



A. Pacific eider hen on nest, low density driftwood (NE58 Alaska Island, 29 June 1998).



B. Pacific eider nest, medium density driftwood (NE57 Alaska Island, 29 June 1998).

Figure 2. Pacific eider nest types encountered during searches on barrier islands in the central Alaskan Beaufort Sea, June 1998 and July 1999.



C. Pacific eider predated nest, medium density driftwood (NE17 Northstar Island, 28 June 1998).



D. Pacific eider pre-nesting scrape, low density driftwood, (Alaska Island, 29 June 1998).

Figure 2. Continued.



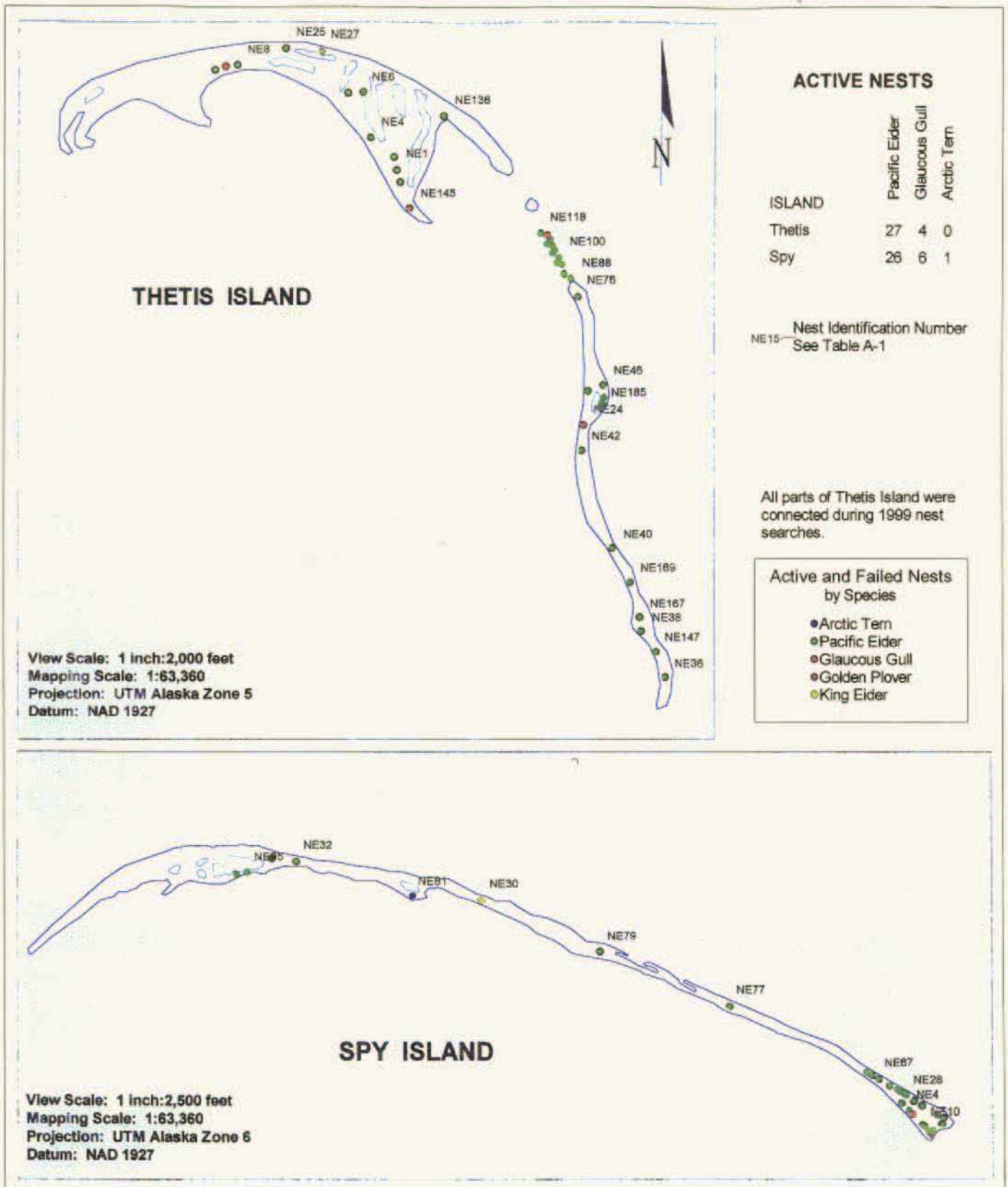


Figure 3. Distribution of active and failed nests on Thetis Island and Spy Island, central Alaskan Beaufort Sea, Alaska, 12 to 17 July 1999.

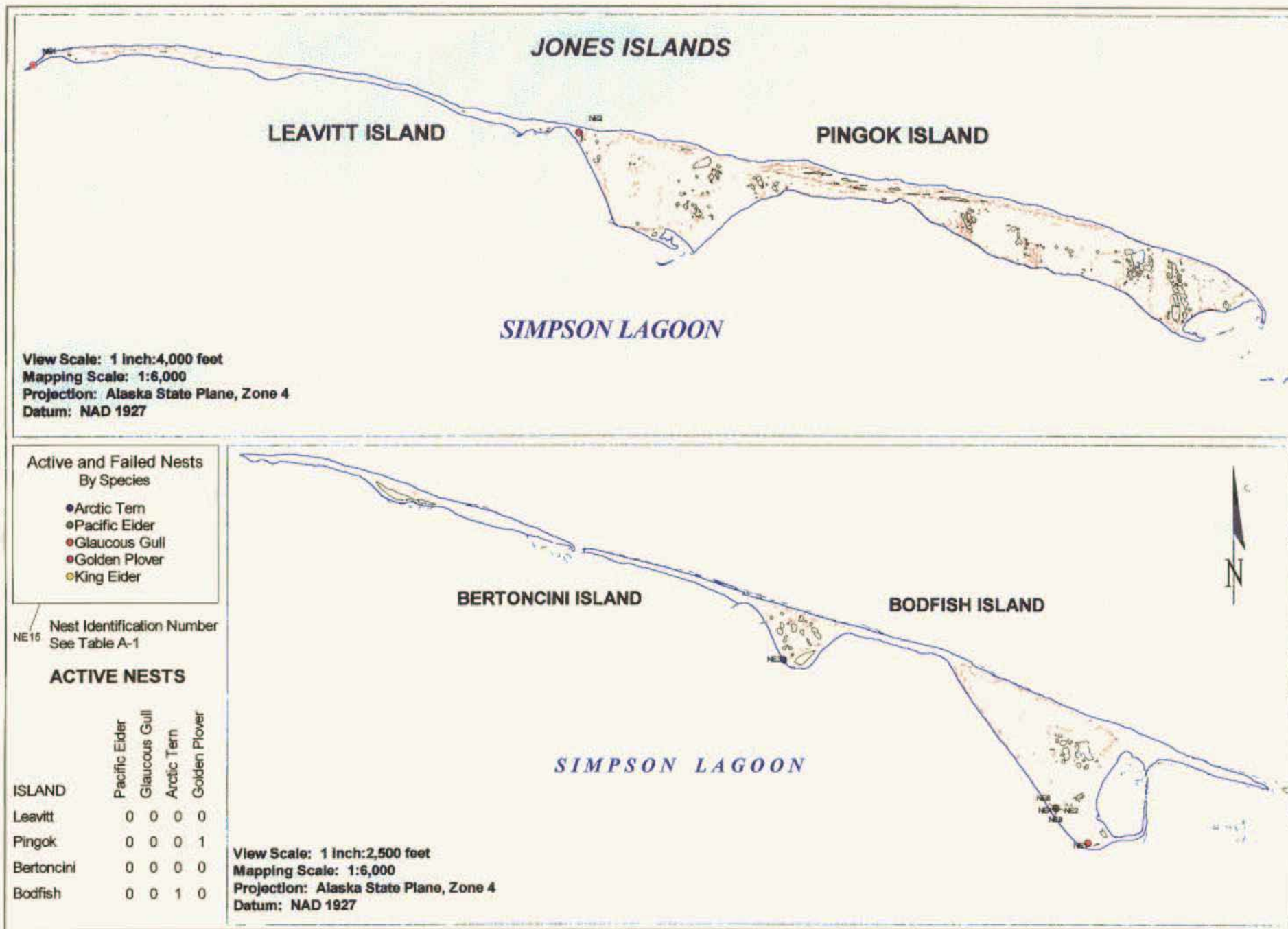


Figure 4. Distribution of active and failed nests on the Jones Islands, central Alaskan Beaufort Sea, Alaska, 12 to 17 July 1999.



# RETURN ISLANDS

## ACTIVE NESTS

ISLAND	Pacific Eider	Glaucous Gull	Arctic Tern
Cottle	5	0	0
Long--West	5	1	1
Long--East	8	0	0
Egg	79	15	1

### Active and Failed Nests By Species

- Arctic Tern
- Pacific Eider
- Glaucous Gull
- Golden Plover
- King Eider

NE15 Nest Identification Number  
See Table A-1

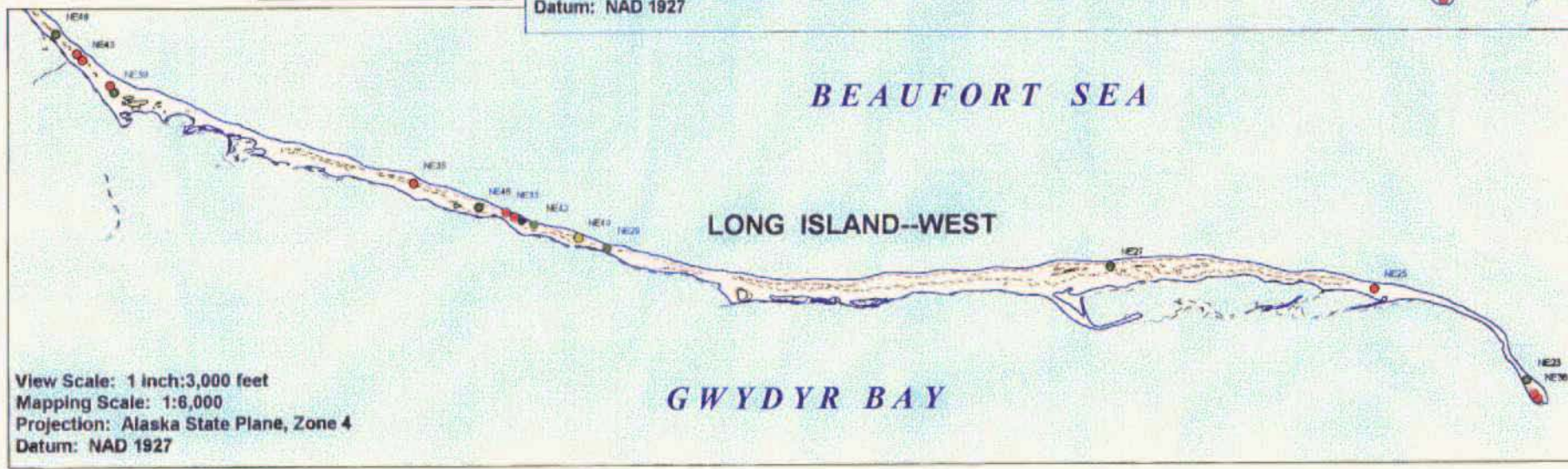
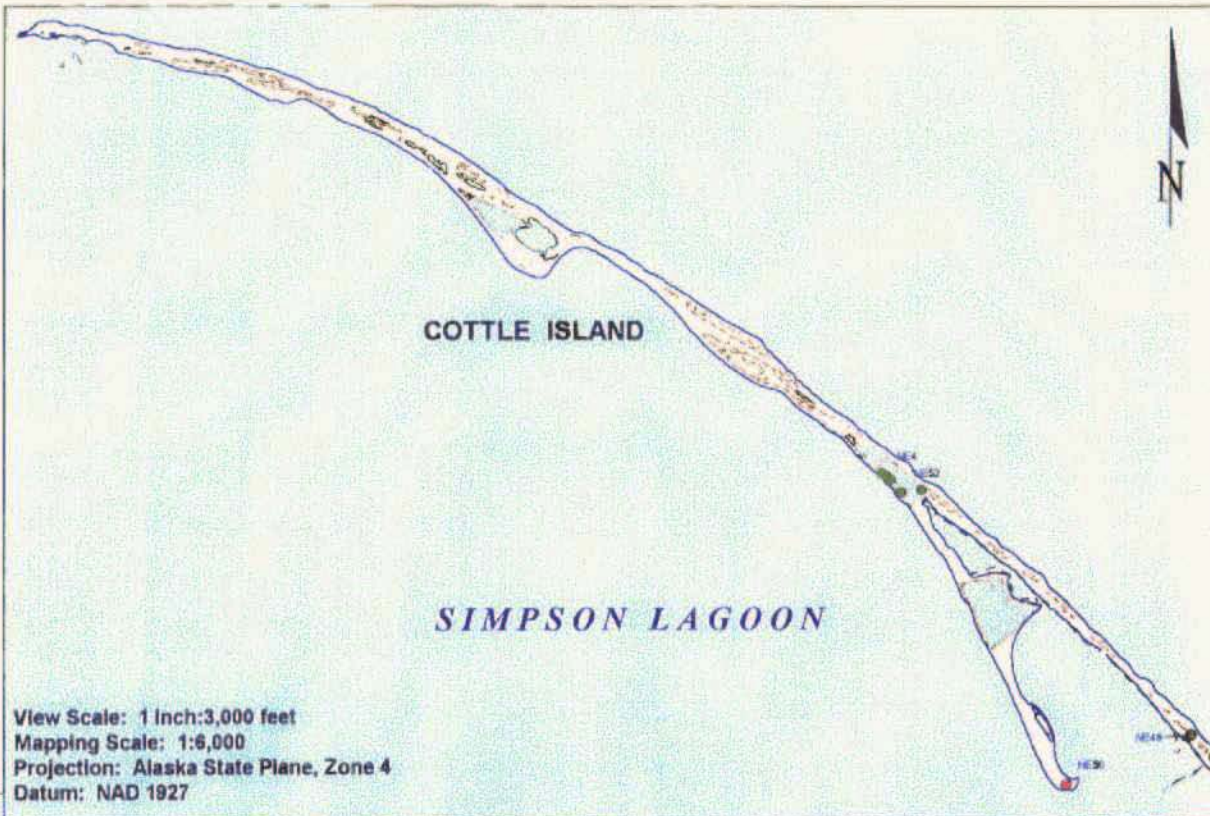


Figure 5. Distribution of active and failed nests on the Return Islands, central Alaskan Beaufort Sea, 12 to 17 July 1999.

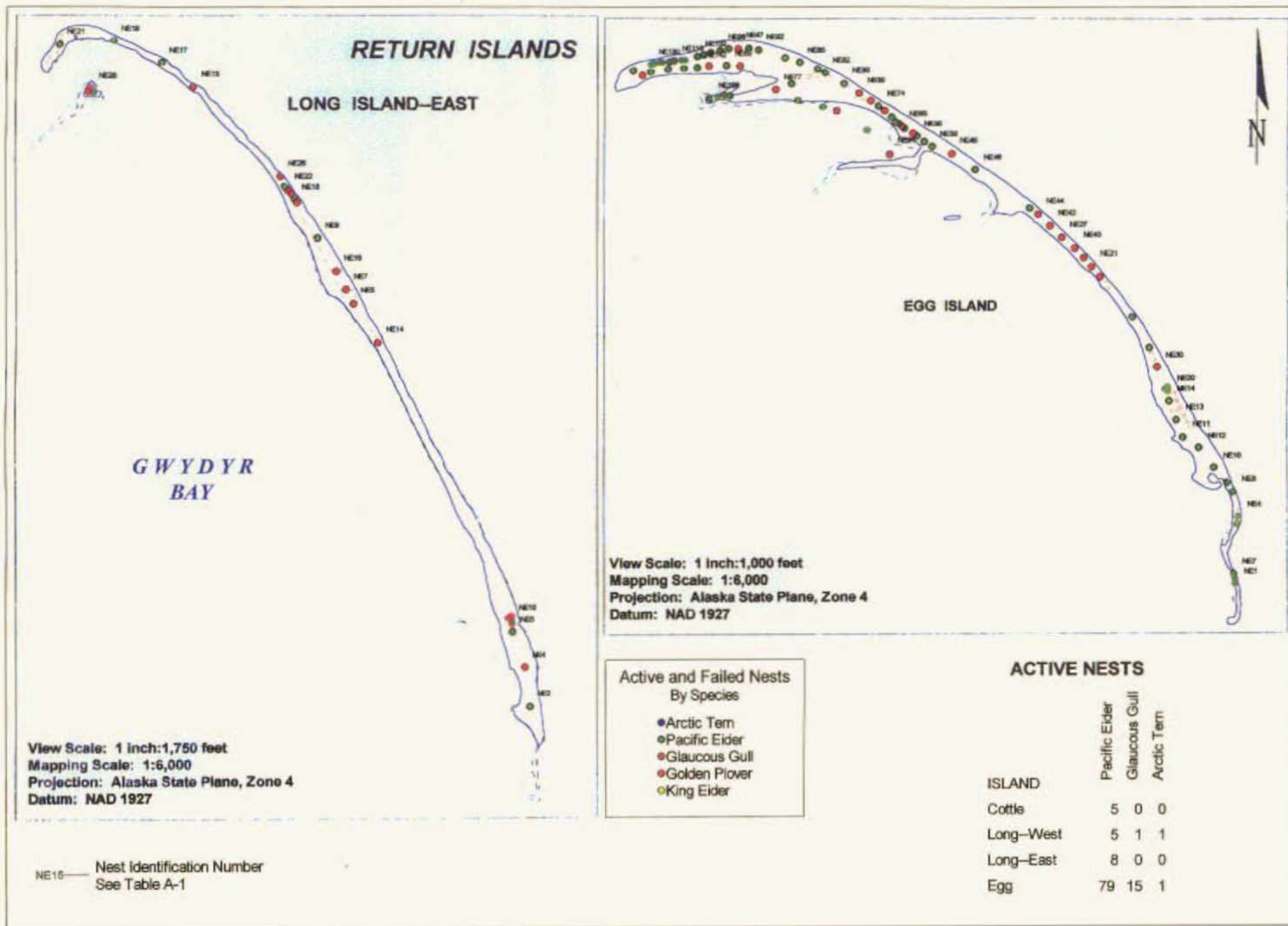


Figure 5. Continued.



# MIDWAY ISLANDS

# REINDEER ISLAND

View Scale: 1 inch:1,200 feet  
 Mapping Scale: 1:6,000  
 Projection: Alaska State Plane, Zone 4  
 Datum: NAD 1927

### Active and Failed Nests by Species

- Arctic Tern
- Pacific Eider
- Glaucous Gull
- Golden Plover
- King Eider

NE15 Nest Identification Number  
 See Table A-1

### ACTIVE NESTS

ISLAND	Pacific Eider	Glaucous Gull	Arctic Tern	Golden Plover
Reindeer	11	8	0	0

Figure 6. Distribution of active and failed nests on the Midway Islands, central Alaskan Beaufort Sea, 12 to 17 July 1999.

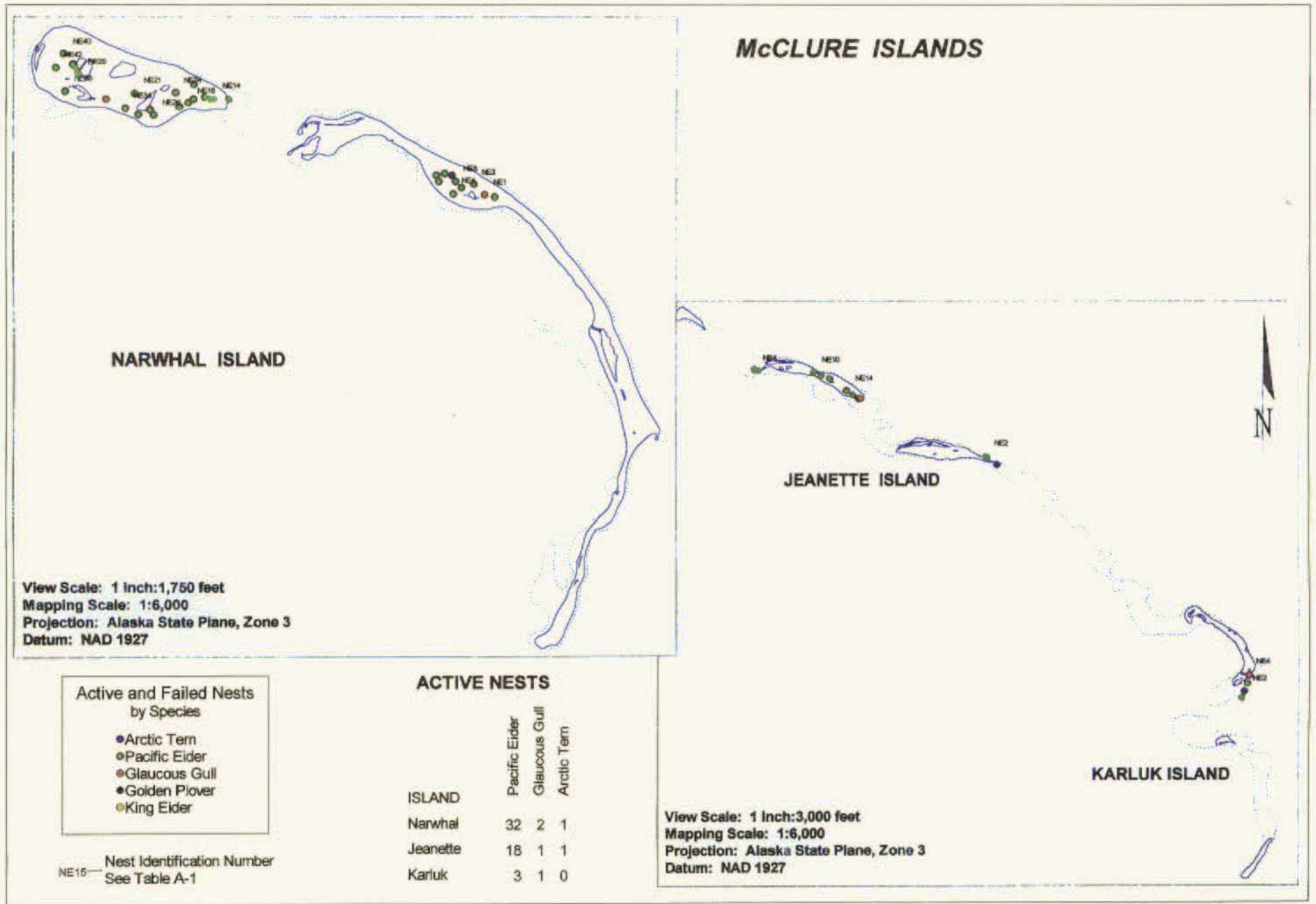


Figure 7. Distribution of active and failed nests on the McClure Islands, central Alaskan Beaufort Sea, 12 to 17 July 1999.



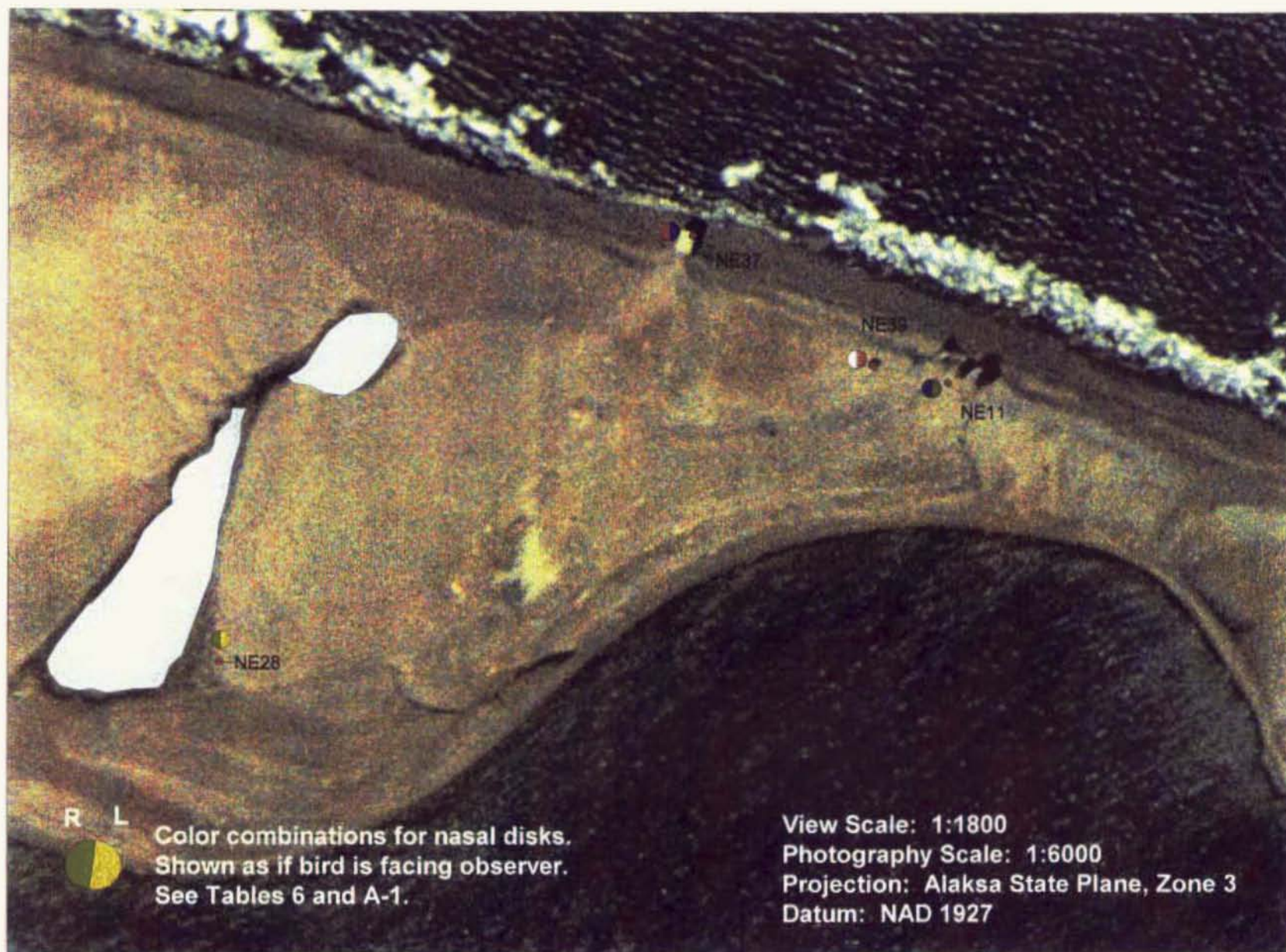


Figure 8. Capture and nest locations for marked female Pacific eiders on Narwhal Island, central Alaskan Beaufort Sea, 17 July 1999.

Table 1. Nest search effort on barrier islands along the central Alaskan Beaufort Sea from Thetis Island to the McClure Islands, 12 to 17 July 1999.

Island (West to East)	Approximate Island Area <sup>2</sup> (ha)	Date	Start Time	End Time	Duration (hours)	Number of Observers	People Hours	Fox Sign
Thetis <sup>1</sup>	51.2	15 Jul 99	16:55	19:35	2.65	3	7.95	None Noted
		15 Jul 99	18:20	19:30	1.17	2	2.34	None Noted
Spy	47.3	15 Jul 99	14:05	17:50	3.60	3	10.80	None Noted
<u>Jones Islands</u>								
Leavitt	47.2	15 Jul 99	14:00	16:15	2.25	3	6.75	Tracks
Pingok-West <sup>2</sup>	46.1	15 Jul 99	13:40	14:00	0.33	3	0.99	Arctic Fox Sighted
Pingok-East <sup>2</sup>	2.3	13 Jul 99	16:45	17:45	1.00	3	3.00	Tracks and Hair
Bertoncini	22.3	13 Jul 99	14:00	15:20	1.33	3	3.99	None Noted
Bodfish	20.8	13 Jul 99	12:50	13:51	1.00	3	3.00	Tracks
<u>Return Islands</u>								
25 Cottle	73.3	12 Jul 99	16:45	18:20	1.58	3	4.74	Tracks
		13 Jul 99	9:05	12:00	2.92	3	8.76	Tracks
Long-West	85.8	12 Jul 99	12:30	16:30	3.58	3	10.74	Scats, tracks over length of island
Long-East	20.4	12 Jul 99	10:00	12:30	2.50	3	7.50	Tracks, headed east
Egg	10.1	16 Jul 99	13:00	19:10	3.16	2	6.32	None Noted
<u>Midway Islands</u>								
Reindeer	35	16 Jul 99	17:35	19:35	2.00	2	4.00	None Noted
<u>McClure Islands</u>								
Narwhal	37.7	17 Jul 99	9:15	12:00	2.75	2	5.50	None Noted
Jeanette	17.2	17 Jul 99	10:25	12:00	1.41	2	2.82	None Noted
Karluk	1.7	17 Jul 99	9:15	10:10	0.75	2	1.50	None Noted
Total	518.4				33.98		94.70	

<sup>1</sup> The entire surface area of Thetis Island was not covered during nest search.

<sup>2</sup> Area of gravel and driftwood habitats searched included the spits at the eastern and western ends of Pingok Island.



Table 2. Nesting effort expressed as the number of active nests, failed nests, and pre-nesting scrapes on barrier islands along the central Alaskan Beaufort Sea coast from Thetis Island to the McClure Islands, 12 to 17 July 1999.

Species and Nest Information <sup>1</sup>	Jones Islands							Return Islands			Midway Islands	McClure Islands			Total Nests and Scrapes
	Thetis	Spy	Leavitt	Pingok	Bertoncini	Bodfish	Cottle	Long- West	Long- East	Egg	Reindeer	Narwhal	Jeanette	Karluk	
<b>Pacific Eider</b>															
Active Nests	27	26	0	0	0	0	5	5	8	79	11	32	18	3	214
Failed Nests	5	37	0	0	0	4	2	2	4	21	1	5	4	0	85
Pre-nesting Scrapes	129	94	2	0	0	13	3	21	60	57	31	67	27	9	513
Total Effort	161	157	2	0	0	17	10	28	72	157	43	104	49	12	812
% Effort by Island	20	19	.0	0	0	2	1	3	9	19	5	13	6	1	100
<b>Glaucous Gull</b>															
Active Nests	4	6	0	0	0	0	0	1	0	15	8	2	1	1	38
Failed Nests	0	2	1	0	0	1	1	9	15	13	0	0	0	0	42
Pre-nesting Scrapes	8	2	1	0	0	6	6	8	17	0	0	4	0	2	54
Total Effort	12	10	2	0	0	7	7	18	32	28	8	6	1	3	134
% Effort by Island	9	7	1	0	0	5	5	13	24	21	6	4	1	2	100
<b>Arctic Tern</b>															
Active Nests	0	1	0	0	0	1	0	1	0	0	0	1	1	0	5
Failed Nests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-nesting Scrapes	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total Effort	0	1	0	0	0	1	0	1	0	0	0	2	1	0	6
% Effort by Island	0	17	0	0	0	17	0	17	0	0	0	33	17	0	100
<b>All Species<sup>2</sup></b>															
Active Nests	31	34	0	1	0	1	5	8	8	94	19	35	20	4	260
Failed Nests	5	39	1	0	0	5	3	11	19	34	1	5	4	0	127
Pre-nesting Scrapes	137	96	3	0	0	19	9	31	77	57	31	72	27	11	570
Total Effort for All Species	173	169	4	1	0	25	17	50	104	185	51	112	51	15	957
% Effort by Island for All Species	18	18	0	0	0	3	2	5	11	19	5	12	5	2	100

<sup>1</sup> See text for definition of active and failed nests, and scrapes. Total effort is equal to the number of active and failed nests, and pre-nesting scrapes. % effort by island is equal to the total effort for an island divided by the total effort over all islands for that species.

<sup>2</sup> All species include the three species listed above, plus a Golden Plover (1 nest on Pingok Island), King Eider (1 nest on Long-west and Spy), and 3 scrapes from an unknown species.

Table 3. Productivity and fate of nests on barrier islands in the Beaufort Sea from Thetis Island to the McClure Islands, Alaska, 12 to 17 July 1999.

Island and Species	Nests <sup>1</sup>	Active Nests <sup>2</sup>	Nest Density (No./ha)	Mean Clutch Size <sup>3</sup>	Failed Nests		% of Nests Depredated <sup>4</sup>	Predator <sup>5</sup>		
					Depredated	Fate Unknown		Arctic Fox	Glaucous Gull	Avian
Thetis Island (51.2 ha)										
Pacific Eider	32	27	0.53	3.1±0.70 (n = 8)	5	0	15.6	0	4	0
Glaucous Gull	4	4	0.08	1 (n = 1)	0	0	0.0	---	---	---
Spy Island (47.3 ha)										
Pacific Eider	63	26	0.55	3.6±0.45 (n = 11)	36	1	57.1	0	32	3
Glaucous Gull	8	6	0.13	---	0	2	0.0	---	---	---
Arctic Tern	1	1	0.02	2 (n = 1)	0	0	0.0	---	---	---
<u>Jones Islands</u>										
Leavitt Island (47.2 ha)										
Glaucous Gull	1	0	---	---	0	1	0.0	---	---	---
Pingok Island (48.4 ha)										
Bertoncini Island (22.3 ha)										
Bodfish Island (20.8 ha)										
Pacific Eider	4	0	---	---	4	0	100.0	4	0	0
Glaucous Gull	1	0	---	---	0	1	0.0	---	---	---
Arctic Tern	1	1	0.05	1 (n = 1)	0	0	0.0	---	---	---
<u>Return Islands</u>										
Cottle Island (73.3 ha)										
Pacific Eider	7	5	0.07	---	0	2	0.0	---	---	---
Glaucous Gull	1	0	---	---	0	1	0.0	---	---	---
Long Island - West (85.8 ha)										
Pacific Eider	7	5	0.06	3.3±2.87 (n = 3)	2	0	28.6	0	1	1
Glaucous Gull	10	1	0.01	3 (n = 1)	0	9	0.0	---	---	---
Arctic Tern	1	1	0.01	2 (n = 1)	0	0	0.0	---	---	---



Table 3. Continued.

Island and Species	Nests <sup>1</sup>	Active Nests <sup>2</sup>	Nest Density (No./ha)	Mean Clutch Size <sup>3</sup>	Failed Nests			Predator <sup>5</sup>		
					Depredated	Fate Unknown	% of Nests Depredated <sup>4</sup>	Arctic Fox	Glaucous Gull	Avian
<u>Return Islands</u> Continued.										
Long Island - East (20.4 ha)										
Pacific Eider	12	8	0.39	4 (n = 1)	3	1	25.0	0	1	2
Glaucous Gull	15	0		---	2	13	13.3	0	0	2
Egg Island (10.1 ha)										
Pacific Eider	100	79	7.82	3.0±0.43 (n = 21)	15	6	15.0	0	12	0
Glaucous Gull	28	15	1.49	1.0±0.00 (n = 4)	0	13	0.0	---	---	---
<u>Midway Islands</u>										
Reindeer Island (35.0 ha)										
Pacific Eider	12	11	0.31	2.8±1.04 (n = 5)	1	0	8.3	0	1	0
Glaucous Gull	8	8	0.23	2.3±1.43 (n = 3)	0	0	0.0	---	---	---
<u>McClure Islands</u>										
28 Narwhal Island (37.7 ha)										
Pacific Eider	37	32	0.85	2.8±0.66 (n = 11)	4	1	10.8	0	3	0
Glaucous Gull	2	2	0.05	1 (n = 1)	0	0	0.0	---	---	---
Arctic Tern	1	1	0.03	---	0	0	0.0	---	---	---
Jeanette Island (17.2 ha)										
Pacific Eider	22	18	1.05	2.4±0.87 (n = 9)	4	0	18.2	0	2	2
Glaucous Gull	1	1	0.06	---	0	0	0.0	---	---	---
Arctic Tern	1	1	0.06	2 (n = 1)	0	0	0.0	---	---	---
Karluk Island (1.7 ha)										
Pacific Eider	3	3	1.76	---	0	0	0.0	---	---	---
Glaucous Gull	1	1	0.59	---	0	0	0.0	---	---	---

<sup>1</sup> Total active and failed nests.<sup>2</sup> Active nests include nests with live eggs, nests with hatched eggs, and nests with an incubating bird.<sup>3</sup> Mean clutch size includes those nests where the adult left the nest and eggs could be counted.<sup>4</sup> Percentage of all nests that were depredated.<sup>5</sup> Type of nest predation was determined by direct observation of predators, evidence that predators had been on an island (animal hair, feathers, scat, or tracks), and morphology of predated eggs.

Table 4. Summary of driftwood density at nesting sites on barrier islands along the central Alaskan Beaufort Sea coast from Thetis Island to the McClure Islands, 12 to 17 July 1999.

Island and Species	Driftwood Density								Total Nests and Scrapes
	High Density		Medium Density		Low Density		No Driftwood		
	Nests	Scrapes	Nests	Scrapes	Nests	Scrapes	Nests	Scrapes	
<b>Thetis</b>									
Pacific Eider	3	3	22	56	7	69	0	1	161
Glaucous Gull	0	1	2	3	2	4	0	0	12
<b>Spy</b>									
Pacific Eider	18	0	17	29	25	65	3	0	157
Glaucous Gull	1	0	5	0	1	2	1	0	10
Arctic Tern	0	0	0	0	1	0	0	0	1
<b>Jones Islands</b>									
<b>Leavitt</b>									
Pacific Eider	0	0	0	1	0	1	0	0	2
Glaucous Gull	0	0	0	0	1	1	0	0	2
<b>Pingok (no nests or scrapes)</b>									
<b>Bertoncini (no nests or scrapes)</b>									
<b>Bodfish</b>									
Pacific Eider	0	0	4	1	0	5	0	7	17
Glaucous Gull	0	0	0	0	1	6	0	0	7
Arctic Tern	0	0	0	0	1	0	0	0	1
<b>Return Islands</b>									
<b>Cottle</b>									
Pacific Eider	0	0	1	1	2	1	4	1	10
Glaucous Gull	0	0	0	0	0	3	1	3	7
<b>Long-East</b>									
Pacific Eider	0	2	5	29	7	29	0	0	72
Glaucous Gull	1	0	0	2	14	12	0	3	32
<b>Long-West</b>									
Pacific Eider	0	0	1	1	6	20	0	0	28
Glaucous Gull	0	0	0	0	8	7	2	1	18
Arctic Tern	0	0	0	0	1	0	0	0	1
<b>Egg</b>									
Pacific Eider	42	3	43	32	15	22	0	0	157
Glaucous Gull	1	0	5	0	21	0	1	0	28
<b>Midway Islands</b>									
<b>Reindeer</b>									
Pacific Eider	0	0	3	4	8	26	1	0	42
Glaucous Gull	0	0	5	0	3	0	0	0	8
<b>McClure Islands</b>									
<b>Narwhal</b>									
Pacific Eider	6	6	20	17	5	43	2	0	99
Glaucous Gull	0	0	0	2	2	2	0	0	6
Arctic Tern	0	0	0	0	1	1	0	0	2
<b>Jeanette</b>									
Pacific Eider	1	0	6	4	15	21	0	0	47
Glaucous Gull	0	0	0	0	1	0	0	0	1
Arctic Tern	0	0	1	0	0	0	0	0	1
<b>Karluk</b>									
Pacific Eider	0	0	3	1	0	8	0	0	12
Glaucous Gull	0	0	0	1	1	1	0	0	3
<b>Pacific Eider Total</b>	<b>70</b>	<b>14</b>	<b>125</b>	<b>176</b>	<b>90</b>	<b>310</b>	<b>10</b>	<b>9</b>	<b>804</b>
<b>Glaucous Gull Total</b>	<b>3</b>	<b>1</b>	<b>17</b>	<b>8</b>	<b>55</b>	<b>38</b>	<b>5</b>	<b>7</b>	<b>134</b>
<b>Arctic Tern Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>



Table 5. Female Pacific eiders captured and marked with round colored nasal disks on Narwhal Island in the central Alaskan Beaufort Sea, 17 July 1999.

#	Right Disk	Left Disk	USFWS Band #	Status	Leg	Wt. w/bag kg <sup>1</sup>	Culmen		Ant. Nares Width mm	Bill Width at feather line mm	Rt. Tarsis mm	Date	Time ADST	Location
							Short mm	Long mm						
10	Blue	Green	103740021	New	Rt	1.7	49.3			23.5	52.5	17-Jul-99	~13:50	Narwhal I., AK, Nest 11
21	Green	Yellow	103740023	New	Rt	2.0	42.0			22.1	51.5	17-Jul-99	~14:50	Narwhal I., AK, Nest 28-3 eggs
23	Orange	Blue	103740020	New	Rt	1.7	48.6				52.6	17-Jul-99	~13:08	Narwhal I., AK, Inside doorway of NW bldg along N beach, Nest 37-3 eggs
39	White	Orange	103740022	New	Rt	2.2	52.7			24.0	51.1	17-Jul-99	~14:11	Narwhal I., AK, Nest 39

<sup>1</sup>Bag Wt. = 75 gm

Table 6. Active Pacific eider nests counted on barrier islands along the central Alaskan Beaufort Sea coast, 1970 to 1999.

Location	Year of Census <sup>1</sup>																													N	Max.	Mean	SD	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998					1999
Thetis I.	19	15	18	14	15	35	40	-	34	-	41	-	0	112	66	82	-	88	57	58	-	27	-	-	-	-	-	-	-	27	18	112	41.6	30.0
Spy I.	2	1	3	1	2	5	4	0	4	-	-	-	0	30	16	26	-	10	16	5	-	2	-	-	-	-	-	-	-	26	18	30	8.5	9.9
Leavitt I.	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	1	-	1	-	4	-	-	-	-	-	-	-	-	-	0	6	4	1.0	1.5
Pingok I.	2	2	1	1	0	6	0	-	17	0	-	-	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	13	17	2.2	4.7
Bertoncini I.	0	0	0	0	0	0	0	-	-	-	-	-	0	0	0	1	-	-	-	-	-	0	-	-	-	-	-	-	-	0	13	1	0.1	0.3
Bodfish I.	0	0	0	0	0	0	0	-	0	-	-	-	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	0	13	0	0.0	0.0
Cottle I.	3	4	4	2	2	6	0	-	2	2	-	-	0	0	0	5	-	7	4	0	-	-	-	-	-	-	-	-	-	5	17	7	2.7	2.3
Long I. (W)	3	6	4	2	3	7	25	-	-	2	-	-	-	11	2	15	-	17	24	15	-	-	-	-	-	-	8	-	-	5	16	25	9.3	7.7
Long I. (E)	-	-	-	-	-	-	1	-	4	29	-	-	0	-	2	25	-	23	31	1	-	-	-	-	-	16	-	-	-	8	11	31	12.7	12.3
Egg I. (W) <sup>2</sup>	8	25	38	15	8	14	24	-	-	16	-	-	-	63	58	87	-	61	68	62	-	47	-	-	-	54	-	-	-	79	17	87	42.8	26.0
Egg I. (E)	-	-	-	-	-	-	-	-	-	-	-	-	-	10	13	17	-	14	-	-	8	-	-	-	-	6	-	-	-	6	17	11.3	4.1	
Stump I.	1	0	1	1	1	4	10	-	30	15	-	-	-	21	5	60	-	70	107	66	89	152	-	-	-	80	-	-	-	18	152	39.6	45.5	
Gull I.	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	1.0	1.4
Reindeer I.	0	0	0	0	0	0	4	-	-	-	-	-	1	9	4	2	-	2	0	0	-	-	-	-	-	-	-	-	-	11	15	11	2.2	3.5
Argo I.	0	0	0	0	0	0	0	-	-	-	-	-	1	0	3	6	-	3	3	4	-	-	-	-	-	-	-	-	-	14	6	1.4	2.0	
Cross I.	97	73	90	91	27	115	139	-	-	0	-	-	129	216	192	243	-	223	166	60	-	105	-	-	-	-	-	-	-	16	243	122.9	70.2	
NoName I.	0	0	0	0	0	0	-	-	-	-	-	-	6	10	17	13	-	11	8	7	-	-	-	-	-	-	-	-	-	13	17	5.5	6.0	
Narwhal I.	2	3	2	4	6	8	33	-	-	-	-	-	30	35	48	40	-	61	63	30	-	62	-	-	-	-	-	-	32	16	63	28.7	22.4	
Jeanette I.	1	2	2	1	0	4	5	-	-	-	-	-	0	10	13	22	-	28	24	0	-	-	-	-	-	-	-	-	18	15	28	8.7	9.9	
Karluk I.	1	1	2	1	0	3	0	-	-	-	-	-	3	7	18	14	-	4	3	0	-	-	-	-	-	-	-	-	3	15	18	4.0	5.3	
Lion Point	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-	77	-	90	88	17	-	-	-	-	-	-	-	-	-	5	90	55.6	40.7	
Pole I.	7	5	50	5	4	16	64	-	-	10	-	-	0	141	60	215	-	158	162	0	-	-	-	-	-	-	-	-	15	215	59.8	72.9		
Belvedere I.	1	0	1	0	0	1	10	-	-	-	-	-	0	1	4	1	-	15	7	1	-	-	-	-	-	-	-	-	14	14	15	3.0	4.6	
Challenge I.	0	0	0	0	0	1	4	-	-	-	-	-	4	17	3	11	-	4	9	28	-	-	-	-	-	-	-	-	14	15	28	6.3	8.1	
Alaska I.	1	0	1	1	0	2	12	-	-	0	-	-	-	44	29	41	-	26	38	21	-	-	-	-	-	-	-	21	15	44	15.8	16.6		
Duchess I.	0	1	0	1	0	2	0	-	-	9	-	-	-	11	6	21	-	31	27	42	-	-	-	-	-	-	-	8	15	42	10.6	13.4		
Northstar I.	1	1	1	1	0	2	0	-	-	-	-	-	4	6	18	15	-	2	17	28	-	-	-	-	-	-	-	0	15	28	6.4	8.7		
Flaxman I. (W)	3	6	7	3	2	5	0	-	-	0	-	-	0	-	0	2	-	-	-	-	-	-	-	-	-	-	-	1	12	7	2.4	2.5		
Flaxman I. (E)	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	0	2	2	1.0	1.4		
All Locations	152	145	225	144	70	236	381	-	91	83	41	-	178	758	577	1042	-	949	922	449	97	395	-	-	-	164	-	-	44	214	380	1342	507.2	27.9

<sup>1</sup> Censuses were conducted on various dates from 25 June to 31 July. Timing may influence census results because of the possibilities of missing late-initiated nests and early failed nests, or censusing after the peak of hatch and not recognizing some empty nests as active nests. Sources: Schamel (1974); Gavin (1976); Divoky (1978); Johnson and Richardson (1981); Johnson (1984); U.S. Fish and Wildlife Service, Office of Ecological Services, Fairbanks, Alaska (unpublished data); Moitoret (1998); Noel et al. (1999a); this study. Dashes indicate no data.

<sup>2</sup> In years when Egg Island is not split into 2 pieces, numbers appear to be recorded for the west end only. 1999 data are presented accordingly.

**APPENDIX A**







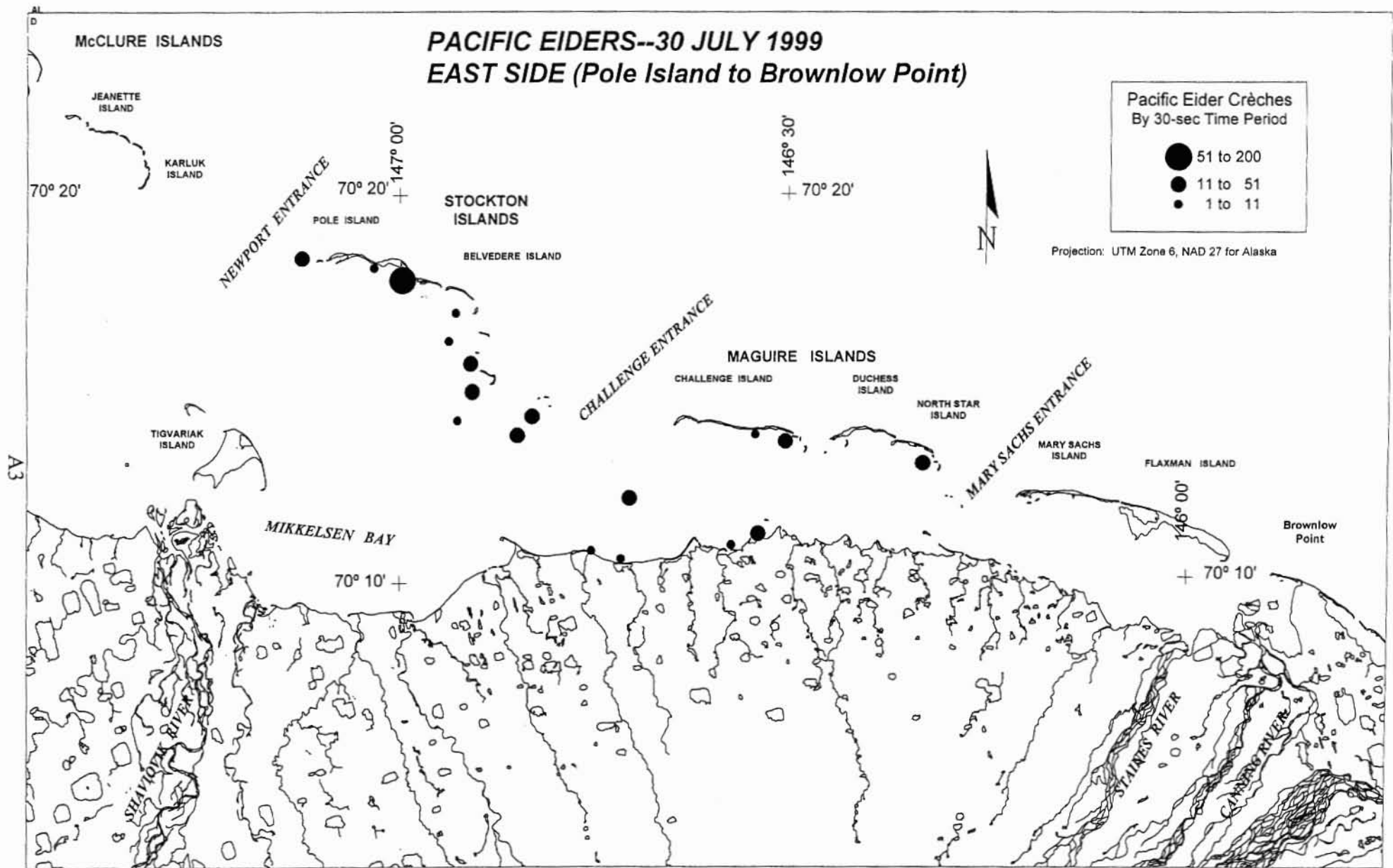


Figure A-3. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 30 July 1999.



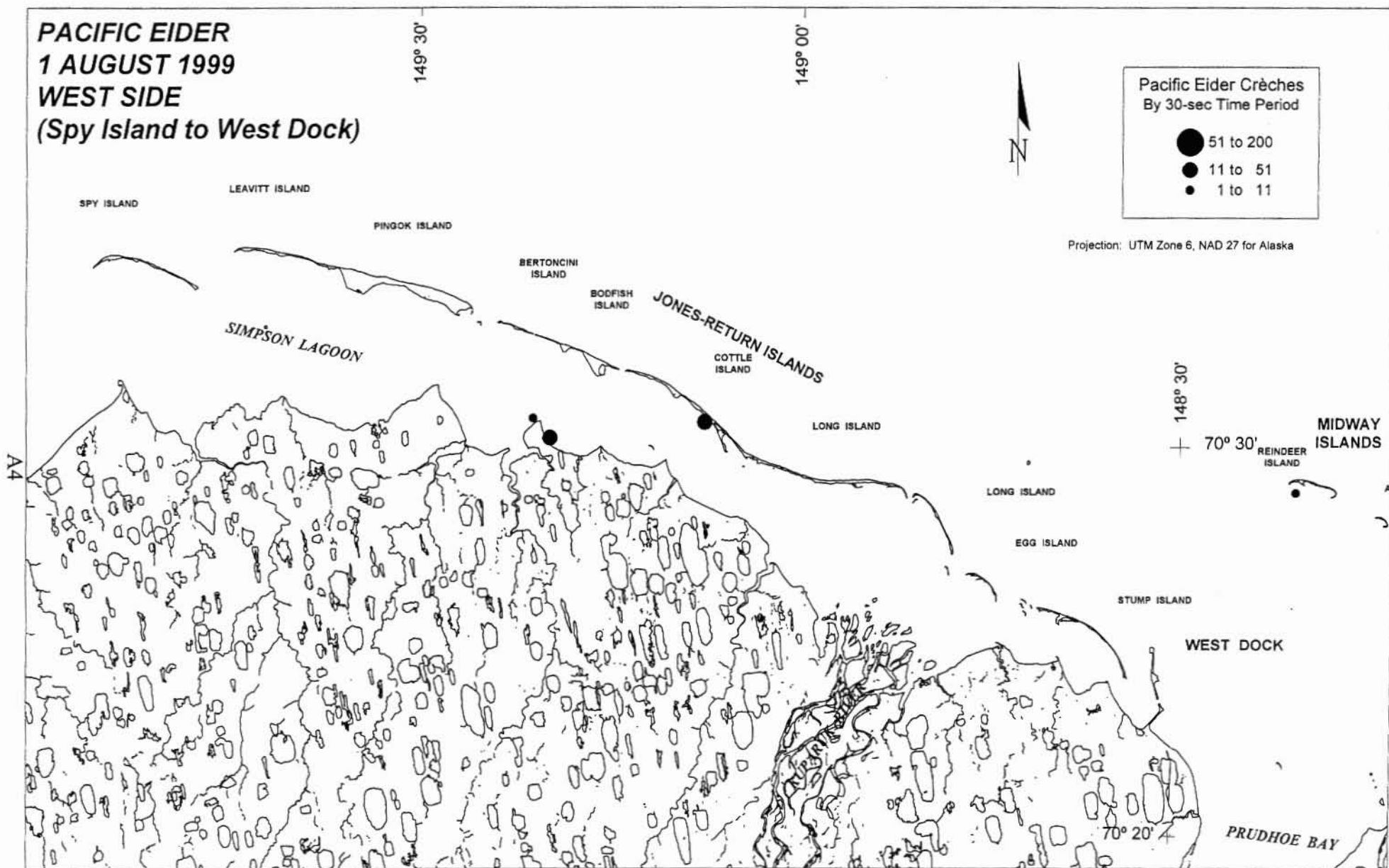


Figure A-4. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 1 August 1999.

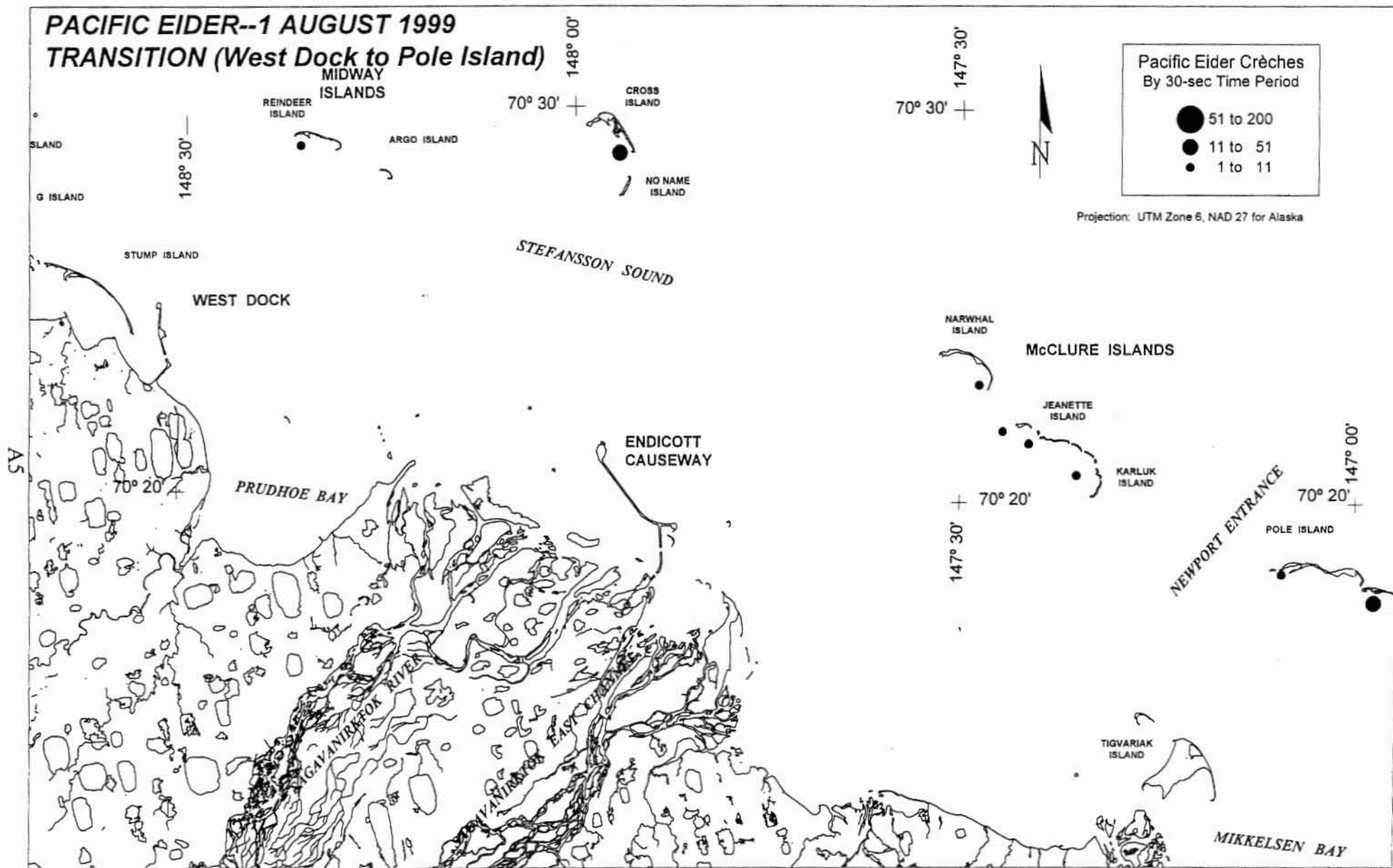


Figure A-5. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 1 August 1999.

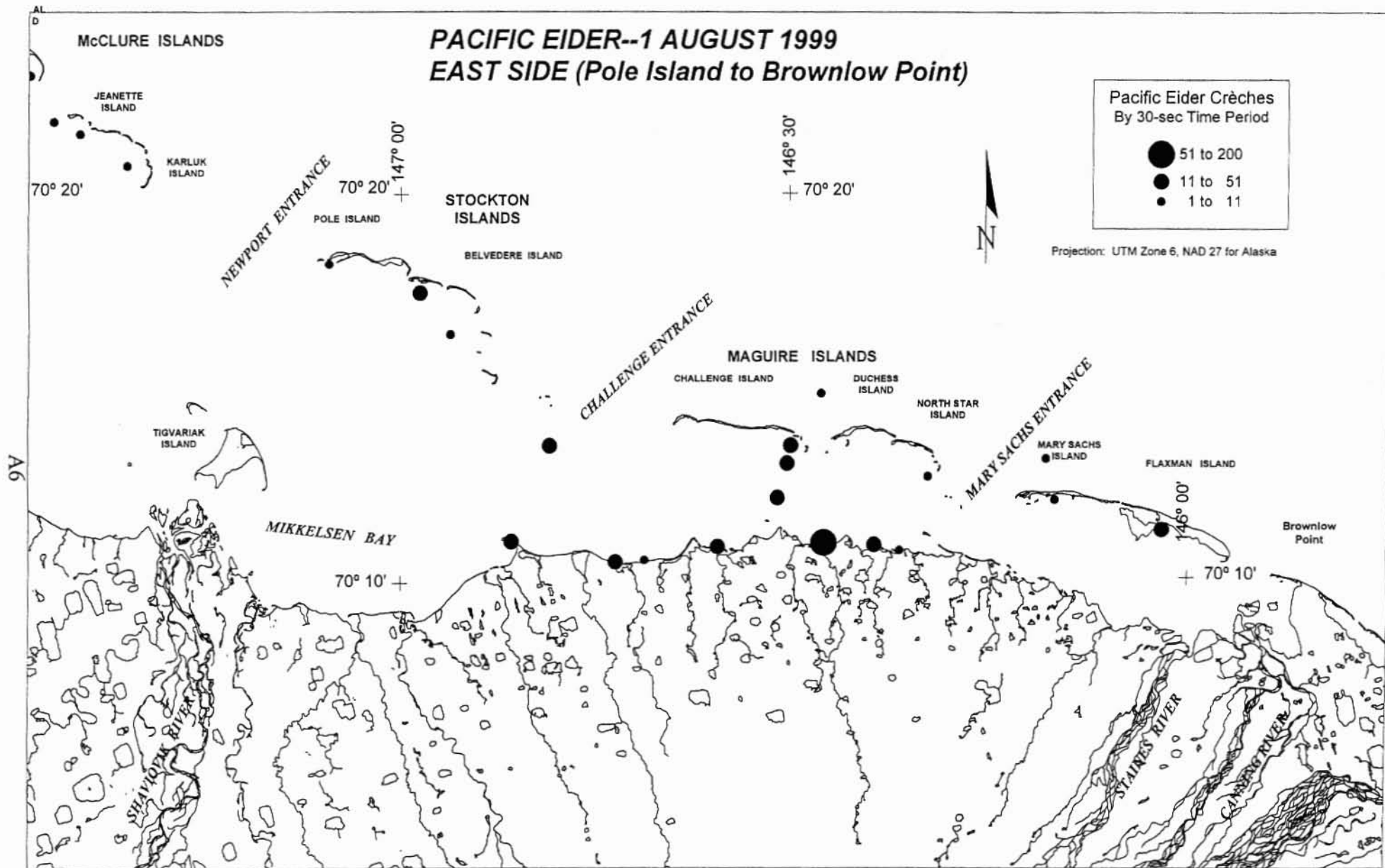


Figure A-6. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 1 August 1999.



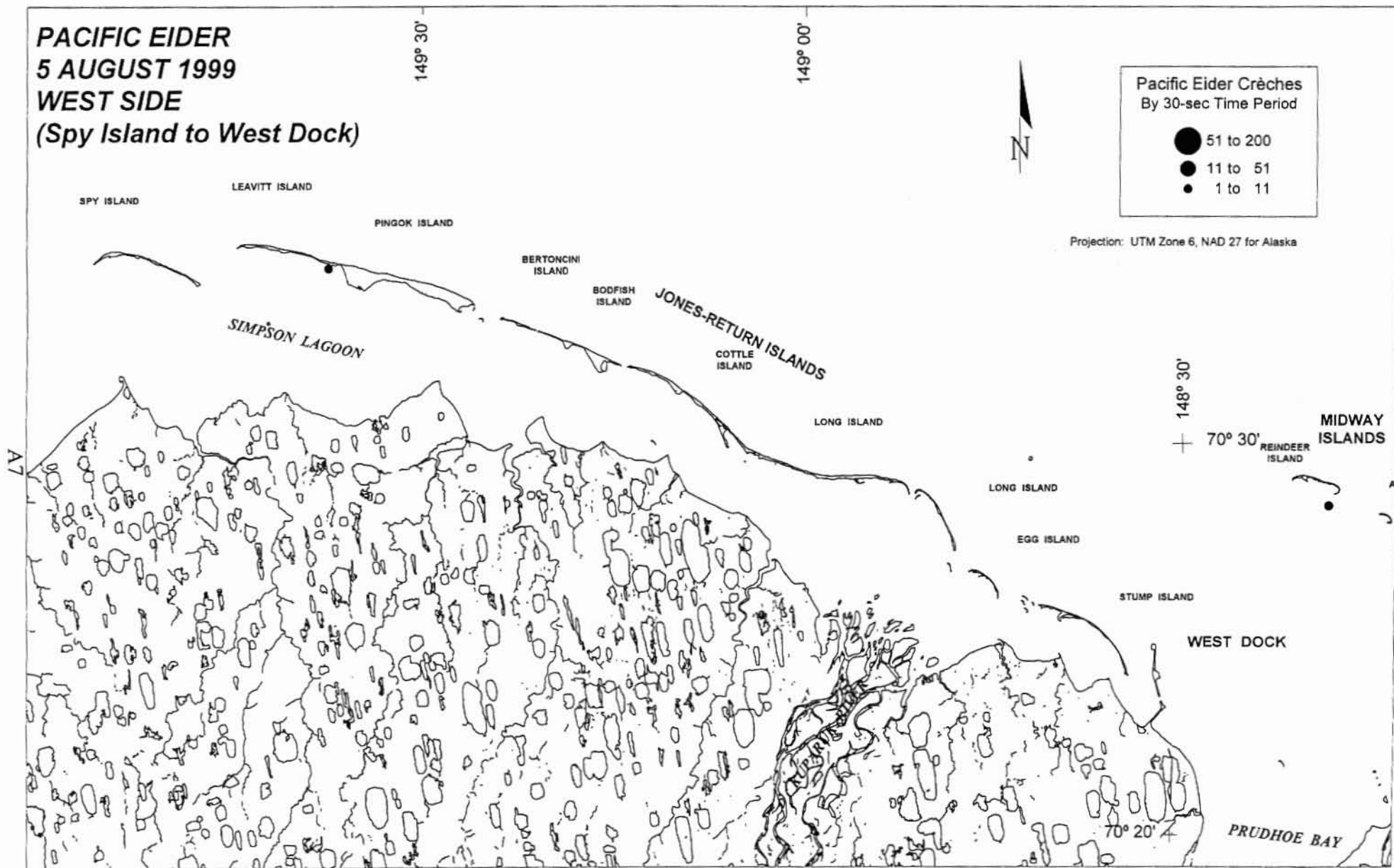


Figure A-7. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between Spy Island and West Dock, Alaska, 5 August 1999.

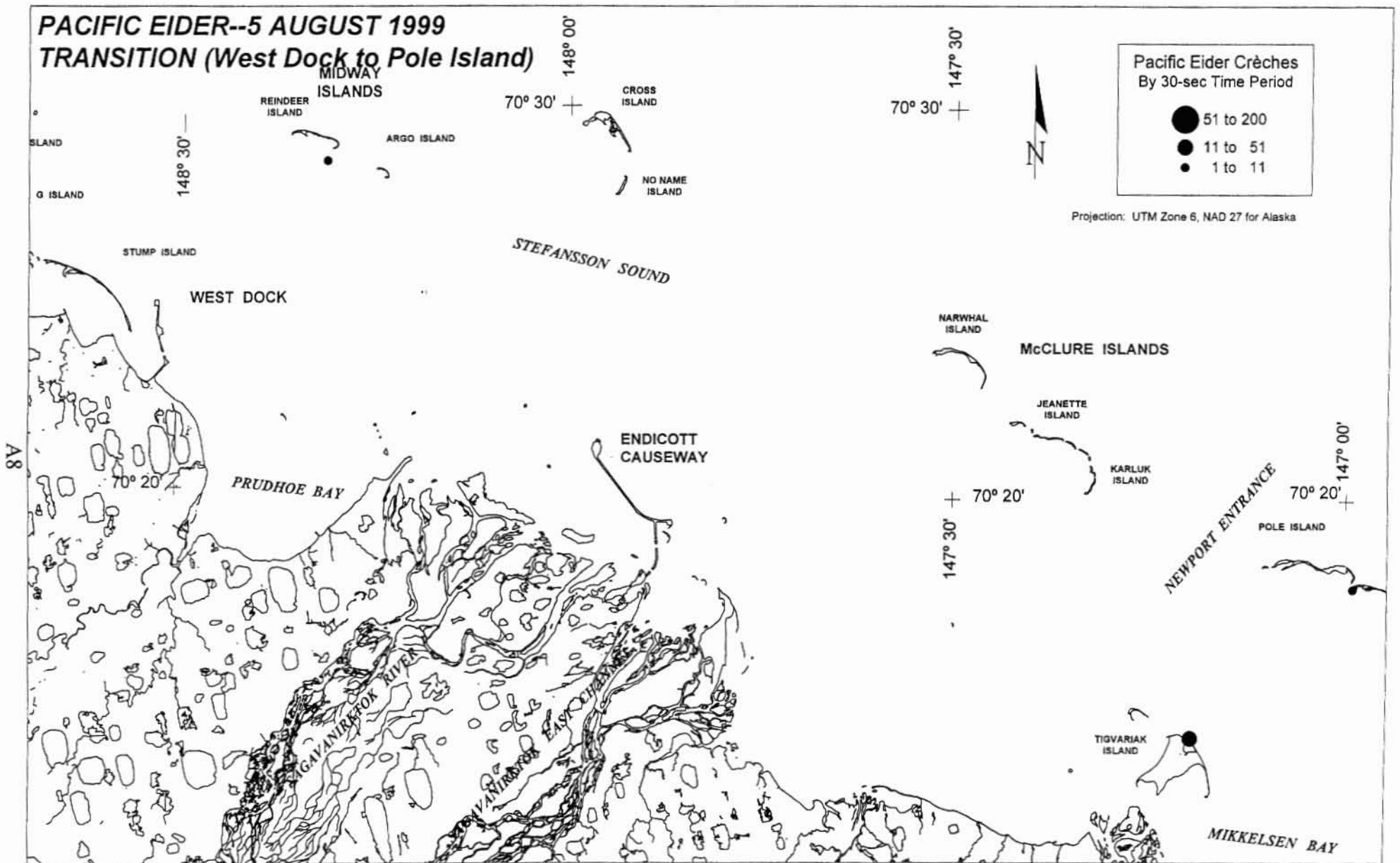


Figure A-8. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between West Dock and Pole Island, Alaska, 5 August 1999.

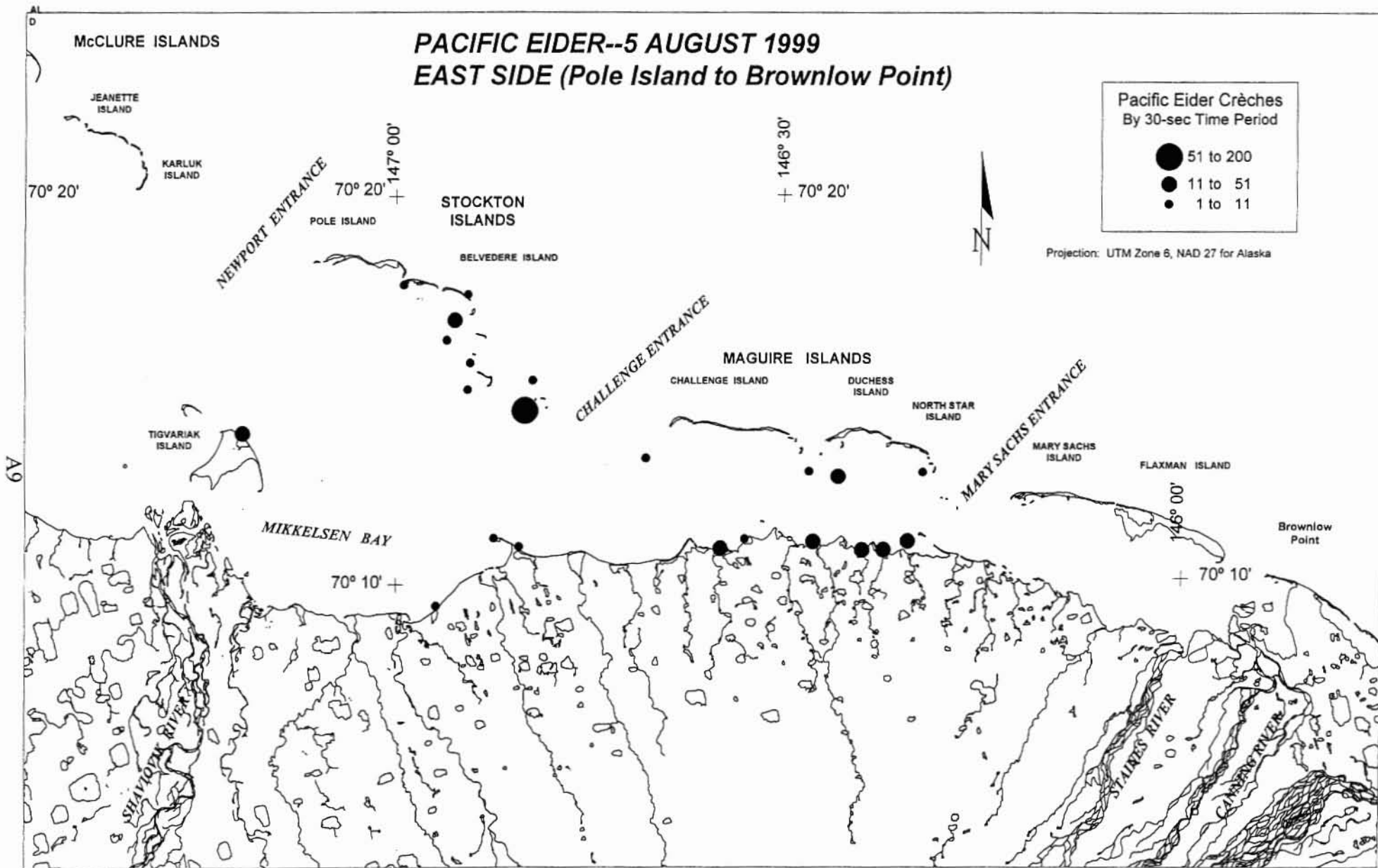


Figure A-9. Summary of total Pacific eiders in crèches by 30-second time period segments in the barrier island-lagoon system between Pole Island and Brownlow Point, Alaska, 5 August 1999.