16.02	44.93	19.83	7.92	2.65	0.07	0.00	2.67	29.23	26.37	79.45	134.92	94.83	86.59

	Off Shore				Tundra			
Date	60	61	62	63	500	501	502	503
MOLT 23 July - 11 August								
23 Jul 01	4.88	9.00	0.00	0.00	-	-	-	-
8 Aug 01	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.18
11 Aug 01	11.54	0.00	0.61	0.00	0.00	0.00	0.92	8.15
Average Density	5.47	3.07	0.20	0.00	0.00	0.00	0.46	4.17

Table 10. Long-tailed duck density (number of individuals/km^2) by aerial survey transect in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

	Transect Numbers		
	Barrier Islands		
Date	130	131	132
Molt (15 July - 21 August)			
23 Jul 01	9.32	43.01	11.31
8 Aug 01	2.05	12.66	15.53
11 Aug 01	4.27	3.11	32.61
Average Density	5.21	19.59	19.82

Table 11. Species densities for all aerial survey transects (total area = 790.38 km^2) in the barrier island-lagoon systems and on tundra between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001.

Species Code	Species Name	Total Number of Birds on Transect	Number of Sightings on Transect	Bird Density (Number/km^2)
LOONS				
PALO	Pacific Loon (*Gavia pacifica*)	160	114	0.202
RTLO	Red-throated Loon (*Gavia stellata*)	76	57	0.096
YBLO	Yellow-billed Loon (*Gavia adamsii*)	8	8	0.010
LOSP	Loon Species (*Gavia* spp.)	2	2	0.003
SEABIRDS (Jaegers, Gulls, and Terns)				
GLGU	Glaucous Gull (*Larus hyperboreus*)	772	314	0.977
SAGU	Sabine's Gull (*Xema sabini*)	49	3	0.062
ARTE	Arctic Tern (*Sterna paradisaea*)	34	21	0.043
BLGU	Black Guillemot (*Cepphus grylle*)	1	1	0.001
COMU	Common Murre (*Uria aalge*)	1	1	0.001
WATERFOWL (Ducks, Geese & Swans)				
COEI	Common (Pacific) Eider (*Somateria mollissima v-nigrum*	1894	172	2.396
KIEI	King Eider (*Somateria spectabilis*)	11	1	0.014
EISP	Eider Species (*Somateria* spp.)	99	5	0.125
SUSC	Surf Scoter (*Melanitta perspicillata*)	643	68	0.814
BLSC	Black Scoter (*Melanitta nigra*)	1	1	0.001
SCOT	Scoter Species (*Melanitta* spp.)	1	1	0.001
OLDS	Long-tailed Duck (*Clangula hyemalis*)	22660	784	28.670
GRSC	Greater Scaup (*Aythya marila*)	20	1	0.025
SCAUP	Scaup Species (*Aythya* spp.)	8	2	0.010
NOPI	Northern Pintail (*Anas acuta*)	4	1	0.005
RBME	Red-breasted Merganser (*Mergus serrator*)	1	1	0.001
DKSP	Duck Species	11	3	0.014
DAGO	Dark Goose	20	1	0.025
BRAN	Black Brant (*Branta bernicla*)	1069	20	1.353
CAGO	Canada Goose (*Branta canadensis*)	348	10	0.440
GWGO	Greater White-fronted Goose (*Anser albifrons*)	893	26	1.130
LSGO	Lesser Snow Goose (*Chen caerulescens caerulescens*)	220	6	0.278
TUSW	Tundra Swan (*Cygnus columbianus*)	5	2	0.006
Other Species				
PHSP	Phalarope Species (*Phalaropus* spp.)	40	1	0.051
RLHA	Rough-legged Hawk (*Buteo lagopus*)	1	1	0.001
SMSH	Small Shorebirds	2	2	0.003
MESH	Medium Shorebirds	5	2	0.006
BISP	Bird Species	2	2	0.003

Table 12. Habitat associations of loons during aerial surveys in the barrier island-lagoon systems and tundra transects between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001

		Pacific Loon		Red-throated Loon		Yellow-billed Loon	
General Habitat Type	Specific Habitat Type	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total
Lagoon (9)	Lagoon (9)	55	38	23	39	3	38
Barrier Island (11)	Shoreline (water side; 15)	27	18	11	19	4	50
Nearshore Sea <3 mi. (13)	Ocean (8)	13	9	9	15	-	-
	Lagoon (9)	3	2	-	-	-	-
Wet Tundra (25)	Pond or Lake (18)	1	1	-	-	-	-
	Completely vegetated (25)	1	1	-	-	-	-
	Pond without Emegrants (46)	1	1	-	-	-	-
	Pond (47)	6	4	-	-	-	-
	River Delta (54)	1	1	-	-	-	-
	Stream (55)	1	1	-	-	-	-
	Pond with Emergents (45)	6	4	-	-	-	-
Mainland Coast (27)	Shoreline (water side; 15)	28	19	14	24	1	13
	River Delta (16)	1	1	-	-	-	-
River Delta (92)	Tide Flat (13)	2	1	2	3	-	-
TOTAL		146	100	59	100	8	100

Table 13. Habitat associations of seabirds during aerial surveys in the barrier island-lagoon systems and tundra transects between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001.

		Arctic Tern		Glaucous Gull		Sabine's Gull	
General Habitat Type	Specific Habitat Type	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total
Lagoon (9)	Lagoon (9)	-	-	25	7.2	1	33.3
	Smooth fast ice(1)	-	-	1	0.3	-	-
Barrier Island (11)	Spit (10)	-	-	6	1.7	-	-
	Island (11)	-	-	16	4.6	-	-
	Shoal (12)	1	4.8	3	0.9	-	-
	Shoreline (land side; 14)	-	-	9	2.6	-	-
	Shoreline (water side; 15)	13	61.9	158	45.5	1	33.3
Nearshore Sea <3 mi. (13)	Ocean (8)	4	19.0	3	0.9	1	33.3
	Lagoon (9)	3	14.3	11	3.2	-	-
Wet Tundra (25)	Pond (47)	-	-	1	0.3	-	-
	Lake Shore (44)	-	-	1	0.3	-	-
Mainland Coast (27)	Spit (10)	-	-	3	0.9	-	-
	Island (11)	-	-	4	1.2	-	-
	Shoal (12)	-	-	1	0.3	-	-
	Shoreline (land side; 14)	-	-	6	1.7	-	-
	Shoreline (water side; 15)	-	-	85	24.5	-	-
	River Delta (16)	-	-	1	0.3	-	-
	Mudflat (41)	-	-	1	0.3	-	-
River Delta (92)	Tide Flat (13)	-	-	8	2.3	-	-
	Mudflat (41)	-	-	4	1.2	-	-
TOTAL		21	100	347	100	3	100

Table 14. Habitat associations of eiders during aerial surveys in the barrier island-lagoon systems and tundra transects between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001.

		Common Eider		King Eider		Eider Species		All Eiders	
General Habitat Type	Specific Habitat Type	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total
Lagoon (9)	Lagoon (9)	29	15.3	1	100	-	-	30	15.6
	Smooth fast ice (1)	2	1.1	-	-	-	-	-	-
Barrier Island (11)	Lagoon (9)	1	0.5	-	-	-	-	-	-
	Smooth fast ice (1)	1	0.5	-	-	-	-	-	-
	Shoreline (land side; 14)	2	1.1	-	-	-	-	2	1.0
	Shoreline (water side; 15)	102	53.7	-	-	1	16.7	103	53.6
	Shoal (12)	2	1.1	-	-	-	-	2	1.0
Nearshore Sea <3 mi. (13)	Ocean (8)	12	6.3	-	-	-	-	12	6.3
	Lagoon (9)	20	10.5	-	-	-	-	20	10.4
Wet Tundra (25)	Pond (47)	-	-	-	-	1	16.7	1	0.5
Mainland Coast (27)	Spit (10)	1	0.5	-	-	-	-	-	-
	Shoreline (water side; 15)	18	9.5	-	-	4	66.7	22	11.5
TOTAL		190	100	1	100	6	100	192	100

Table 15. Habitat associations of scoters during aerial surveys in the barrier island-lagoon systems between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001.

		Surf Scoter		Black Scoter		Scoter Species		All Scoters	
General Habitat Type	Specific Habitat Type	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total
Lagoon (9)	Lagoon (9)	55	77.5	1	100	-	-	56	75.7
Barrier Island (11)	Shoreline (water side; 15)	13	18.3	-	-	1	50	14	18.9
Nearshore Sea <3 mi. (13)	Ocean (8)	2	2.8	-	-	-	-	2	2.7
Mainland Coast (27)	Shoreline (water side; 15)	1	1.4	-	-	1	50	2	2.7
TOTAL		71	100	1	100	2	100	74	100

Table 16. Habitat associations of geese and swans during aerial surveys in the barrier island-lagoon systems and tundra transects between Spy Island and Brownlow Point, Alaska, 23 July-11 August 2001.

		Black Brant		Canada Goose		Greater White-fronted Goose		Tundra Swan	
General Habitat Type	Specific Habitat Type	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total	Number of Sightings	Percent of Total
Barrier Island (11)	Shoreline (water side; 15)	1	4.8	2	11.8	1	3.2	-	-
Wet Tundra (25)	Pond or Lake (18)	-	-	1	5.9	-	-	-	-
	Lake with Emergents (42)	-	-	-	-	-	-	1	14.3
	Lake (50)	-	-	1	5.9	-	-	-	-
	Pond (47)	-	-	-	-	1	3.2	3	42.9
	River Delta (54)	-	-	1	5.9	-	-	-	-
	Lake Shore (44)	-	-	1	5.9	-	-	-	-
	Pond with Emergents (45)	-	-	1	5.9	-	-	-	-
	Large Lake (49)	-	-	-	-	1	3.2	-	-
Mainland Coast (27)	Shoreline (water side; 15)	20	95.2	9	52.9	28	90.3	3	42.9
River Delta (92)	Tide Flat (13)	-	-	1	5.9	-	-	-	-
TOTAL		21	100	17	100	31	100	7	100

APPENDIX A:

JULY AND AUGUST 2001
WEST DOCK NOAA STATION DATA

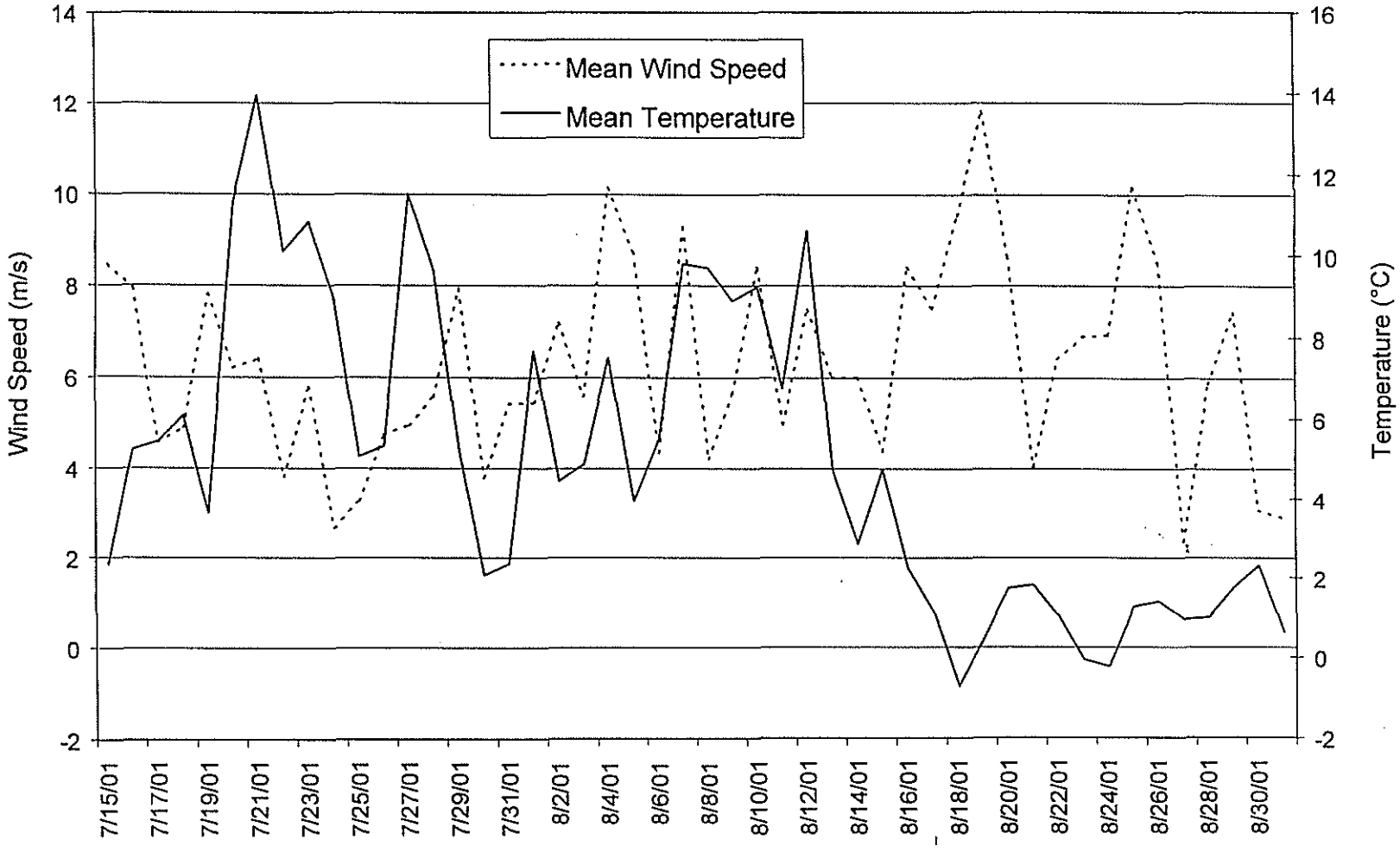

Figure A1. Daily mean temperature and wind speed recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July – 31 August 2001. Data available at http://co-ops.nos.noaa.gov/co-ops.html.

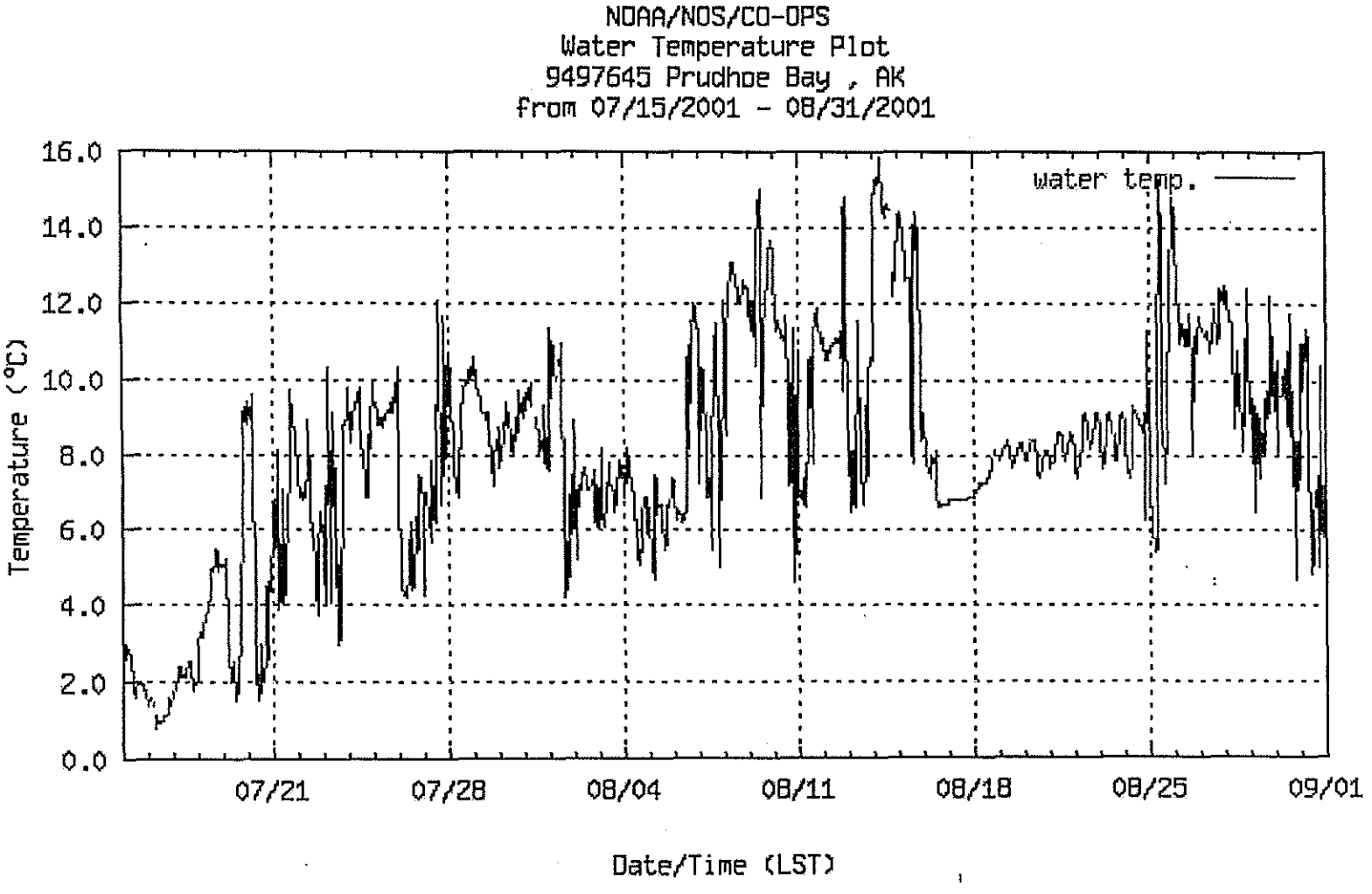

Figure A2. Hourly mean water temperature recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July – 1 September 2001. Data available at http://co-ops.nos.noaa.gov/co-ops.html.

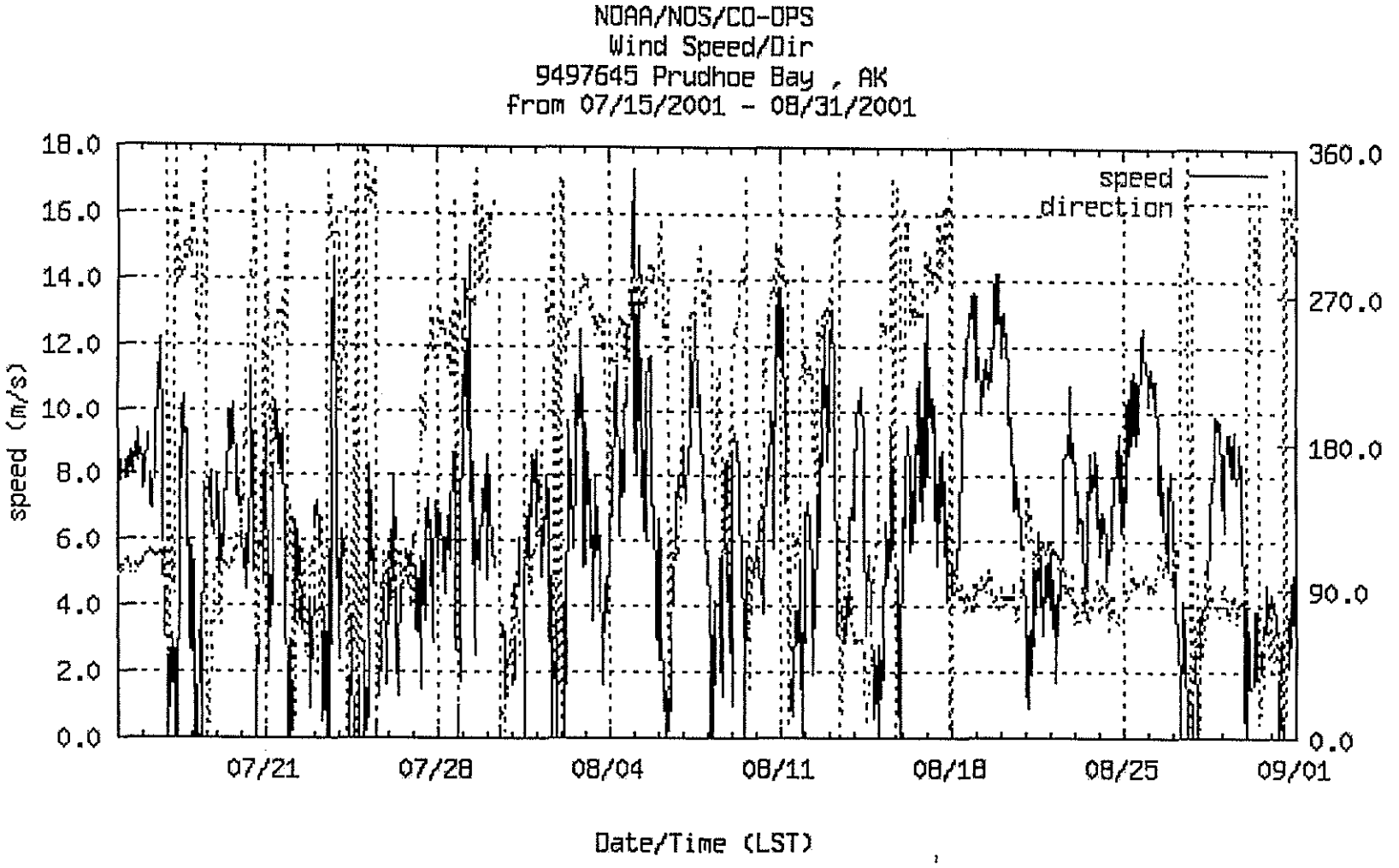

Figure A3. Hourly mean wind speed and direction recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July – 1 September 2001. Data available at http://co-ops.nos.noaa.gov/co-ops.html.

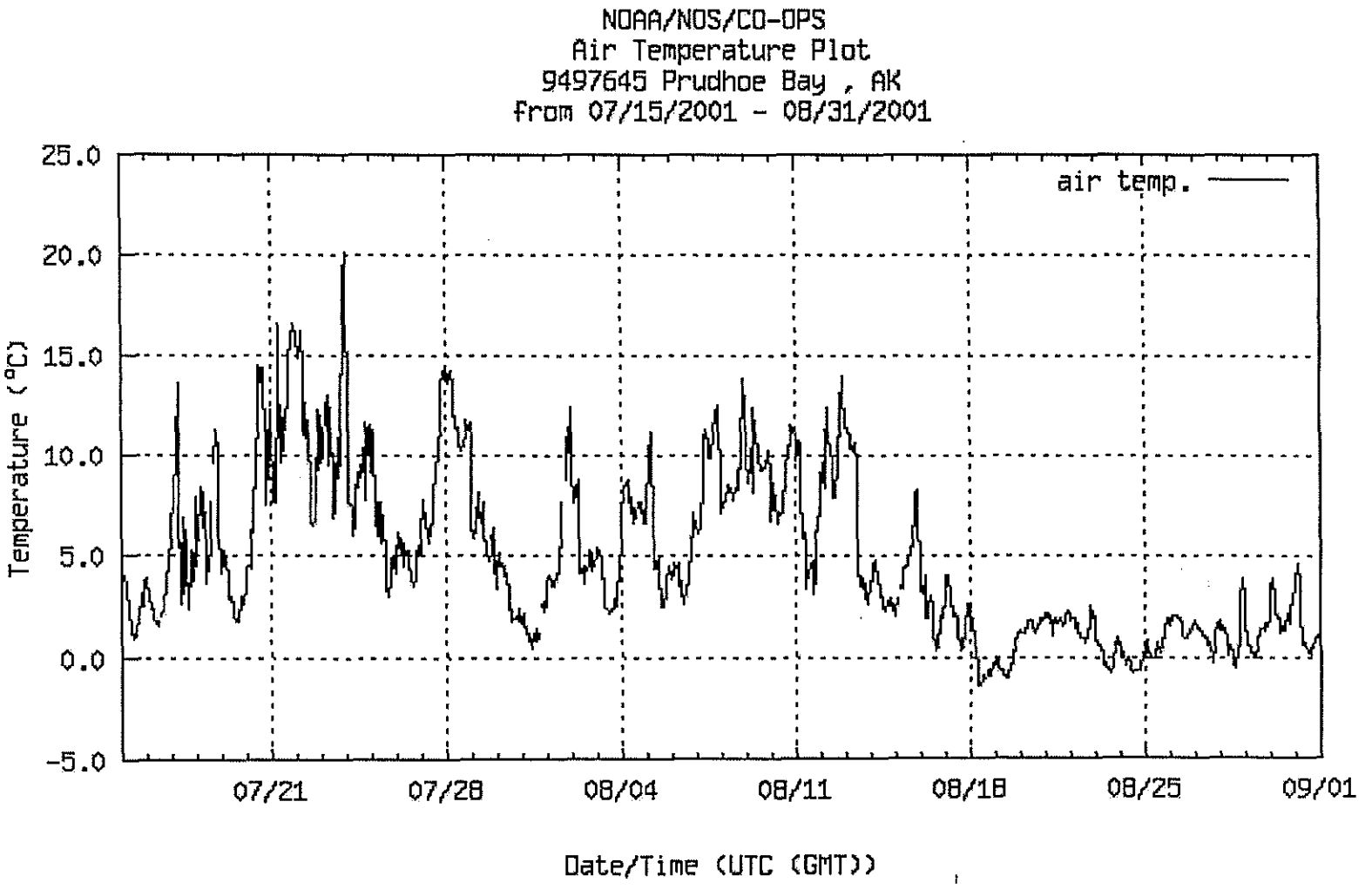

Figure A4. Hourly mean air temperature recorded at the Prudhoe Bay NOAA Station at West Dock, Alaska, 15 July-1 September 2001. Data available at http://co-ops.nos.noaa.gov/co-ops.html.

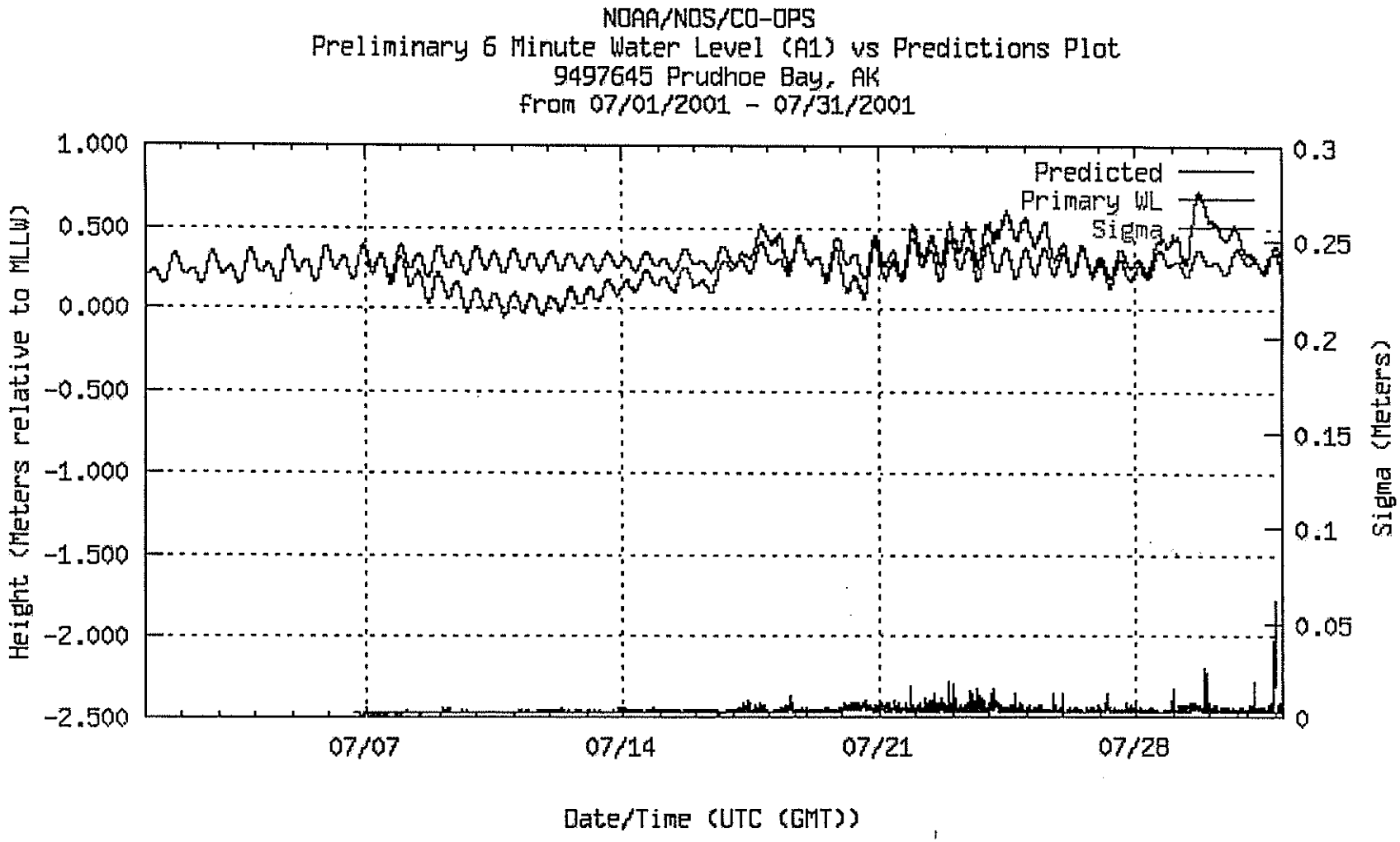

Figure A5. Water level relative to mean low, low water level recorded at 6-min intervals at the Prudhoe Bay NOAA Station at West Dock, Alaska, 1-31 July, 2001. Data downloaded at http://co-ops.nos.noaa.gov/co-ops.html.

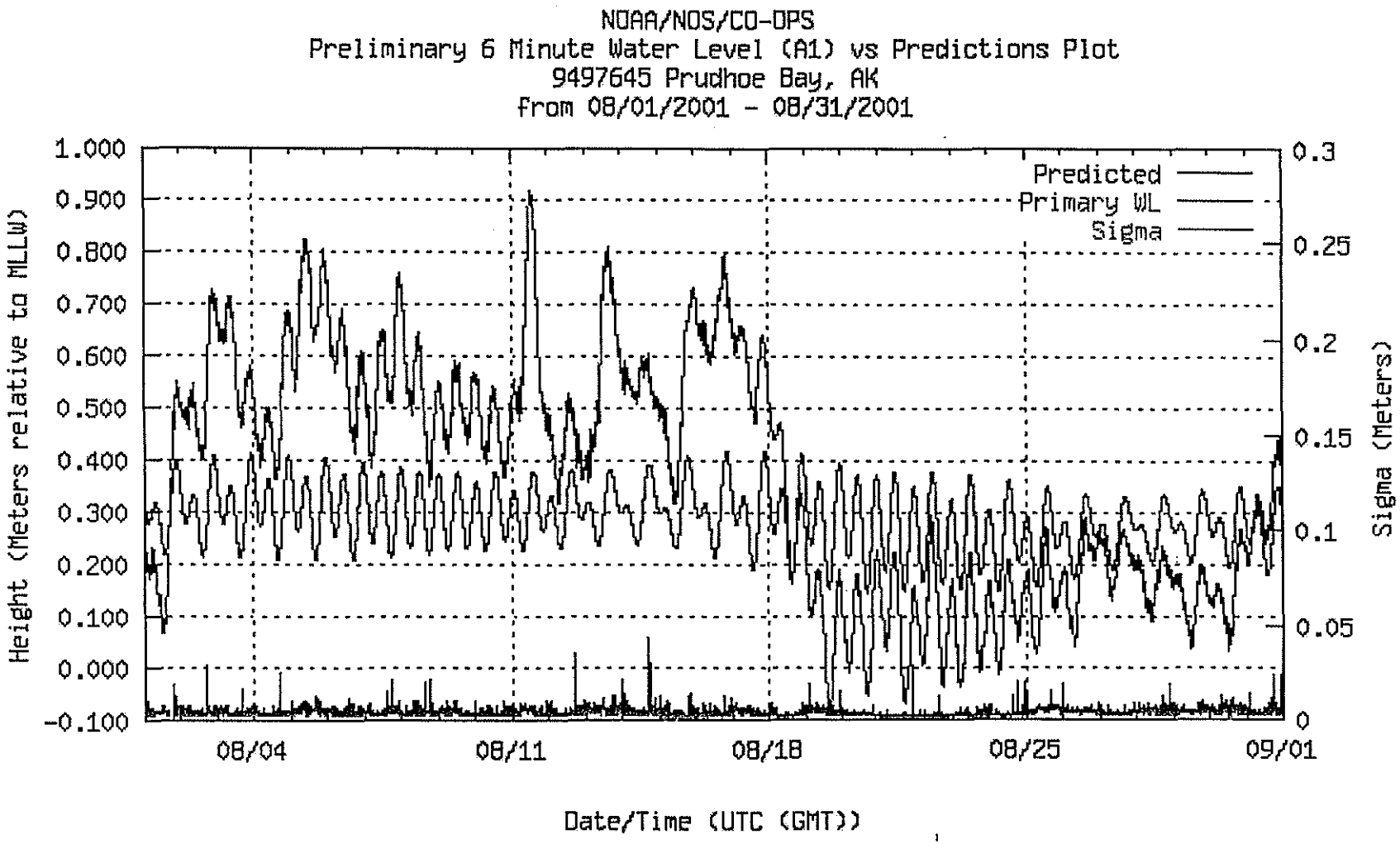

Figure A6. Water level relative to mean low, low water level recorded at 6-min intervals at the Prudhoe Bay NOAA Station at West Dock, Alaska, 1-31 August 2001. Data downloaded at http://co-ops.nos.noaa.gov/co-ops.html.

APPENDIX B:

2001 LONG-TAILED DUCK DENSITY BY SURVEY AND HISTORICAL DATA

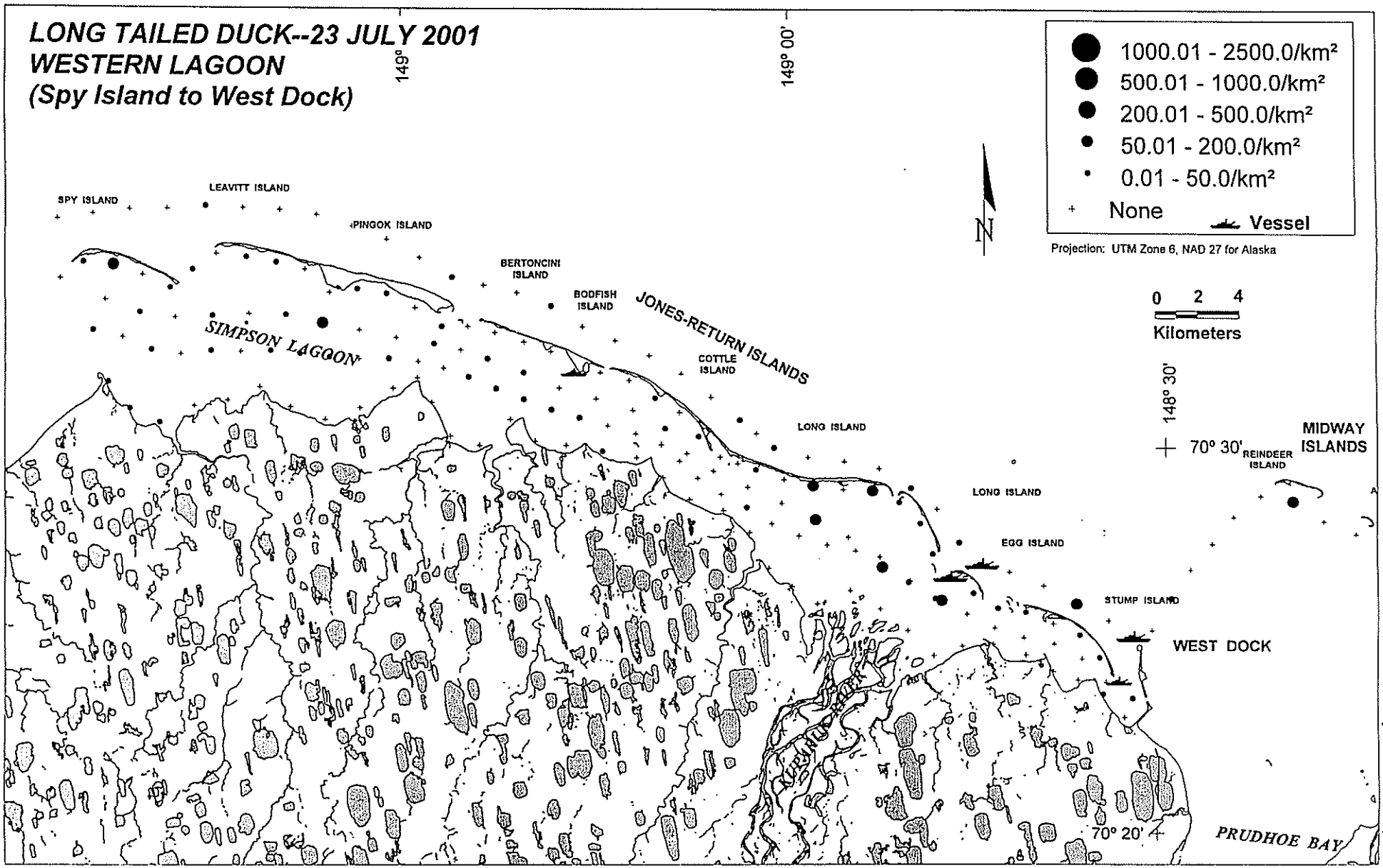

Figure B1. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July 2001.

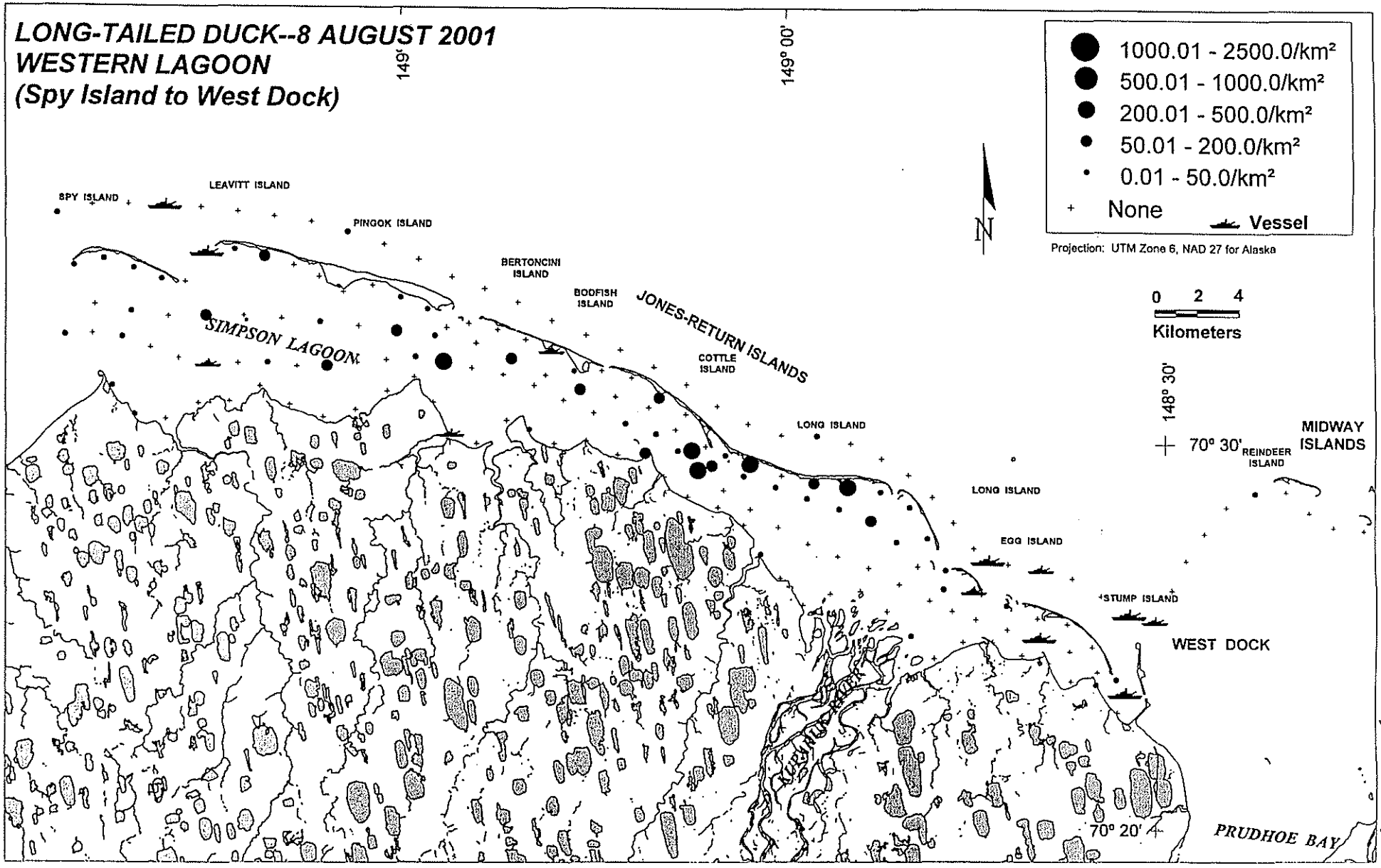

Figure B2. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 8 August 2001.

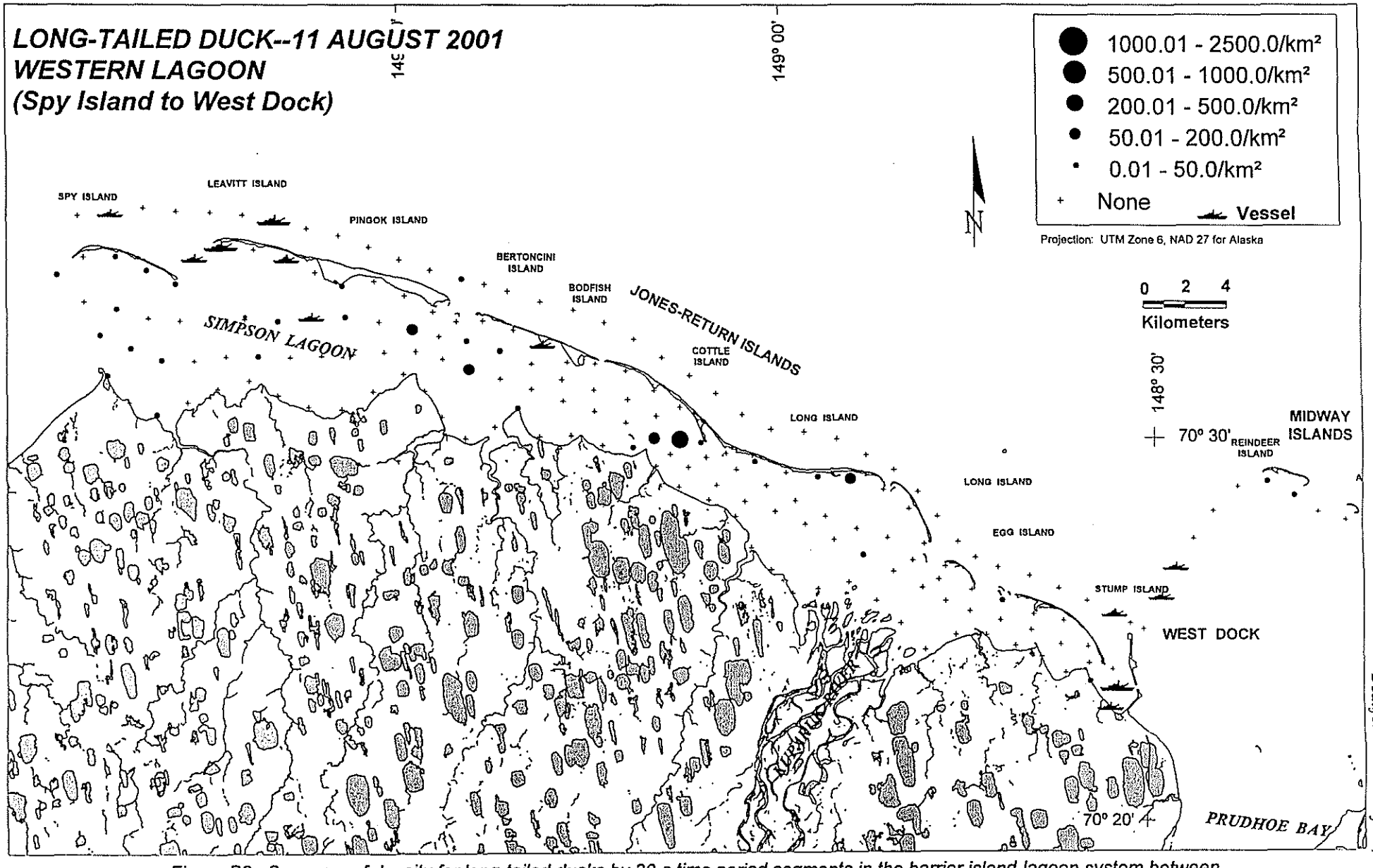

Figure B3. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 11 August 2001.

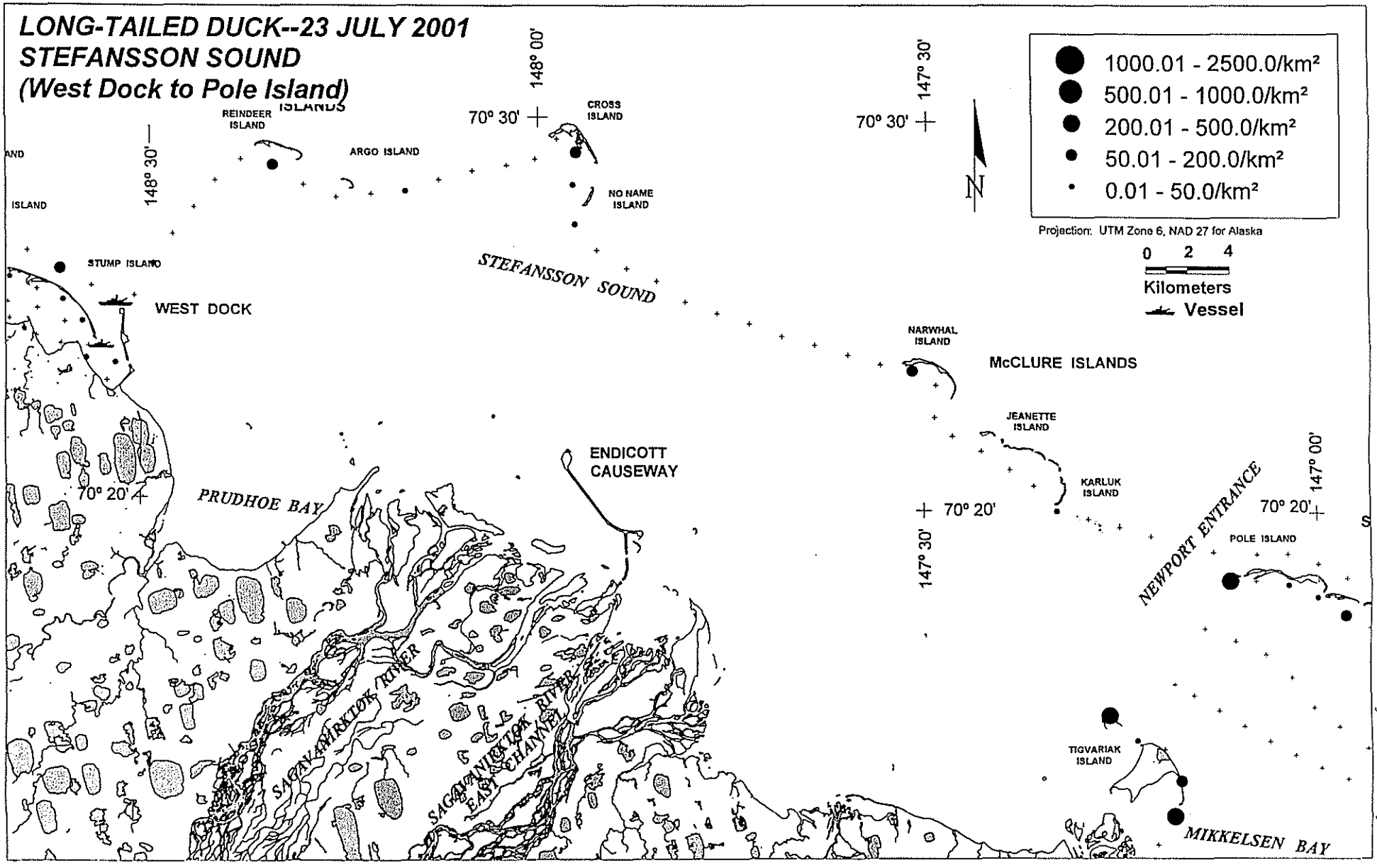

Figure B4. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July 2001.

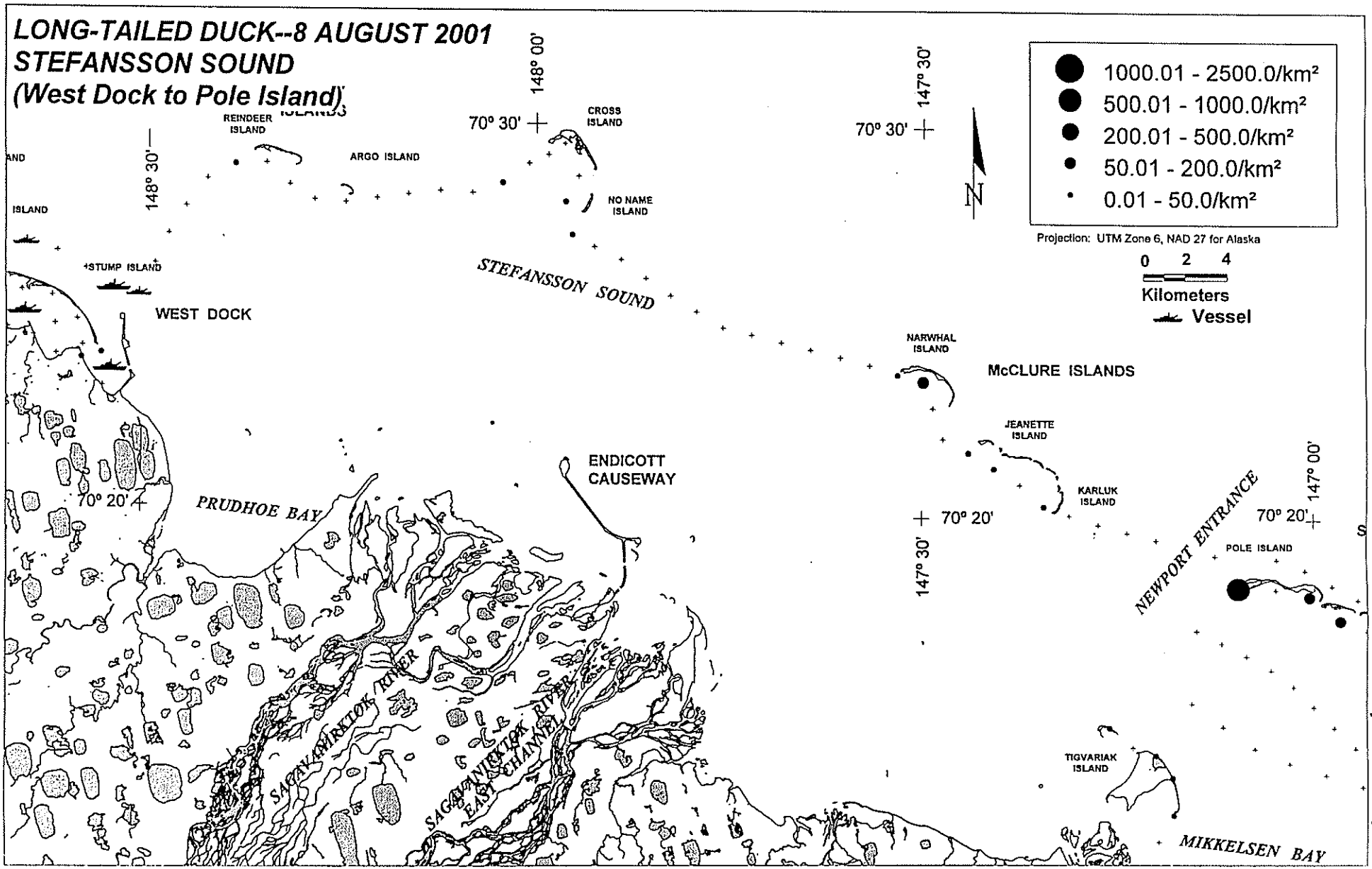

Figure B5. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 8 August 2001.

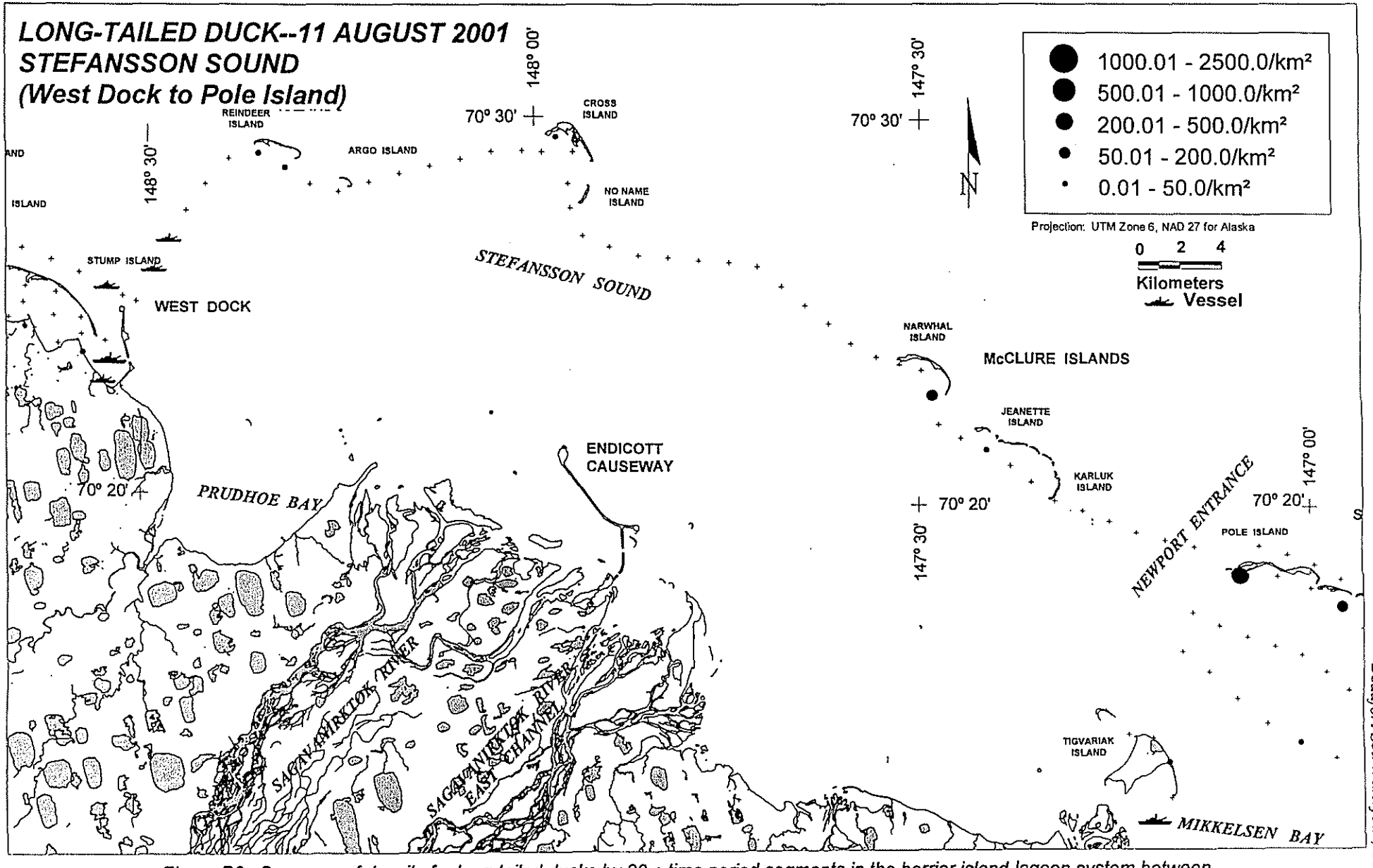

Figure B6. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 11 August 2001.

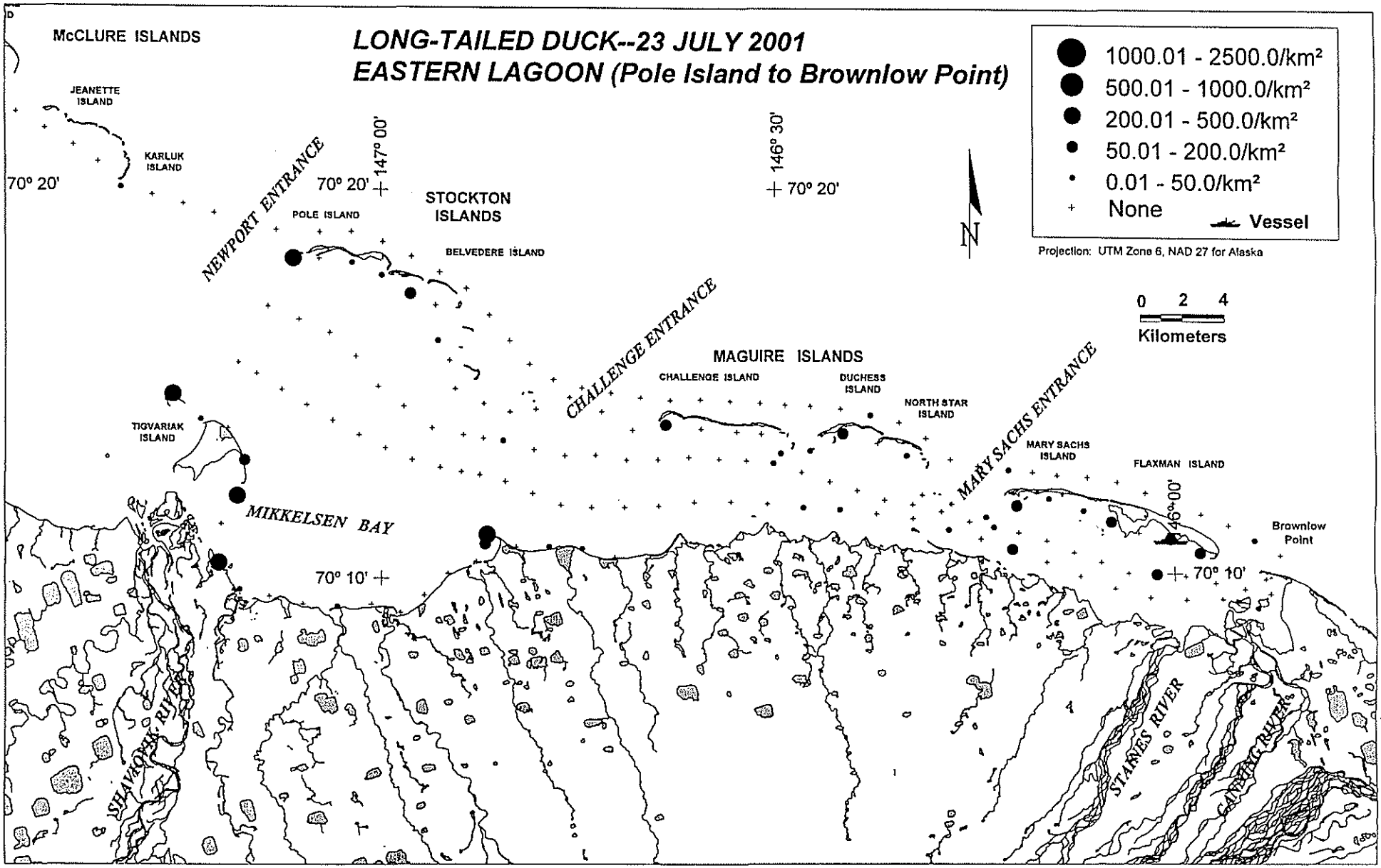

Figure B7. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July 2001.

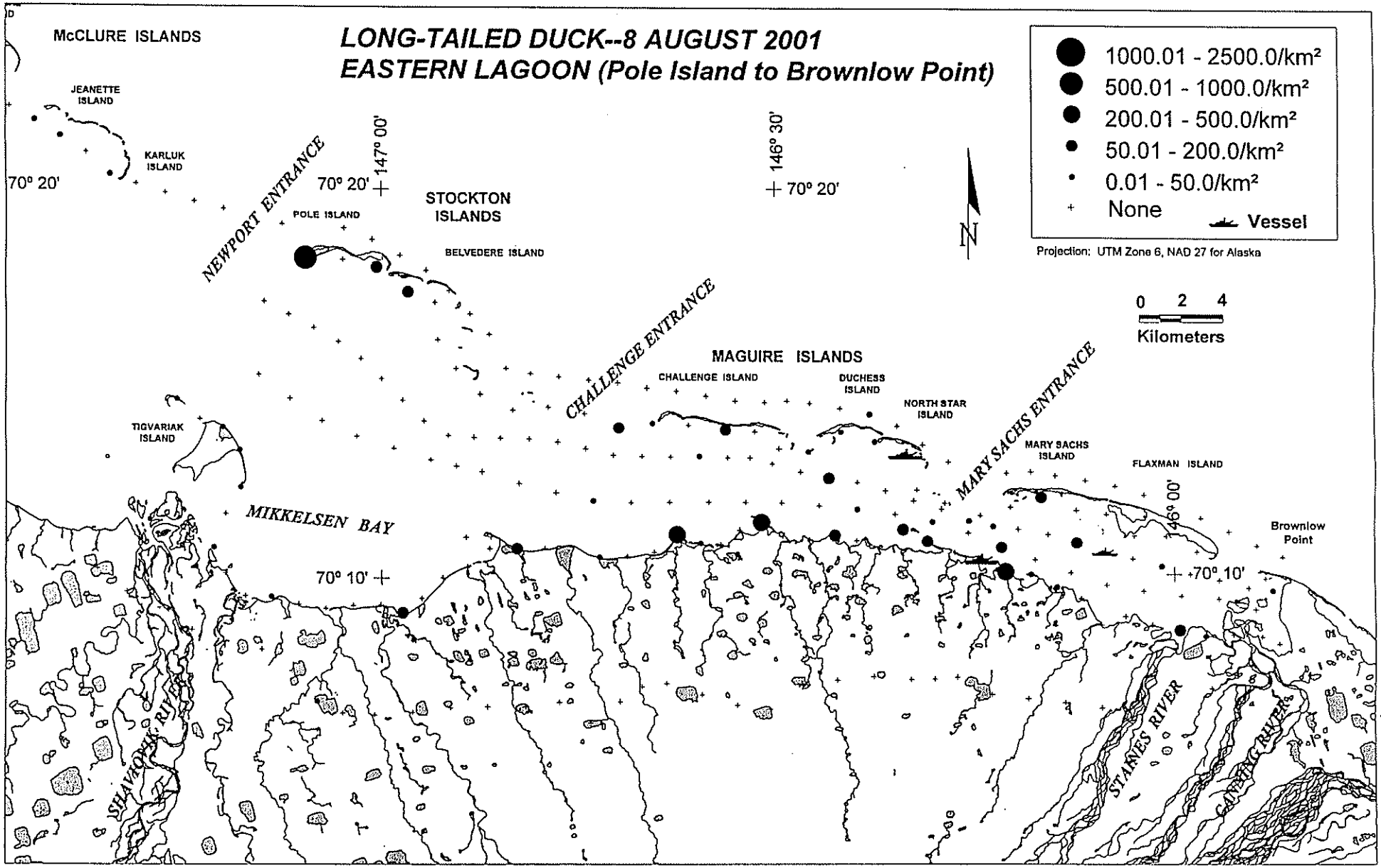

Figure B8. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 8 August 2001.

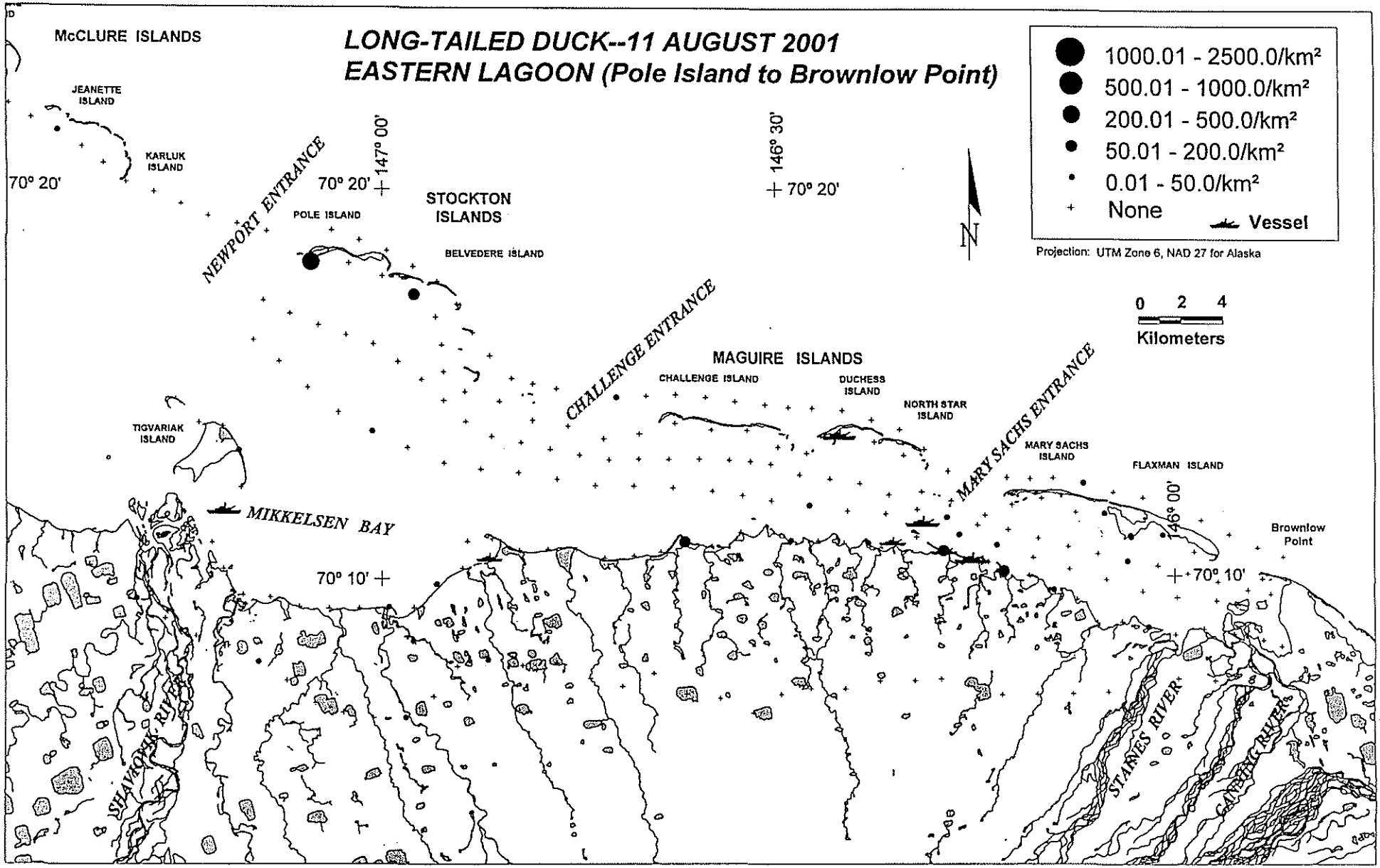

Figure B9. Summary of density for long-tailed ducks by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 11 August 2001.

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.

	Survey Year															
Category*	1977	1978	1979	1980	1981	1982	1983	1984	1989	1990	1991	1998	1999	2000	2001	All Years
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	Overall Study Area*			Barrier Island Transect Nos. and Areas Sampled (km²)										Non-barrier Island Transect Nos. and Areas Sampled (km²)									
Transect Number	Total Area (km²)	Total No.	Overall Dens.	23	31	201	202	130	131	132	133	134	135	136	10	11	12	13	19	20	21	22	24	25
Transect Area	On-transect	On-transect	No. km²	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	546.13	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	63.96	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	237.65	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	1.36	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	8867	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	
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	
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	
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	19097	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	33.65	264.08	612.91	872.20				532.07	556.61	1146.48	1416.08								0.00	3.18	1.25
4 Aug.90	168.28	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	431.85	348.73									22.73	0.00
16 Aug.90	72.28	6657	92.10	26.11	249.30	671.60	18.09																4.09	0.00
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	262.26								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	2.71
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	3.75
18 Jul.91	73.42	3759	51.20	17.70	104.05	170.75	238.98																2.05	0.00
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	0.00
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	0.21
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	0.00
4 Aug.91	115.60	8670	75.00	90.27	91.73	98.23	136.68				97.37	113.64	115.00	63.54									7.05	2.08
10 Aug.91	115.60	6628	57.34	25.44	28.35	109.91	88.82				131.58	36.16	73.33	39.01									1.36	1.46
14 Aug.91	139.00	6883	49.52	21.90	144.19	166.98	162.83				87.17	46.69	35.19	30.00									9.32	3.13
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	50.36	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	248.79	142.12								0.80	1.52	0.00
1 Aug.99	186.36	14051	75.40	4.81	103.30	114.68	113.32	3.40	70.58	70.39	190.07	106.71	351.03	206.86								10.17	0.24	0.00
4-Aug-99																			2.13	17.80	0.00			
5 Aug. 99	186.36	10406	55.84	10.58	63.83	9.11	96.72	15.70	80.71	56.25	21.38	214.17	224.50	17.45								0.00	0.00	0.00
11 Aug. 99	95.36	6732	70.60	131.38	267.43	204.19	310.88												31.65	0.00	0.00	56.82	1.46	7.48
26 Aug. 99	186.36	3887	20.86	0.00	24.51	23.42	5.94	4.92	87.11	121.59	97.60	68.25	42.04	57.05								0.00	4.08	1.67
1 Aug. 00	186.36	8514	45.69	5.28	67.02	20.20	69.50	8.33	10.53	5.23	151.67	128.88	105.34	38.78								0.00	5.00	0.00
8 Aug. 00	186.36	15888	85.25	8.33	416.73	102.86	205.96				152.00	149.81	117.32	228.08					35.95	98.08	0.00	0.60	0.00	0.00
12 Aug. 00	186.36	5378	28.86	16.24	66.72	11.02	27.32				50.96	70.47	39.63	131.46					3.77	0.00	11.52	0.62	12.98	1.94
14 Aug. 00	95.36	2300	24.12	7.43	109.09	30.36	73.33	1.71	37.55	23.49												1.49	6.37	1.60
24 Aug. 00	186.36	3854	20.68	1.02	84.46	83.37	67.00	5.71	42.60	15.10	13.85	15.87	13.99	65.17								1.52	0.48	3.26
23 Jul.01	175.60	6697	38.14	15.50	124.44	41.25	34.18	9.32	43.01	11.31	133.22	49.80	42.19	95.92								24.06	3.29	0.44
8 Aug.01	186.36	9283	49.81	21.36	218.39	36.84	27.04	2.05	12.66	15.53	211.25	56.65	5.87	28.08								0.00	0.72	6.53
11 Aug.01	186.36	1906	10.23	1.25	34.79	4.13	0.97	4.27	3.11	32.61	68.35	0.00	0.00	10.78								1.58	0.00	2.16
n =	76	76	76	64	57	70	69	10	10	10	47	47	47	46	3	3	3	3	4	4	4	36	63	44
Mean =	116.67	12597.12	118.86	99.65	306.83	270.93	216.01	8.92	43.11	40.57	252.69	192.22	250.37	394.91	0.07	1.43	0.00	0.00	18.38	28.97	2.88	20.09	36.60	15.73
s.d. =	49.12	10554.09	120.51	231.03	476.33	400.35	301.39	9.67	29.30	35.93	256.28	304.37	287.09	461.11	0.12	1.28	0.00	0.00	17.91	46.83	5.76	37.67	184.84	77.42
c.v. =	0.42	0.84	1.01	2.32	1.55	1.48	1.40	1.08	0.68	0.89	1.01	1.58	1.15	1.17	1.73	0.90			0.97	1.62	2.00	1.87	5.05	4.92

*Overall study area includes eastern and western lagoon transects only

Table B2. Continued.

Survey Date	Non-barrier Island Transect Nos. and Areas Sampled (km²)																										
Transect Number	30	32	33	50	51	52	53	60	61	62	63	101	102	301	302	401	402	180	181	182	183	184	190	191	192	193	601
Transect Area	5.00	5.72	7.52	4.72	4.24	4.28	5.64	5.76	4.44	4.52	5.36	8.44	6.00	6.92	5.24	7.28	5.64	5.68	4.24	5.16	5.64		6.28	4.48	7.00	9.84	4.24
5 Jun.77												0.00	0.00	0.00	0.00	0.00	2.13										
20 Jun.77												0.00	0.00	0.00	0.00	0.82	2.84										
5 Jul.77												0.12	5.00	4.91	0.38	119.23	44.68										
28-29 Jul.77												0.12	6.67	72.25	1505.73	1550.55	2741.41										
15 Aug.77																1124.73	35.46										
30 Aug.77												5.45	0.17	143.35	244.06	428.57	71.63										
22 Sep.77												5.21	0.83	626.45	1458.78	276.53	1334.04										
23 Jun.78		1.05										0.00	0.00	0.00	0.00	0.41	0.00										
5 Jul.78		11.71										0.24	0.00	3.90	7.44	3.43	0.53	24.47	107.78	0.00	0.00						
15 Jul.78		6.47										2.96	1.67	14.74	72.14	29.69	111.03										
25 Jul.78		3.50										18.26	2.17	82.80	62.02	28.43	7.09	4.40	11.79	0.00	0.00						
5-6 Aug.78		8.04										0.36	0.53	53.76	75.76	11.40	0.00	183.10	117.62	0.00	0.00						
15 Aug.78		14.86										0.00	0.00	4.77	10.58	0.00	0.00										
25 Aug.78		54.37										52.37	45.33	24.86	45.42	0.00	1.77	1.07	0.00	0.00	0.00						
5-6 Sep.78		38.64										23.70	14.50	11.13	14.12	0.14	0.00	309.15	1354.01	206.59	18.97						
15 Sep.78												163.15	229.50	33.24	25.57	2.06	13.65										
23 Sep.78		29.10										2.61	0.00	369.36	56.30	157.69	114.54	438.03	79.01	0.00	152.30						
22 Jun.79		2.62										0.00	0.00	0.00	0.00	0.00	0.53										
28 Jul.79		4.55										0.00	9.43	131.21	138.45	41.48	17.73	18.84	104.01	23.26	0.00						
31 Aug.-1 Sep.79												6.57	45.83	98.70	640.29	0.00	0.00										
22 Sep.79		21.50										19.79	9.50	5.76	0.57	76.10	162.59										
2 Aug.80		71.68										0.00	0.00	250.87	61.83	134.71	213.48	0.00	16.98	0.00	0.00						
18 Jul.81												107.94	0.00	53.28	26.39	9.75	8.76										
29 Jul.81												0.00	0.17	129.48	177.67	0.00	0.35										
2 Aug.81		122.03										0.00	0.00	51.16	233.59	37.23	27.66	32.22	20.05	0.00	0.00						
12 Aug.81												0.00	0.00	7.37	8.87	0.27	4.79										
29 Aug.81												8.06	0.33	15.32	8.02	0.00	0.00										
11 Sep.81												71.56	18.00	194.87	20.42	0.69	1.24										
18 Jul.82	2.40	73.43	2.66									0.12	0.00	12.86	55.34	5.91	9.04										
31 Jul.82												0.12	0.00	386.99	193.51	22.80	11.70										
14 Aug.82												1.18	0.00	28.12	0.38	0.00	0.00										
28 Aug.82	8.00	7.69	19.95									10.31	1.50	58.09	94.03	0.00	0.00										
23 Sep.82	0.20	47.90	419.68									8.53	0.00	254.77	197.90	17.17	73.58										
29 Jul.83																											
8 Aug.84	12.00	70.28	0.00									7.94	0.00	209.54	387.60	0.00	0.00	101.76	227.19	113.37	7.80						
6 Aug.89	0.00	10.49		3.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	276.01	318.70			0.00	0.00	322.29	0.00						
8 Aug.89	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.48	0.57			4.40	23.58	23.45	0.00						
9 Aug.89	1.41	0.00		0.00	7.08	5.79	0.00	0.00	0.00	0.00	0.00	0.00	0.33	14.45	0.57			0.00	0.00	211.24	39.01						
18 Jul.90	1.81	24.65	0.00					36.89	41.52	0.00	0.00	8.29	0.00	227.75	26.72	7.28	0.00	62.68	195.52	34.88	0.00		490.03	372.32	165.29	63.62	
20 Jul.90	9.68	15.56	1.20					0.35	1.56	0.22	0.56	18.84	0.00	147.40	83.21	7.01	0.00	144.72	66.75	34.30	21.28		200.32	242.63	160.14	77.95	
23 Jul.90	0.00	15.03	0.00					0.00	2.23	0.00	0.00	0.59	0.00	59.39	17.75	2.47	0.35	22.18	2.36	0.19	2.66		387.64	452.46	216.57	53.25	
3 Aug.90	0.00	123.95	1.06					0.00	0.00	0.00	0.00	13.63	2.50	130.64	26.72	0.00	4.26	67.61	54.25	4.84	0.00		187.03	802.23	153.00	100.00	
4 Aug.90	0.00	156.99	0.00									0.00	0.00	112.86	34.35	0.96	0.00	13.20	29.25	26.74	2.66		319.30	277.01	150.57	32.01	
9 Aug.90		54.55	1.20											59.97	58.30	0.14	0.18	31.16	41.04	14.15	0.00		36.23	189.06	56.00	25.91	
16 Aug.90		0.17	0.27											7.23	4.39	2.61	0.00										
20 Aug.90	3.23	14.16	2.93					0.00	0.00	2.21	0.00	4.27	0.00	19.51	222.14	4.95	1.06	0.35	0.00	27.52	0.00		45.09	406.92	234.43	2.13	
2 Sep.90	0.00	0.52	14.10					0.00	0.22	0.00	0.00	0.00	0.00	15.46	1.34	69.00	0.18	44.54	13.21	0.97	1.95		18.20	40.85	35.00	4.27	
4 Sep.90		7.52	5.98											19.94	8.11	0.00	0.35	37.32	8.02	237.21	3.72		24.21	71.65	31.00	5.16	
5 Sep.90		0.00	14.63											1.59	3.24	1.10	0.53	0.00	0.47	62.02	192.73		3.01	140.40	48.86	20.83	
18 Jul.91		1.22	0.13											12.43	5.73	5.22	2.84										
19 Jul.91		15.03	4.65											22.40	12.80	7.42	0.18	23.06	7.55	6.78	0.00		45.70	108.04	23.29	4.57	
20 Jul.91		25.00	14.36											30.35	15.46	11.40	4.96	5.11	7.78	4.84	0.35		11.78	70.76	33.00	8.84	
22 Jul.91		33.22	0.66											27.89	10.69	19.23	0.18	66.90	63.44	116.67	0.00		67.20	101.34	30.71	50.61	
4 Aug.91		41.96	13.96											76.59	86.26	16.48	13.48	36.44	34.67	61.24	0.35		49.52	78.13	83.14	44.31	
10 Aug.91		144.58	10.24											69.94	10.31	13.32	1.77	30.11	16.04	67.44	0.53		39.65	94.64	38.43	17.28	
14 Aug.91		55.94	0.00						4.50	0.00	0.00	0.59	0.00	41.47	16.41	2.34	14.18	0.00	28.30	75.39	0.00		101.43	10.71	65.71	5.89	
16 Aug.91	0.60	36.89	1.33					23.44	65.99	23.23	1.31	0.47	1.67	138.87	147.52	1.92	0.00	35.21	23.35	83.72	0.18		19.90	9.60	9.71	8.94	
21 Aug.91	17.20	17.48	1.73					9.20	4.50	11.06	30.22	0.47	10.33	217.77	9.16	3.57	0.18	10.21	30.66	46.32	0.00		10.19	33.26	2.86	2.44	
5 Aug. 98																		8.09	9.11	0.00	0.00		122.97	87.41	85.03	0.57	
14 Aug. 98																		17.36	0.00	0.00	0.00		173.15	333.93	200.89	20.77	
16 Aug.98																		20.50	1.00	1.35	0.00		157.93	298.29	211.57	51.53	
31 Aug.98																		0.68	1.88	30.43	0.00		4.69	28.37	35.29	17.03	
3 Sept.98																		8.78	61.67	401.55	1.89		36.88	118.79	87.89	33.67	
30 Jul.99	0.00	40.77	0.00					0.00	1.60	0.00	0.00	0.00	2.52	149.29	78.64	0.00	0.00	79.28	28.39	0.38	0.21		241.72	291.43	311.13	303.13	57.55
1 Aug.99	10.26	217.11	0.28					10.50	10.83	6.20	0.00	0.00	3.47	102.47	51.41	3.99	0.00	82.92	46.22	0.19	0.00		101.88	115.58	145.98	134.51	277.65
4-Aug-99																						0.00					
5 Aug. 99	0.00	0.00	1.85					0.97	0.58	0.21	1.12	0.23	0.86	43.85	32.28	0.00	0.00	136.89	6.25	0.00	0.00		176.11	223.63	242.44	102.86	39.03
11 Aug. 99	3.57	2.61	0.00									0.00	0.00	83.88	0.21	20.65	0.00					21.33					3.92
26 Aug. 99	0.00	29.82	0.00					14.36	0.00	8.01	0.00	0.38	1.61	19.07	101.19	9.27	0.00	2.87	59.90	34.96	0.00		18.79	10.08	24.21	5.88	103.80
1 Aug. 00	0.00	4.11	0.00					0.00	0.00	0.00	0.00	0.00	0.00	28.57	108.91	0.70	0.00	70.38	0.60	58.14	0.00		147.78	133.66	164.47	68.75	119.97
8 Aug. 00	0.00	163.40	0.00					0.00	0.00	0.80	0.36	0.00	0.00	58.76	35.83	14.48	17.24	40.11	0.62	0.48	0.00	0.00	160.69	304.03	95.24	235.75	248.32
12 Aug. 00	7.22	18.35	9.71					0.00	0.39	0.68	0.00	3.54	4.90	33.33	97.90	3.46	10.99	11.52	20.90	49.62	0.21	1.82	65.15	31.72	69.16	45.13	137.25
14 Aug. 00	0.00	10.62	10.11									0.00	0.00	20.28	67.36	17.57	20.89										73.32
24 Aug. 00	13.08	3.27	0.00					0.00	0.20	11.59	4.01	5.20	0.00	32.40	7.20	4.01	15.24	3.21	5.40	5.88	0.00		12.12	54.40	37.63	27.05	5.00
23 Jul.01	7.46	32.57	0.00					4.88	9.00	0.00	0.00	2.87	3.15	27.92	28.48	3.69	0.71	35.48	9.96	0.00	0.00				118.75	206.34	55.21
8 Aug.01	0.38	68.18	0.53					0.00	0.20	0.00	0.00	2.75	0.00	45.08	182.79	9.39	45.18	20.95	5.20	7.96	0.00		133.59	235.64	123.63	44.35	91.03
11 Aug.01	0.00	0.84	0.00					11.54	0.00	0.61	0.00	0.12	0.00	9.04	34.76	6.93	6.08	3.08	8.61	0.00	0.20		25.31	34.20	42.11	9.09	0.00
4	29	54	37	3	3	3	3	22	23	23	23	59	59	89	69	67	67	47	47	47	47	4	33	33	34	34	13
Mean =	3.40	36.59	14.95	1.06	2.36	1.93	0.00	5.10	6.23	2.82	1.63	9.81	7.16	84.02	112.45	64.93	77.21	48.73	62.73	50.99	9.51	5.79	110.16	175.86	103.92	53.96	93.23
s.d. =	4.93	48.19	68.61	1.84	4.09	3.34	0.00	9.51	15.72	5.73	6.29	27.18	30.73	109.84	261.17	237.51	369.52	61.56	198.43	87.64	35.67	10.40	116.59	169.15	79.61	70.50	87.24
c.v. =	1.45	1.32	4.59	1.73	1.73	1.73		1.87	2.52	2.03	3.85	2.77	4.29	1.31	2.32	3.66	4.79	1.67	3.16	1.72	3.75	1.80	1.06	0.96	0.77	1.31	0.94

Table B2. Continued.

Survey Date							Tundra Transect Nos. and Areas Sampled (km²)			
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										
5-6 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	116.21	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.[illegible]	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	4.46	0.00	0.00	0.92	8.15
3	13	13	11	11	11	11	15	15	15	15
Mean =	46.17	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	sdate	loc_alfa	obs_no	position	visibil	assoc	species_cd	species	no_individ	gr_type	behaviour	a_habitat	g_habitat	on_or_off	time_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	3	04	99	10	11	0	6	0	0	0	0	0	0			SEVERAL PEOPLE AT C
P598	456	12	23	7/23/2001	001	LN	FR	1		8000	HUMAN	2	04	23	14	11	0	7	0	0	0	0	0	0			2 CONNEX'S
P598	479	13	31	7/23/2001	001	LN	FR	1		8000	HUMAN	1	01	99	14	11	0	1	0	0	0	0	0	0			ONE CONNEX
P598	551	14	202	7/23/2001	001	LN	FR	1		8000	HUMAN	1	01	99	14	11	1	7	0	0	0	0	0	0			CAMP W/BUNCH OF TEN
P598	1780	44	25	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	3	0	0	0	0	0	0		135743	NORTHSTAR PIPELINE
P598	1793	44	25	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	07	15	27	0	7	0	0	0	0	0	0		135953	FYKE NET
P598	2188	53	31	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	0	5	0	0	0	0	0	0		144435	NET-CAPTURE-USGSBRD
P598	2239	54	202	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	0	1	0	0	0	0	0	0		144647	NET-CAPTURE-USGSBRD
P598	2243	54	202	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	2	0	0	0	0	0	0		144729	TOWER W/BLIND?
P598	2247	54	202	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	3	0	0	0	0	0	0		144755	TOWER W/BLIND?
P598	2254	54	202	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	7	0	0	0	0	0	0		144940	USGSBRD CAMP, 6-8 T
P598	2255	54	202	8/8/2001	001	LN	RF	1	1	8000	HUMAN	6	04	15	15	11	0	7	0	0	0	0	0	0		144953	6 PEOPLE & BOAT SET
P598	2320	55	201	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	10	0	0	0	0	0	0		145648	TOWER-TELEMETRY
P598	2421	57	102	8/8/2001	001	LN	RF	1		8000	HUMAN	1	01	15	08	13	1	3	0	0	0	0	0	0		150758	DOT BRD CAMP (OFF)
P598	3617	90	25	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	3	0	0	0	0	0	0		140026	NORTHSTAR PIPELINE
P598	3628	90	25	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	7	0	0	0	0	0	0		140245	FYKE NET
P598	3896	99	31	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	1	0	0	0	0	0	0			BOXES AND ORANGE CO
P598	3898	99	31	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	2	0001	0	0	0	0	0			FISH BOX AT END OF
P598	3911	99	31	8/11/2001	001	LN	RF	1		8000	HUMAN	2	04	15	15	11	0	5	0	0	0	0	0	0			TELEMETRY TOWER & C
P598	3919	99	31	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	8	0	0	0	0	0	0		144755	TELEMETRY TOWER W/T
P598	3941	100	202	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	1	0	0	0	0	0	0		144920	TELEMETRY ANTENNA
P598	3943	100	202	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	2	0	0	0	0	0	0		144948	ANTENNA WITH BLIND
P598	3954	100	202	8/11/2001	001	LN	RF	1		8000	HUMAN	2	04	15	15	11	1	8	0	0	0	0	0	0			USGSBRD CAMP, 2 PEO
P598	3985	101	201	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	5	0	0	0	0	0	0		145533	TELEMETRY ANTENNA
P598	4004	101	201	8/11/2001	001	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	10	0	0	0	0	0	0		145808	TELEMETRY ANTENNA
P598	1084	27	136	7/23/2001	003	LN	FR	1		8000	HUMAN	1	01	15	15	11	1	2	0	0	0	0	0	0			BRD CAMP ON FLAXMAN
P598	1092	27	136	7/23/2001	003	LN	FR	1		8000	HUMAN	1	01	15	15	11	0	4	0	0	0	0	0	0		165013	CAMP
P598	1097	27	136	7/23/2001	003	LN	FR	1		8000	HUMAN	2	04	21	11	11	0	7	0	0	0	0	0	0			
P598	1547	39	193	7/23/2001	003	LN	FR	1		8000	HUMAN	1	01	99	15	27	1	10	0	0	0	0	0	0			BADAMI CAMP
P598	2708	65	61	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	08	13	1	4	0	0	0	0	0	0		164755	MONITORING STATION
P598	2710	65	61	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	08	13	1	8	0	0	0	0	0	0		164807	ANOTHER ANTENNA
P598	2739	66	60	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	08	13	1	4	0	0	0	0	0	0			USGS BRD CAMP
P598	2740	66	60	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	08	13	1	7	0	0	0	0	0	0			TELEMETRY TOWER E E
P598	2794	68	135	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	8	0	0	0	0	0	0		170248	MONITORING STATION
P598	3276	81	191	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	5	0	0	0	0	0	0		180647	MONITORING STATION
P598	3280	81	191	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	6	0	0	0	0	0	0		180731	FYKE NET
P598	3295	81	191	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	9	0	0	0	0	0	0			FYKE NET IN MAINLAN
P598	3330	82	190	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	1	0	0	0	0	0	0		181019	FYKE NET
P598	3336	82	190	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	3	0	0	0	0	0	0		181115	FYKE NET
P598	3342	82	190	8/8/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	8	0	0	0	0	0	0		181238	RADIO ANTENNA
P598	4402	113	136	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	3	0	0	0	0	0	0		165401	TELEMETRY TOWER W/B
P598	4406	113	136	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	11	1	5	0	0	0	0	0	0		165501	TELEMETRY STATION W
P598	4414	113	136	8/11/2001	003	LN	RF	1		8000	HUMAN	10	04	15	15	11	1	4	0	0	0	0	0	0			CAMP W/10 TENTS, CL
P598	4562	119	606	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	09	09	1	8	0	0	0	0	0	0		172308	PT THOMSON FISH CAM
P598	4727	125	193	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	13	0	0	0	0	0	0		175126	BADAMI DOCK-NO ACTI
P598	4759	126	192	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	2	0	0	0	0	0	0		175331	FYKE NET
P598	4807	127	191	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	4	0	0	0	0	0	0			TELEMETRY TOWER W/T
P598	4811	127	191	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	6	0	0	0	0	0	0		180155	FYKE NET
P598	4818	127	191	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	9	0	0	0	0	0	0		180321	FYKE NET IN LAGOON
P598	4823	127	191	8/11/2001	003	LN	RF	1		8000	HUMAN	2	04	22	15	27	0	10	0	0	0	0	0	0		180352	2 PEOPLE WALK SHORE
P598	4846	128	190	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	1	0	0	0	0	0	0		180440	FYKE NET
P598	4850	128	190	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	0	3	0	0	0	0	0	0		180537	FYKE NET
P598	4854	128	190	8/11/2001	003	LN	RF	1		8000	HUMAN	1	01	15	15	27	1	6	0	0	0	0	0	0		180659	TELEMETRY TOWER W/B
P598	478	13	31	7/23/2001	001	LN	FR	1		8001	BOAT	1	01	99	15	11	0	1	0	0	0	0	0	0			
P598	482	13	31	7/23/2001	001	LN	FR	1		8001	BOAT	1	01	02	15	11	0	1	0	0	0	0	0	0			
P598	562	14	202	7/23/2001	001	LN	FR	1		8001	BOAT	1	01	02	14	11	0	7	0	0	0	0	0	0			ANCHORED ZODIAC
P598	791	18	30	7/23/2001	001	LN	FR	1		8001	BOAT	1	01	21	08	13	0	8	0	0	0	0	0	0		150915	RUNNING THROUGH BAR
P598	1692	42	402	8/8/2001	001	LN	RF	1		8001	BOAT	1	01	07	15	27	1	2	0	0	0	0	0	0	1	134706	BOAT WAKE, USFWS BO
P598	1714	42	402	8/8/2001	001	RR	LR	1		8001	BOAT	1	01	07	15	27	0	2	0	0	0	0	0	0		134700	SMALL MOTOR BOAT MO
P598	2256	54	202	8/8/2001	001	LN	RF	1	1	8001	BOAT	1	01	07	15	11	0	7	0	0	0	0	0	0		144953	
P598	2472	58	30	8/8/2001	001	RR	LR	1		8001	BOAT	2	04	07	08	13	0	9	0	0	0	0	0	0			1 DORY, 1 ZODIAK &
P598	2478	59	22	8/8/2001	001	LN	RF	1		8001	BOAT	1	01	07	05	13	1	2	0	0	0	0	0	0			
P598	3629	90	25	8/11/2001	001	LN	RF	1		8001	BOAT	1	01	07	15	27	0	7	0	0	0	0	0	0			
P598	3647	91	24	8/11/2001	001	LN	RF	1		8001	BOAT	1	01	07	09	09	0	1	0	0	0	0	0	0			BOAT OUT FROM BARGE
P598	3789	95	603	8/11/2001	001	LN	RF	1		8001	BOAT	1	01	07	09	09	1	8	0	0	0	0	0	0			BRD CREW OUT WITH B

Table B3. Continued.

proj_code	record	trans_cd	trans_no	sdate	loc_site	obs_no	position	visibil	assoc	species_cd	species	no_individ	qr_type	behaviour	a_habitat	g_habitat	on_or_off	time_per	adults	sub_adults	yg_of_yr	males	females	ice	repeat	time	remarks
P598	3956	100	202	8/11/2001	001	LN	RF	1		8001	BOAT	1	01	15	15	11	0	7	0	0	0	0	0	0		145139	NET AND BOAT AT TRA
P598	1106	27	136	7/23/2001	003	LN	FR	1		8001	BOAT	1	01	07	15	11	0	4	0	0	0	0	0	0		165013	BOAT ANCHORED ON SH
P598	2786	68	135	8/8/2001	003	LN	RF	1		8001	BOAT	1	01	15	15	11	0	4	0	0	0	0	0	0			ZODIAK AT MONITORIN
P598	3024	74	607	8/8/2001	003	RR	LR	1		8001	BOAT	1	01	07	09	09	0	4	0	0	0	0	0	0		172855	SMALL BOAT W/3 PEOP
P598	3298	81	191	8/8/2001	003	LN	RF	1		8001	BOAT	2	04	07	15	27	0	11	0	0	0	0	0	0			ZODIAKS ANCHORED
P598	4434	114	135	8/11/2001	003	LN	RF	1		8001	BOAT	1	01	15	15	11	0	4	0	0	0	0	0	0		165912	TELEMETRY WITH BOAT
P598	4437	114	135	8/11/2001	003	LN	RF	1		8001	BOAT	1	01	15	15	11	0	6	0	0	0	0	0	0		170001	TELEMETRY TOWER WIT
P598	4710	125	193	8/11/2001	003	LN	RF	1		8001	BOAT	2	04	07	15	11	0	6	0	0	0	0	0	0		174808	2 AIRBOATS ALONG SH
P598	4813	127	191	8/11/2001	003	LN	RF	1		8001	BOAT	1	01	07	15	27	1	7	0	0	0	0	0	0			OFFSHORE AT PT THOM
P598	4824	127	191	8/11/2001	003	LN	RF	1		8001	BOAT	2	04	15	15	27	0	10	0	0	0	0	0	0			2 ZODIAKS ON BEACH
P598	4836	127	191	8/11/2001	003	PJ	LR	1		8001	BOAT	1	01	99	15	27	1	9	0	0	0	0	0	0			
P598	814	19	22	7/23/2001	001	LN	FR	1		8002	MBOAT	2	04	23	08	13	0	5	0	0	0	0	0	0			ALASKA CLEAN SEAS
P598	815	19	22	7/23/2001	001	LN	FR	1		8002	MBOAT	2	04	21	08	13	0	5	0	0	0	0	0	0			
P598	1806	45	24	8/8/2001	001	LN	RF	1		8002	MBOAT	4	04	07	09	09	0	1	0	0	0	0	0	0			2 BOOM BARGES, 2 BA
P598	2480	59	22	8/8/2001	001	LN	RF	1		8002	MBOAT	1	01	07	08	13	0	3	0	0	0	0	0	0		151613	SPEEDY TUG
P598	2489	59	22	8/8/2001	001	RR	LR	1		8002	MBOAT	5	04	07	08	13	0	5	0	0	0	0	0	0			3 BOATS AT BARGE, B
P598	4638	122	181	8/11/2001	003	LN	RF	1		8002	MBOAT	1	01	07	09	09	1	2	0	0	0	0	0	0			HEADED OUT THROUGH
P598	4761	126	192	8/11/2001	003	LN	RF	1		8002	MBOAT	1	01	07	15	27	0	3	0	0	0	0	0	0		175405	BOAT PULLING IN TO
P598	4768	126	192	8/11/2001	003	LN	RF	1		8002	MBOAT	1	01	07	15	27	0	5	0	0	0	0	0	0	1	175508	BOAT ABOVE-CROSSED
P598	816	19	22	7/23/2001	001	LN	FR	1		8003	SEISMC	1	01	21	08	13	0	5	0	0	0	0	0	0			
P598	1811	45	24	8/8/2001	001	LN	RF	1		8003	SEISMC	3	04	07	09	09	0	4	0	0	0	0	0	0			1 SEISMIC BARGE, 2
P598	1928	48	301	8/8/2001	001	LN	RF	1		8003	SEISMC	1	01	07	09	09	1	8	0	0	0	0	0	0			
P598	2148	52	23	8/8/2001	001	LN	RF	1		8003	SEISMC	1	01	07	15	11	1	6	0	0	0	0	0	0			N OF ISLAND
P598	2317	55	201	8/8/2001	001	LN	RF	1		8003	SEISMC	3	04	07	15	11	1	9	0	0	0	0	0	0		145559	SEISMIC SOURCE BOAT
P598	2383	56	101	8/8/2001	001	LN	RF	1		8003	SEISMC	3	04	07	08	13	0	4	0	0	0	0	0	0		150210	
P598	2401	56	101	8/8/2001	001	RR	LR	1		8003	SEISMC	1	01	07	08	13	1	4	0	0	0	0	0	0	1		MOVING WEST
P598	2403	56	101	8/8/2001	001	RR	LR	1		8003	SEISMC	1	01	07	08	13	1	5	0	0	0	0	0	0	1		WESTERN ENDEAVOR
P598	3990	101	201	8/11/2001	001	LN	RF	1		8003	SEISMC	1	01	07	15	11	1	6	0	0	0	0	0	0			OFF SHORE TO NORTH
P598	3996	101	201	8/11/2001	001	LN	RF	1		8003	SEISMC	2	04	07	15	11	1	8	0	0	0	0	0	0			200M NORTH OF ISLAN
P598	4000	101	201	8/11/2001	001	LN	RF	1		8003	SEISMC	1	01	07	15	11	1	9	0	0	0	0	0	0		145733	SEISMIC OFFSHORE FR
P598	4011	101	201	8/11/2001	001	LN	RF	1		8003	SEISMC	1	01	07	15	11	1	12	0	0	0	0	0	0	1	145854	SEISMIC SHIP 1-2 KM
P598	4052	102	101	8/11/2001	001	LN	RF	1		8003	SEISMC	1	01	07	08	13	1	5	0	0	0	0	0	0			WITH BOOM, OFF TO S
P598	4067	102	101	8/11/2001	001	PJ	LR	1		8003	SEISMC	1	01	07	08	13	1	2	0	0	0	0	0	0			BARGE
P598	4072	102	101	8/11/2001	001	PJ	LR	1		8003	SEISMC	1	01	07	08	13	1	6	0	0	0	0	0	0			BOAT
P598	4074	102	101	8/11/2001	001	PJ	LR	1		8003	SEISMC	1	01	07	08	13	1	7	0	0	0	0	0	0			BARGE
P598	4153	105	22	8/11/2001	001	PJ	LR	1		8003	SEISMC	1	01	07	08	13	1	5	0	0	0	0	0	0			BARGE
P598	409	12	23	7/23/2001	001	LN	FR	1		8004	SHIP	1	01	99	15	11	0	1	0	0	0	0	0	0			TUG
P598	3846	91	24	8/11/2001	001	LN	RF	1		8004	SHIP	2	04	07	09	09	0	1	0	0	0	0	0	0			2 BOOM BARGES-NOT M
P598	2498	60	130	8/8/2001	002	LN	RF	1		8004	SHIP	2	04	07	09	13	1	96	0	0	0	0	0	0			AT WEST DOCK-2 BOOM
P598	2500	60	130	8/8/2001	002	LN	RF	1		8004	SHIP	1	01	07	09	13	1	1	0	0	0	0	0	0		161419	BARGE TO WEST
P598	4183	106	130	8/11/2001	002	LN	RF	1		8004	SHIP	1	01	07	09	13	1	3	0	0	0	0	0	0			BARGE AND MODULE 1
P598	4188	106	130	8/11/2001	002	PJ	LR	1		8004	SHIP	1	01	07	09	13	0	2	0	0	0	0	0	0			LARGE BARGE
P598	517	13	31	7/23/2001	001	LN	FR	1		8006	PLANE	1	01	11	15	11	1	9	0	0	0	0	0	001		144022	FLOAT PLANE NEAR AN
P598	1252	30	133	7/23/2001	003	LN	FR	1		8006	PLANE	1	01	11	15	11	1	97	0	0	0	0	0	0			
P598	1408	35	180	7/23/2001	003	LN	FR	1		8006	PLANE	1	01	11	09	09	1	1	0	0	0	0	0	0			
P598	1466	38	183	7/23/2001	003	LN	FR	1		8006	PLANE	1	01	11	15	11	1	97	0	0	0	0	0	0			USFWS PLANE ON SHOR
P598	2372	55	201	8/8/2001	001	RR	LR	1		8007	BOUY	1	01	07	15	11	0	14	0	0	0	0	0	0			
P598	2381	56	101	8/8/2001	001	LN	RF	1		8007	BOUY	1	01	07	08	13	0	3	0	0	0	0	0	0		150143	
P598	2387	56	101	8/8/2001	001	LN	RF	1		8007	BOUY	0	01	07	08	13	0	7	0	0	0	0	0	0		150327	
P598	2392	56	101	8/8/2001	001	LN	RF	1		8007	BOUY	1	01	07	08	13	0	10	0	0	0	0	0	0		150514	
P598	2399	56	101	8/8/2001	001	RR	LR	1		8007	BOUY	1	01	07	08	13	0	3	0	0	0	0	0	0			
P598	4059	102	101	8/11/2001	001	LN	RF	1		8007	BOUY	1	01	07	08	13	0	10	0	0	0	0	0	0			

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
Artifical 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
ALL HABITATS		326	381	150	857	100

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
TOTAL	326	381	150	857	100

APPENDIX C:

2001 DISTRIBUTION MAPS FOR SELECTED SPECIES

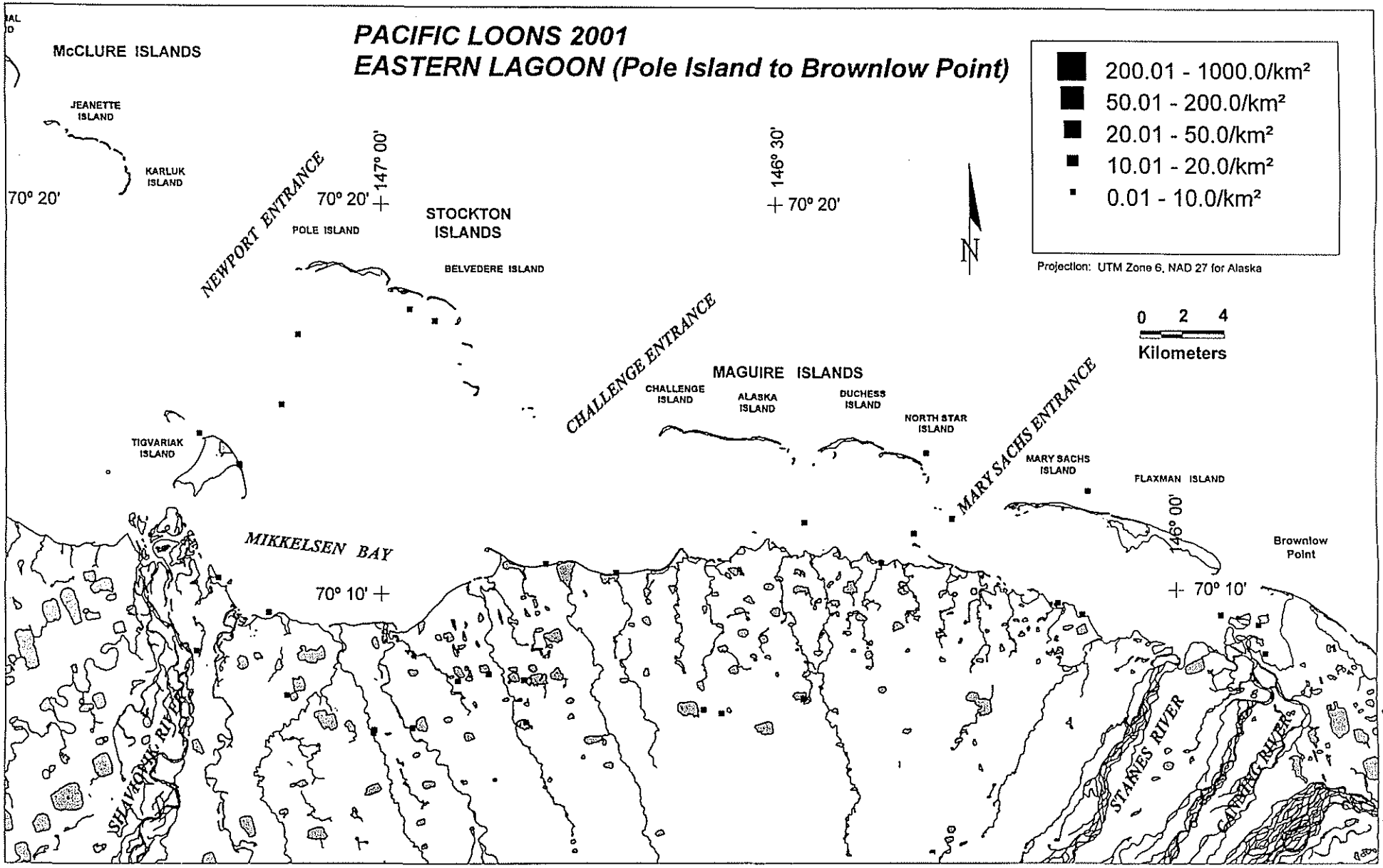

Figure C3. Summary of density for Pacific loons by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

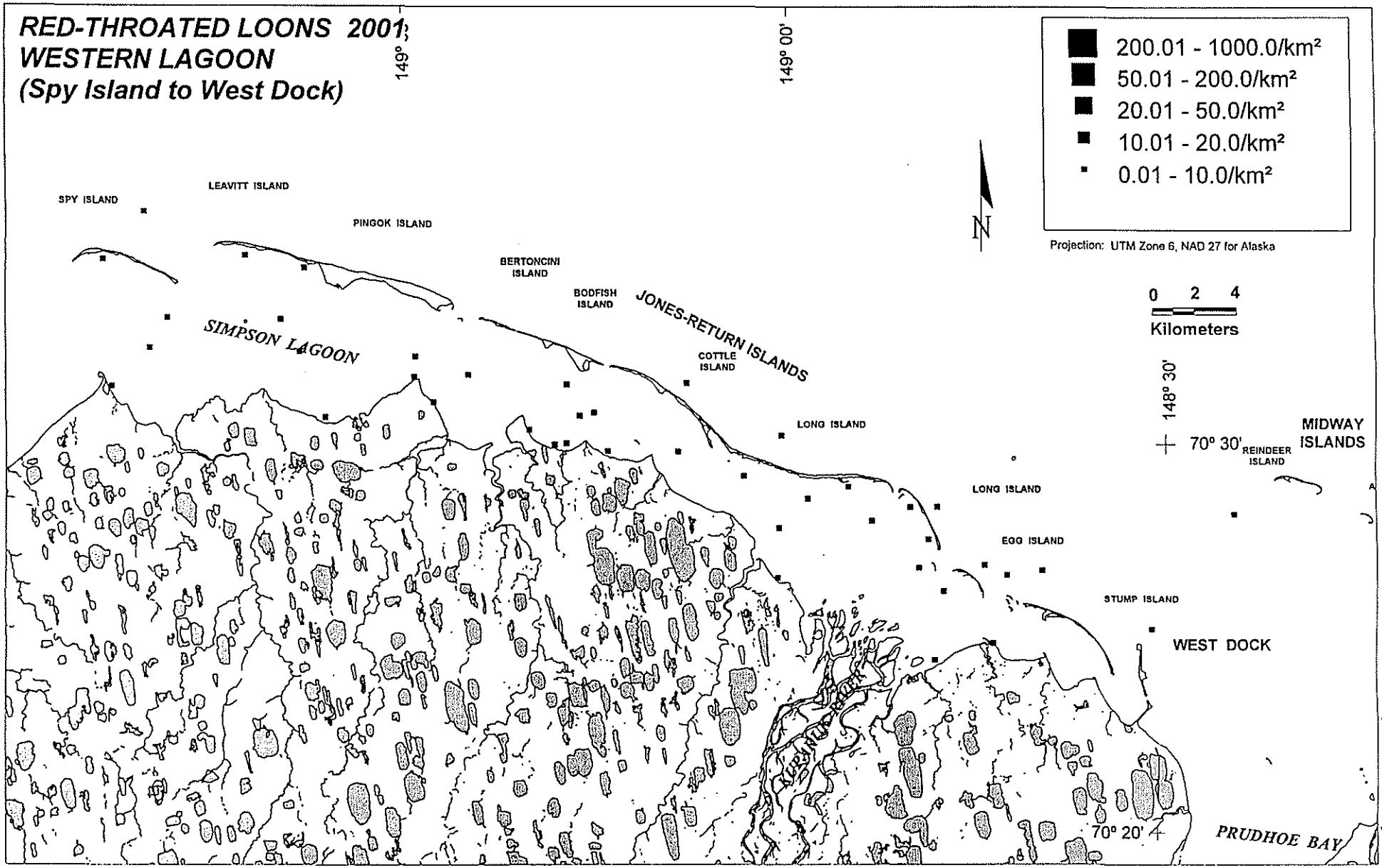

Figure C4. Summary of density for red-throated loons by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

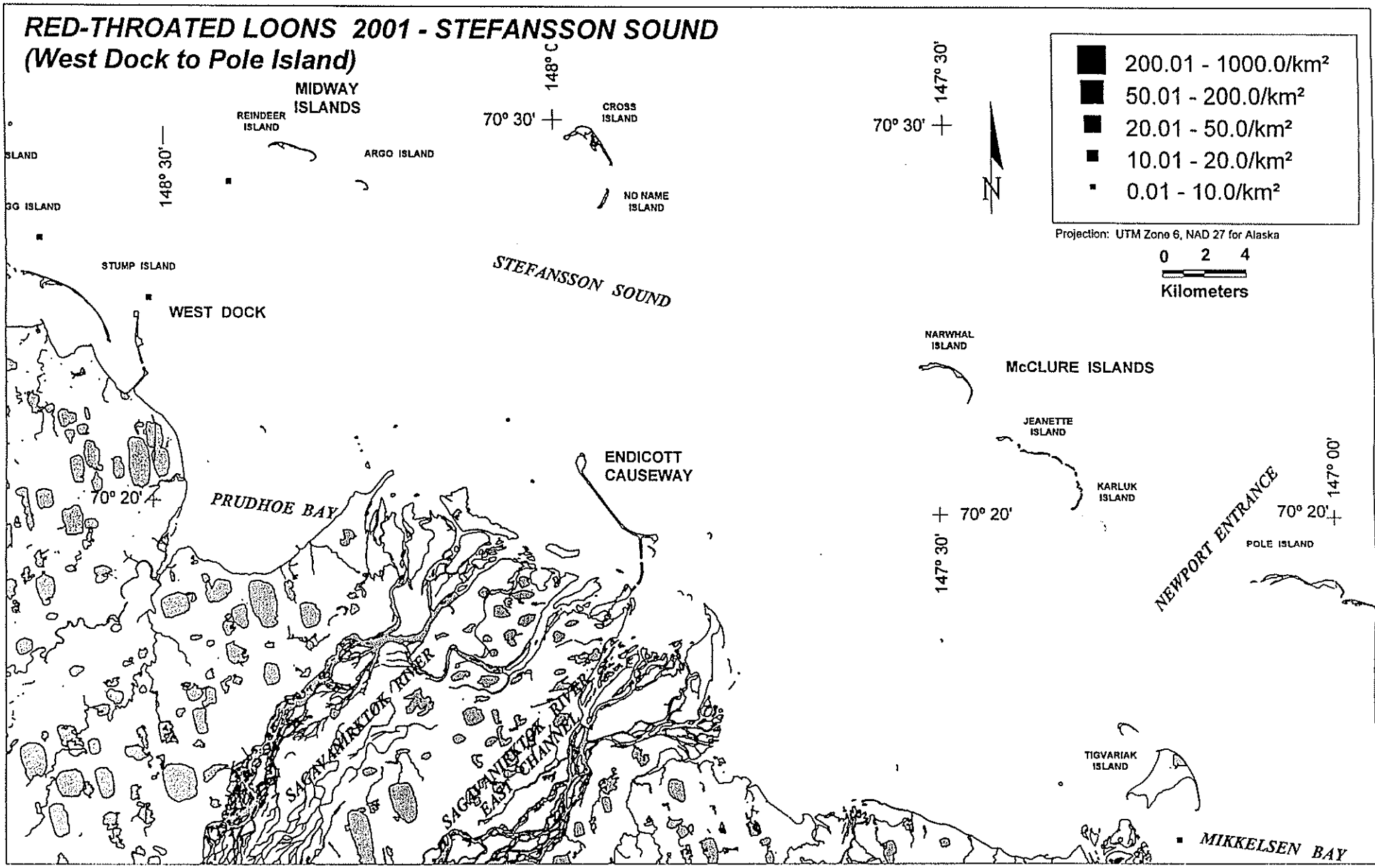

Figure C5. Summary of density for red-throated loons by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

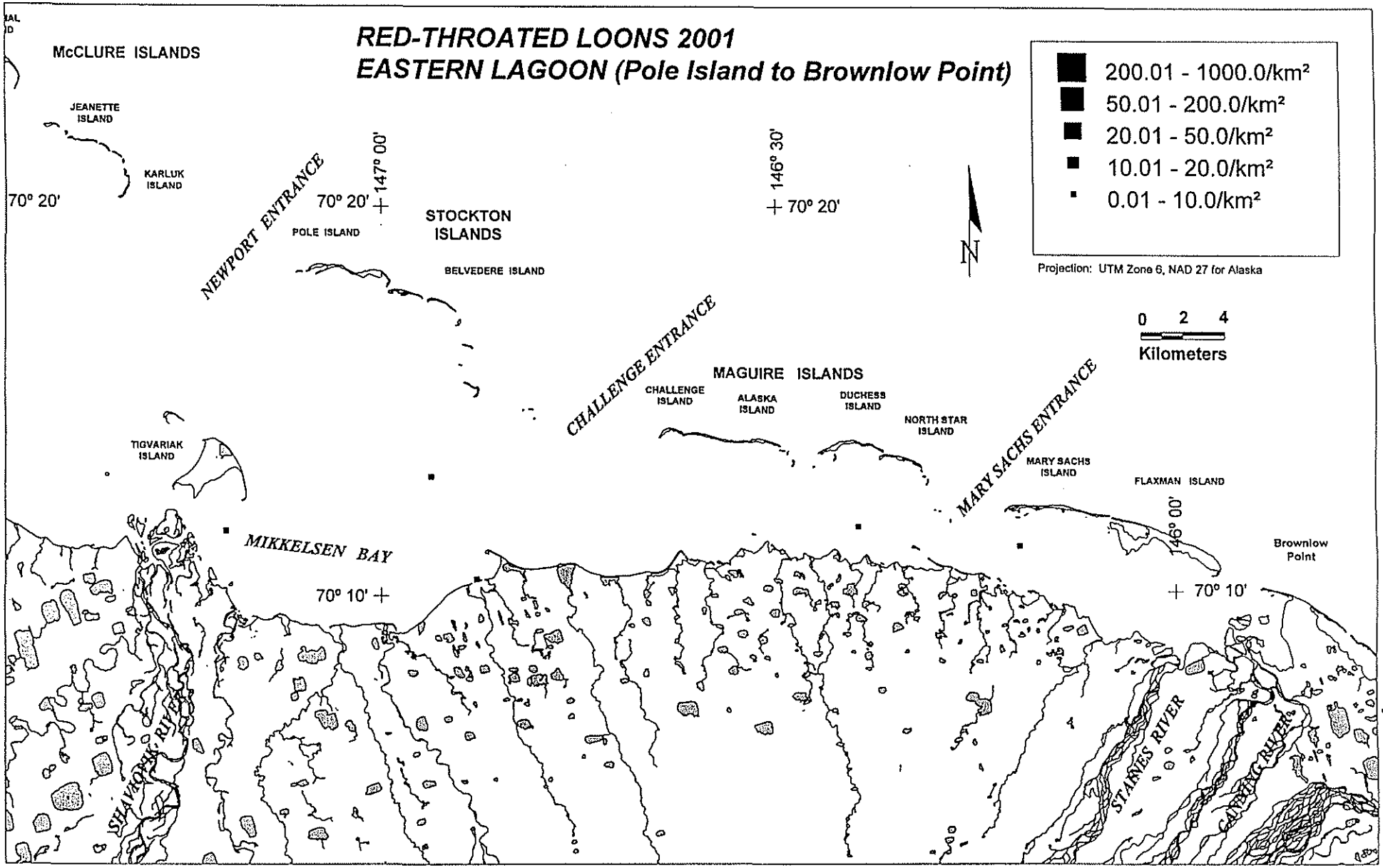

Figure C6. Summary of density for red-throated loons by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

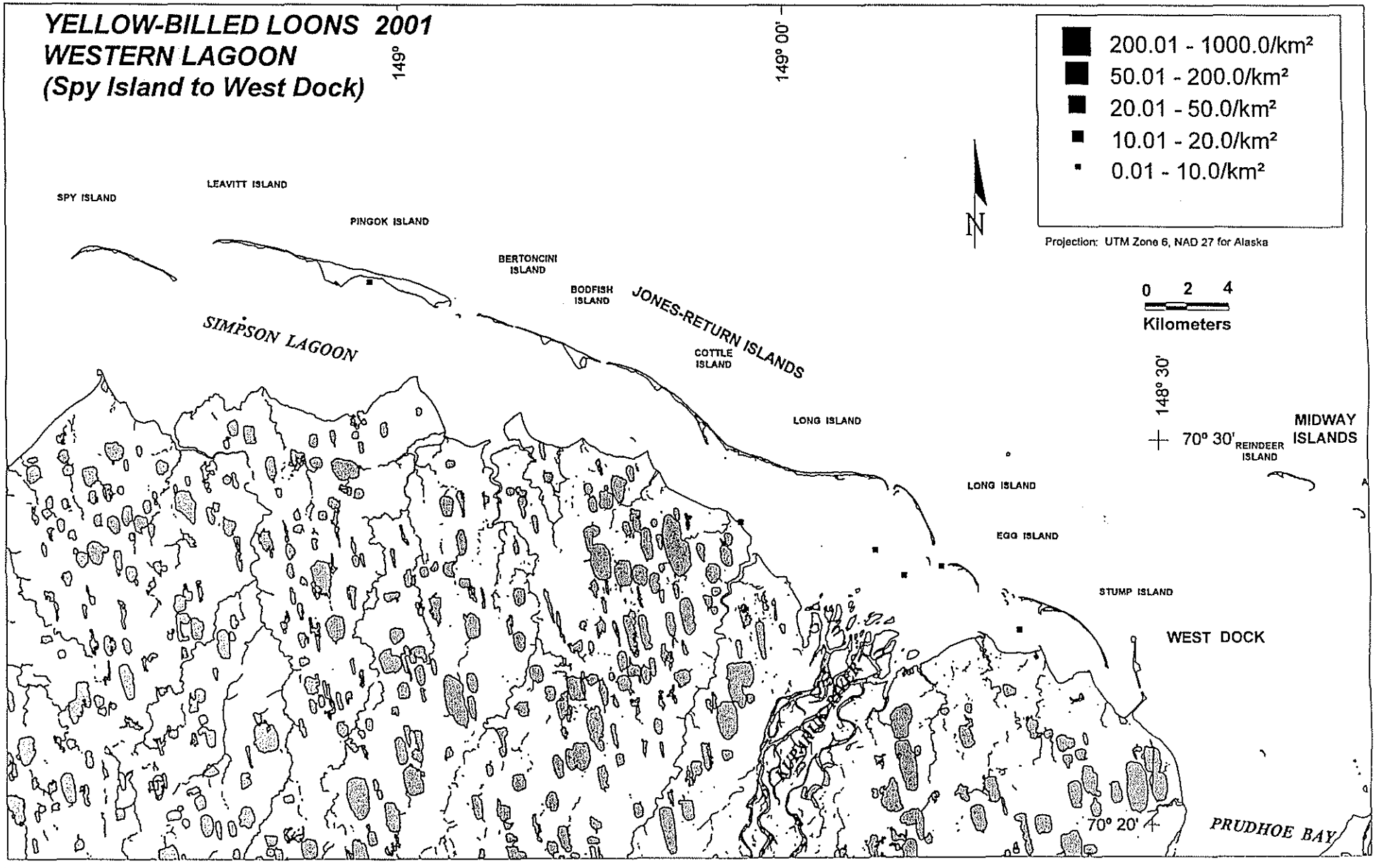

Figure C7. Summary of density for yellow-billed loons by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

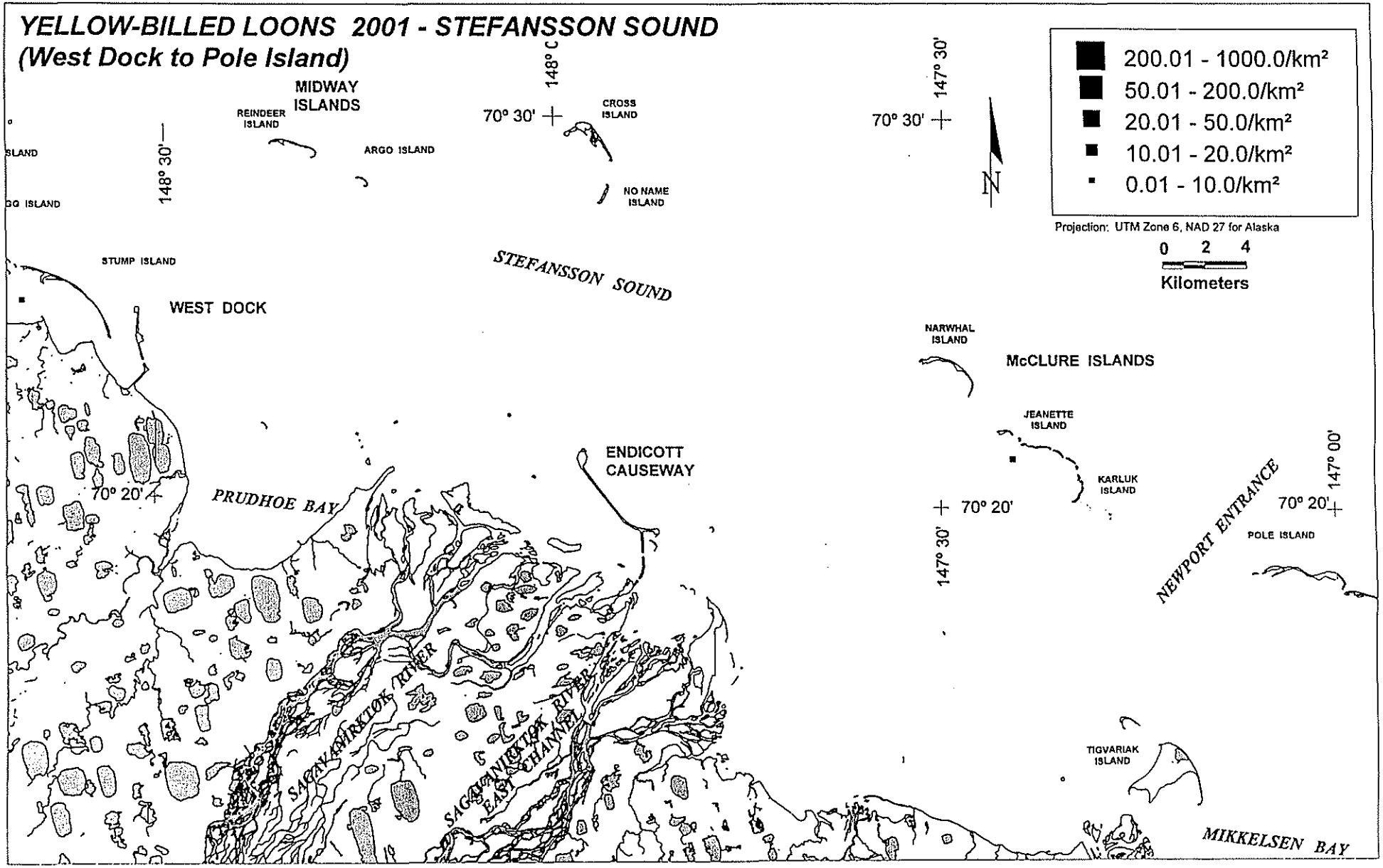

Figure C8. Summary of density for yellow-billed loons by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

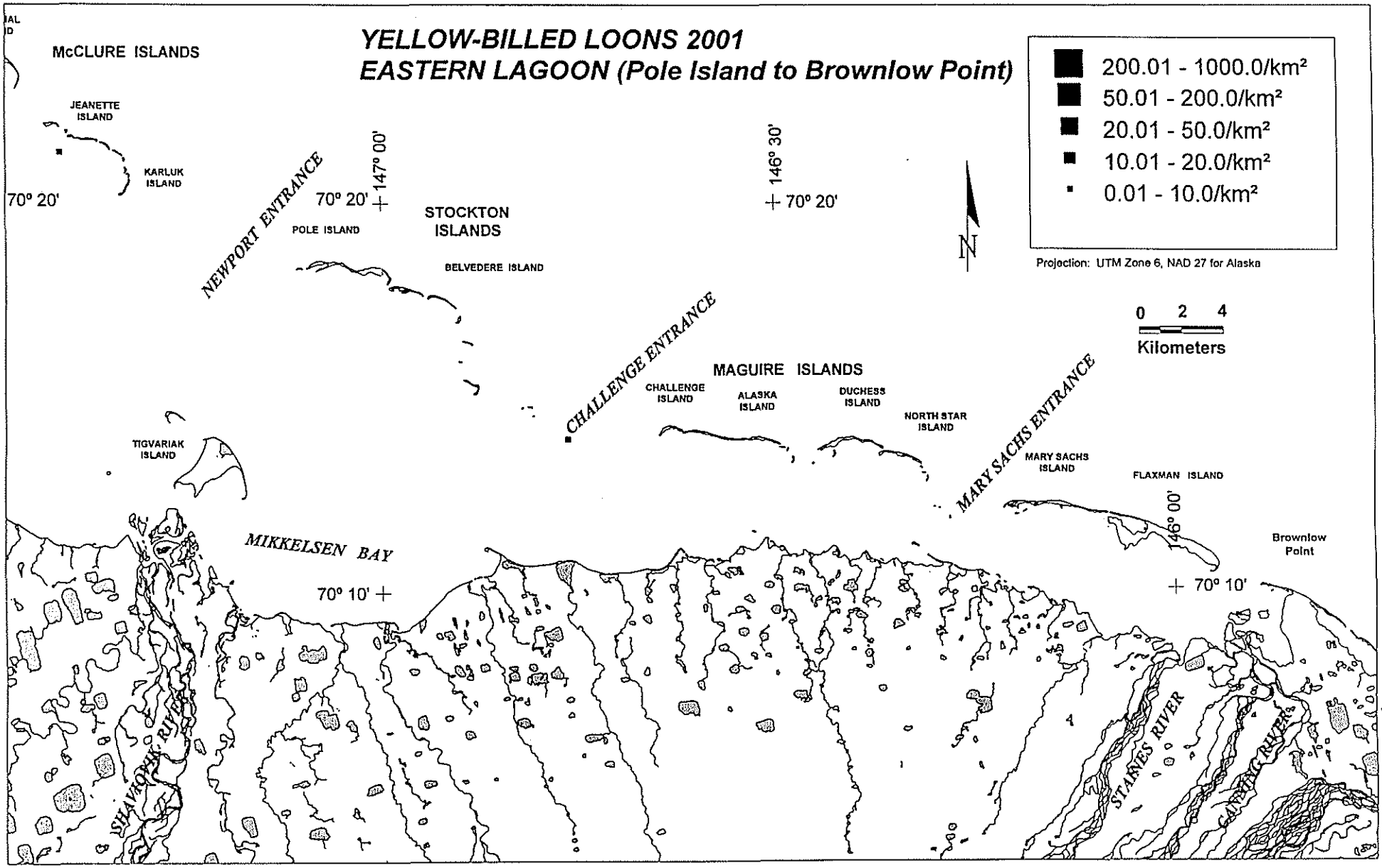

Figure C9. Summary of density for yellow-billed loons by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

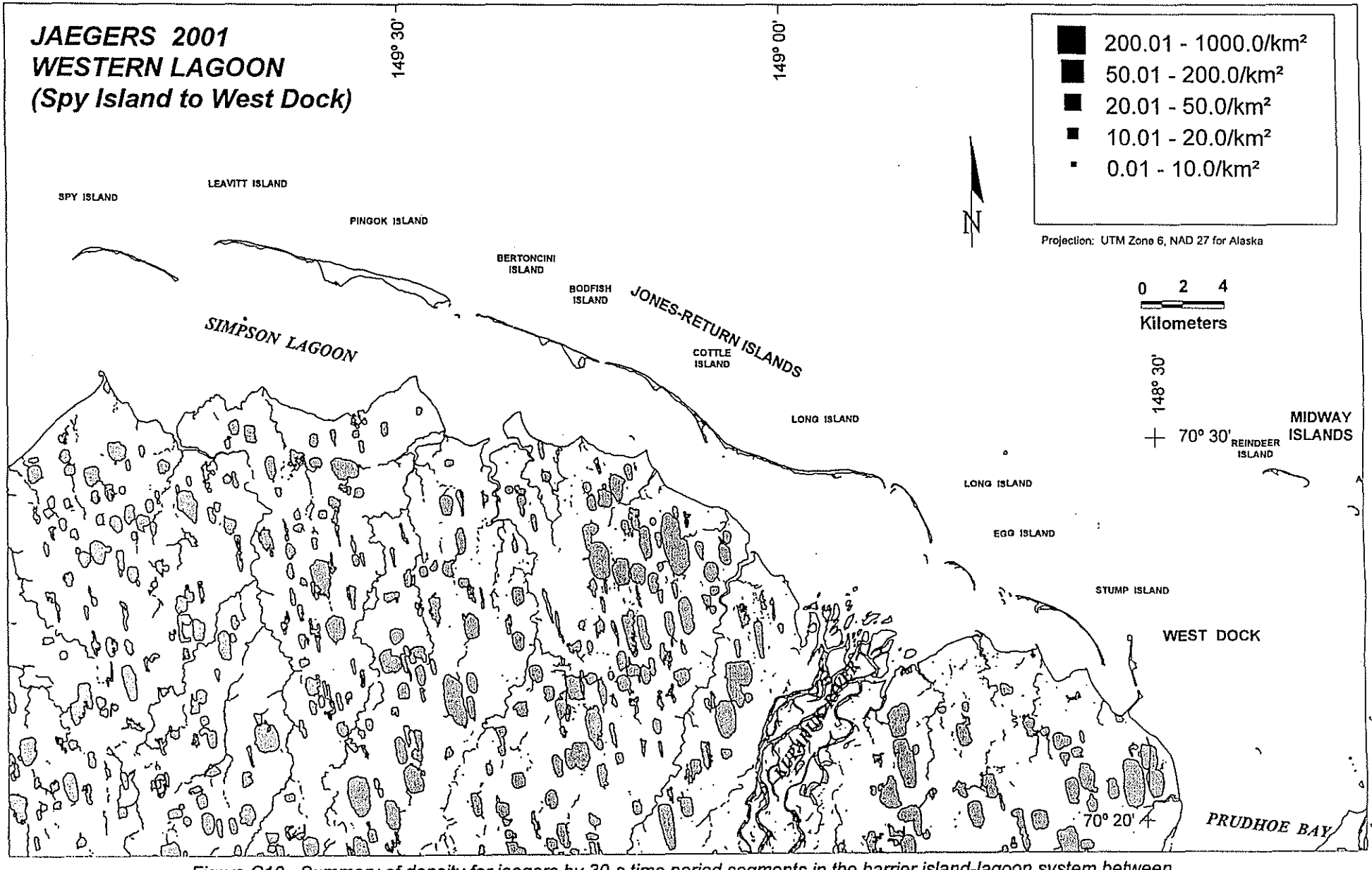

Figure C10. Summary of density for jaegers by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

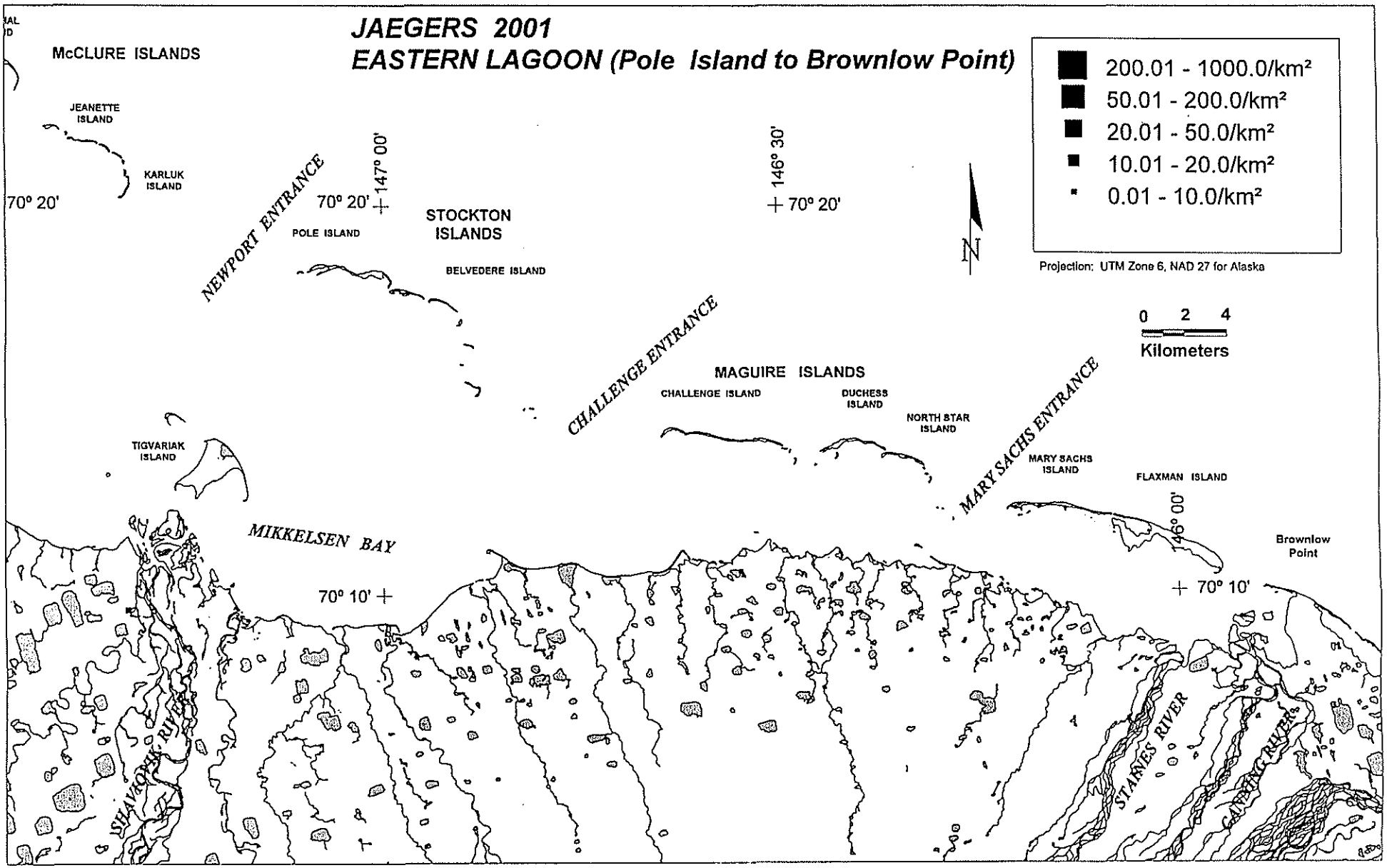

Figure C11. Summary of density for jaegers by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

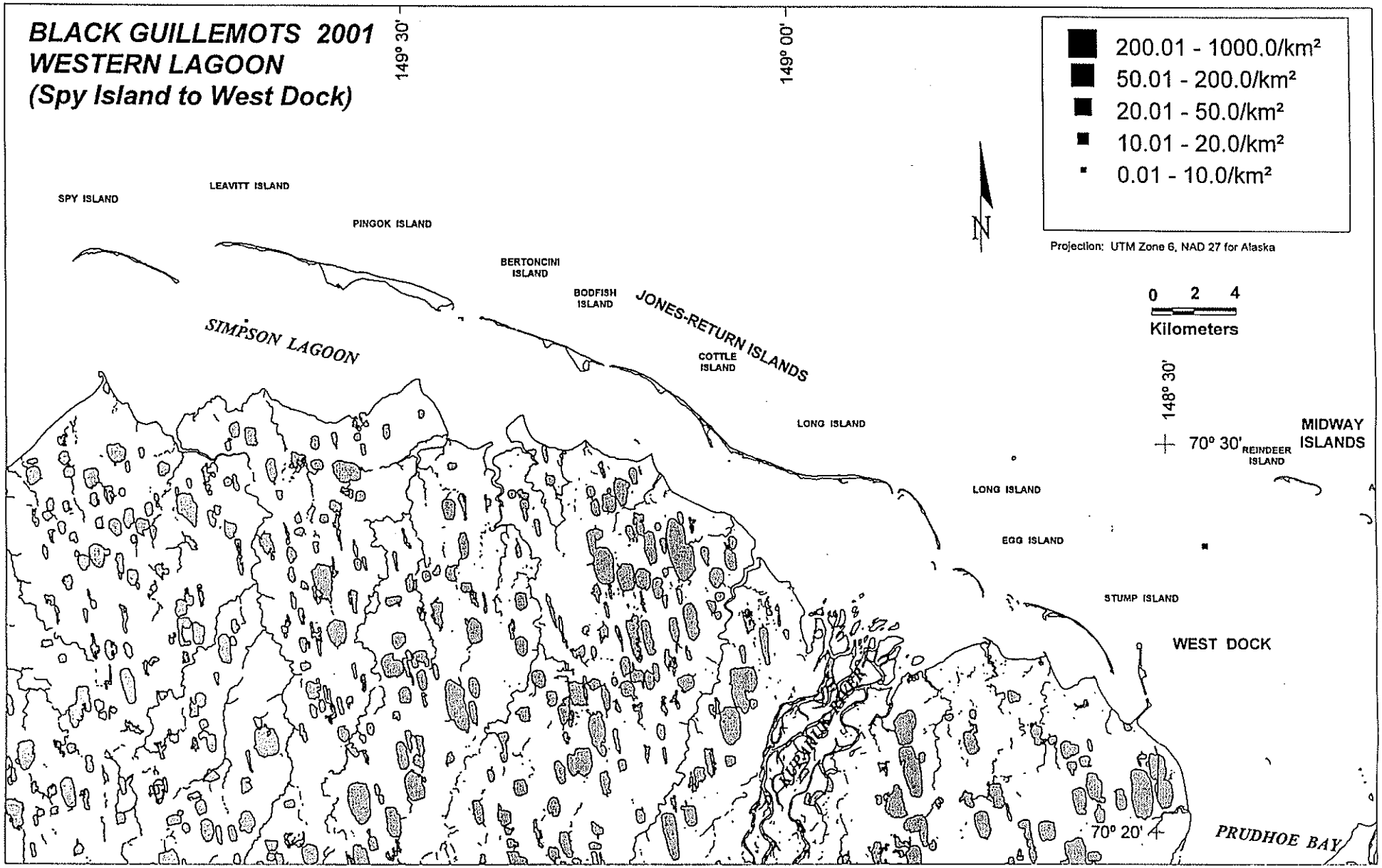

Figure C12. Summary of density for black guillemots by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

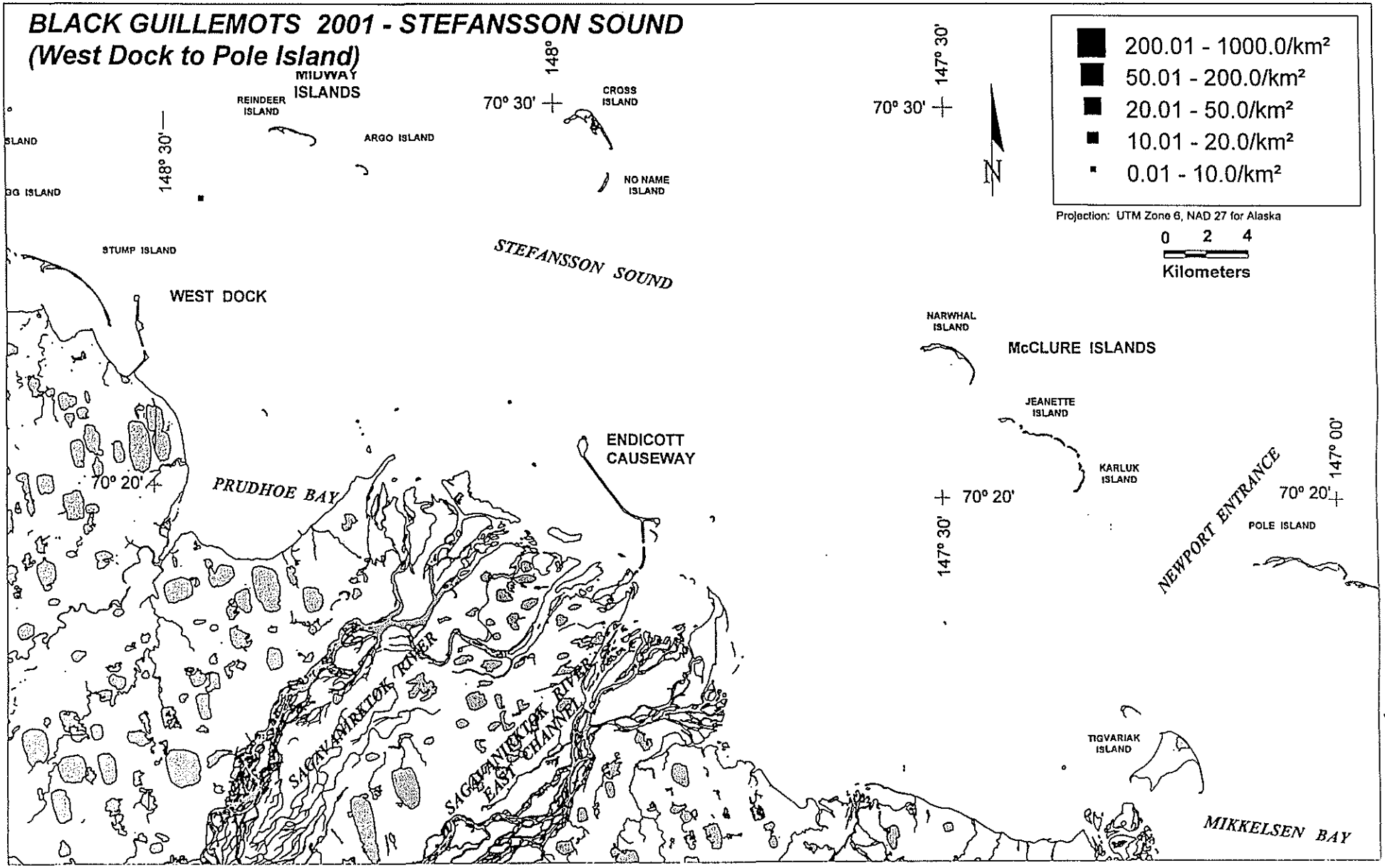

Figure C13. Summary of density for black guillemots by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

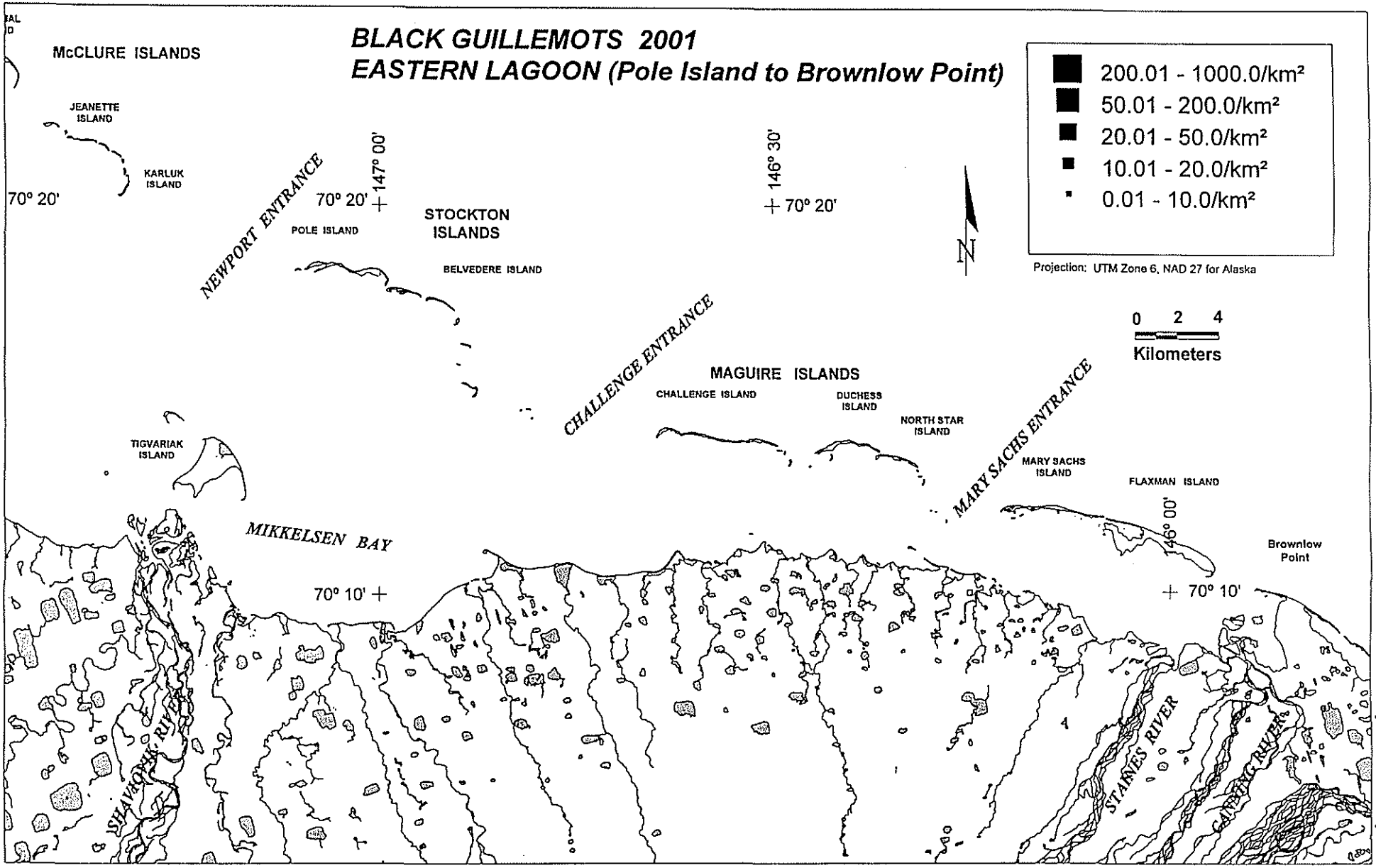

Figure C14. Summary of density for black guillemots by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.

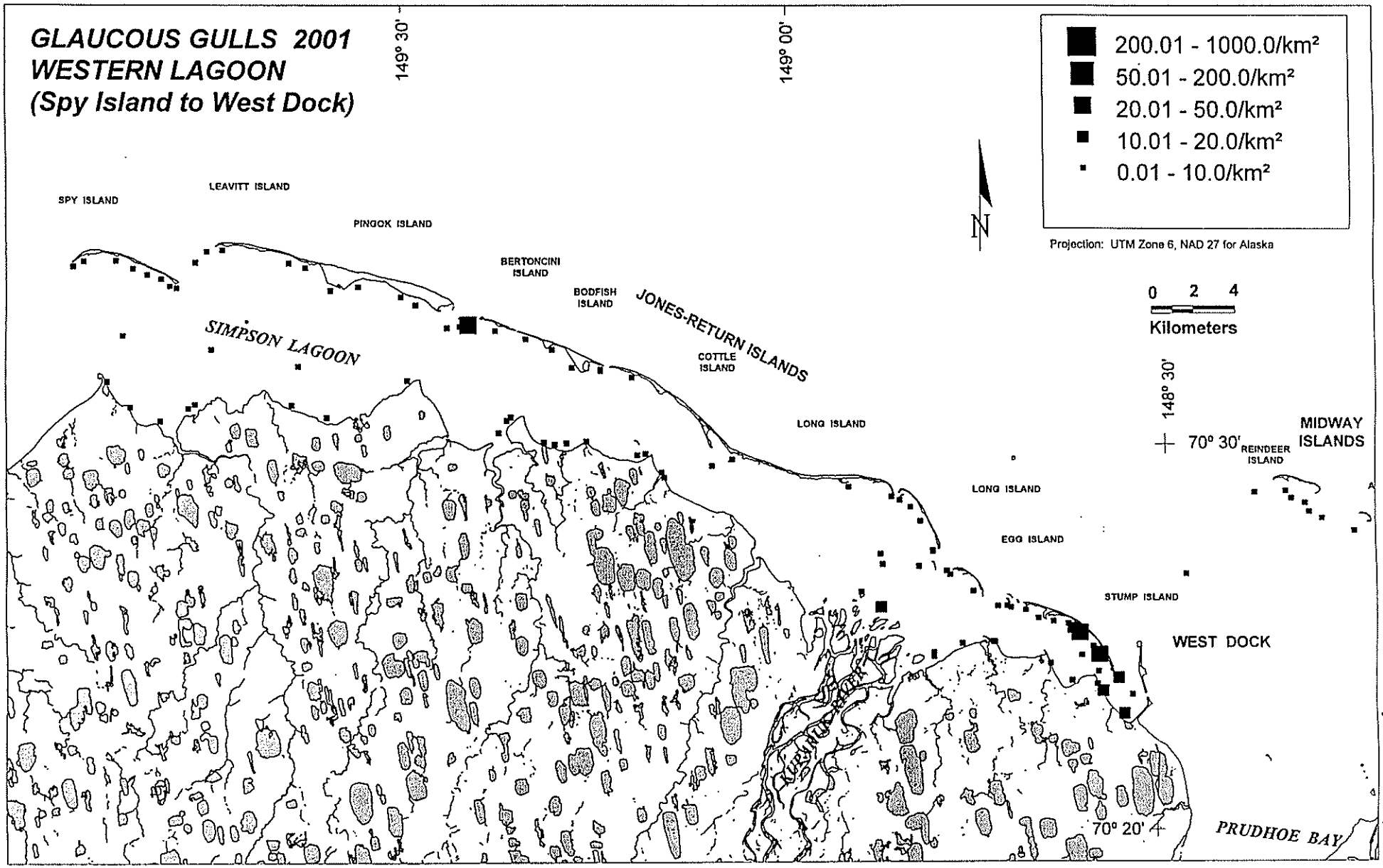

Figure C15. Summary of density for glaucous gulls by 30-s time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 23 July-11 August 2001.

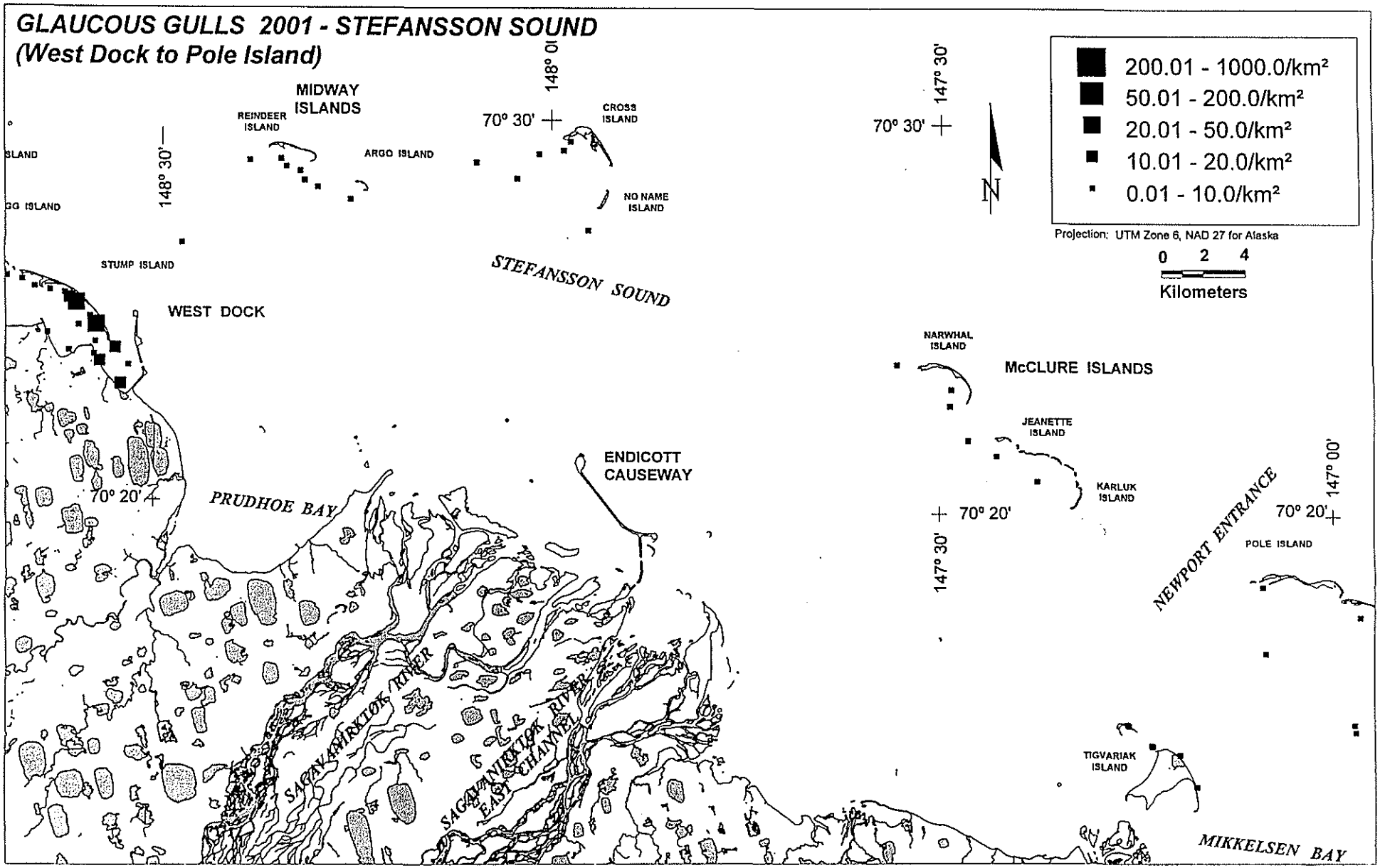

Figure C16. Summary of density for glaucous gulls by 30-s time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 23 July-11 August 2001.

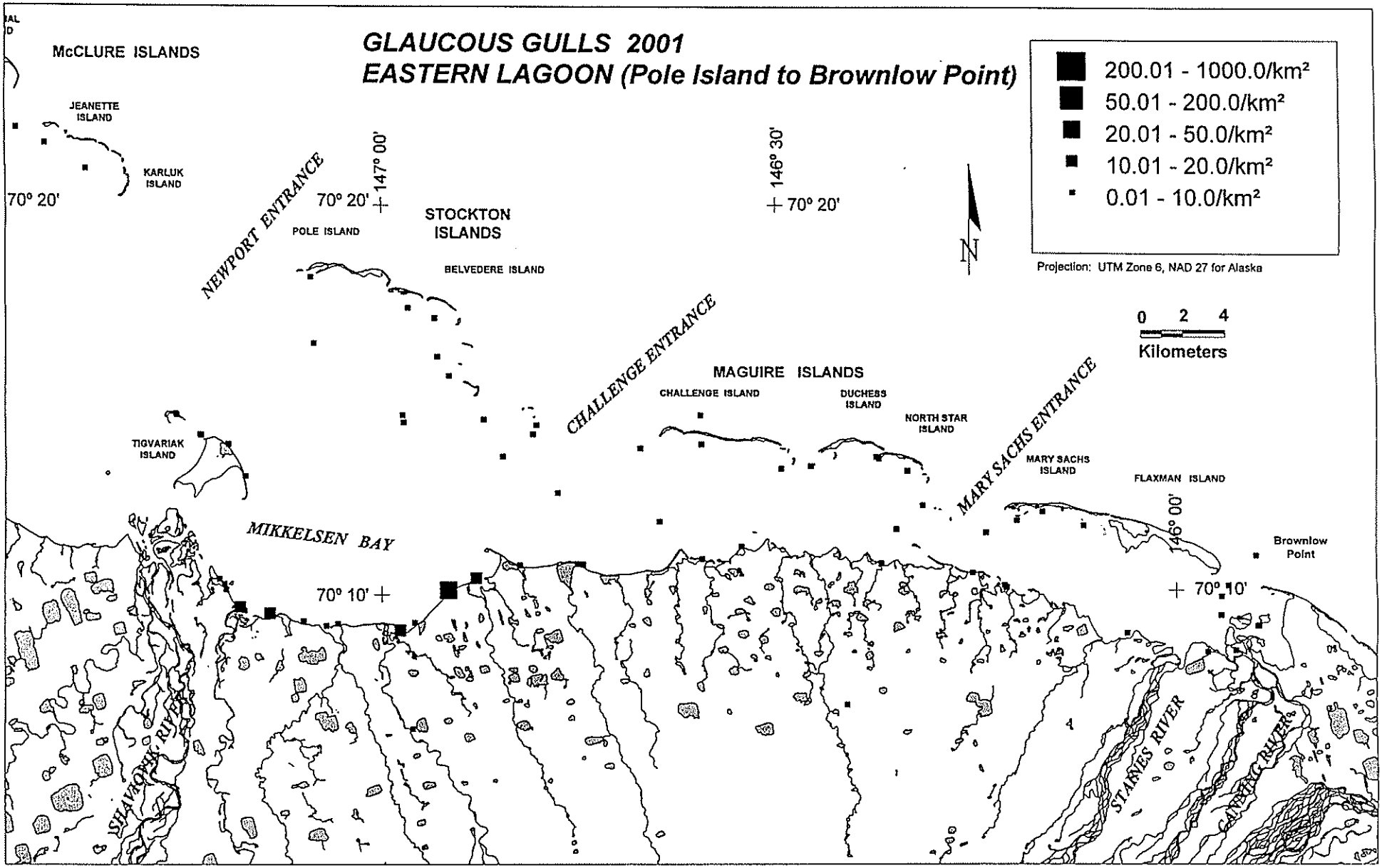

Figure C17. Summary of density for glaucous gulls by 30-s time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 23 July-11 August 2001.