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Environmental Assessment of the Alaskan Continental Shelf

Volume 3. Marine Birds

Principal Investigators' Reports
for the Year Ending March 1976



U.S. DEPARTMENT OF COMMERCE
BUREAU OF OCEANOGRAPHY AND MARINE RESEARCH



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Annual Reports from Principal Investigators

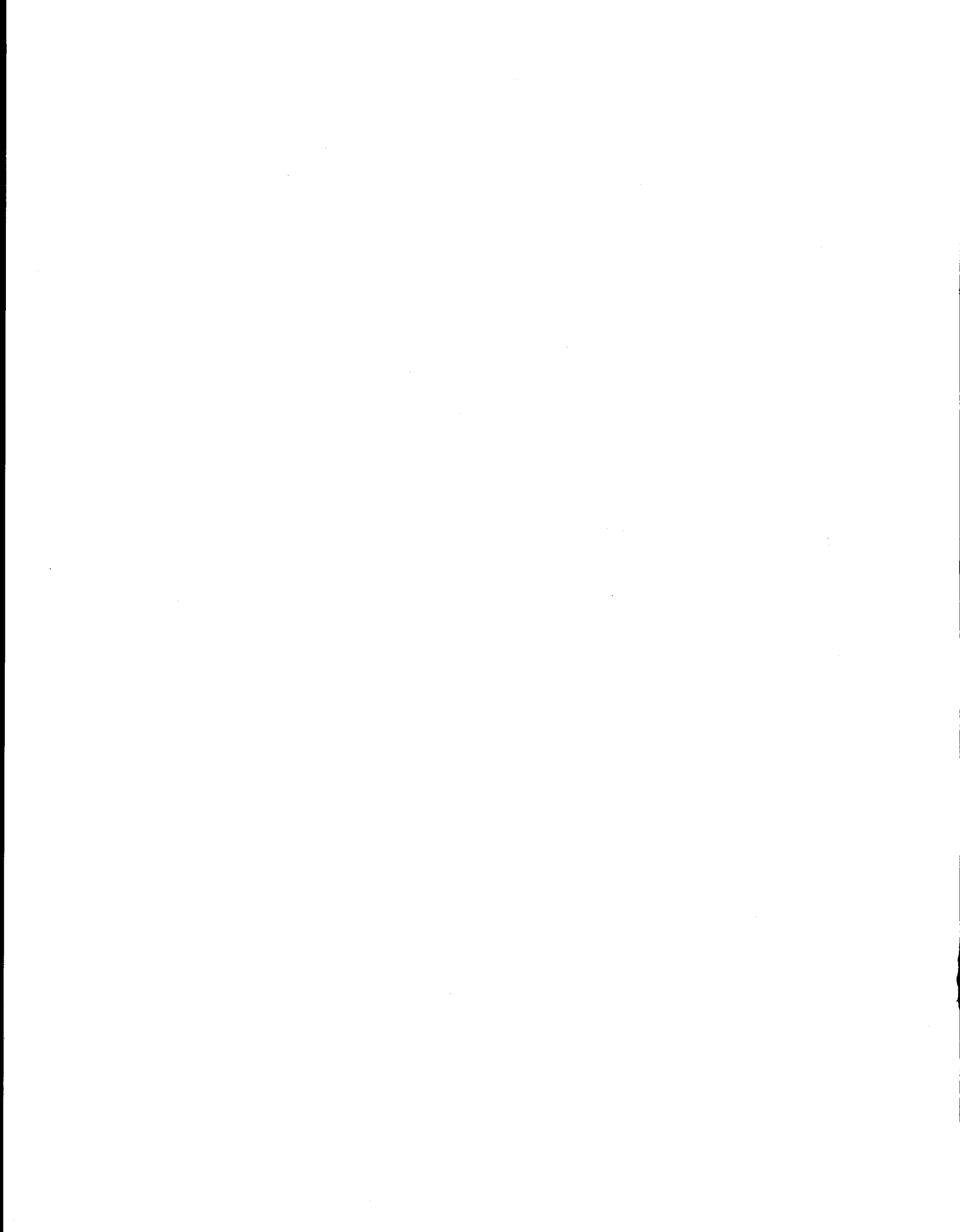
- Volume:
1. Marine Mammals
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Environmental Assessment of the Alaskan Continental Shelf

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*Fourth quarter and annual reports for the reporting period ending March 1976,
from Principal Investigators participating in a multi-year program of environmental
assessment related to petroleum development on the Alaskan Continental Shelf.
The program is directed by the National Oceanic and Atmospheric Administration
under the sponsorship of the Bureau of Land Management.*

ENVIRONMENTAL RESEARCH LABORATORIES / Boulder, Colorado / 1976



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ANNUAL REPORT

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ECOLOGY AND BEHAVIOR OF SOUTHERN HEMISPHERE SHEARWATERS

(Genus Puffinus) AND OTHER SEABIRDS, WHEN OVER THE

OUTER CONTINENTAL SHELF OF THE BERING SEA AND

GULF OF ALASKA DURING THE NORTHERN SUMMER.

JUAN GUZMAN

UNIVERSITY OF CALGARY

MARCH 22, 1976

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FOREWORD

The field work was carried out during the summer season of 1975. This report is, therefore, a follow-up on the information given in Report No. 1 (June, 1975) and Report No. 2 (July-August, 1975), and includes retroactive analyses of field notes.

I. Summary of Objectives, Conclusions and Implications with Respect to OCS Oil and Gas Development.

This project is dedicated to the study of the ecology and behavior of the Sooty Shearwater (Puffinus griseus) and Short-tailed Shearwater (P. tenuirostris), when they occur in Alaskan coastal waters (OCS), during the northern summer. This research will be used by Juan Guzman, in partial fulfillment of the requirements for the degree of Master of Science at the University of Calgary, in accordance with Work Statement R.U.#239, attached to Contract No. 03-5-022-78.

Objectives. The following is the overall objective of this research: to learn what are the basic reasons for the presence of Southern Hemisphere seabirds in such large numbers in the Alaskan Outer Continental Shelf Zone from May to September each year, and delineate (i) the distribution, (ii) regional movements and responses to environmental influences and (iii) the ecological requirements, of populations of these shearwaters.

Conclusions and Implications. The Southern Hemisphere shearwaters mainly occupy the Continental Shelf of Alaska rather than zones close inshore or farther out over deeper water. They do not appear to compete with local breeding species of seabirds. Much more data needs to be collected on the oceanographic and climatic determinants of their patchy distribution patterns and movements. Serious oil leaks that became widespread or continuing pollution could, in certain localities or times, probably so alter the food chains upon which shearwaters dependent as to drastically reduce their numbers.

II. Introduction

A. General Nature and Scope of Study.

The ecology and behavior of shearwaters (Order Procellariiformes, Genus *Puffinus*) in open ocean areas during the non-breeding season has hardly been studied at all until now in the North Pacific. Yet, millions of these seabirds visit the North Pacific Ocean from the southern hemisphere for several months each year.

This project is devoted to the ecology and behavior of the Short-tailed Shearwater (*Puffinus tenuirostris*) and Sooty Shearwater (*P. griseus*), when they occur over the Outer Continental Shelf of the Bering Sea and Gulf of Alaska during the northern summer. It is necessary to refer to both species together in most of what follows because they are not usually distinguishable in the field.

This study deals to a much lesser extent with other seabirds when they interact with shearwaters. The possible impact of petroleum on shearwaters is considered in relation to their distribution, the biological and oceanographic characteristics of the study areas, and the weather conditions.

B. Specific Objectives.

1. The relationship between the distribution of the Short-tailed Shearwater and Sooty Shearwater during the northern summer in the study area and a) the food available to them, b) particular water conditions, c) the distance from shore, and d) the passage of weather systems.

2. To obtain measurements and descriptions of captured specimens and examine stomach contents, to determine differences i) between the species, and also ii) between different populations of the same species in different oceanic areas.

3. To study the plumage, molt and reproductive state of shearwaters during the southern winter months, when it is assumed that they are in non-reproductive state. Molt can be studied i) by means of photographing flying and captured living birds, ii) examination of specimens, and iii) by sampling feathers on the ocean surface.

4. To determine if there is any ecological interaction between visiting shearwaters and North Pacific breeding species, and to analyze the relative behavior of shearwaters and other seabirds when they occur in mixed feeding flocks.

5. To correlate the directions of flight of moving flocks with the pattern of passing weather systems (as suggested by Manikovsky, 1971).

6. The behavioral dynamics of shearwaters at both the individual and flock (social) level.

7. Baseline residues of certain pollutants in tissues (to be analyzed only if this can be carried out by another agency at no cost to this project).

C. Relevance to the Consequence of Probable Future Petroleum Development of the OCS.

1. Before it is possible to determine whether oil does or does not have an impact on the populations of shearwaters, a more prolonged study of their movements and distribution over the OCS area is required. The dispersal of oil over the surface of the water depends upon several environmental factors (e.g. winds and currents) some of which are also involved in bringing about the actual distribution and movements of elements in the food chain. Data from other sources that will make this analysis feasible have not been obtained, yet.

2. Analyses (of the types mentioned in section B7) for petroleum levels in tissues, heavy metals in feathers, and also the nature of plastic particles in gizzards would provide essential baseline data on levels of petroleum and other pollutants in these, the most abundant birds in the North Pacific and Bering Sea during the summer, against which pollutant levels in future years can then be compared. However, we have not received any support for such baseline studies. Up to this time we have, therefore, confined ourselves to collecting a small number of specimens in 1975 that have been kept frozen, so that analyses of their tissues, feathers and stomach contents may when circumstances allow it provide some of the information required. At least partly, the analytical techniques necessary have not yet been fully developed.

III. Current State of Knowledge.

1. An "International Resource".

In summer the Short-tailed Shearwater and the Sooty Shearwater are the most numerous species of seabirds over the Outer Continental Shelf of the Gulf of Alaska and the Bering Sea away from the immediate coastline. Neither species breeds in Alaska, however. The Short-tailed Shearwater is the "mutton bird" of Australian commerce. It makes a circuit of the North Pacific Ocean during its annual migration, perhaps to avoid unfavourable wind conditions during a return migration by the same route. It has previously been reported to be the more common of the two species in the Bering Sea and among the Aleutian Islands. The Sooty Shearwater is supposed to be the more common of the two species in the North Gulf Coast and in the waters of Southern Alaska. The OCS Draft Study Plan (page 20) refers to such seabird populations of the Gulf of Alaska as an "international resource", and this the shearwaters from southern Chile, New Zealand and Australia certainly are. They visit United States waters during their non-breeding season, occurring in Alaskan waters during the period of winter in the Southern Hemisphere, from May to September.

2. Present Ignorance of Shearwater Ecology at Sea, and the Importance of the Alaska OCS Areas.

Despite the writings of Murie (1959), Gabrielson and Lincoln (1959), Bartonek and Gibson (1972), Bartonek (1971, "102 statement-description of bird resources along proposed tanker route from Port of Valdez to southern terminals"), Isleib and Kessel (1973) and Martin and Myres (1969), the ecology of shearwaters of the genus Puffinus is

not well understood for the period of the year when they occur in the Bering Sea and the northeasternmost North Pacific Ocean. It will suffice to suggest that there must be good reasons for them coming there, and that interference with the food chain on the OCS would cause the virtual extinction of these most abundant birds, since they evidently depend on the resources of the region for a large period of the year.

3. Oil and Seabirds.

The history of incidents involving oil and seabirds is a long one with an extensive literature, but differences in the effect of oil on different taxa are not well known. Species behave in varying ways, in the presence of oil on the surface of the water. Murres and penguins dive, and Manx Shearwaters, gulls and kittiwakes fly away (Bourne, 1968; Vermeer and Vermeer, 1975), but unfortunately most of them react only after contact with the oil slick. Of the damage that can be caused by oil, among the most important to consider is the oiling of birds. The feathers of birds once oiled lose their waterproofing quality, and consequently the birds lose their buoyancy and the capacity to control the temperature of the body (Vermeer and Vermeer, 1975).

Another cause of seabird mortality, indirectly due to petroleum, is starvation caused by loss of the food species upon which seabirds depend. Few confirmed and documented examples have yet been studied in detail, however.

The toxic effects of oil have been tested by Hartung and Hunt (1966), who found that industrial oil caused lipid pneumonia, gut irritation, fatty livers and adrenocortical hyperplasia when fed to ducks.

Hartung (1963) found that birds preen around 50% of the oil from their feathers in the first 8 days after oiling, but ingest most of this in the process (in Vermeer and Vermeer, 1975). Peaker (1971), suggested that oiling of birds could affect the activity of the salt glands, so a serious physiological salt imbalance could result.

The number of birds killed during a spill of oil depends mainly on the characteristics of the "incident", physical conditions of the environment (currents, weather, distance offshore), season of the year, proximity to colonies and species of birds present in the area. Tanis and Morzer Bruijns (1969), estimated that 150,000 to 400,000 seabirds are killed annually in the North Pacific Ocean (in Sowl and Bartonek, 1974). During the winter 1969-1970, King estimated that at least 10,000 birds were killed by oil pollution along the coast of Alaska during an "unusual" six week period of southeast winds. He stressed that it is impossible to calculate the number of seabirds that are not drifted ashore, but are instead "trapped" in the rotating offshore currents of the Gulf of Alaska.

IV. Study Area.

The study area covers the Gulf of Alaska and the Bering Sea, approximately from 53° to 60° N and 130° to 170° W. In accordance with the criteria of Sanger (1972), the study area includes parts of the following oceanographic regions: Central Subarctic Domain, Coastal Domain, Bering Sea Coastal Domain and Western Subarctic Domain (Figure 1).

The study area has been divided into $5^{\circ} \times 5^{\circ}$ "latilong" regions (Figure 2), equivalent to Marsden quadrants (Favorite and McLain, 1973) but with a different numbering. These regions enclose rectangular areas that are 5° of latitude south-north and 5° of longitude east-west. The 5° latilongs that cut across the Aleutian Islands chain have been divided into two, a to the south and b to the north of the Islands.

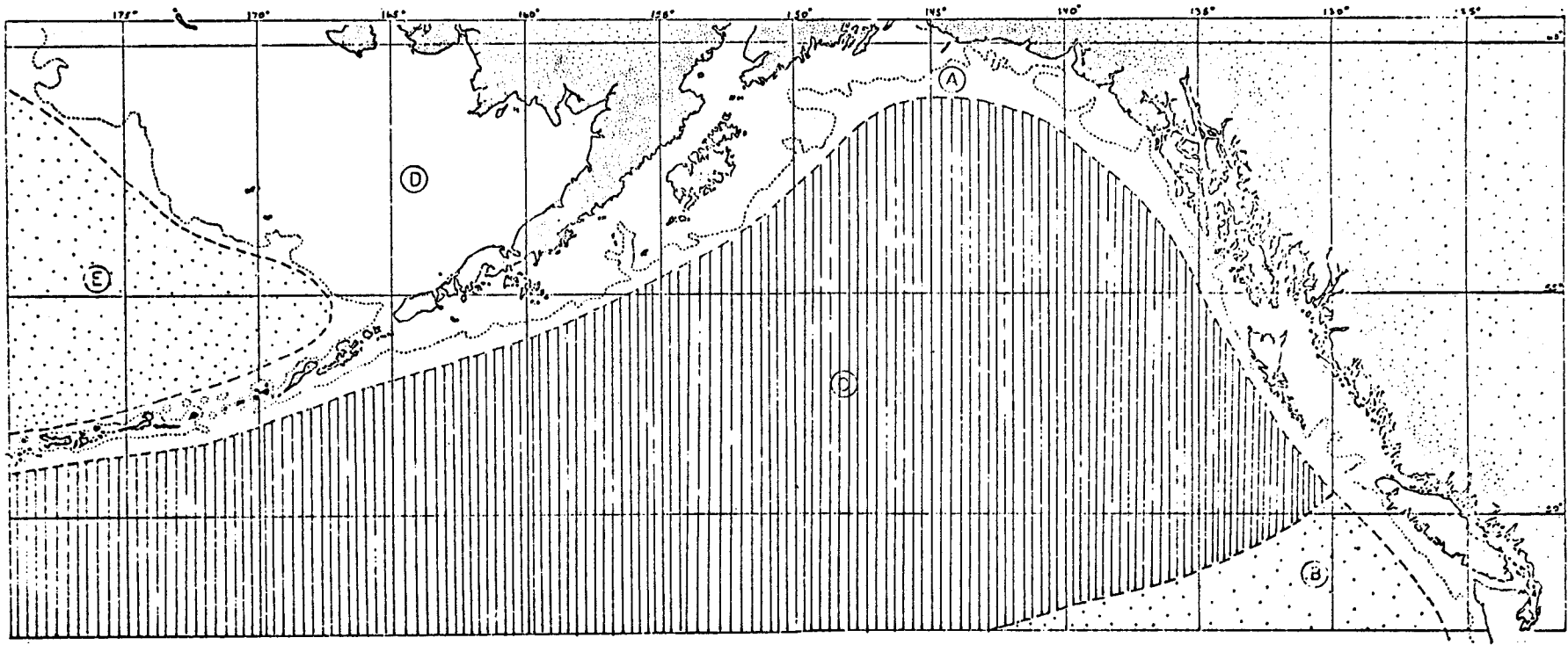


Figure 1. Oceanic regions included in the study area:

- A. Coastal Domain
- B. Transitional Domain
- C. Central Subarctic Domain
- D. Bering Sea Coastal Domain
- E. Western Subarctic Domain

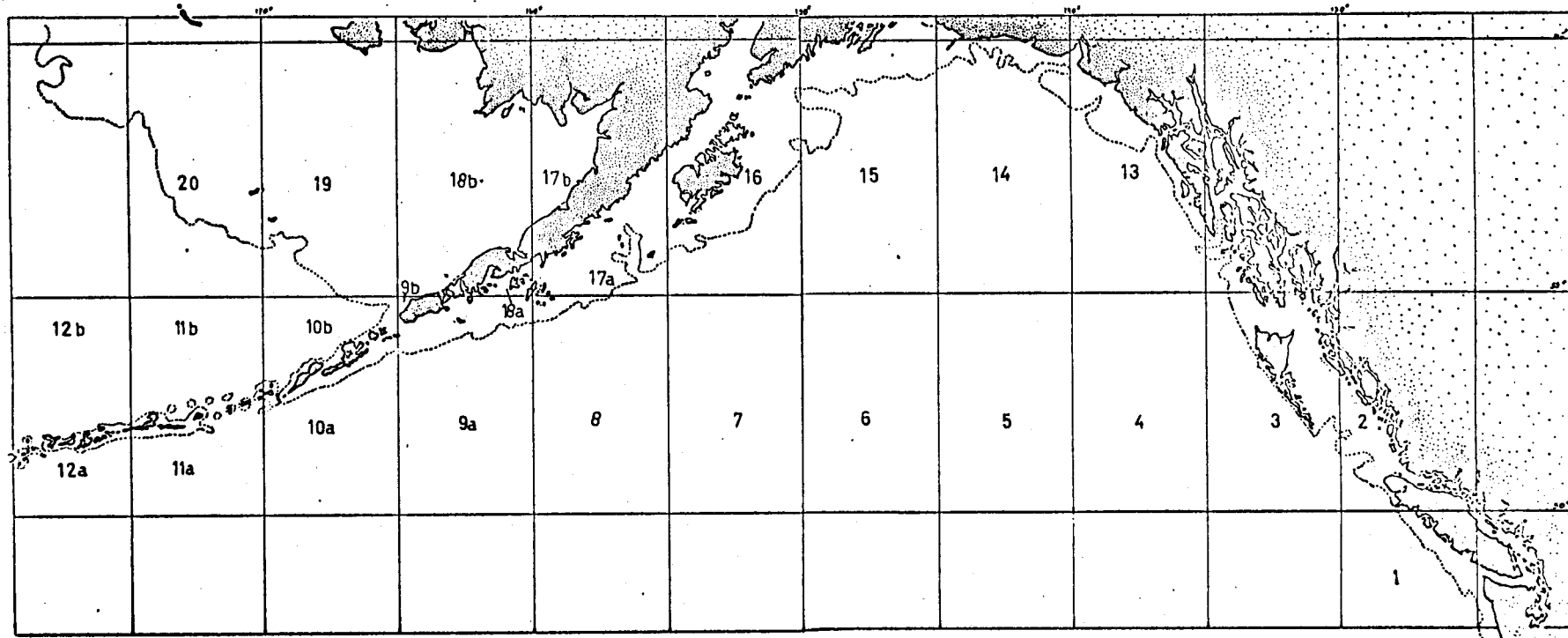


Figure 2. Latilongs covered by the study area.

V. Sources, Methods and Rationale of Data Collection.

During this study the following activities were carried out in 1975, and will be continued in 1976.

1. Census. A method developed by Dr. Calvin Lensink of the U.S. Fish and Wildlife Service specifically for Alaska OCSEAP was employed. The processing of our data is being carried out by his office for incorporation into the archives at the National Oceanographic Data Center (NODC) in Washington, D.C.

The method involved data forms for ship transects and station records. Normal Transect Counts were made mainly from atop the pilot house (flying bridge), out to a distance of 300 m forward from the ship on one side only, in three zones, each 100 m wide. Counts were made during a standard 15 min. of observation each hour. At fixed ship stations all the birds inside 600 m around the ship were counted. In addition whenever visibility was limited by fog so-called Experimental Transect Counts were made. These were on the same forms as the Normal Transects but an "E" was placed before the number, in order to show that the information was collected using other censusing procedures than for Normal Transect Counts. Whenever time permitted I counted all the shearwaters that it is possible to see from the ship, using 7x binoculars and a telescope (d=60).

2. Behavior. Behavioral data on shearwaters was also recorded (as "remarks") on the census sheets. In particular, information about the dynamics of both flock and individual behavior was sought.

3. Atmospheric, Oceanographic and Hydrographic Conditions. One of the unexplained facts about Sooty Shearwaters is that they "vary

in numbers from day to day in any given locality" (Martin and Myres, 1969). In an attempt to establish the reasons for the discontinuous distribution of shearwaters at sea, both in space and in time, all the census and behavioral data from 1975 and 1976 will later in 1976/77 be related to those environmental conditions that prevailed at the time, as they were recorded by the crew and scientists of the NOAA ships DISCOVERER and SURVEYOR, and obtained either aboard ship or from NODC (see paragraph 7, below). It is hoped to establish some statistical correlations between the distribution and directions of movements of shearwaters and weather conditions, i.e. whether, within a region, regular patterns of 'circulation' by sub-populations may be taking place. Also, I hope to be able to find a way of distinguishing movements of this type from true seasonal migratory movements by establishing the range of conditions under which the latter take place.

4. Plankton, Squids and Fish. Because of the multidisciplinary nature of the scientific teams working on the NOAA ships in the OCSEAP program it should also, later, be possible to obtain, from contemporary samplings by other scientists, data on the biological oceanography of stations where shearwaters were or were not found.

5. Collecting Birds. In 1975, 24 birds were collected with a 20-gauge shotgun, under a U.S. Fish and Wildlife Service Subpermit (No. 7SC25) to Dr. Calvin Lensink. With additional specimens to be collected in 1976, these birds will be used to obtain measurements, data on molt, and stomach contents. (Hopefully, some stomach contents and tissues can also be analysed for petroleum derivatives, although the results will certainly not be available in time for inclusion in the final report.)

6. Disposition and Contract Data. The U.S. Fish and Wildlife Service will keypunch the bulk of the Census Data. This consolidation of all seabird data will make additional observation of shearwaters from other sources available for incorporation into, or correlation with, mine when I analyze them in 1976/77.

7. Data Required from Alaska OCSEAP Project Office, Juneau and NODC. The physical and biological data required from other OCSEAP investigations for correlation with our Shearwater data is listed by Project Numbers on pages 15 and 16.

Required Information from the Alaska OCSEAP Project Office, Juneau and
NODC

In order to achieve clear results in this Research Unit, it is vitally necessary to attempt correlations with the information collected by the following NOAA Projects, which we have placed into three separate categories (below):

1. Field Data (1975) on Shearwaters (Species Codes 03-02-04).

	03-02-04-07
RU 108	03-02-04-08
RU 330/196	
RU 337	
RU 340	
RU 341	
RU 342	

2. Copies of Annual Reports of April 1, 1976 on Reviews of Literature and Unpublished Data.

RU 19
RU 30
RU 64
RU 68
RU 75
RU 156/164a
RU 307
RU 339
Task B8 (no RU#)

3. Copies of Annual Reports of April 1, 1976 from other RU's so that we can determine from these summaries whether we may need precise field data from any of them for direct correlation with Shearwater (RU 239).

<u>Task</u>	<u>RU</u>
A5	337
	340
A6	108
	341
	342
A16	285
A23	156/164b
	156/164c
	156/164d
	156/164e

<u>Task</u>	<u>RU</u>
A25b	349
A31	330/196
A33	275/276/294
A35	153/155
B2	48
	111
	138/139/147
	141/145/148
	217
	235
	289
C2	62
	71
	74

VI. Results.

1. Distribution. During June, July and August 1975, at least 36 species of seabirds were censused in the Bering Sea and Gulf of Alaska. The total number of seabirds of all the species recorded was 12,614,173 in 223 observations (including all kinds of Transects and Stations). Shearwaters were over 99% of all the records (Tables 1 and 2).

Shearwaters were present in outstanding numbers in Bristol Bay, where the ocean is less deep than other places in the Bering Sea (Figures 3, 4 and 5). The largest concentration of shearwaters was observed northeast of the Pribilof Islands, where over 10 million were seen on August 17, 1975; on that occasion, both species of shearwaters were present over a transect distance of about 30 miles.

Beyond the edge of the Outer Continental Shelf the number of shearwaters seen was relatively low. During a cruise between Seattle and Kodiak (July 12, 13, 14 and 15, 1975), the total number of shearwaters seen was only 6679 (Fig. 6, which also includes observations carried out by J. Guzman before this research began).

The distribution of the species of seabirds by latilong regions is shown in Table 3. No observations were made in regions 6, 7, 11a, 11b, 12a, 12b and 13. The most widespread species were the Northern Fulmar (Fulmarus glacialis), Tufted Puffin (Lunda cirrhata) and Fork-tailed Storm Petrel (Oceanodroma furcata) which were present in 13 out of 19 regions (or their subregions) in which observations were made.

Shearwaters (Puffinus sp.) and kittiwakes (Rissa sp.) were present in 11 out of the 19 regions or subregions studied.

2. Molt. In the areas of large aggregations of shearwaters many feathers were seen floating on the sea, indicating that molting

SPECIES	GULF OF ALASKA & NORTH PACIFIC OCEAN						BERING SEA & UNINAK PASS						SUMMARY OF ALL THE OBSERVATIONS	
	TRANSECTS		E-TRANSECTS		STATIONS		TRANSECTS		E-TRANSECTS		STATIONS		Total	%
	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%	Total	%
Northern Fulmar	177	0.76	114	0.082	1	0.229	2131	0.76	0	0	109	0.2415	2532	0.0205
Fork-t'd Storm Petrel	766	3.31	21	0.0152	0	0	107	2.32	0	0	0	0	894	0.0069
Leach's Storm Petrel	49	0.21	5	0.0036	0	0	1	0.022	0	0	0	0	55	0.00044
Petrel (unid.)	4	0.02	1	0.00072	0	0	0	0	0	0	0	0	5	0.00004
Cormorant	1	0.004	117	0.085	6	1.376	19	0.41	0	0	6	0.0133	149	0.0012
Gull (unid.)	16	0.069	0	0	0	0	3	0.065	2	0.00002	9	0.0199	30	0.0002
Gl. winged gull	22	0.095	377	0.2722	23	5.275	27	0.59	6	0.0001	64	0.1418	519	0.0042
Mew Gull	0	0	5	0.0036	0	0	0	0	0	0	0	0	5	0.00004
Sabine Gull	0	0	0	0	0	0	1	0.022	0	0	0	0	1	0.000008
Kittiwake sp.	178	0.77	20720	14.96	46	10.55	87	1.88	0	0	319	0.7067	21350	0.1725
Arctic Tern	2	0.0086	5091	3.675	0	0	2	0.04	0	0	4	0.0089	5099	0.0412
Pigeon Guillemot	1	0.004	78	0.0563	0	0	3	0.065	0	0	1	0.0022	83	0.0007
Murre sp.	121	0.523	16	0.012	7	1.605	442	9.57	6	0.0001	1263	2.798	1855	0.01498
Small Alcids	108	0.47	3	0.0022	0	0	19	0.41	0	0	38	0.0842	168	0.00135
Tufted Puffin	455	1.97	271	0.1956	83	19.04	728	15.77	15	0.0001	266	0.5893	1818	0.01468
Horned Puffin	46	0.199	31	0.0224	0	0	41	0.89	1	0.00001	1	0.0089	123	0.00099
Puffin (unid.)	2	0.0086	0	0	0	0	0	0	0	0	0	0	2	0.000016
Bl.footed Albatross	16	0.069	1	0.0007	0	0	0	0	0	0	0	0	17	0.00014
Phalarope sp.	55	0.24	51	0.0368	0	0	123	2.66	23	0.00018	0	0	252	0.0024
Jaeger sp.	12	0.052	17	0.0123	0	0	20	0.43	4	0.00003	14	0.031	67	0.0005
Semipalmeted Plover	3	0.013	0	0	0	0	0	0	0	0	0	0	3	0.00002
Shorebirds	5	0.021	0	0	0	0	0	0	0	0	0	0	5	0.00004
Scoter sp.	0	0	1	0.0007	0	0	1	0.022	0	0	2	0.0044	4	0.000032
Sooty Shearwater	5431	23.45	15122	10.92	265	60.78	239	5.18	0	0	0	0	21057	0.1702
Short-t'd Shearwater	5	0.021	62	0.045	0	0	464	10.05	102114	0.8395	42520	94.189	145165	1.17296
New Zealand Shearwater	11	0.047	1	0.00072	0	0	0	0	0	0	0	0	12	0.000097
Manx Shearwater	0	0	1	0.00072	0	0	0	0	0	0	0	0	1	0.000008
Shearwater (unid.)	15672	67.67	96412	69.603	5	1.147	159	3.44	12061890	99.160	520	1.1519	12174658	98.3736
TOTAL	23158	100	138517	100	436	100	4617	100	12164061	100	45139	100	12375941	100
No OF OBSERVATIONS	53		11		6		25		18		16		129	
No OF DAYS	13		6		4		12		7		11			

TABLE 1: CENSUS OF SEABIRDS DURING JULY AND AUGUST, 1975.

SPECIES	GULF OF ALASKA				BERING SEA				SUMMARY OF ALL THE OBSERVATIONS			
	TRANSECTS		E-TRANSECTS		TRANSECTS		E-TRANSECTS				STATIONS	
	Total	%	Total	%	Total	%	Total	%	Total	%		
Pelagic Cormorant	0	0.0	0	0.0	0	0.0	7	0.004	0	0.0	7	0.003
Fulmar	111	20.9	2	2.17	733	3.3	0	0.0	1390	4.3	2246	0.94
Shearwater	156	29.4	1	1.89	13668	61.9	181880	99.9	30500	94.7	227605	95.5
Tufted Puffin	160	30.1	13	24.5	33	0.2	24	0.01	0	0.0	230	0.096
Horned Puffin	13	2.5	0	0.0	0	0.0	0	0.0	0	0.0	13	0.005
Murre	0	0.0	4	7.6	1016	4.6	9	0.07	5	0.02	1034	0.43
Alcids	0	0.0	0	0.0	46	0.2	0	0.0	0	0.0	46	0.02
Parakeet Auklet	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0	1	0.00
Kittiwake	25	4.7	0	0.0	291	1.3	3	0.002	311	0.97	630	0.26
Gl.winged Gull	0	0.0	2	3.8	8	0.04	8	0.005	4	0.01	22	0.01
Gull	1	0.2	0	0.0	8	0.04	14	0.07	0	0.0	23	0.01
Pomarine Jaeger	0	0.0	0	0.0	2	0.01	0	0.0	0	0.0	2	0.00
Parasitic Jaeger	0	0.0	0	0.0	1	0.01	0	0.0	0	0.0	1	0.0
Jaeger	0	0.0	0	0.0	11	0.05	0	0.0	0	0.0	11	0.004
Fork-tailed Storm Petrel	4	0.75	24	45.3	6007	27.2	0	0.0	10	0.03	6045	2.54
Leach's Storm Petrel	60	11.3	5	9.4	0	0.0	0	0.0	0	0.0	65	0.02
Storm Petrel	0	0.0	1	1.9	5	0.02	0	0.0	0	0.0	6	0.002
Red Phalarope	0	0.0	0	0.0	243	1.1	0	0.0	0	0.0	243	0.102
Black-footed Albatross	1	0.19	1	1.9	0	0.0	0	0.0	0	0.0	2	0.00
TOTAL	531	100	53	100	22073	100	181945	100	32220	100	238232	100
No. OF OBSERVATIONS	12		2		57		16		7		94	
No. OF DAYS	1		1		14		7		6			

TABLE 2: CENSUS OF SEABIRDS DURING JUNE, 1975.

Species	1	2	3	4	5	8	9a	9b	10a	10b	14	15	16	17a	17b	18a	18b	19	20
Black-footed Albatross	x	x	x		x			x			x		x						
Northern Fulmar	x		x		x	x	x				x	x	x	x	x			x	x
Petrel (unid.)					x		x				x		x						x
Fork-tailed Storm Petrel	x	x	x	x		x	x			x		x	x	x		x			x
Leach's Storm Petrel		x	x	x	x	x	x			x	x		x						
Cormorant (unid.)										x			x			x	x		x
Pelagic Cormorant							x			x			x			x			
Red-faced Cormorant													x						
Scoter sp.										x									
White-winged Scoter													x			x			
Shrebirds													x						
Semipalmated plover															x				
Phalarope sp.	x								x	x									
Northern Phalarope										x			x			x			x
Red Phalarope										x									x
Jaeger sp.										x			x			x	x		x
Parasitic Jaeger					x						x						x	x	
Pomarine Jaeger									x	x			x	x			x	x	x
Gull (unid.)	x					x		x	x		x	x			x		x	x	x
Glaucous Gull						x													
Gl.-winged Gull	x					x		x	x				x	x		x	x	x	x
Mew Gull													x						
Sabine Gull																			x
Kittiwake sp.					x	x		x	x			x	x	x	x	x	x	x	x
Arctic Tern									x			x	x						x
Pigeon Guillemot						x		x		x			x						
Murre sp.						x		x		x			x	x	x	x	x	x	x
Thick-billed Murre																			x
Common Murre					x			x	x			x	x				x	x	x
Unid. Small Alcids	x				x				x			x			x	x	x	x	x
Marbled Murrelet	x											x			x				
Kittlitz's Murrelet												x							
Ancient Murrelet						x						x			x	x			
Rhinoceros Auklet	x																		
Parakeet Auklet													x						x
Least Auklet														x					
Cassin's Auklet	x																		
Shearwater (unid.)						x		x		x			x	x	x	x	x		
Short-t'd Shearwater						x	x	x	x	x		x		x	x	x	x	x	x
Sooty Shearwater	x			x	x				x	x	x	x				x	x	x	x
New Zealand Shearwater												x							
Manx Shearwater													x						
Puffin (unid.)	x																		
Horned Puffin					x	x			x			x	x			x			x
Tufted Puffin	x	x			x	x		x	x	x	x	x	x			x	x		x

TABLE 3: DISTRIBUTION OF SPECIES IN EACH GIVEN REGION OF THE STUDY AREA.

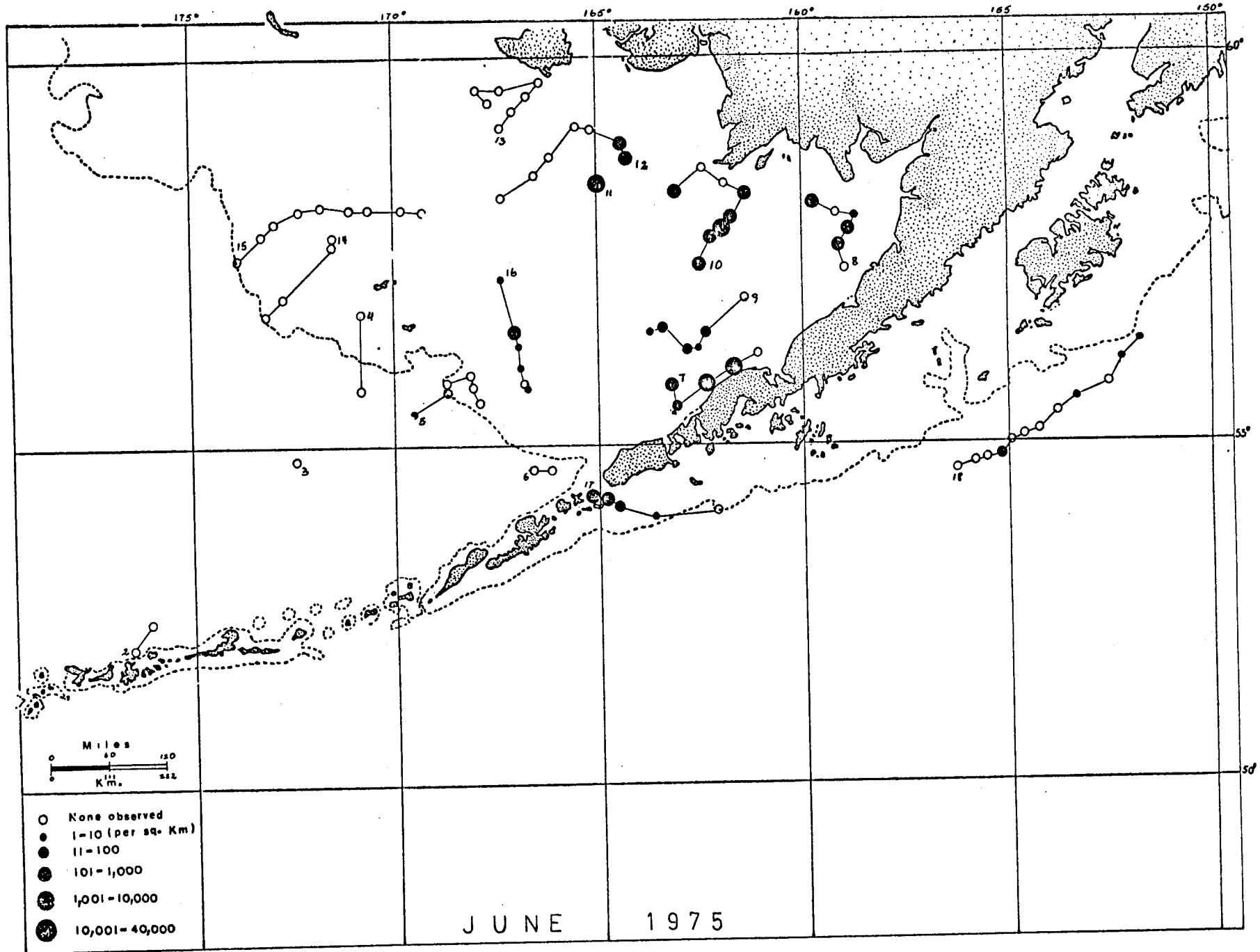


Figure 3. Densities of shearwaters encountered in June 1975, in the Bering Sea and NW Gulf of Alaska. The numbers indicate the dates and they are placed beside the first observation made during that day. Gaps correspond to nights and days with fog cover.

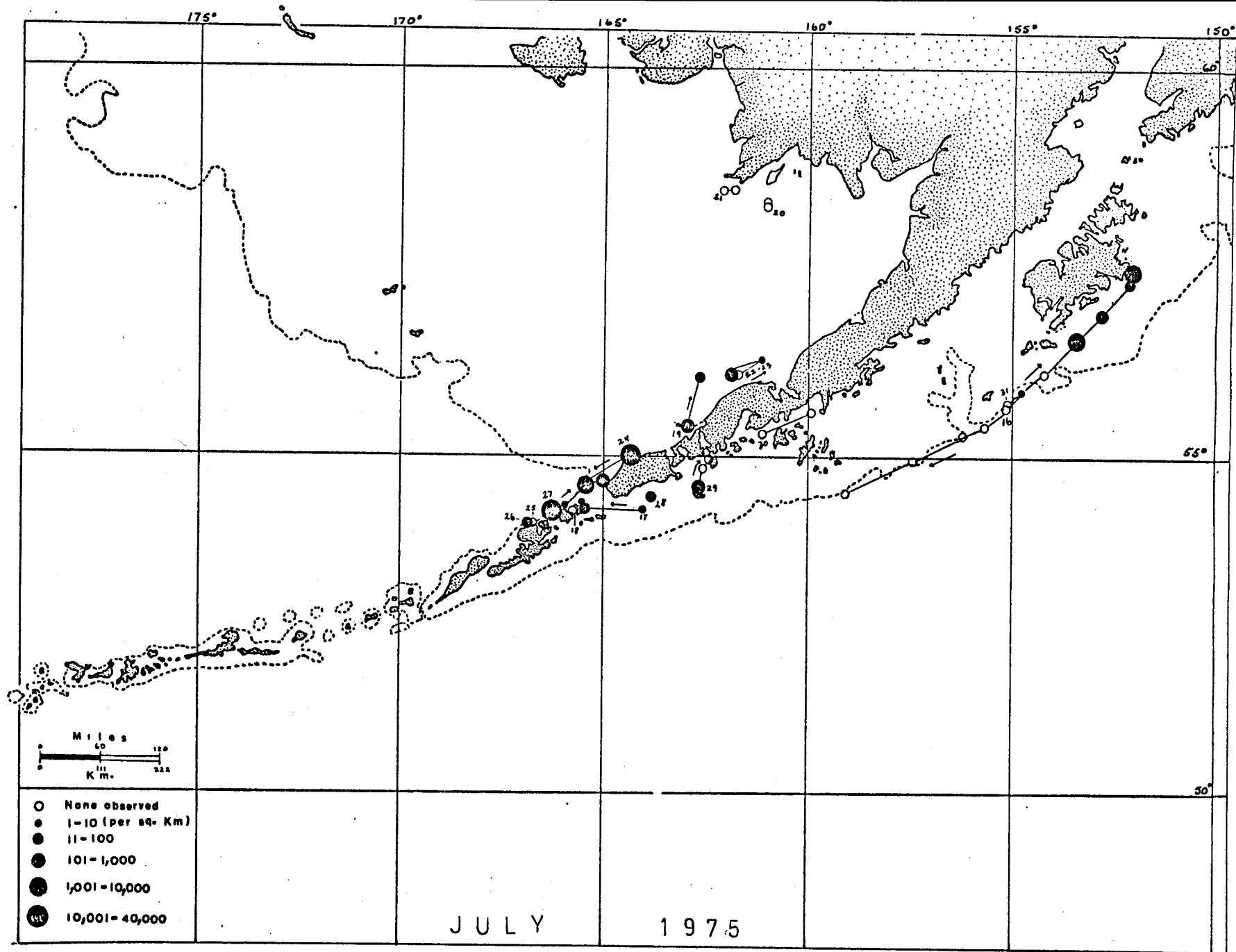


Figure 4. Densities of shearwaters encountered in July 1975. Notations are the same as in Figure 5, and arrows help to distinguish the direction in which the ship was moving.

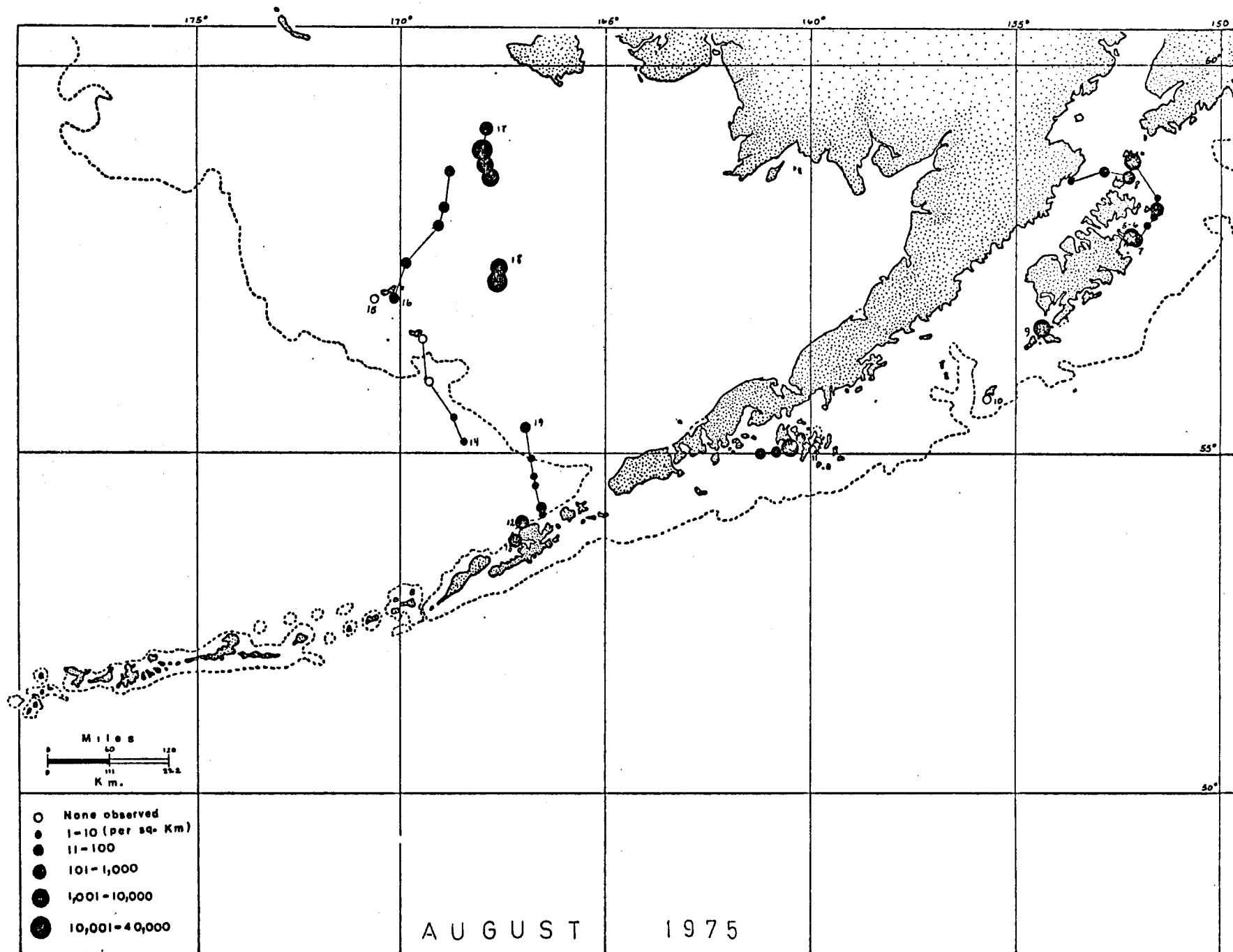


Figure 5. Densities of shearwaters encountered in August 1975, on August 17, during a transit of about 30 n.m. and the visibility to 7 n.m. (about 800 km²); the ship travelled through a concentration of not less than 10 million birds.

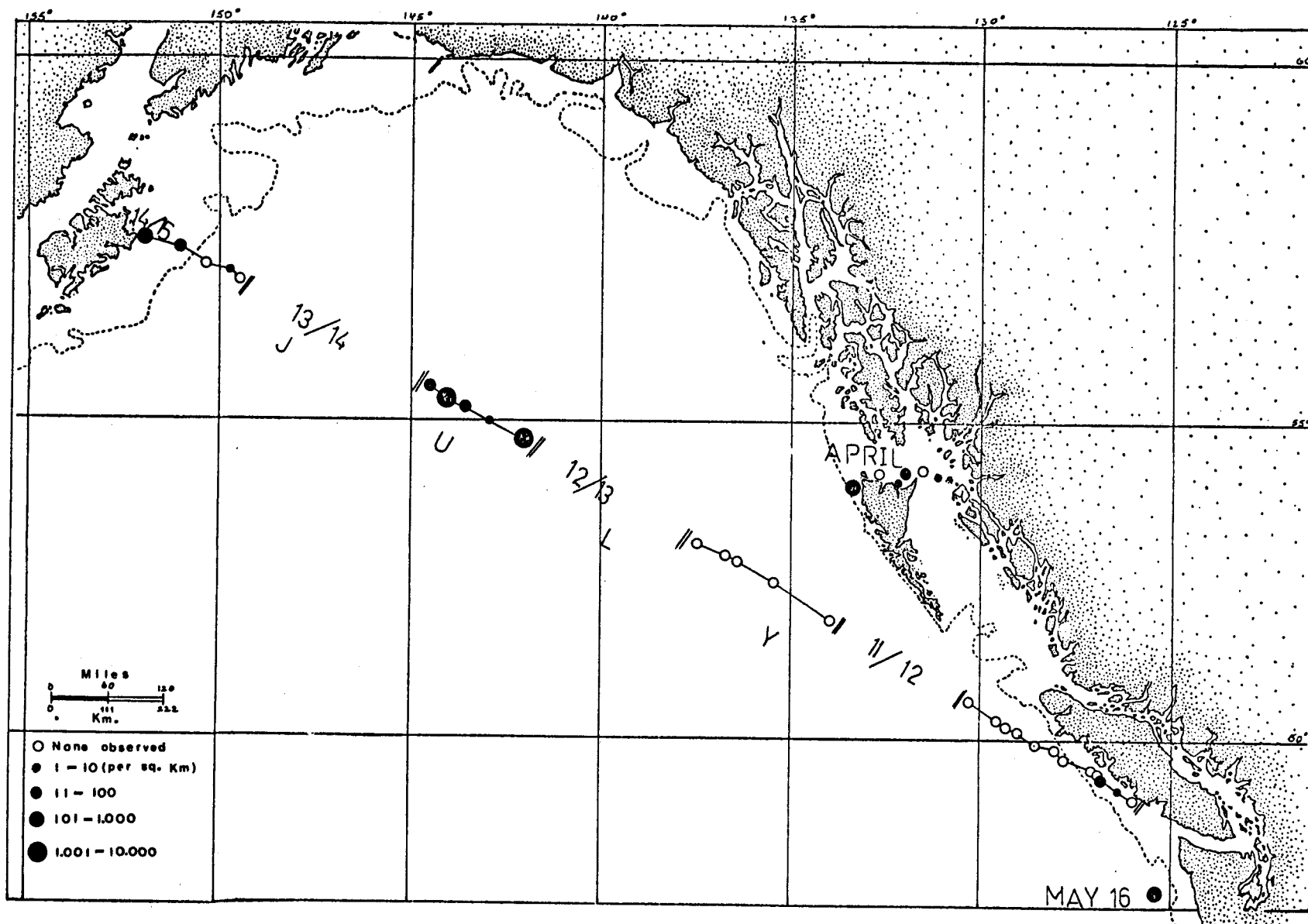


Figure 6. Densities of shearwaters encountered in April, May and July, 1975, in the North Pacific Ocean. Because no observations could be made at night, there are spaces along the trans-Gulf transit in July, and the dates are placed therein, e.g., the night of 11/12 July.

was in progress. Molt was also evident in collected birds. I found molt of body feathers taking place, as well as molt of wing and tail feathers, during June, July and August in the Bering Sea and Northwest Gulf of Alaska.

3. Flight. The manner of flight of shearwaters is evidently determined mainly by the speed of the wind. Without wind they fly very close to the water and beat the wings continuously. With light wind they fly close to the surface alternately beating the wings (6-15 times) and gliding. When the wind is stronger shearwaters move up and down in elevation in relation to the water surface; during the ascent they face the wind with their breasts and ascend rapidly, then they advance in the direction of flight gliding as they descend again.

4. Behavior. Shearwaters are gregarious birds that feed and move in flocks; I saw them alone, or in very small groups, only a few times. When in large aggregations of several thousands or even millions, the birds are not evenly dispersed, but are grouped in flocks that range in size from 50 to 5000 birds each (most often flocks of 100-200 birds). When the birds are sitting on the water, these flocks are usually from 50-500 m apart. Feeding flocks are also separated by relatively short distances, but they keep moving mainly by flying in circles and mixing with other flocks and then separating again. When they move from one area to another birds fly in files, the length and width of which depends on the number of birds. All of this is significant when considered in relation to the likely response of shearwaters to surface oil pollution, and in estimating the proportion of birds present that are likely to become oiled.

5. Food. I dissected only four birds (from a sample obtained

close to Nunivak Island in the Bering Sea on June 10, 1975). A large number of crustaceans were found in their stomachs, and one of the birds had "beaks" of squids. I also found small pieces of plastic material in the stomachs of these birds.

An aggregation of about 50,000 shearwaters (of both species) and about 20,000 Black-legged Kittiwakes (Rissa tridactyla) was observed between Kodiak and Woody Islands on August 5 and 6, 1975; all these birds were apparently feeding on small fish.

I observed feeding by day very seldom, and I believe that much of shearwater feeding in the northern summer must take place in twilight when crustaceans and squids are nearer the surface. If we can arrange it, I hope to study this with a star-light scope.

6. Oil Pollution. Oil was observed in the Gulf of Alaska, when sailing between Seattle and Kodiak, in July 1975 (Figure 6). Small slicks of oil about 4 cm in diameter were recorded several times during this cruise.

At Kodiak Island many slicks of oil were observed attached to the rocks on a beach close to the harbour in Women's Bay.

VII. Discussion.

1. Abundance.

Shearwaters have been shown to have constituted the most abundant species of pelagic birds offshore in the Gulf of Alaska and the Bering Sea during the summer of 1975. In spite of that, the interaction with breeding residents was low.

2. Interactions with Other Seabirds.

The Black-legged Kittiwake is the resident seabird that mingles with the shearwaters more frequently than others, but although shearwaters and kittiwakes are seen feeding together the percentage of kittiwakes in mixed flocks was very much lower than that of shearwaters. The only time that kittiwakes formed a large proportion of a flock was in the feeding flock studied off Kodiak, close to Woody Island, in August, 1975, when they composed almost one-third of the concentration.

Other birds present in flocks of shearwaters were alcids (mainly Common Murre (Uria aalge) and Tufted Puffin (Lunda cirrhata), a few cormorants (Phalacrocorax sp.) and Glaucous-winged Gull (Larus glaucescens), but the percentage of these (when they were present) was always extremely low.

It seems that the ecological pressure of jaegers (Stercorarius sp.) on shearwaters and kittiwakes is low, and only a few of them were ever seen in association with huge flocks of their potential victims.

3. Location and Diversity in Shearwater Food Resources.

Shearwaters probably feed on a wider range of basic prey types (crustaceans, squids and fish) than any equivalent taxon of resident bird species with the exception of gulls; thus, the two groups of birds

occupy different zones with different resources, and interaction by the visiting migrants with the native species may be largely avoided. In fact, in the Bering Sea alcids feed close to the coast while shearwaters feed over the ocean. The records from the Gulf of Alaska are less clear, because only one large feeding flock was recorded feeding on fish, and this was very close to the coast. It is interesting to note that, although big colonies of alcids were present not far from this feeding flock, they were present in it only in very low numbers.

4. Mobility of Shearwaters Within Their Winter Range.

As was mentioned earlier shearwaters may congregate in aggregations of about 40,000-50,000 birds. I suspect that these aggregations occupy a regular area or territory where the birds reside during the northern summer months and circulate around.

It is probable also, because of this, that concentrations of many thousands or even millions of birds may more often be recorded early in the summer (May and early June) when they arrive from the South and again in the late summer (August and September) before they leave for the South. Also one might expect that when the weather conditions over a wide area of ocean are adverse for shearwater feeding and/or safety many aggregations may come together in the remaining areas of the ocean.

5. Are the Australasian and Chilean Populations Behaving Differently?

At the population level one might formulate some questions: (i) do the populations of Puffinus griseus from South America consume similar foods as those from New Zealand? (ii) do they occupy, in fact, different regions of the ocean during the northern summer? and (iii) do the populations of Puffinus tenuirostris have similar food preferences

to those of P. griseus. We know that P. griseus and P. tenuirostris feed together in our area of study, but we do not know if they occupy exactly the same niches. About the population of P. griseus of South America and New Zealand, when each occurs in the Northern Hemisphere during the northern summer, we do not have any information.

It is evident that more sophisticated taxonomic techniques may give an answer to these questions (Brown et al., 1975). Also it is necessary to develop techniques that will allow the behavior of each population to be studied in a more discriminating way.

6. Reactions of Shearwaters to Surface Oil.

The effect of oil on shearwaters is not known; there are few records that mention these seabirds in relation with oil. Casement noted that a patch of oil in the Bosphorus caused Manx Shearwaters (P. puffinus) "to rise a few feet as flocks passed over it and then swoop down again to within a few feet of the sea" (in Bourne, 1968). It seems that, when feeding, shearwaters look for clean waters and will not settle on patches of oil. But we do not know anything about the reaction of birds to the presence of big spills, widespread or drifting and dispersing, or upon small floating tar drifting with the ocean currents. It is evident that many more observations on the behavior of shearwaters when in the presence of surface oil are needed. It is important to collect specimens over a wide range of the study area and examine the digestive tracts for oil derivative particles.

7. Possible Disasters to Shearwater Populations from Oil Spills.

Shearwaters concentrate on the Alaskan Outer Continental Shelf, so oil pollution, either eventually or permanently over this area of the ocean, could directly or indirectly affect the populations of shearwaters.

Direct effects could result from spills at feeding grounds, forcing the birds to leave the area and starve. If a spill of oil happened in molting areas, when some shearwaters appear to become flightless, the result would be an international disaster, particularly just before the long return migration in August-October to the Southern hemisphere. Indirect effects include the action of oil in the food chains, considering that shearwaters are at the top of the food chains.

An underwater blow out of an oil well would have a massive effect in a vast area for a relatively long period of time, mainly if the oil is trapped in the gyre of an ocean current, as in the southeastern Bering Sea. The sources of oil pollution are various, intentional discharges during oil transfer operations, tanker accidents, drilling accidents, pipeline breaks, storage losses during exploration and production and from domestic and industrial wastes (Vermeer and Vermeer, 1975).

Comparison of the areas of the Alaska OCS being considered for oil and gas lease sales with Figures 3-6, of this report tentatively suggests low number of shearwaters over the Bering Sea - St. George Basin (although there were vast numbers of them to the NE of it in August), but the presence of large number of shearwaters over the Bering Sea - Bristol Bay Basin in June and Gulf of Alaska - Kodiak Basin in July and August.

VIII. Conclusions.

1. Shearwaters are the most abundant species of seabirds during the northern summer over the offshore waters of the Outer Continental Shelf of Alaska.

2. Shearwaters unfortunately concentrate mainly on the Outer Continental Shelf of the Bering Sea and the Gulf of Alaska rather than living beyond its limits, so that they must be adjudged as "at risk" from oil drilling on the Alaska OCS.

3. Both species of shearwaters (Puffinus tenuirostris and P. griseus) occur in mixed flocks, both in the Bering Sea and the Gulf of Alaska.

4. They feed during the daytime on occasions when environmental circumstances cause food to be available, but feed in twilight when organisms that come close to the surface during that period of the summer "day" are the chief food source.

5. During June, July and at least the first part of August, shearwaters molt wing feathers, as well as body feathers, in the study area.

6. Shearwaters mix very seldom with Northern Hemisphere breeding species. Only kittiwakes (Rissa sp.) were seen with shearwaters in considerable numbers.

7. The effect of oil leaks on shearwaters in Alaskan waters has not been determined because I could not observe or sample this moving population in all "latilongs" in each month, but its future impact if oil fields are found in coastal waters and drilled is likely to be very serious for shearwaters.

IX. Needs for Further Study.

Although observations were made in the SE Bering Sea in 1975, only one short visit will be made there in 1976 because this year observations will be concentrated in the NE and NW Gulf of Alaska. Unfortunately the data on the distributions and feeding of shearwaters in the Bering Sea were equivocal because of the extent of the continental Shelf there and the impossibility of surveying the whole region simultaneously. It is certain that analyses of the data collected in 1975 and 1976, for the full implications of the distribution of shearwaters (and on the likely impact of oil pollution upon them) cannot be prepared in time for the Final Report, due in October 1, 1976. Therefore, we expect to continue drawing during 1977 upon the data collected by other Alaska OCSEAP scientists, for correlation with the actual shearwater information.

In 1975 and 1976 three transects across the Gulf of Alaska to or from Seattle will be completed. This information will contribute to the present conclusion that shearwaters are scarce there and concentrated instead on the Continental Shelf.

X. Summary of 4th Quarter Operations.

No time was spent in the field during the 4th Quarter because the shearwaters are absent then.

Analyses of data collected in 1975 were continued (Section A5b), and is reflected in the more sophisticated Tables, Figures and Interpretative Comments contained in this Annual Report.

March 22, 1976.

Juan Guzman
Department of Biology
University of Calgary

D A T A

RESEARCH UNIT 239

Ecology and Behavior of Southern Hemisphere Shearwaters (Genus Puffinus) and other Seabirds, when over the Outer Continental Shelf of the Bering Sea and Gulf of Alaska during the Northern Summer.

Subject: Submit Data Report. Information collected in Bering Sea and Gulf of Alaska during June, 1975.

To: Dr. Mauri Pelto

Data Manager of

U.S. Department of Commerce

National Oceanic and Atmospheric Administration

Outer Continental Shelf Energy Program

Juneau Project Office

P.O. Box 1808

Juneau, Alaska 99802. U.S.A.

From: Juan Guzman and Dr. M.T. Myres

Department of Biology

University of Calgary

Calgary, Alberta, T2N 1N4. Canada.

FOREWORD.

This report is in response to the Data Management Plan - Project 239, outlined between Dr. Pelto and Juan Guzman in June 25, 1975, in the Juneau Project Office.

METHODS.

In accordance with the schedule of the NOAA ships, the best for our project during the month of June was that of the DISCOVERER. I boarded this vessel in Adak (Aleutians Island) on May 30 and I got off in Seward on June 19. The DISCOVERER left Adak for the Bering Sea on June 2. I spent the first two days getting familiar in recognizing the species, before starting the transects. Transects were made between 5 June and 16 June in the Bering Sea, 17 June in Unimak Pass and 18 June in Gulf of Alaska. A virtually unobstructed view was obtained from the flying bridge (atop the wheelhouse, approximately 40 feet high), from which all the transects were carried out. During the stations the observations were made walking around the main deck. The information has been collected in accordance with forms OBS 2-75 for Pelagic Bird Observations: Transect Record and OBS 3-75 for Pelagic Bird Observation: Station Record, provided by Dr. Cal Lensink. When the visibility was limited by fog, and for observations of shearwaters exclusively Experimental Transects were filled out; these are OBS 2-75 forms but an E is placed before the number, in order to show that the information was collected using other censusing procedures. In all these forms was included in remarks, information dealing mainly with the behavior. With the help of Irving Warner

of U.S.F.&W.S., Anchorage, three samples of macrozooplankton were taken, by trawling of a macrozooplankton net behind the ship. With the assistance of some members of the crew 12 Slender-billed Shearwater (*Puffinus tenuirostris*) were shot during two parties (6 birds in each one) from a small boat; the birds are kept frozen by the U.S.F.&W.S. in Anchorage. Also pictures were taken and super 8 movies; some of the slides have been used in calibration of counts in one station, in order to determining the percentage of light and dark fulmars (*Fulmarus glacialis*). All the information collected has been plotted on maps, that show the distribution of transects and stations but not the relative number of birds. A Bushnell telescope (D=64 mm) has been very usefull during the observations of shearwaters, when they are more than 500m far from the ship. Gaps between transects represent period when no observations were made because of either darkness or fog.

RESULTS:

The distribution and census of birds of at least 19 species of pelagic birds in the Bering Sea and North West Gulf of Alaska are shown in the transects and stations records. Analysis of the distribution and density by species will be done by October 10, at the moment it is not possible to do further comments but a gloval calculation of the number of birds by species in Bering Sea and Gulf of Alaska shows clearly the predominance of shearwaters during the month of June, as it is shown in table 1. If we only consider the records for normal transects in Bering Sea we find that shearwaters represent a 61.9% of all the birds; the second greatest predominance is fork-tailed petrel (*Oceanodroma furcata*) with 27.21%. The records for the Gulf of Alaska correspond to only one day of observation, being much less representative than those of the Bering

Sea. The total number of birds recorded during this month was 238,232 from which 95.54% were shearwaters. All the transect records are shown in maps 1 and 2, station records in map 3 and experimental transect records are shown in map 4. The distribution of shearwaters is shown in maps 5 and 6; the birds in the Bering Sea were slender-billed shearwater (*Puffinus tenuirostris*), though in South Western Bristol Bay some sooty shearwater (*Puffinus griseus*) were identified (E-Transect 4). At other times it was impossible to tell at the level of species. Most of birds in the Gulf of Alaska seemed to be sooty shearwater. Large scattered flocks on the water were seen mostly in calm seas and concentrated in limited areas; they were grouped in several flocks of 200 to 2000 birds each and separated by a distance of about 500 to 1000 meters. Sometimes from the flying bridge it is possible to see these flocks all over the ocean. The largest concentration seen, was South West of Cape De Newenham with about 110,000 slender-billed shearwaters. In the areas of big aggregations of shearwaters many feathers were seen floating, indicating that the molting period was progressing. It was also possible to notice molt when the birds flew or when they tried to take off; sometimes after running several meters on the water they stop again failing in their attempt to fly; molt was also evident in the birds collected. The four slender-billed shearwaters dissected (two from each sample), showed molting in belly, wings, tail and back. In the stomachs a large number of Euphausiids were found, and one of the birds had beaks of Cephalopoda, stones and three small pieces of an orange material in the gastric mill. These pieces of orange material float when they are placed on

water and look like as paraffinic waxes from pelagic tar lumps (see: BUTLER, Amer. Sci., June 1975 pages:90-97]. It would be very interesting to do laboratory analysis of this material. In relation with the feeding activities, shearwater were never seen catching food; it is easy to suppose that the birds get the food during the night when the Euphausiids move up to the surface. They can dive for food but maybe only a few meters; one slender billed shearwater was seen to dive for 55 seconds and come up to the surface about 40 meters further. Samples of macrozooplankton were taken close to some large concentrations of slender billed shearwater (see map 7), with the idea of finding out some relation between birds and plankton, but without positive results (see table 2). The flight of shearwaters is determined mainly by the speed of the wind; with poor wind they fly close to the water alternating beating of the wings (6-15 times) and gliding. When^{it} is windy they move up and down, during the ascent they face the wind with their breast and go up high and fast, then they come down gliding and advancing.

The fulmars were widespread in Bering Sea and the largest concentration found was 1087 birds (station record 6). In this station pictures were taken for calibration of counts. The field census showed that 70% were light phase fulmars. The pictures showed 68,33% of light and 31,66% of dark fulmar.

SUGGESTIONS.

Although all things were carried out without problems aboard the DISCOVERER I would like to make two small suggestions for the schedules of the next year. One is to consider some additional time in the schedule of the ships for the bird projects in order to get samples and shoot birds, without

damage to the other projects. And the other, is to know the schedule of activities of the vessels some time ahead in order to permit the selection of the best one for our researchs.

Acknowledgements.

We gratefully acknowledge the cooperation of the Captain, Chief Scientist, Officers and Crew of the DISCOVERER in collecting the information and samples for our project. We wish to express our thanks to Dr. Cal Lensink for his assistance in Anchorage.

LIST OF THE SPECIES OBSERVED

Phalacrocorax pelagicus = Pelagic Cormorant

Fulmarus glacialis = Fulmar

Puffinus tenuirostris = Slender billed Shearwater

Puffinus griseus = Sooty Shearwater

Oceanodroma furcata = Fork-tailed Petrel

Oceanodroma leucorhoa = Leach's Petrel

Diomedea nigripes = Black-footed Albatross

Phalaropus fulicarius = Red Phalarope

Stercorarius parasiticus = Parasitic Jaeger

Stercorarius pomarinus = Pomarine Jaeger

Larus glaucescens = Glaucous-winged Gull

Larus argentatus = Herring gull

Rissa tridactyla = Black-legged Kittiwake

Rissa brevirostris = Red-legged Kittiwake

Uria aalge = Common Murre

Uria lomvia = Thick-billed Murre.

Lunda cirrhata = Tufted Puffin

Fratercula corniculata = Horned Puffin

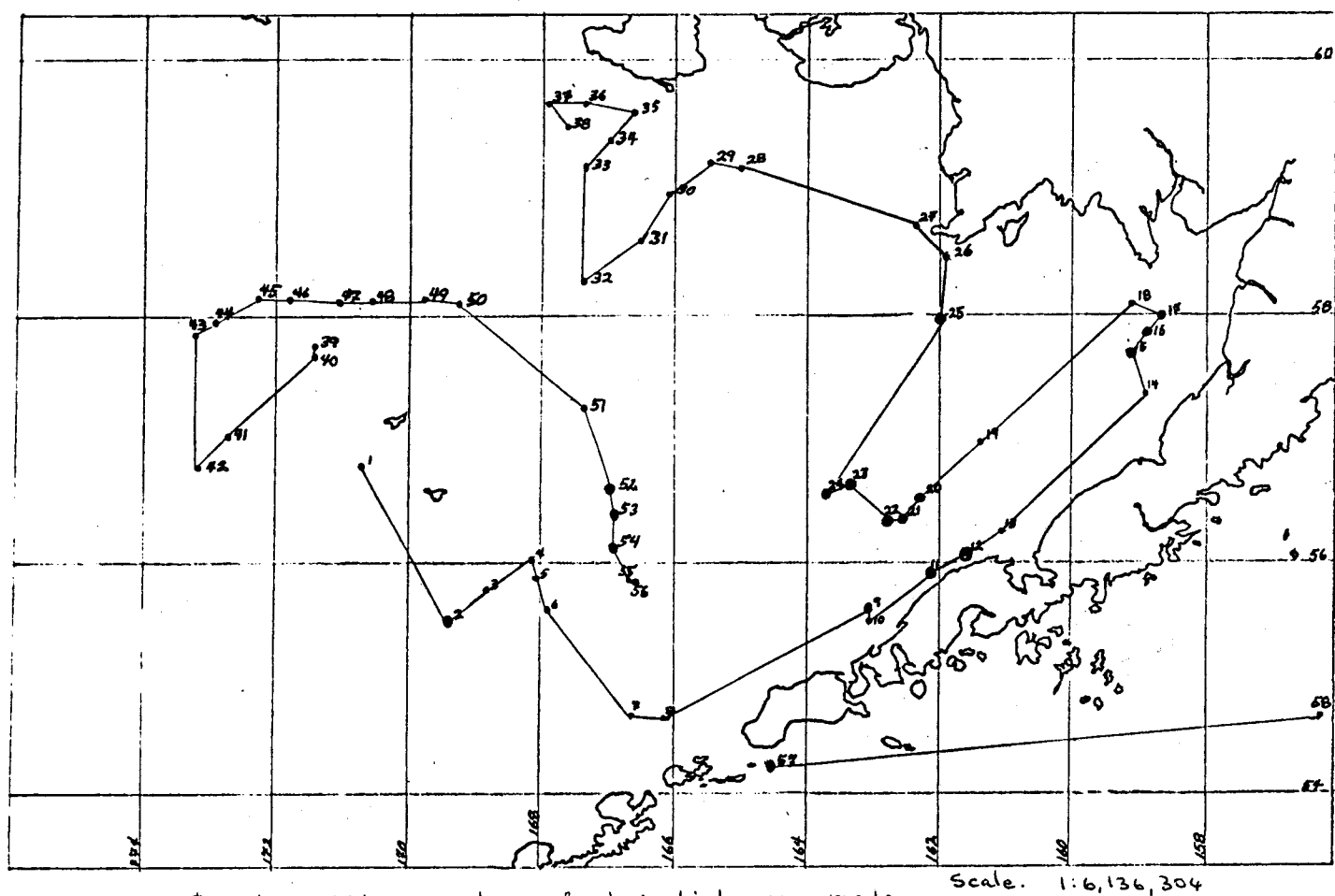
Cyclorhynchus psittacula = Parakeet Auklet

TABLE # 1

	Pelagic Cormorant	Fulmar	Shearwater	Tufted Puffin	Horned Puffin	Murre	Alcids	Parakeet Auklet	Kittiwake	Glaucous-winged Gull	Gull	Pomarine Jaeger	Parasitic Jaeger	Jaeger	Fork-tailed Petrel	Leach's Petrel	Storm Petrel	Red Phalarope	Black-footed Albatross	TOTAL
TOTAL BIRDS:TRANSECTS BERING SEA	0	733	13668	33	0	1016	46	1	291	8	8	2	1	11	6007	0	5	243	0	22073
PERCENTAGE %	0.0	3.32	61.92	0.15	0.0	4.60	0.21	0.01	1.32	0.04	0.04	0.01	0.01	0.05	27.2	0.0	0.02	1.1	0.0	100%
TOTAL BIRDS:STATIONS BERING SEA	0	1390	30500	0	0	5	0	0	311	4	0	0	0	0	10	0	0	0	0	32220
PERCENTAGE %	0.0	4.31	94.66	0.0	0.0	0.02	0.0	0.0	0.97	0.01	0.0	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	100%
TOTAL BIRDS:E-TRANS- ECTS BERING SEA	7	0	181880	24	0	9	0	0	3	8	14	0	0	0	0	0	0	0	0	181945
PERCENTAGE %	0.004	0.0	99.96	0.01	0.0	0.05	0.0	0.0	0.002	0.07	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100%
TOTAL BIRDS:E-TRANS- ECTS GULF OF ALASKA	0	2	1	13	0	4	0	0	0	2	0	0	0	0	24	5	1	0	1	53
PERCENTAGE %	0.0	3.17	1.89	24.5	0.0	7.55	0.0	0.0	0.0	3.77	0.0	0.0	0.0	0.0	45.28	9.43	1.89	0.0	1.89	100%
TOTAL BIRDS:TRANSECTS GULF OF ALASKA	0	111	156	160	13	0	0	0	25	0	1	0	0	0	4	60	0	0	1	531
PERCENTAGE %	0.0	20.9	29.38	30.1	2.45	0.0	0.0	0.0	4.71	0.0	0.19	0.0	0.0	0.0	0.75	11.3	0.0	0.0	0.19	100%
TOTAL OF ALL THE OBSERVATIONS	7	2246	227605	230	13	1034	46	1	630	22	23	2	1	11	6045	65	6	243	2	238232
PERCENTAGE %	0.003	0.942	95.54	0.096	0.005	4.434	0.02	0.0	0.264	0.01	0.01	0.00	0.0	0.004	42.537	0.02	0.002	0.102	0.00	100%

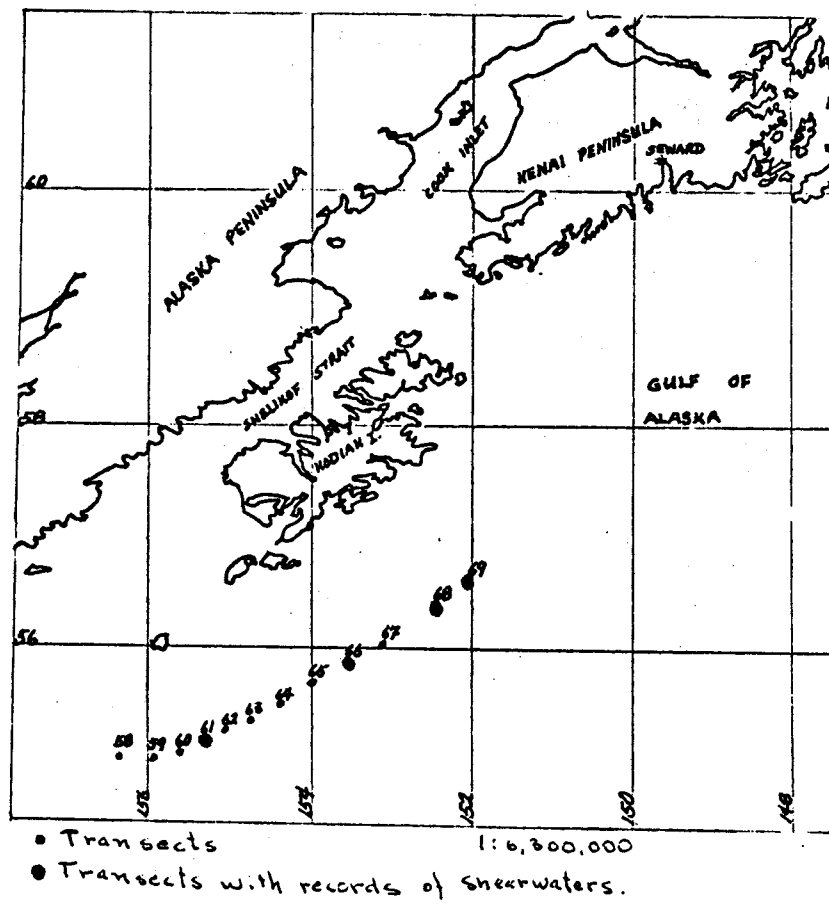
RAWL #	LOCATION	SPEED	LENGTH	DATE	COMMENTS
	54° 39' N 165° 25' W	3 Knots	25 min.	6.6.1975	Time= 21:30 hrs. Depth of this tow was 0.1 m. No fish. The sample was poor in macrozooplakton. Euphausids, copepoda and jellyfish were present.
	55° 29' N 163° 06' W	3 Knots	40 min.	6.7.1975	Time= 10:30 Sunny day. Depth of this tow was 1 m. No fish were caught. Only a few small crustacean and jelly fish.
	58° 09' N 153° 49' W	4.8 Knots	30 min.	6.8.1975	Time= 21:00 Depth of this tow was 15 m. Close to the sunset. A few fish larvae and jelly fish.

TABLE # 2 : Trawling of a Macrozooplankton net.



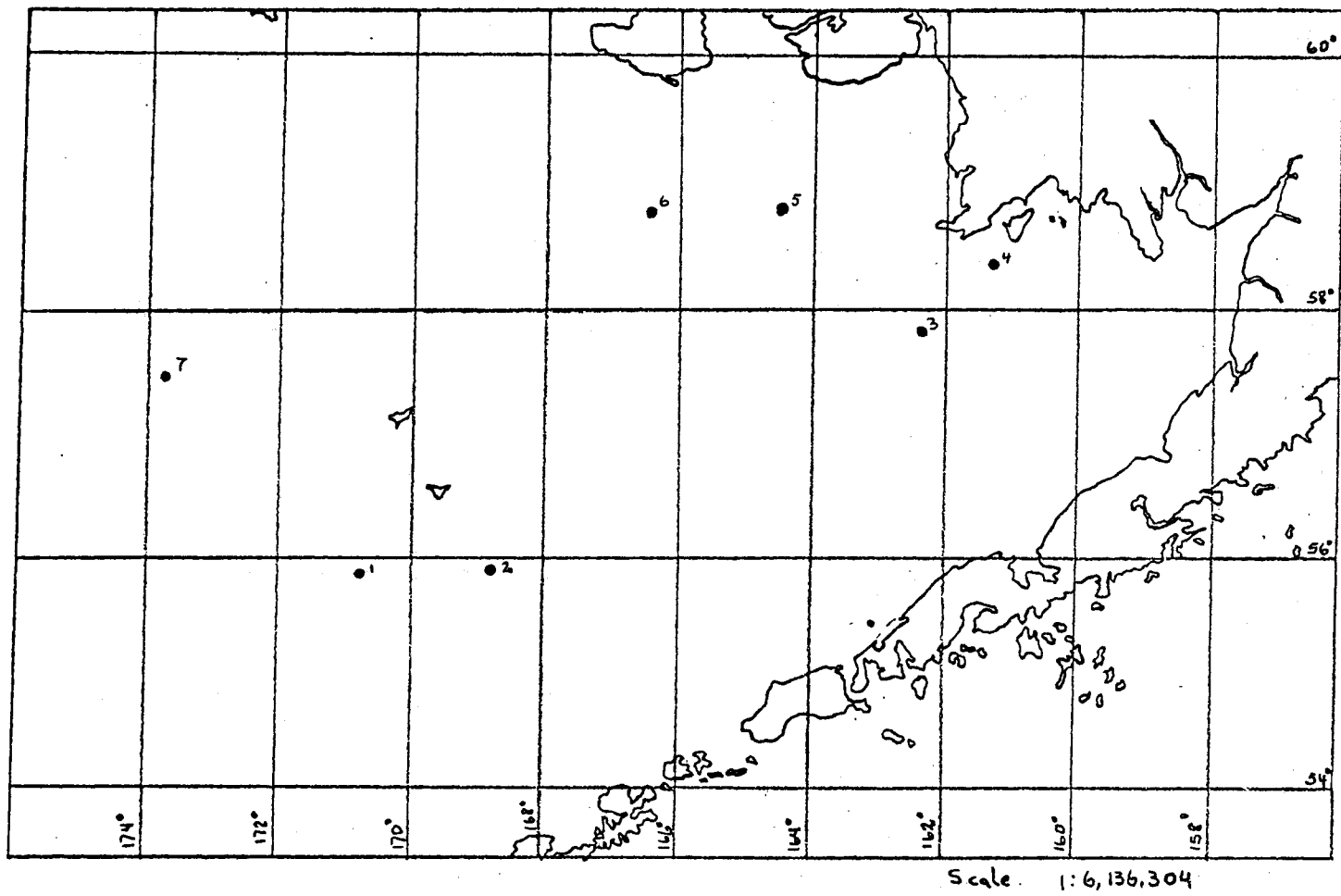
- Transects along which observations of pelagic birds were made.
- Transects along which shearwaters were recorded

MAP # 1 : TRANSECTS IN BERING SEA AND GULF OF ALASKA.

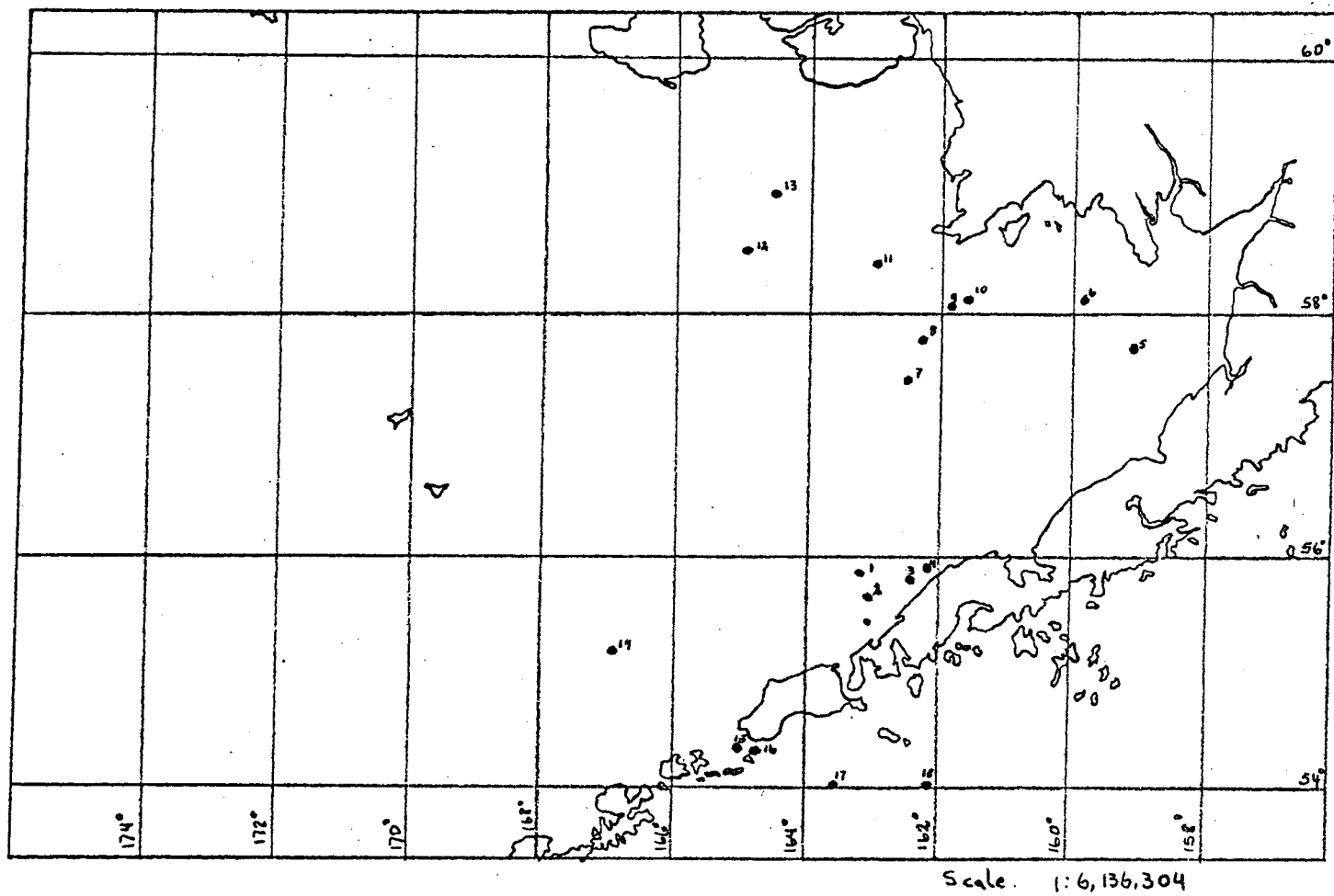


MAP # 2 : TRANSECTS IN THE GULF OF ALASKA.

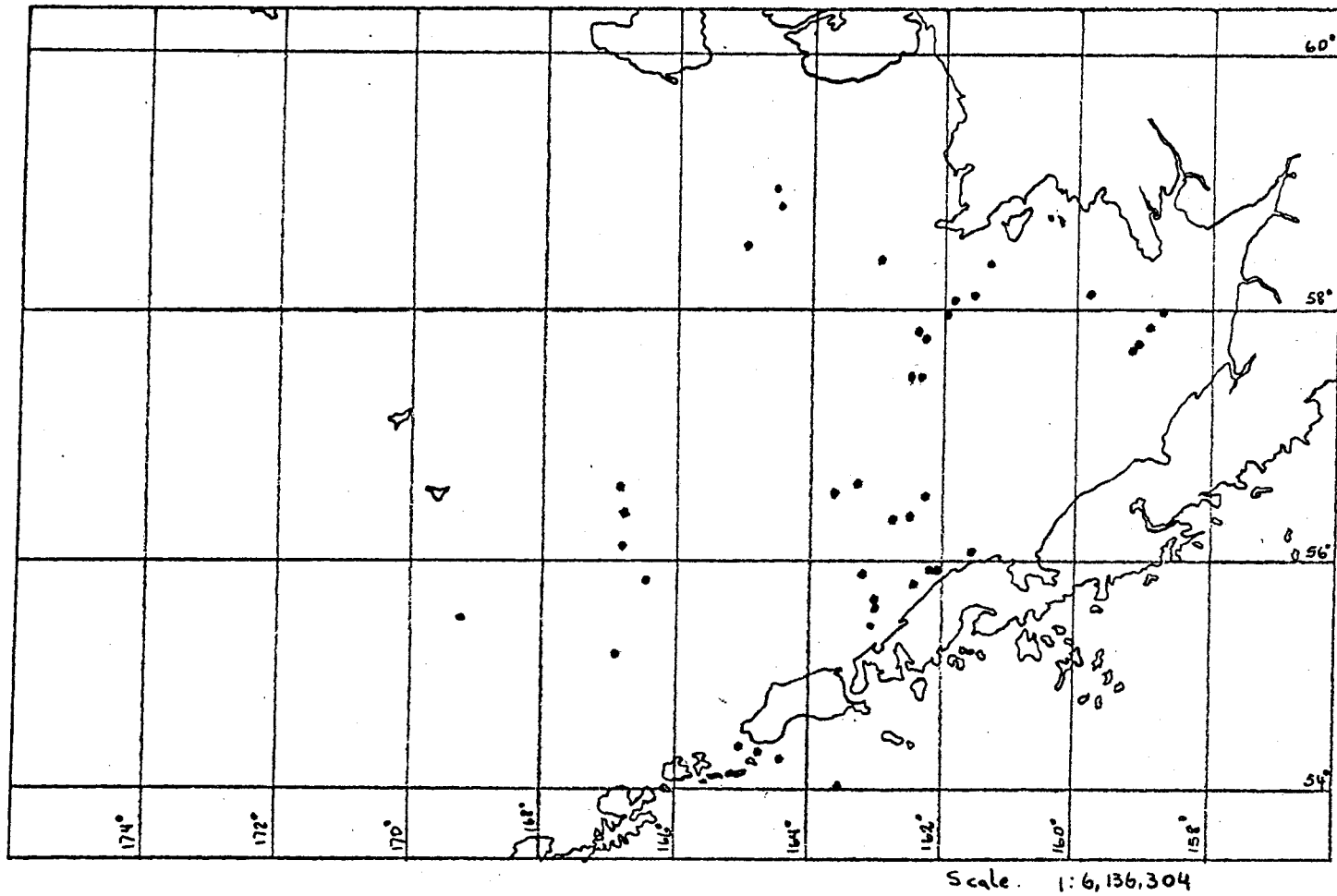
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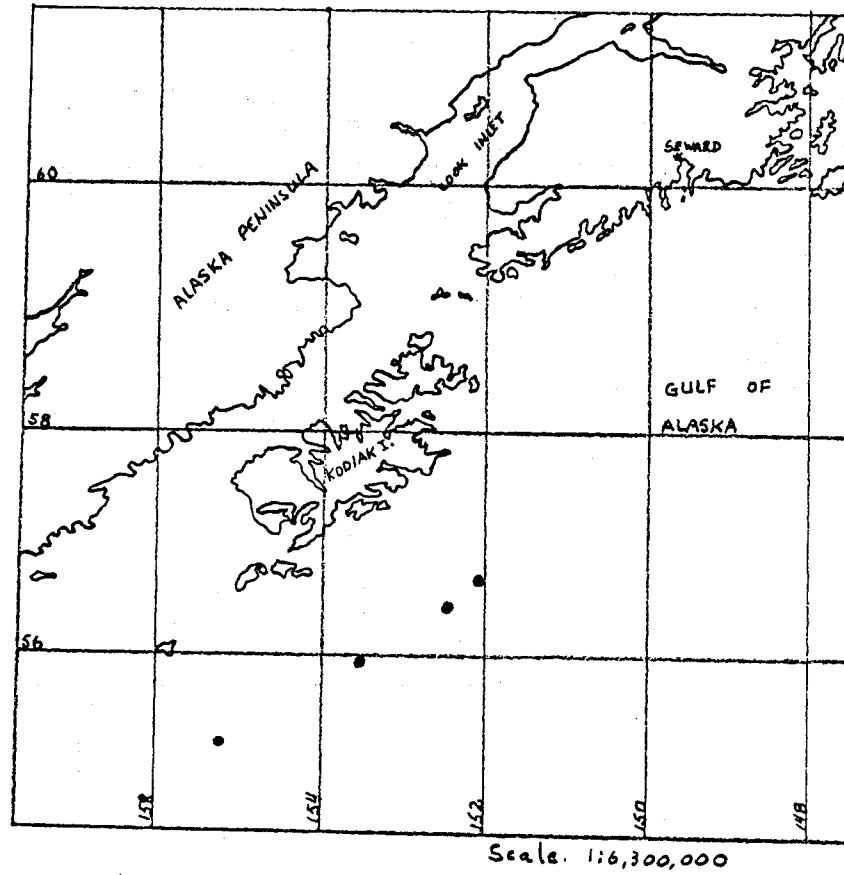
MAP # 3 : STATION RECORDS IN THE BERING SEA



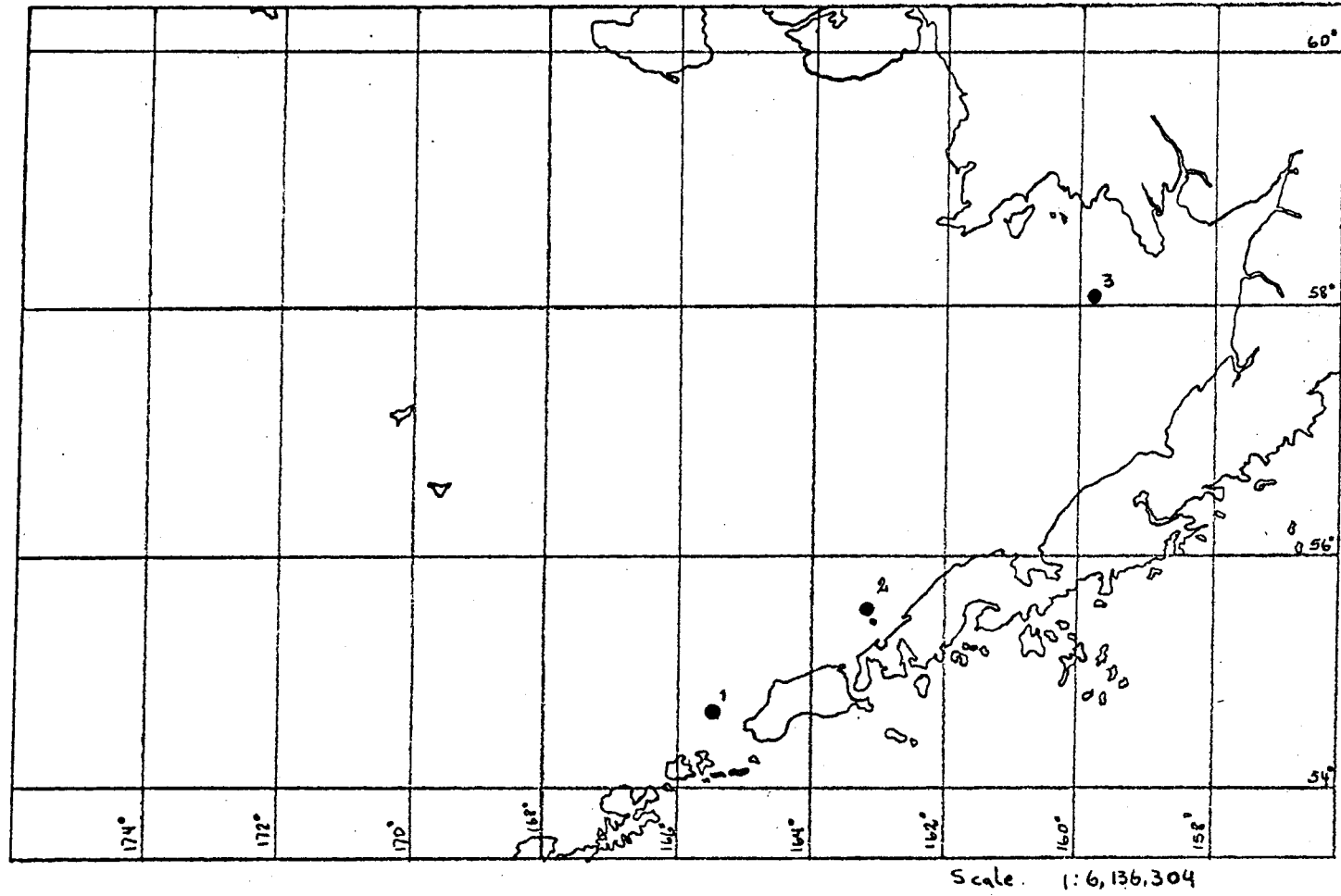
MAP # 4 : EXPERIMENTAL TRANSECTS IN THE BERING SEA AND GULF OF ALASKA.



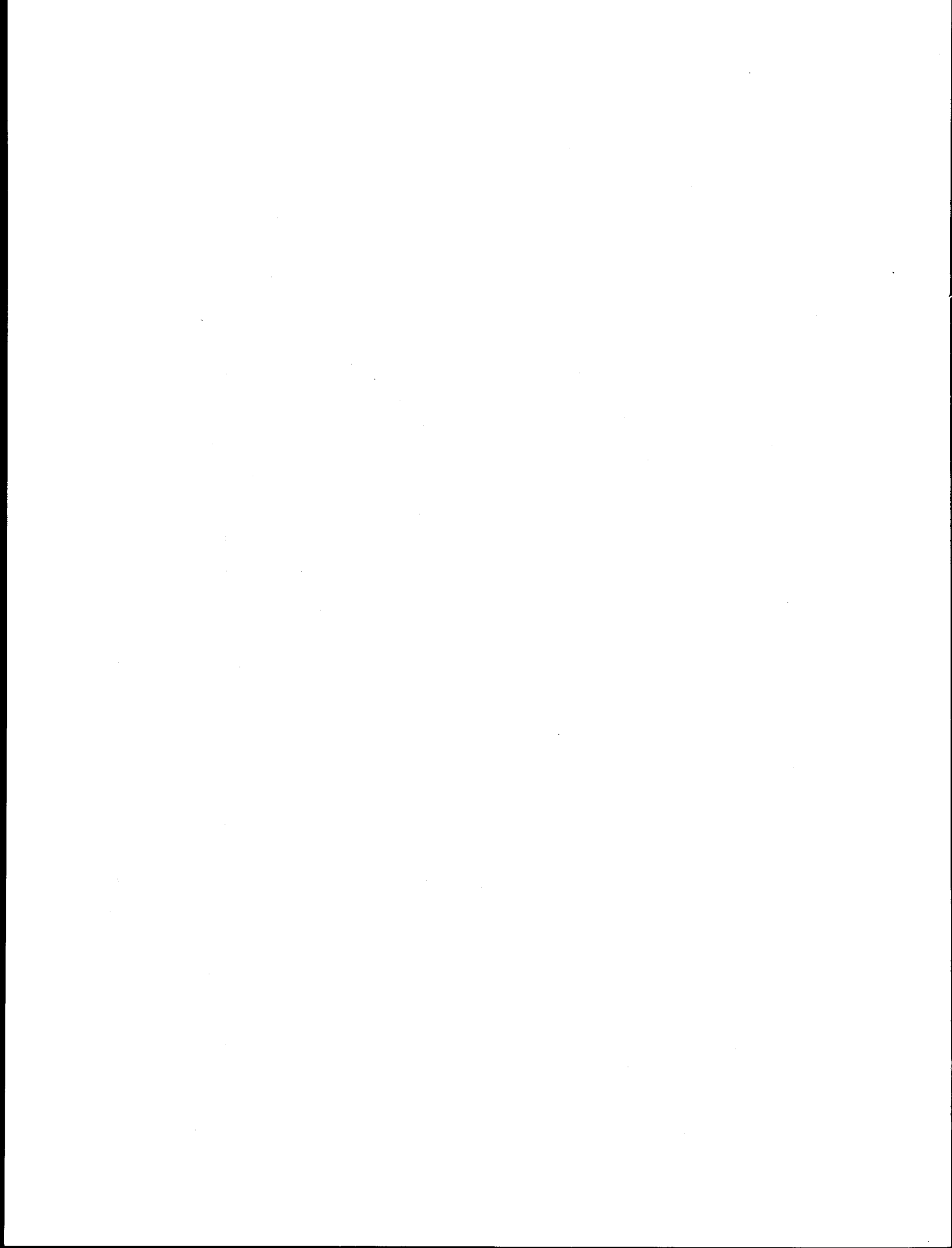
MAP # 5 : DISTRIBUTION OF SHEARWATERS IN THE BERING SEA AND GULF OF ALASKA,
BASED IN TRANSECTS, E-TRANSECTS AND STATIONS.



MAP # 6 : DISTRIBUTION OF SHEARWATERS IN THE GULF OF ALASKA
BASED IN TRANSECTS.



MAP # 7 : TRAWLING FOR MACROZOOPLANKTON SAMPLE.



Annual Report

Contract No. # 03-5-022-69
Research Unit ~~344~~ and
330/196
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10 March 1976
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The distribution, abundance and feeding ecology of birds
associated with the Bering and Beaufort Sea pack ice

and

Identification, documentation and delineation of coastal
migratory bird habitat in Alaska

Principal Investigator:

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10 March 1976

I. Summary of objectives, conclusions and implications with respect to OCS oil and gas development

Both R.U. 3/4 and R.U. 330/196 are concerned with determining bird densities and activities in the Arctic Ocean. R.U. 3/4 is concerned with determining the bird use of coastal habitats in the Beaufort and Chukchi Seas. R.U. 330/196 deals with bird use of the different regions and types of sea ice. Both projects will determine critical habitats for birds.

Field work in past years has shown Chukchi and Beaufort Sea ice to be a major summering area for a number of species. 1975 showed that when little Bering Sea water is entering the Chukchi Sea, the area may be less important.

II. Introduction

This report covers two research units: R.U. 330/196, The distribution, abundance and feeding ecology of birds associated with the Bering and Beaufort Sea pack ice and part of R.U. 3/4, Identification, documentation, and delineation of coastal migratory bird habitat in Alaska. The part of R.U. 3/4 that covers the area south of Cape Prince of Wales will be reported by Paul Arneson, Alaska Department of Fish and Game, Anchorage. The Arctic coast portion of R.U. 3/4 is closely associated with birds and pack ice and NOAA personnel have asked that a common annual report be written.

A. General nature and scope of study

Both R.U. 330/196 and R.U. 3/4 deal with determining densities of birds in the Arctic and in analyzing the habitat that supports these birds. R.U. 330/196 considers bird densities in relation to ice cover and type and a number of oceanographic parameters such as sea surface temperatures and salinity. R.U. 3/4 considers birds primarily in relation to physiographic and faunistic characteristics of the shoreline. Both of the projects assess bird activities in relation to the habitat and determine what organisms the birds are feeding on. Because bird densities are good indicators of the productivity of a region, these projects will ultimately show which areas of the Beaufort and Chukchi Seas are the most biologically productive.

B. Specific objectives

The specific objectives of R.U. 3/4 are:

1. To determine the seasonal density, distribution, critical habitats, migratory routes and breeding locales for bird species in littoral and estuarine habitats in the Chukchi and Beaufort Seas.

2. To describe population dynamics and trophic relationships of selected seabird species at coastal study sites in the Beaufort Sea.
3. Summarize existing literature and unpublished data on bird use of coastal and estuarine habitats in the Beaufort and Chukchi Seas.

The specific objectives for R.U. 330/196 are:

1. To determine the seasonal distribution and abundance of the seabird species associated with the Arctic pack ice off Alaska and to determine the importance of the various regions of the ice (e.g. ice front, consolidated pack, polynias) to bird populations.
2. To develop a predictive model based on ice cover, type and location (the independent variable) and the distribution, abundance, behavior and age classes of birds associated with the pack ice. Such a model will allow the prediction of species and numbers of birds in a given area on the basis of satellite or aerial photos.
3. To determine the feeding habits of the seabird species associated with the pack ice with regard to the relative importance of nekton, macro-plankton, benthos and under-ice biota as food sources and how the relative importance of these food sources varies during the period of ice cover and in the various regions of the ice.

C. Relevance to problems of petroleum development

Because birds are indicators of biological productivity these projects not only determine where birds are most abundant in the Beaufort and Chukchi Seas, they also determine what parts of these two seas are the most biologically productive. Oil drilling and related activities will hopefully be limited to those areas of little biological importance and these projects will be able to determine what those areas are.

Both of these projects involve primarily Arctic waters where biodegradation of oil would be slow and the long term effects on the Arctic ecosystem could be expected to be large. The ice environment has been shown to play a major role in providing food for a number of seabird species. Oil spills on or under the ice would have major impacts on these species. These studies will allow the determination of what these impacts will be. The major use of much of the data provided by these projects will be in the preparation of environmental impact statements and ultimately in providing baseline data for assessing the impact of oil spills.

Because barrier islands will be used for oil drilling platforms, our work on Cooper and other islands is especially pertinent.

III. Current state of knowledge

R.U. 3/4

No delineation of bird habitat in the Beaufort or Chukchi Seas has been done. Bailey (1948) gives a summary of birds found in the Alaskan arctic but does not give a breakdown of bird use by habitat. Andersson (1973) presents a breakdown of species found in habitats at one point on the Beaufort Sea coast.

R.U. 330/196

Observations of birds in the Chukchi Sea in 1970 and Beaufort Sea in 1971 and 1972 have been presented in Watson and Divoky (1972, 1975). The only other paper on birds in the ice is by Frame (1973).

IV. Study area

Positions of field work are given in Sections V and VI of this report.

V. Sources, methods and rationale of data collection

R.U. 3/4

Work on this project was begun in late October 1975 and has included a preliminary delineation of bird habitat and planning for an intensive field season in the spring and summer of 1976. The preliminary delineation of coastal habitat is in the Results section of this report. The field plans for the 1976 field season include the following:

<u>Location</u>	<u>Dates</u>	<u>Purpose</u>
Barrow	April-May	Observe migration in area of offshore lead
Wales	early June	Observe migration and coastal habitat use
Point Hope	mid-June	Observe migration and coastal habitat use

Point Lay	late-June	Observe migration and coastal habitat use
Kasegaluk Lagoon (small boat trip)	July	Census breeding populations; assess bird use of coastal habitat
Wainwright to Barrow (small boat trip)	early August	Census breeding populations; assess bird use of coastal habitat
Demarcation Bay	late June	Census breeding populations; assess bird use of coastal habitat
Prudhoe Bay to Oliktok Pt.	early July	Census breeding populations; assess bird use of coastal habitat
Cooper Island	mid-June to August	Study breeding biology and feeding ecology of species breeding on island and determine use of island by non-breeding birds
Prudhoe Bay	June to August	Observe migration; census breeding populations and assess bird use of coastal habitats
DEWline sites along Chukchi and Beaufort coasts	June to September	Observe migration and assess bird use of coastal habitats
Barrow	June to September	Census birds along the Chukchi and Beaufort coasts by air and foot

All observers will be provided with standard forms for recording migration, breeding biology and coastal habitat use. Migration will be recorded on a birds per unit time basis. Use of coastal habitats will be recorded on transects with densities of birds per area of habitat being obtained. While much of the work will be a general survey of large sections of coast, certain coastal transects (at Barrow, Prudhoe and DEWline sites) will be studied from June through September and will provide replicate sampling and changes in use through time.

R.U. 330/196

Data for this research unit was gathered in the following localities:

<u>Dates</u>	<u>Location</u>	<u>Activity</u>
16-30 May	DISCOVERER Seward to Adak (Bering Sea)	Pelagic observations and and specimen collecting (Divoky)
24-27 June	Barter Island	Waiting for Fish and Wildlife plane to arrive for offshore aerial census; plane did not arrive; some land based observations made (Divoky and Boekelheide)
30 June- 23 July	Cooper Island via helo and float plane	Observe breeding activities and migration (Divoky and Boekelheide)
30 July- 13 August	USCGC GLACIER Nome to Barrow (Chukchi Sea)	Pelagic observations (Divoky and Boekelheide)
13-29 August	USCGC GLACIER off Barrow	Pelagic observations (Boekelheide)
22-28 August	Anchorage	Waiting for good weather for P2V Beaufort Sea flight; flight scrubbed (Divoky)
1-5 September	Cooper Island (via float plane)	Observe breeding activities and migration (Boekelheide)
6-18 September	Barrow	Observe migration (Divoky and Gibson)
28 September- 21 October	Barrow	Wait for BURTON ISLAND; mission scrubbed (Divoky)

Cruise tracks for the cruises are given in Figs. 1 and 2.
Methods of data collection are as follows:

Pelagic observations - observations are made from the flying bridge while the ship is underway during daylight hours. Observations are made for at least 30 minutes each hour (two 15 minute intervals). Observations at stations are made at irregular intervals. Birds are identified to species, counted, ages determined when possible and their activity (flying, sitting on water, sitting on ice, etc.) is noted. Detailed notes on behavior are taken when warranted. Oceanographic and meteorological data are obtained from the ship's log. Data on ice type and cover is gathered by the bird observer. Transect observations are used to derive density figures on a km² basis. Station observations provide relative numbers but not densities.

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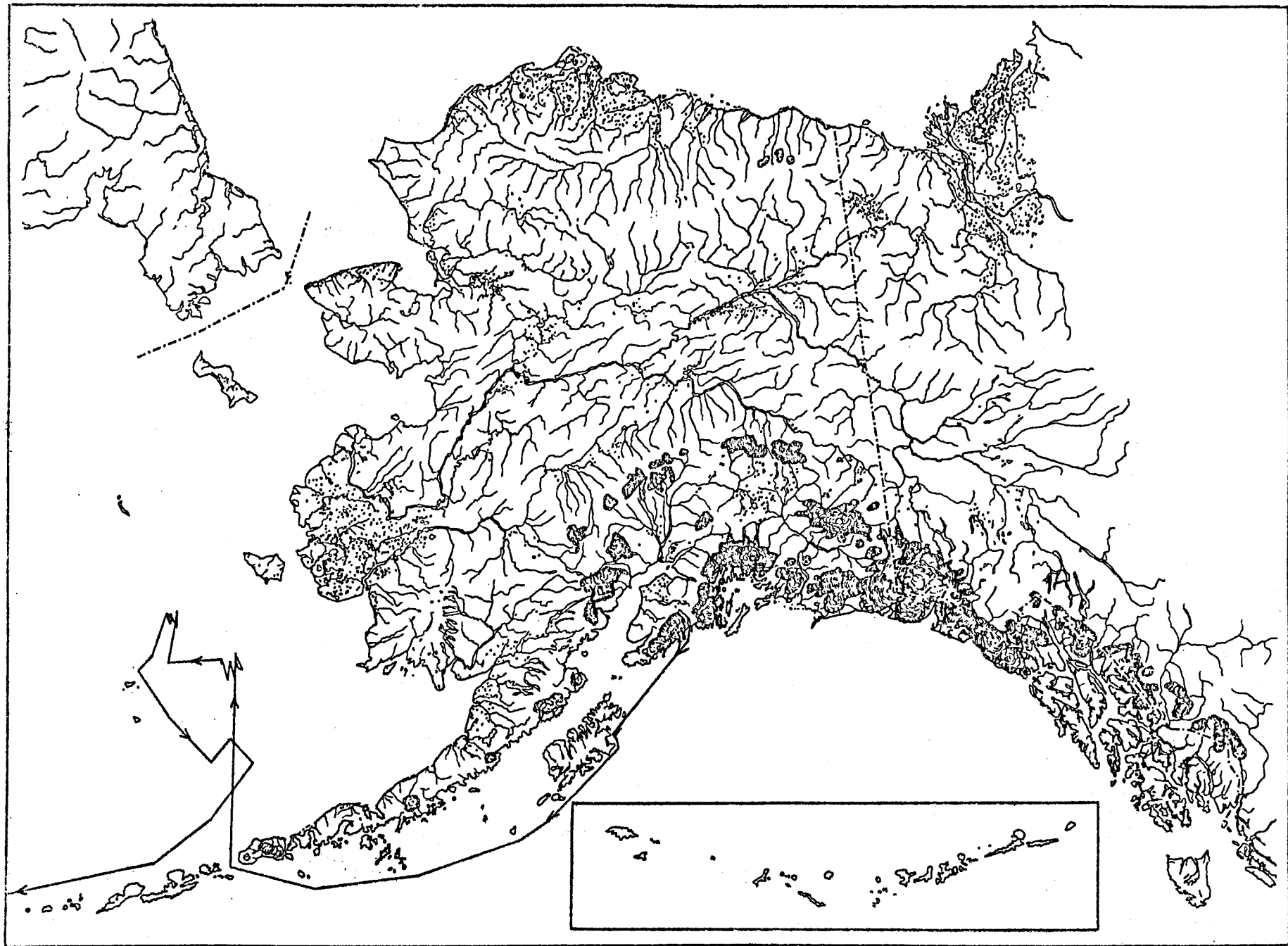


Fig. 1. Cruise track of DISCOVERER
16-30 May 1975

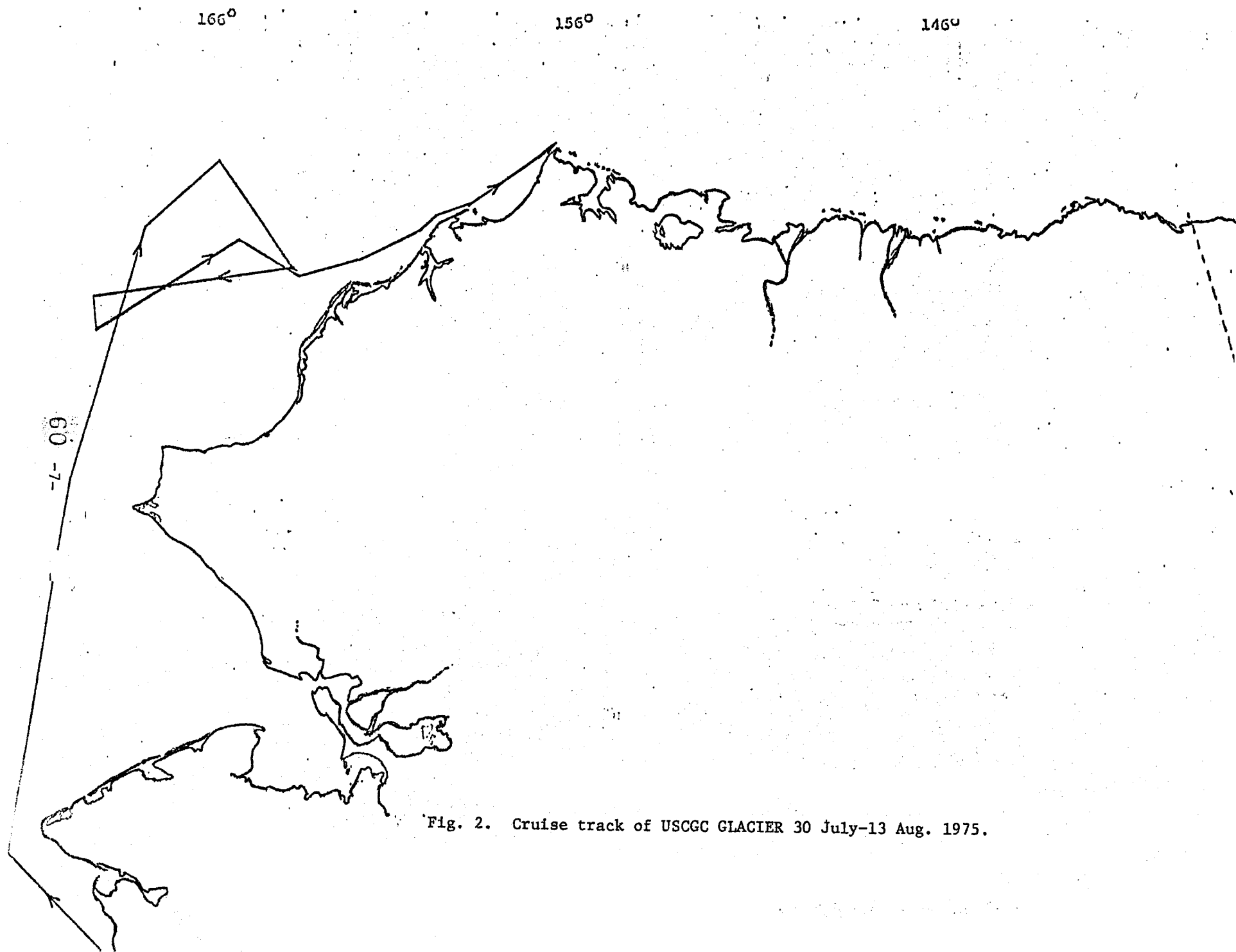


Fig. 2. Cruise track of USCGC GLACIER 30 July-13 Aug. 1975.

Cooper Island breeding activities - When Cooper Island was first visited on 29 June it was completely surrounded by ice except for a 5m moat immediately adjacent to the island. Cooper Island was chosen as a study site because it is surrounded by ice until late in the season and still supports a relatively large number of breeding birds. Our purpose in visiting Cooper was to obtain information on breeding chronology and success and to determine where the breeding birds feed during breeding. Because we saw that most tern flights were either to the north or south of the island, watches were conducted to determine the number of flights in each direction per hour. Nesting was studied by locating all nests on the island and visiting them every two days to determine final hatching dates and hatching success. Later visits to the island provided information on fledgling success. Plankton tows were taken near the island.

Migration observations - numbers, movements and feeding activity of migrant birds were observed whenever possible. This was frequently done incidentally to other land-based work but some information of birds per unit time were obtained.

Specimen collecting - birds were collected with a shotgun. Stomach contents were preserved in formalin and the bird's body frozen for later examination. Some collections of zooplankton were conducted to observe densities of prey.

The following data were obtained:

DISCOVERER Cruise

Number of 15 minute transect observations	104
Number of station observations	30
Specimens collected:	
Black-legged Kittiwake	4
Glaucous-winged Gull	6
Glaucous Gull	1

Cooper Island

Number of hours of observations of movements of migratory and breeding birds	110
Nests studied:	
Arctic Tern	51
Black Guillemot	18
Oldsquaw	9
Sabine's Gull	4
Specimens collected:	
King Eider	2
Oldsquaw	4
Black-legged Kittiwake	1
Glaucous Gull	1
Arctic Tern	1

GLACIER Cruise

Number of 15 minute transect observations	489
Number of station observations	15

VI and VII. Results and discussion

In order to delineate coastal bird habitat between Cape Lisburne and Demarcation Point, the coastline was broken down into 15 divisions. An attempt was made to have each division be as homogeneous as possible.

Landforms and habitat characteristics of importance to marine birds were listed and measured in order to assess the importance of the region to birds. Measurements were obtained from USGS maps. Habitat information was obtained from the Joint State-Federal Land Use Planning Commission maps. The following characteristics are measured for each region:

miles of coastline - this is a rough measure of the size of a region. It ignores convolutions of the shoreline and thus is not the same as miles of mainland coast.

barrier islands or spits - these are primarily sand or gravel because they are usually separated from the mainland tundra and thus have fewer predators. They are important breeding and loafing sites for a number of species. When the miles of seaward coastline or barrier islands is subtracted from the miles of seaward aspect of barrier island, a rough estimate of the miles of protected coastline can be obtained.

lagoons or protected waters - these waters are important for birds for a number of reasons. Lagoons are usually subjected to less ice scour than unprotected waters. Rivers frequently empty into lagoons and thus have estuarine conditions. Depth of lagoons is important since deeper ones could be expected to have a richer benthic fauna due to less ice scour.

rivers - rivers provide open water early in the summer and the overflow of rivers are important to the arrival of birds in many areas. Rivers are also important sources of nutrients and river mouths would be expected to have higher productivity. This is especially important in summer when surface nutrients in the Arctic are low. Delta islands, numerous in rivers with a large coastline, are also important to breeding birds. Barrier islands in close proximity to rivers are more important than ones away from rivers.

nearshore bottom topography - the distance from the mainland to the five and ten fathom contour show how shallow inshore waters are and give an indication of how important the area may be to benthic feeders. Areas having a large shoal would be expected to be important feeding areas.

coastal relief - the distance from the shoreline to the 50 and 100 foot contour provide information on the drainage of the mainland adjacent to the coast. Low sections of mainland would be expected to have wet tundra and numbers of breeding water birds.

coastal habitat - this provides specific information on the mainland habitat adjacent to the coast. Wet tundra will have larger numbers of waterbirds than moist tundra. Alpine tundra would have few, if any, waterbirds.

Fig. 3 shows the 15 divisions. Tables 1-15 list the landforms in each division and a preliminary analysis of the region's importance to seabirds. Areas with barrier islands, rivers and lagoon areas are of most importance to birds. Areas without these features would have less bird use.

R.U. 330/196

DISCOVERER Cruise

Data formats for processing pelagic observations have just been obtained and no specific results are available for the pelagic aspects of this study. No concentration of birds was found at the ice front as has been found in winter. Black-legged Kittiwakes and Glaucous-winged Gulls were the most abundant birds found in and near the ice. Observations made during the last days of the cruise showed that a diverse assemblage of birds was associated with a "warm" water plume flowing north through Unimak Pass.

GLACIER Cruise

Observations made while the ship steamed north past King Island, Fairway Rock and Cape Lisburne provided information on the locations and movements of feeding flocks going and coming from these colonies. Physical oceanographic conditions in the Chukchi were atypical and the birds observed reflected this. In normal years the water flowing north through the Bering Strait has a major effect on the Chukchi Sea. Bering Sea water usually extends as far north as Barrow and in some years into the Beaufort Sea. In 1975 the Bering Sea water was hard to locate even as far south as Cape Lisburne. These oceanographic conditions were reflected by low densities of birds throughout most of the Chukchi and the absence of many species that typically summer in the Chukchi. These include shearwaters, puffins and a number of other alcids. Ross' Gull, which is usually associated with ice and Arctic waters but does not usually occur in the Chukchi until late September, was observed in early August.

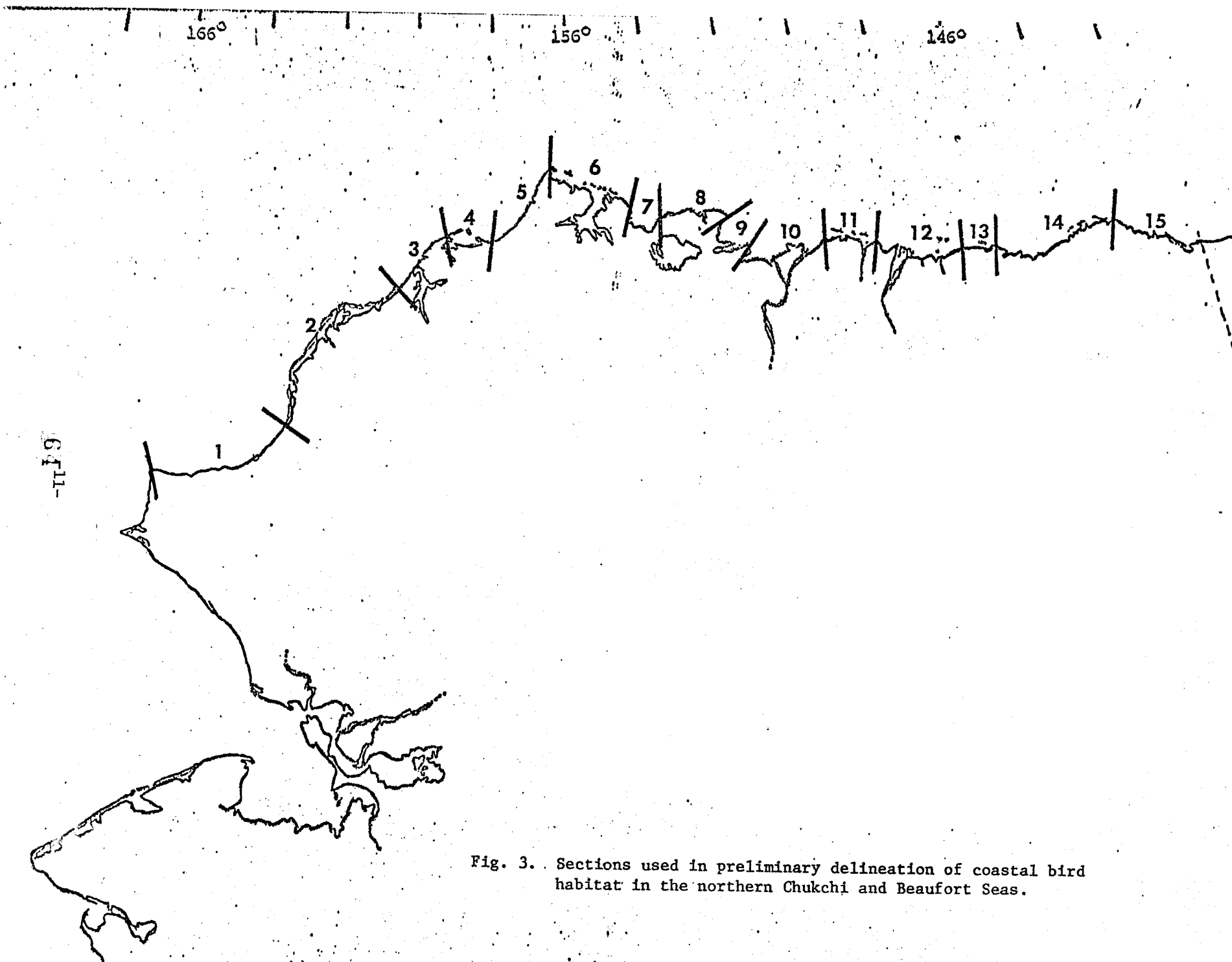


Fig. 3. Sections used in preliminary delineation of coastal bird habitat in the northern Chukchi and Beaufort Seas.

Table 1. Cape Lisburne to Kasegaluk Lagoon - Sect. 1.

<u>Miles of seaward aspect</u> 84 mi.	<u>Barrier islands or spits</u> none	<u>Lagoons or protected waters</u>															
		<table border="0"> <tr> <td><u>name</u></td> <td><u>area (mi²)</u></td> <td></td> </tr> <tr> <td>Ayugatak</td> <td>1.88</td> <td>completely enclosed</td> </tr> <tr> <td>Agiak</td> <td>0.48</td> <td>" "</td> </tr> <tr> <td>Omaliik</td> <td>0.68</td> <td>" "</td> </tr> <tr> <td>Total</td> <td>3.04</td> <td></td> </tr> </table>	<u>name</u>	<u>area (mi²)</u>		Ayugatak	1.88	completely enclosed	Agiak	0.48	" "	Omaliik	0.68	" "	Total	3.04	
<u>name</u>	<u>area (mi²)</u>																
Ayugatak	1.88	completely enclosed															
Agiak	0.48	" "															
Omaliik	0.68	" "															
Total	3.04																
<u>Rivers</u> none, however has at least 25 small streams	<u>Nearshore bottom topography</u> (avg. distance mainland shore to contour) <u>5 fathoms</u> 5-7 mi.	<u>Coastal relief</u> (avg. distance mainland shore to contour) 500 foot hills 2 mi. inland															

Coastal habitat
Alpine and moist tundra.

Comments

Cape Lisburne is known to have 1 to 2 million breeding cliff nesting seabirds (J. C. Bartonek, pers. comm.), but the remainder of the area is probably of little importance to breeding birds. This is due to the lack of wet tundra, and barrier and delta islands. All of the coastal migrants that breed in the Beaufort and northern Chukchi Seas pass through the region in migration. The importance of the region as a feeding and resting site is not known, however. The inshore waters are shallow enough to provide a large feeding area for benthic feeding species, but since ice scour may be extensive, benthic populations may be small. The completely enclosed lagoons may be of importance since they are the only protected waters in the region.

Table 2. Kasegaluk Lagoon - Sect. 2

<u>Miles of seaward aspect</u> 120 mi.	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft)</u>
	"southern spit"	2.85	12.75	Kasegaluk	360	6
	Naokok to Kukpowruk Pass	1.75	14.6			
	Pt. Lay Island	2.18	19.6			
	Akunik to Utukok Pass	2.05	15.0			
	Solivik Island	3.0	19.0			
	"Icy Cape Island"	1.62	16.4			
	Akoliakatat to to Pingorarok Pass	1.4	11.5			
	"Northern spit"	0.83	9.5			
	Total	15.6	118.35			

<u>Rivers</u>		<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	<u>mi. coastline</u>	<u>(avg. distance mainland shore to contour)</u>		<u>(avg. distance mainland shore to contour)</u>	
Kukpowruk R. and Epizetka R.	4.0	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
Kokolik R.	1.6	5 mi.	12 mi.	1-3 mi.	5-16 mi.
Utukok R.	4.8	Blossom shoals (3-4 fathoms) extend 6-8 mi. NW of Icy Cape.		decreasing topographical relief toward Icy Cape.	

Coastal habitat

Moist tundra; wet tundra at mouth of Utukok R. and Avak Inlet.

Comments

This is probably the most important section of coast in the northern Chukchi Sea. Almost nothing is known about bird use of this area, however. The barrier islands are important breeding sites for eiders (William Wiseman, pers. comm.). The extensive lagoon area is probably a major molting area for eiders and oldsquaw. The rivers provide many delta islands and are the only major rivers emptying into the northeastern Chukchi Sea (excluding those that enter into Wainwright Inlet).

Table 3. Wainwright - Sect. 3
(Kilimantavi to Atavik)

<u>Miles of seaward aspect</u>		<u>Barrier islands or spits</u>	<u>Lagoons or protected waters</u>		
37.6 mi.		None, however spits are present on each side of Wainwright Inlet (both 2.5 mi ² , 6 mi coastline)	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
			Wainwright Inlet	90	6-1/2
<u>Rivers</u>		<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	<u>mi. coastline</u>	(avg. distance mainland shore to contour)		(avg. distance mainland shore to contour)	
Sinaruruk R. (protected)	2.8 mi. long inlet	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
K. ngok, Kuk, Ivisaruk and Alatakrok Rivers enter into Wainwright Inlet complex.		1/2 mi.	1-3 mi.	1-9 mi.	22-30 mi.

Coastal habitat
Moist tundra.

Comments

Most of this area appears to be of low quality bird use. There are a few breeding areas, and the bottom drops off quickly providing little feeding area. Wainwright Inlet may be an important feeding and resting area, however, and studies are needed to determine the Inlet's importance.

Table 4. Peard Bay - Sect. 4.

<u>Miles of seaward aspect</u>	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
28 mi.	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
	"west spit"	1.66	5.6	Peard Bay	23	20'
	Pt. Franklin	1.79	8.2	Kugrua Bay	8.4	10-12'
	Seahorse Is. (largest has 20' elevation)	0.1	1.5			
	"east spit"	0.34	5.4			
	Total	3.79	20.7			

<u>Rivers</u>	<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	(avg. distance mainland shore to contour)		(avg. distance mainland shore to contour)	
Kugrua River enters Kugrua Bay	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft</u>
Several small streams enter bay	5-7 mi.	10 mi.	1/2 mi.	20 mi.

Coastal habitat

Moist tundra bordering coast and the Kugrua R.;
wet tundra bordering east and west ends of
Kugrua Bay.

Comments

This is one of the few bays along the northern Chukchi coast. The barrier islands are known to support breeding colonies of Arctic Terns and Black Guillemots. The shallow well protected bay may be an important feeding and resting site. In 1975 the bay was completely ice free in August when surrounding waters were covered with ice.

Table 5. Tachinisok Inlet to Pt. Barrow - Sect. 5.

<u>Miles of seaward aspect</u>	<u>Barrier islands or spits</u>	<u>Lagoons or protected waters</u>
60 mi.	none	none
<u>Rivers</u> name	<u>Nearshore bottom topography</u> (avg. distance mainland shore to contour)	<u>Coastal relief</u>
Walakpa River enters into 4-1/2 mi. long Walakpa Bay. 10-12 small streams	<u>5 fathoms</u> .5-1.0 mi.	<u>10 fathoms</u> 1-5 mi.
		mod. bluffs (25'-90') present, furrowed by numerous small streams. Almost no beaches adjoin bluffs.
		closest 100' elevation, 33 mi. inland.
<u>Coastal habitat</u>		<u>Comments</u>
Moist tundra present as a 2 - 2-1/2 mi. wide wide band adjacent to coast. Wet tundra begins 2-1/2 mi. inland.		Very little suitable habitat for breeding seabirds is available in this region. Resting and feeding areas are few due to the lack of barrier islands, and the very narrow band of shallow water adjacent to the shore.

Table 6. Pt. Barrow to Cape Simpson - Sect. 6.

<u>Miles of seaward aspect</u> 53 mi.	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coastline (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
	Doctor Island	.02	.25	Elson	100	9'
	Deadman's Is.	0.125	1.3	Admiralty Bay	225	8-10'
	Tapkaluk Is.	0.7	7.8	Inaru, Meade		
	complex			Topagoruk,		
	Cooper Is.	0.6	3.8	Chipp and		
	Martin Is.	0.28	5.0	Alaktak R.		
	Sanigarvak Is.	0.075	1.6	enter Admiralty		
	Igalik Is.	0.17	2.0	Bay		
	Kulgurak Is.	0.18	3.25	Fatigue Bay	5.6	
	Tulimanik Is.	0.15	2.5	(extensive mud flats)		
	Total	2.31	27.50			

Rivers
(see Lagoons,
Admiralty Bay)

Nearshore bottom topography
(avg. distance mainland shore to contour)
5 fathoms
5 mi.

10 fathoms
16 mi.

Coastal relief
(avg. distance mainland shore to contour)
50 ft.
43 mi.

100 ft.
60 mi.

Coastal habitat
Wet tundra.

Comments

Although this region has a number of barrier islands, they are all ice bound until late in the season due to the lack of major rivers emptying near the islands. This makes them less important to breeding birds than islands further to the east. The protected waters are extensive, but only one section, Admiralty Bay, has input from rivers. Productivity in areas away from rivers could be low. The low wet tundra on the mainland is important breeding habitat for water birds.

Table 7. Smith Bay - Sect. 7.

<u>Miles of seaward aspect</u>		<u>Barrier Islands or Spits</u>	<u>Lagoons or protected waters</u>		
38 mi.		none	none		
<u>Rivers</u>		<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	<u>mi. coastline</u>	(avg. distance mainland shore to coastline)	(avg. distance mainland shore to coastline)	(avg. distance mainland shore to coastline)	(avg. distance mainland shore to coastline)
Ikpikpuk	18.4 mi.	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
and		12 mi.	25 mi.	27 mi.	35 mi.
Piasuk R.					

Coastal habitat
Wet tundra.

Comments

The delta islands of the Ikpikpuk and Piasuk River provide breeding habitat. Although the bay is not protected by barrier islands, it is isolated enough from the ocean to have many of the characteristics of a lagoon. The wide shoal in the bay and the input of river water probably makes the area important for feeding.

Table 8. Drew Point to Cape Halkett - Sect. 8

<u>Miles of seaward aspect</u> 44 mi.	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>	
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>
	"Pitt Pt. Island"	.04	1.0	Pogik Bay	7
	Pogik Bay Complex	0.7	2.55	small shallow lagoon near Kokruagarok	
	Total	.74	3.55		

<u>Rivers</u>	<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
no rivers, few small streams	(avg. distance mainland shore to contour)		(avg. distance mainland shore to contour)	
	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
	4 mi.	24 mi.	32 mi.	36 mi.

Coastal habitat
Wet tundra.

Comments

The lack of islands makes the area unsuitable for certain species of birds, but the large amount of wet tundra makes it important to other species. The lack of protected waters and rivers makes it unsuitable for extensive feeding.

Table 9. West Harrison Bay - Sect. 9.
(Cape Halkett to Atigaru)

<u>Miles of seaward aspect</u>		<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
38 mi.		<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
		Eskimo Is.	.13	1.25	Kogru R. -a series of connected		
			.34	1.5	"lakes" that form a 10 mi. long,		
		(tundra islands; bluffs up to 20 ft. in height)			18 mi ² lagoon; entrance depth,		
					4 ft, but deeper inside.		
<u>Rivers</u>		<u>Nearshore bottom topography</u>			<u>Coastal relief</u>		
<u>name</u>	<u>mi coastline</u>	(avg. distance mainland shore to contour)		(avg. distance mainland shore to contour)			
None		<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>		
Few small streams		6 mi.	25 mi.	5 mi.	15 mi.		
		Pacific Shoal - 8 mi. SE Cape Halkett; 3-5 ft. deep and 5 mi. in north-south length.					

Coastal habitat
Wet tundra.

Comments

Suitable breeding habitat is found only on the mainland. The wide shallow bay could be an important feeding area.

Table 10. Colville River - Sect. 10.
(Atigaru Pt. to Oliktok Pt.)

<u>Miles of seaward aspect</u>		<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
56		<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
		Thetis Is.	.14, .05	1.4, 1.25	None		

<u>Rivers</u>		<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	<u>mi. coastline</u>	(avg. distance mainland shore to contour)		(avg. distance mainland shore to contour)	
Colville R.	32.0	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
		8 mi.	22 mi.	4 mi.	12 mi.

Extensive bars and shoals to the E
and SE of Atigaru Pt.

Coastal habitat
Wet tundra.

Comments

The Colville delta provides numerous delta islands. The river provides open water early in the summer and nutrients throughout the open water period. Bird use of the shoreline area would be expected to be high.

Table 11. Oliktok Pt. to Pt. McIntyre - Sect. 11.

<u>Miles of seaward coast</u>	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
57.6	Spy Is.	.18	3.4	Simpson Lagoon	100	6
	Leavitt Is.	.1	1.6	Gwydyr Bay		3-5
	Pingok Is.	1.6	7.1			
	Bertoncini Is.	.08	.5			
	Bodfish Is.	.25	.8			
	Cottle Is.	.35	4.3			
	Long Is.	.4	7.0			
	Egg Is.	.05	1.2			
	Stump Is.	.16	2.75			
	Total	3.17	28.65			

<u>Rivers</u>	<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	<u>mi. coastline</u>	<u>(avg. distance mainland shore to contour)</u>	<u>(avg. distance mainland shore to contour)</u>	
Egnuravik R.	-	<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>
Sakonowyak R.	-	4 mi.	11 mi.	<u>100 ft.</u>
Kuparuk R.	6.4			13 mi. 20 mi.

Coastal habitat

Wet tundra, except moist tundra at Oliktok Pt. and south, and adjacent to Kuparuk R. almost to coast.

Comments

An important region for birds. Birds nest in numbers on the barrier islands and on the mainland tundra. Post-breeding use of the lagoon is high.

Table 12. Pt. McIntyre to Bullen - Sect. 12.

<u>Miles of seaward aspect</u>	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>	
46 mi.	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>
	Gull Is.	.01	.3	Prudhoe Bay	30
	Reindeer Is.	.07	1.6	Foggy Is. Bay	45
	Argo Is.	.02	.5	Mikkelsen Bay	35
	Niakuk Is.	.03	.75		
	Howe Is.	.3	.3	Total	110
	Duck Is.	.02	.3		
	Foggy Is.	.06	2.0		
	Cross Is.	.19	2.6		
	Dinkum Is.	.01	.22		
	Narwhal Is.	.13	2.2		
	Jeanette to Karluk Is. complex	.12	3.4		
	Lion Pt.	.06	1.2		
	Tigvariak Is.	1.37	2.0		
	Pole Is.	.22	3.0		
	Belvedere Is.	.15	3.9		
	Total	2.76	24.3		

4 mi. wide, 18-27 ft deep channel
between mainland and barrier
islands.

<u>Rivers</u>	<u>mi. coastline</u>	<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>		<u>(avg. distance mainland shore to contour)</u>		<u>(avg. distance mainland shore to contour)</u>	
		<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
Putuligayuk R.	-	11 mi.	17 mi.	6 mi.	10 mi.
Sagavanirktok R.	16.8				
Kadleroshilik R.	-				
Shaviovik R.	5.5				

Coastal habitat
Wet tundra.

Comments

The barrier islands are far offshore and are probably visited only infrequently by fox. The lagoon has a deep channel that supports a rich benthic fauna (Peter Barnes, pers. comm.). The Sagavanirktok River provides numerous delta islands.

Table 13. Bullen to Brownlow Pt. - Sect. 13.

<u>Miles of seaward aspect</u> 24 mi.	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
	Bullen Pt.	.03	1.0	"Challenge- Flaxman lagoon"	60	10
	Pt. Gordon	.06	1.75			
	Challenge Is.	.04	.07			
	Alaska Is.	.15	3.7			
	Duchess Is.	.12	1.8			
	North Star Is.	.08	1.5			
	Flaxman Is.	1.33	7.0			
	Pt. Thompson	.04	1.3			
	Total	1.85	18.75			

<u>Rivers</u> <u>name</u>	<u>mi. coastline</u>	<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
		(avg. distance mainland shore to contour)	(avg. distance mainland shore to contour)	(avg. distance mainland shore to contour)	(avg. distance mainland shore to contour)
Staines (branch of Canning R.)	4.0	<u>5 fathoms</u> 4 mi.	<u>10 fathoms</u> 6 mi.	<u>50 ft.</u> 6.5 mi.	<u>100 ft.</u> 8.5 mi.

Coastal habitat
Wet tundra.

Comments

The barrier islands and lagoons provide high bird use areas. The mainland wet tundra is not extensive and is found only in close proximity to the coast.

Table 14. Brownlow Pt. to Jago River - Sect. 14.

<u>Miles of seaward aspect</u>	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
78.4	Canning R. complex	.48	9.35	"Canning R. lagoon"	9.5	6
	Collinson Pt.	.10	2.0	"Anderson Pt. Arey Lagoon"	6.5	6
	Anderson Pt. complex	.50	5.9	Arey Lagoon	15.0	6
	Arey Is.	.53	7.25	Kaktovik Lagoon	7.0	10
	Barter Is.	6.10	4.6			
	Bernard Spit	.45	5.2			
	Total	8.16	34.3	Total	38.0	

<u>Rivers</u>		<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
<u>name</u>	<u>mi. coastline</u>	<u>(avg. distance mainland shore to contour)</u>		<u>(avg. distance mainland shore to contour)</u>	
		<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
Canning R. (excluding Staines R. branch)	4.0	4 mi.	7.5 mi.	1.5 mi.	3 mi.
Tamayariak R.					
Katakturuk R.	1.5				
Sadlerochit R.	1.0				
Hulahula R.	5.0				
Okpilak R.					
Numerous small streams					

Coastal habitat

Wet tundra - Canning R. delta;
 Sadlerochit R. delta; Hulahula R. to Barter Is.
 Moist tundra - Camden Bay.
 Sadlerochit R. to Hulahula R.

Comments

The western part of this region contains the Canning River, and has a variety of habitats for breeding birds including delta islands, barrier islands, and wet tundra. The remainder of the area has high coastal relief and few islands. The Hulahula and Okpilak River delta provides delta islands, however.

Table 15. Jago River to U.S./Canada Border - Sect. 15.

<u>Miles of seaward aspect</u> 68 mi.	<u>Barrier islands or spits</u>			<u>Lagoons or protected waters</u>		
	<u>name</u>	<u>area (mi²)</u>	<u>seaward coast (mi)</u>	<u>name</u>	<u>area (mi²)</u>	<u>depth (ft.)</u>
	Jago spit	.25	3.8	Jago	21	10
	Tapkaurak spit	.36	7.25	Tapkaurak	8	6
	"Pokok Lagoon spit"	.45	4.5	Oruktalik	3.5	6
	Angun Lagoon	.30	5.0	Pokok	57.24	6
	(Humphrey Pt. to Angun Pt.)			Pokok Bay	1.7	10
	Nuvagak Lagoon	.40	7.0	Angun	3.5	9
	complex			Beaufort-		
	Egaksrak Lagoon	.28	3.7	Nuvagak	10.5	6
	complex			Egaksrak	14.0	6
	Icy Reef	1.14	16.5	Siku	9.0	6
	Demarcation Pt.	.25	2.5	Demarcation Bay	17.0	15
	Total	3.43	50.3	Total	89.1	

<u>Rivers</u>	<u>name</u>	<u>mi. coastline</u>	<u>Nearshore bottom topography</u>		<u>Coastal relief</u>	
			<u>(avg. distance mainland shore to contour)</u>		<u>(avg. distance mainland shore to contour)</u>	
			<u>5 fathoms</u>	<u>10 fathoms</u>	<u>50 ft.</u>	<u>100 ft.</u>
	Jago R.	6	1.0 mi.	3.5 mi.	2 mi.	4 mi.
	Aichilik-	6.4				
	Egaksrak R.					
	Kongakut R.	10.0				
	Numerous small streams					

Coastal habitat

Moist tundra along entire coast, except wet tundra at Jago R. and its mouth, mainland adjacent to Beaufort Lagoon, and east side of Demarcation Bay.

Comments

The large river deltas and barrier islands make the area suitable for breeding birds. Coastal habitat drier than further west and less suitable for large numbers of breeding water birds. The Mackenzie River probably plays a major role in influencing conditions in the section.

Cooper Island

Arctic Terns on Cooper Island fed primarily on the mainland during the pre-hatching stage of incubation. Table 16 shows that between 10 and 17 July approximately two birds per hour flew to and from the mainland. No open water was present between the island and the mainland and we assumed that all birds flying south of the island were feeding on tundra ponds. One bird collected as it flew back to the island had insects in its stomach. Flights on the north side of the island were much less common. Between 0800 and 1800 no tern flights were observed on the north side of the island during the pre-hatching period. No similar phenomenon was observed on the south side of the island. This will be studied further in 1976 to determine if a mid-day period of inactivity on the north side is a regular occurrence.

Observations during hatching (Table 17) show that flights both to the north and south increase after hatching. Arctic cod became an important food item at this time with more than half of the birds returning from the north carrying fish.

In addition to flying to the mainland for insects, terns also fed in the lagoon south of the island. While no specimens were collected, it appeared that the terns were feeding on amphipods. It is of interest that no terns flying to the island from the south were observed carrying Arctic cod. This indicates that the ice in the lagoon does not support Arctic cod populations as does the ice outside of the islands.

In order to assess the potential importance of the moat surrounding the island surface and bottom plankton tows were taken at a number of stations on 11 July. The volumes taken in these tows are shown in Fig. 4. An aerial photo of the moat is shown in Fig. 5. Mysids made up over 90 percent of the volume of the tows. They were most common in the bottom tows and few were taken on the south side. Small numbers of amphipods were taken in most tows and these were occasionally common at the surface unlike mysids. On the basis of these tows and from observations of birds feeding in the moat, it is concluded that the moat is of little importance as a feeding area, except for irregular feeding on small surface amphipods. Large benthic isopods which occur in the moat but were not taken in tows appear to be the only food items in the moat that may be of regular importance to birds.

Information on breeding chronology and nesting success on Cooper Island were gathered so they can be compared with years in which ice cover differs. The 1975 information proved quite interesting by itself, however. Hatching success was high for both Black Guillemots and Arctic Terns (Tables 18 and 19). Both species had hatching success greater than any previously published findings. Black Guillemots also had a very high fledging success. No data is available on Arctic Tern fledging success but survival of Arctic Tern young after one week was high.

Table 16. Cooper Island 1975. 10,12-17 July - Pre-hatching period
Arctic Tern flights.

Time	North Side		South Side	
	Flights North	Flights South	Flights North	Flights South
0-0100	0	0	0	0
0100-0200	0	0	0	0
0200-0300	0	1F	0	0
0300-0400	2	1,2F*	2	1
0400-0500	0	3,1F	1	1
0500-0600	2	2	1	3
0600-0700	0	2	2	0
0700-0800	0	2,1F	0	4
0800-0900	0	0	0	0
0900-1000	0	0	2	3
1000-1100	0	0	2	4
1100-1200	0	0	1	6
1200-1300	0	0	2	7
1300-1400	0	0	7	3
1400-1500	0	0	1	2
1500-1600	0	0	4	0
1600-1700	0	0	2	2
1700-1800	0	0	1	0
1800-1900	1	0	0	1
1900-2000	0	1	10	5
2000-2100	1	2	10	3
2100-2200	0	1	0	0
2200-2300	0	2	0	0
2300-2400	0	1	2	4
<hr/>				
Totals	6 .25/hr.	22 (5 w/fish) .92/hr.	50 2.08/hr.	49 2.04/hr.

*F indicates bird carrying fish.

Table 17. Cooper Island 1975. 18-22 July - During Hatching, Arctic Tern flights.

Time	North Side		South Side	
	Flights North	Flights South	Flights North	Flights South
0-100				
0100-0200				
0200-0300				
0300-0400				
0400-0500				
0500-0600				
0600-0700				
0700-0800				
0800-0900				
0900-1000	8	1	24	16
1000-1100	11	6	7	11
1100-1200	7	1,7F*	6	0
1200-1300				
1300-1400				
1400-1500	0	3	6	5
1500-1600				
1600-1700	1	3,4F	6	0
1700-1800 (2 watches)	2 & 11	3,3F & 9,1F	5 & 6	3 & 0
1800-1900				
1900-2000	11	5,8F	2	2
2000-2100				
2100-2200				
2200-2300	0	5F	0	1
2300-2400				
Totals	51 5.66/hr	59 (28 w/fish) 6.6/hr.	62 6.9/hr.	38 4.2/hr.

*F indicates bird carrying fish.



Fig. 5. Cooper Island aerial photograph, 20 July 1975.

Table 18. Black Guillemot breeding data, Cooper Island, Beaufort Sea, 1975.

Number of nests: 17
 Average clutch size: 1.8

Approximate dates of laying:

	July								
	1	3	5	6	10	15	17	21	22
No. of eggs	10	6	4	1	1	5	1	2	1

Approximate dates of hatching:

	July		August						
	29	31	2	3	7	12	14	18	19
No. of eggs	10	6	4	1	1	5	1	2	1

Hatching and Fledging Success

No. of eggs: 31
 No. of dead eggs: 1
 No of eggs hatched: 30 (96.78%)
 No. of young hatched/nest: 1.77
 No. of young fledged: 25 minimum (80.7%)
 29 maximum (93.6%)

Table 19. Arctic Tern breeding data, Cooper Island, Beaufort Sea, 1975.

Number of nests: 51
 Average clutch size: 1.9

Approximate dates of laying (calculation based on 22 days incubation):

	June						July	
	23	25	27	28	29	30	1	2
No of eggs	1	11	20	2	28	15	3	3

Approximate dates of Hatching (includes projected dates):

	July							
	15	17	19	20	21	22	23	24
No. of eggs	1	11	20	2	28	15	3	3

Hatching Success

No. of eggs: 97
 No. of dead eggs: 7
 No. of young died in hatching: 7
 No. of eggs hatched: 83 (85.6%)
 No. of young hatched/nest: 1.6

Number of young alive after first week: 67 individuals
 1.3/nest

Barrow

Observations of birds feeding at the shoreline at Barrow in mid-September provided information on food during migration. Red Phalaropes, Sabine's Gulls and Ross' Gulls were all feeding on an assemblage of invertebrates found at the water's edge. The stomach contents of Ross' Gulls collected at Cooper Island and Barrow are included in a paper on the feeding habits of Ivory and Ross' Gulls to be published in the next issue of Condor. A copy of the manuscript is attached to this report.

VIII. Conclusions

R.U. 3/4

The preliminary delineation of coastal bird habitat in the northern Chukchi and Beaufort Sea presented in this report show that certain areas would be expected to have little bird use while other areas will have intensive bird use. Field work being conducted in 1976 will determine how important each of the areas is. Once the relative importance of each area and the habitats within an area are determined, specific results of petroleum related impacts can be determined.

R.U. 330/196

No specific information from the at-sea observations made in 1975 is yet available. The Bering Sea May observations provided information on birds in the ice during a time that has not been studied before. From the 1975 data it is obvious that by May the species that winter in the Bering Sea pack ice have moved north and have been replaced by birds that breed and summer in the Bering Sea.

Observations made in the Chukchi Sea in August provide information from an anomolous year when bird densities were low and certain species were absent from the Chukchi. Information such as this will allow more accurate determinations of what population changes are due to oceanographic effects and which are the result of petroleum related factors.

Breeding and feeding data obtained on Cooper Island demonstrated how important the ice and its associated fauna is to certain species. The Arctic cod associated with the ice is the apparent reason why nesting success was so high for Black Guillemots and Arctic Terns. It was also demonstrated that while tundra ponds on the mainland are important to Arctic Terns during the pre-hatching period, the area north of the island becomes important after the chicks hatch.

IX. Needs for further study

R.U. 3/4

Because no field work has been done on this project it is impossible at this time to suggest future topics for study. This season's field work will undoubtedly provide the basis for directing future studies.

R.U. 330/196

Pelagic observations made over the past six years provide information on birds in the pack ice in the Bering Sea in winter and in the Chukchi and Beaufort Seas in summer and fall. The period between October and March has had almost no observations, however. Aerial or small boat surveys are needed during this period.

For those periods and areas where the species and relative numbers of birds are known the most pressing need is an understanding of what the birds are feeding on so that the relative importance of organisms under the ice, in the water column and on the bottom can be determined.

Observations made in 1975 show that barrier islands may be most important as loafing areas. While 1975 work stressed the birds breeding on Cooper Island, in 1976 much time will be spent on the island's role as a loafing and feeding site.

X. Summary of fourth quarter activities

A. Ship or laboratory schedule

1. Field trip schedule

12-14 January Divoky attends OCS coastal-littoral workshop in Seattle

9-10 February Divoky attends pre-cruise meeting at PMC in Seattle

2. Data analyzed and methods

a. Number and types of samples

26 plankton tows.

b. Types of analyses

Volume of each order in tow were determined;
average size of organisms in each group were determined.

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THE PELAGIC FEEDING HABITS OF IVORY AND ROSS' GULLS

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Little information is available on the pelagic feeding habits of the Ivory Gull (Pagophila eburnea) and Ross' Gull (Rhodotethia rosea). This paper reports the food found in the stomachs of 13 Ivory and 24 Ross' Gulls collected from an icebreaker in the Chukchi Sea and 7 Ross' Gulls collected from shore near Point Barrow, Alaska. Observation on the feeding behavior of these two species in the Chukchi, Beaufort and Bering Seas are also presented and the importance of sea ice as a feeding area is discussed.

Specimens were collected in the eastern Chukchi Sea between 24 September and 9 October southwest of Point Barrow and north of Cape Lisburne (for specific localities see Watson and Divoky 1972). With one exception, all birds were collected at the edge of the pack ice, either in leads or in the brash ice just south of the consolidated pack. Sea surface temperatures ranged from -1.8° to 1.7°C . A single Ross' Gull was collected in an ice free area with a sea surface temperature of 3.1°C . Seven Ross' Gulls were collected from shore in 1975; 2 at Cooper Island 32 km east of Point Barrow on 4 September and 5 at Point Barrow between 9 and 18 September. Pack ice was visible 2 to 3 km from shore and grounded ice floes were present on some of the shoreline. Sea surface temperatures ranged from 1.5° to 0°C at both these localities.

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Ross' Gulls were observed in the Chukchi Sea in summer and fall and Beaufort Sea in fall; Ivory Gulls in the Beaufort Sea in summer, Chukchi Sea in fall and Bering Sea in winter. Terms used to describe feeding methods are from Ashmole and Ashmole (1967:70-71).

IVORY GULL

Juvenile arctic cod (Boreogadus saida) was the primary food in Ivory Gull stomachs (Table 1), usually indicated by the presence of otoliths. The otoliths ranged from 1 to 6.5 mm, corresponding to fish of approximately 40 to 140 mm total length. Two benthic tunicates found in one stomach must have been taken after they floated to the surface. A single amphipod, Apherusa glacialis, was present in one stomach. Potentilla sp. seeds were present in two stomachs.

Ivory Gulls were observed feeding by hovering and contact dipping. Most fed within 2 to 3 m of the ice. They were observed sitting on the water only three times, but were not feeding. When the ship was breaking ice in the Beaufort and Chukchi Seas, the propellers frequently washed arctic cod onto ice floes. These were eaten by Ivory and other gulls. In the Bering Sea, Ivory Gulls fed on small, unidentifiable items washed onto the ice by natural waves (Fig. 1). In the Chukchi Sea flocks of these Gulls were twice seen flying over surfacing whales and may have been feeding on items brought to the surface by them. Garbage thrown on the ice was often scavenged, natural refuse only rarely. In the Chukchi

Sea in fall a single Ivory Gull was observed picking at walrus (Odobenus rosmarus) feces on an ice floe.

It frequently is stated that the Ivory Gull depends on the carcasses and feces of pack ice mammals for much of its food (Salomonsen 1950:290-292; Dement'ev et al. 1969:467; Lovenskiold 1964:271). Seals killed by polar bears (Ursus maritimus) are thought to be a major food source (Summerhayes and Elton 1928). Thus, Birkenmajer (1972) attributed the decline of the Ivory Gull population on Spitsbergen to a declining polar bear population. Kurotshkin (1970) explained the high mobility of the Ivory Gull's jaw on the basis of a staple winter diet of frozen polar bear, seal and walrus feces.

Little evidence from the western Arctic supports these ideas of the Ivory Gull's dietary dependency. I saw no Ivory Gulls in association with 20 polar bears observed in the Beaufort Sea or the 15 observed in the Chukchi Sea (Watson and Divoky 1972 and Divoky in prep.). Polar bears are common in both these seas in winter but Ivory Gulls leave as the ice edge advances southward into the Bering Sea (Bailey 1948:264). They are found there in the loose ice at the southern edge of the pack in the general vicinity of St. Matthew Island (Irving et al. 1970; Divoky in prep.). This is outside the range of the polar bear which now rarely occurs south of St. Lawrence Island (Jack W. Lentfer pers. comm.).

Evidence suggesting that pinnipeds supply a major food source in the western Arctic also is lacking. The walrus would provide the most constant and readily available food source because it hauls out on the ice more frequently than other pinnipeds and leaves ice floes covered

with feces. While Ivory Gulls in the Chukchi Sea in fall commonly were seen in areas where walrus feces were plentiful on the ice, only one instance of scavenging on the feces was recorded. Although Ryder (1957) observed Ivory Gulls in the Bering Sea in February feeding among walruses on ice floes, I found them in the Bering Sea in February and March to be well south of the large concentrations of walrus (Divoky in prep.). Ryder also observed Ivory Gulls, as well as Black-legged Kittiwakes (Rissa tridactyla) and Glaucous Gulls (Larus hyperboreus), feeding on seal carcasses. Seals probably provide little food except in April and May when all the pack ice pinnipeds are whelping and placentas may be a major food source as they are in parts of the eastern Arctic (Tuck 1960:104-105).

Zooplankton may be an important food item in the spring when Ivory Gulls move north into the Chukchi Sea (Bailey 1948:247). During that season Brower found Ivory Gulls to be more common at Barrow during westerly winds when they fed on an "invertebrate scum" floating on the water's surface (Bailey 1948:248).

Stomachs of Ivory Gulls from the eastern Arctic contain primarily fish and invertebrates. Manniche (1910) found mainly fish bones and crustaceans although he also found insects in the stomach of one summer bird and a piece of seal flesh in another. The stomach of a gull collected off Greenland (Cottam 1936) contained primarily invertebrates, including 115 Thysanoessa inermis, 5 Apherusa glacialis and traces of arctic cod and copepods. An Ivory Gull shot at a glacier face was full of Thysanoessa sp. (Hartley and Fisher 1936). Jackson (1899:419-420) found "shrimps", fish, pelecypod shells and brown algae in the stomachs of nine birds. Only small crustaceans were present in the birds examined by Kumlien (1879).

Fish and invertebrates are probably the primary food during breeding. Bateson and Plowright (1959) saw mostly fish and crustaceans being fed to young. The two birds collected contained only arctic cod. Montague (1926) found fish and carrion in the stomachs of birds collected at breeding sites.

Although scavenging by Ivory Gulls has been recorded often in the eastern Arctic (e.g. Lovenskiold 1964:271-272), there is no evidence that such scavenging provides most of the diet throughout the year. Much of the scavenging observed was on garbage and carrion provided by man. Many species of gull will use such refuse, but there is no evidence that scavenging by birds not associated with man is as frequent. Apparently, the Ivory Gull's habit of rarely sitting on the water has reinforced the view that it is unable to obtain food from the water and that scavenging on carrion and feces constitutes the bulk of its feeding activity. Montague (1926) surmised that fishes found in Ivory Gull stomachs were not obtained from the water but were picked up after being dropped by other birds. As this paper and previously published reports on stomach contents show, the Ivory Gull does obtain much of its food from the water.

The role that pack ice mammals play in providing food for the Ivory Gull cannot be ascertained until regular observations of feeding activity are made throughout the year in various regions; however the species certainly is not as dependent on pack ice mammals as previous authors have stated. Rather the Ivory Gull appears to feed primarily on fish and invertebrates associated with the ice and to a lesser extent on the feces and carcasses of mammals found at the pack ice edge.

ROSS' GULL

Juvenile arctic cod were found in 79 percent of the Ross' Gull stomachs collected at sea (Table 1). Otolith size was the same as in the Ivory Gull. Because otoliths persist in the stomach for some time the relative importance of arctic cod as a food item is probably exaggerated. Amphipods were an important part of the diet in the Chukchi Sea, being present in 54 percent of the stomachs. Apherusa glacialis was the most abundant amphipod; one stomach contained 160, six contained between 40 and 90 and three contained less than 5. Three Anonyx nugax, two probable Gammarus locusta and one Atylus bruggeni also were found. Four stomachs contained ventral setae of an echiuroid worm. Echiuroids are benthic organisms and are too large to be a food item for Ross' Gull even if they floated to the surface. Walrus and bearded seal (Erignathus barbatus) feed on echiuroids (John J. Burns pers. comm.) and it seems likely that Ross' Gulls ingested the spines while feeding on feces. The setae are highly chitinized and could pass through a pinniped digestive tract and remain intact. One stomach contained five setae. A piece of coleopteran exoskeleton present in one of the stomachs apparently had persisted from the breeding season when insects are the primary food (Buturlin 1906). Previous accounts of the pelagic feeding habits of the Ross' Gull are rare. Collett and Nansen (1900) found the crustacean Hymenodora glacialis and arctic cod in eight birds and Gammarus locusta in one.

Ross' Gulls collected from shore were feeding primarily on a diverse assemblage of invertebrates (table 2). Arctic cod though present in 57 percent of the stomachs was usually only represented by

single skeletal elements. This differed from birds collected at sea which frequently contained whole fish. Apherusa glacialis was present in 71 percent of the stomachs though the number per stomach was less than birds collected at sea; one stomach contained 35 and the rest had less than 20 each. Chaetognaths though present in only 29 percent of the stomachs were numerous in each there being 75 in one and 40 in the other. The other invertebrates present in the stomachs were each represented by less than five individuals. Sedge seeds present in one stomach were being fed upon at the shoreline as indicated by a number of seeds present in the esophagus.

At sea, Ross' Gulls fed primarily within 2-3 m of ice usually by hovering and surface feeding. In more open water birds usually plunged to the surface. When plunging to the surface little submersion of the body would occur. Ross' Gulls were not attracted to the ship's garbage. The only scavenging I observed was by a single bird feeding on walrus feces on an ice floe.

Ross' Gulls observed feeding near shore were usually in or near flocks of surface feeding Red Phalaropes (Phalaropus fulicarius) and Sabine's Gull (Xema sabini). Such flocks were usually within 3 m of the shoreline. Ross' Gulls associated with these flocks would feed by contact dipping, plunging to the surface and wading at the water's edge. In such situations Ross' Gulls appeared to be minimizing the amount of time their plumage was in contact with the water. Birds plunging to the surface would take flight a few seconds after hitting the water. Birds wading in the water would avoid depths where they would have to swim. Such behavior probably accounts for Dement'ev et al. (1969:487) and Salomonsen (1972) stating that Ross' Gulls rarely, if ever, sit on

saltwater. My observations at sea, however, show that sitting on water is not uncommon.

DISCUSSION

Observations made during the period when the Ivory and Ross' Gulls were collected at sea showed both species to be found more frequently at the edge of the ice pack than in the open water south of it (Divoky 1972; Watson and Divoky 1972). The apparent reasons for this was the abundance and availability of prey organisms associated with ice. Arctic cod and Apherusa glacialis are both part of an under-ice fauna that may be an important food source for several species of arctic seabirds.

The under-ice biota is poorly known, and only fragmentary information is available on its component species. Phytoplankton blooms occur in and on the underside of sea ice (Apollonio 1961). At least in areas with multi-year ice the phytoplankton associated with the ice supports an under-ice zooplankton community. Amphipods are a major part of this community and are found either swimming in the water directly below the ice or clinging to its undersurface. Some amphipod species are found under the ice only in winter and are dispersed by meltwater in spring (Mohr and Geiger 1968). Others, including Apherusa glacialis, are found under the ice throughout the year (MacGinitie 1955). Although the arctic cod is found in open water away from the ice (Alverson and Wilimovsky 1966; Quast 1974), it is common under the ice where it evidently feeds on under-ice organisms.

The lack of techniques for quantitatively sampling the under-ice fauna precludes comparison of prey densities between ice and open water areas. Observations and sampling in the Chukchi Sea at the time the

birds were collected does, however, allow some comments about the two areas. Trawling in open water south of the pack ice showed that arctic cod were uncommon in the upper 11 of water (Quast 1974). Conversely, observations showed arctic cod were common in the surface waters next to ice floes. Vertical plankton tows showed zooplankton to be scarce in the water column both next to the ice and in open water (B. L. Wing in prep.). That these plankton tows failed to sample the organisms associated with the ice is indicated by their failure to catch Apherusa glacialis which was so common in stomachs of Ross' Gulls from the same areas.

The prey organisms associated with the ice are probably easier for birds to locate than surface organisms in open water. The ice acts as a windbreak, and surface waters on the lee side are relatively calm, providing increased visibility. Also, arctic cod swimming over underwater ice shelves are highly visible from above.

Although the ice associated fauna is the major food source in fall for the Ivory and Ross' Gull, the latter species is also seen at the shore at Barrow (Gabrielson and Lincoln 1959:463) where chaetognaths, crab zoea and other invertebrates are abundant. Ivory Gulls do not utilize this food source and only are occasionally seen from land at Barrow (Bailey 1948:247-248).

While both species are found primarily at the ice edge in the Chukchi Sea in fall they differ in their association with ice during the remainder of the year. Ivory Gulls are dependent on ice during the breeding season. Breeding colonies are usually close to the pack ice or glaciers. Glacier faces provide a concentration of organisms at the water's surface due to upwelling of nutrient rich waters (Hartley and

Fisher 1936; Hartley and Dunbar 1938). The importance of the ice to the Ivory Gull during the breeding season is suggested by the observation of Dalgety (1932) that the average clutch size was smaller in a year with little ice than it was in a year with more ice. Montague (1926) believed that adult birds fly to the pack ice for food for their young. Traditional breeding colonies of the Ivory Gull may be deserted as a result of ice disappearing from the area (Birkenmajer 1972).

In contrast to the Ivory Gull the Ross' Gull has no association with the pack ice during breeding but nests on river deltas where the primary food is insects. Immediately after breeding, however, Ross' gulls move north to the pack ice (Buturlin 1906).

During the winter both species are associated with the pack ice but occupy ecologically distinct areas. Ross' Gulls apparently winter primarily in the Arctic Ocean (Bailey 1948:252) with only a small number passing through the Bering Strait (Fay and Cade 1959). Ivory Gulls, however, winter primarily at the ice edge in the Bering Sea with few, if any, individuals remaining in the Arctic Ocean. Most of the ice in the Arctic Ocean is multi-year ice and is capable of supporting a well-developed under ice fauna. Almost all of the ice in the Bering Sea is first year ice and while it supports an in and under ice plankton bloom (McRoy and Goering 1974) it does not have time to develop ice associated zooplankton and arctic cod populations. Thus, while Ross' Gulls probably feed on the under ice fauna during the winter Ivory Gulls winter in an area where the fauna is not present.

Primary productivity in the Bering Sea in winter is low except for the phytoplankton bloom occurring in the ice and one occurring in the

surface waters at the southern edge of the ice (McRoy and Goering 1974). Because the bloom occurring in the ice is not available to grazing zooplanktons the ice edge bloom is the only food source available to zooplankton near the water's surface. While no sampling of fish or zooplankton associated with this bloom has been conducted it seems likely that organisms supported by the bloom provide food for the Ivory Gull. This would explain the association of Ivory Gulls with the southern edge of the Bering Sea ice (Divoky in prep.). In spring when the ice begins to melt the phytoplankton in the ice is released into the water making the ice edge bloom less important.

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TABLE 1. Frequency of occurrence of food items in stomachs of Ivory Gulls and Ross' Gulls collected in the Chukchi Sea in fall.

Food Items	Ivory Gull		Ross' Gull	
	no.	%	no.	%
(Sample size)	(13)		(24)	
Arctic cod (<u>Boreogadus saida</u>)	12	92	19	79
Amphipods	1	8	13	54
<u>Apherusa glacialis</u>	<u>1</u>	<u>8</u>	<u>10</u>	<u>42</u>
<u>Anonyx nugax</u>			<u>1</u>	<u>4</u>
<u>Gammarus locusta</u>			<u>1</u>	<u>4</u>
<u>Atylus bruggeni</u>			<u>1</u>	<u>4</u>
Unidentified			<u>2</u>	<u>8</u>
Echiuroid worm (<u>Echiurus echiurus</u>)			4	17
Pyurid ascidian	1	8		
Coleoptera			1	4
Plant material	3	23		
Phaeophyceae (brown algae)	<u>1</u>	<u>8</u>		
<u>Potentilla</u> sp. seeds	<u>2</u>	<u>15</u>		
Ship's refuse	1			

TABLE 2. Frequency of occurrence of food items in stomachs of Ross' Gulls collected from land near Point Barrow, Alaska in early September.

Food Items	No.	% Freq.
Sample size	(7)	
Arctic cod (<u>Boreogadus saida</u>)	4	57
Amphipods	5	71
<u>Apherusa glacialis</u>	<u>5</u>	<u>71</u>
<u>Onisimus litoralis</u>	<u>1</u>	<u>14</u>
Chaetognaths	2	29
Copepods	2	29
Mysids	1	14
Euphausiids	1	14
Decapods	1	14
Polychaetes	1	14
Cyperaceae seeds	1	14

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SEASONAL DISTRIBUTION AND ABUNDANCE OF MARINE BIRDS:

PART I. SHIPBOARD SURVEYS

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Abstract. Shipboard surveys of marine birds were conducted from Long Beach, California, to the vicinity of Point Barrow, Alaska, between 27 January and 6 December 1975 by U.S. Fish and Wildlife Service personnel, contractees, and cooperators. Data were drawn from 21 "opportunistic" cruises, 2,663 transect counts, and 416 station counts. Sixty-four percent of the transect counts and 81 percent of the station counts were made within regions identified for oil and gas leasing, with the remaining counts being made in adjacent regions seaward or between lease areas, and enroute between Alaska and both Washington and California.

Data on populations of birds, are summarized by species, month, and oceanographic region in 165 tables. Monthly summaries of relative densities of all birds in the Alaskan outer continental shelf regions are depicted on 12 maps.

Distributional data are deemed inadequate to characterize the avifauna and predict potential impacts in all OCS leasing area except in possibly the Northeastern and Northwestern Gulf of Alaska regions.

INTRODUCTION

This report summarizes observations of marine birds obtained during 1975 by U.S. Fish and Wildlife Service personnel, contractees, and collaborators while aboard ships in waters over Alaska's outer continental shelf and when transiting between there and ports along the west coast of the United States. Observations of marine birds from aircraft are summarized in the companion report titled "Seasonal distribution and abundance of marine birds: Part II. Aerial surveys". A detailed analysis of bird distribution will be deferred until the final report.

The objective of this research unit is to describe the seasonal density distribution of marine birds in those portions of the Gulf of Alaska, the Bering Sea, and the Beaufort Sea that have been identified by the U.S. Department of the Interior for leasing and development of their oil and gas potentials. This research unit considers only the offshore environment and does not include species generally confined to the nearshore and littoral habitats. It does not directly consider the distribution of pelagic species when they occupy shoreline habitats such as during the breeding season. The onshore distribution of pelagic birds is summarized in a report on Research Unit No. 343.

Understanding the varied and complex patterns of distribution and abundance for each of the nearly hundred species of migratory birds that frequent the waters over the Alaskan outer continental shelf is prerequisite to identifying their critical habitats and periods of vulnerability and to providing clues as to their oftentimes less-than-obvious relationships with the marine environment. This kind of information is but a part of that required by natural resource management agencies in order to eliminate, minimize, and mitigate adverse impacts upon birds resulting from oil and gas development and all of its ancillary activities. This research unit addresses direct impacts of development and does not measure potential indirect impacts such as the effects resulting from changes in food chains, uptake of harmful hydrocarbons, or the disturbance of nesting areas. Some such effects, however, may be predicted or assumed.

CURRENT STATE OF KNOWLEDGE

Published assessments of seasonal densities of birds in the marine waters off the Alaskan coast are both scanty and patchy in coverage. Shuntov (1961, 1962, 1963, 1966, 1968, 1972), with his studies of birds in the northern North Pacific Ocean and the Bering Sea, presents the most comprehensive and generalized pictures of bird distribution and abundance in the ice-free waters concerned with outer continental shelf development. Sanger (1972), using original data and that of Shuntov, estimates the numbers and biomass of birds in various oceanographic domains within the northern North Pacific Ocean and the Bering Sea during summer and winter. Isleib and Kessel (1973) qualitatively and quantitatively characterized the avifauna of the northern

Gulf of Alaska and Prince William Sound regions, emphasizing the onshore and nearshore areas. Arnold (1948) quantitatively described the birds seen while transiting between Kodiak, Unalaska, and Attu Islands during a summer. Kuroda (1955, 1960) reported bird densities and oceanographic relationships in the vicinity of the Kuril Islands and the western end of the Aleutian Islands. Laing (1925) and Jacques (1930) provided annotated remarks of birds seen while in the Bering Sea. Bartonek and Gibson (1972) described bird distribution and abundance in Bristol Bay during a summer. Irving et al. (1970) reported the wintering birds seen along a short track of an ice-breaker in the Bering Sea ice. Swartz (1967) and Watson and Divoky (1972) provided data on bird distribution during mid- to late-summer in the Chukchi Sea. Frame (1973) and Watson and Divoky (1975) describe the birds in the ice of the western Beaufort Sea during late summer.

Some unpublished reports and unanalyzed data exists for birds in these marine waters, but they are obviously not readily obtainable to all potential users. Those data which lend themselves to incorporation into our data system will be reported in subsequent reports upon receiving permission of the investigators. Considerable information on bird densities in Prince William Sound during four seasons of the year was obtained by U.S. Fish and Wildlife Service personnel from 1973 through 1975; but the death of Larry Haddock, principal investigator, while making an aerial survey of marine birds has delayed the interpretation and analysis of those data. King and McKnight (1969) and Montgomery (1972) report bird densities in Bristol Bay during a fall and a spring, respectively. Unanalyzed data on birds observed in the Bering Sea are irregularly published with the oceanographic and fisheries records of the RV Osharo Maru (Hokkaido University 1957). King et al. (1974) provided quantitative assessments of the birds in the eastern Bering Sea in a winter. Trapp (1975) reports bird densities in summer throughout the Aleutian chain. Divoky (1972) described the birds of late summer in the Chukchi Sea. Bartels (1971, 1973) described the bird populations seen from shipboard and aerial surveys during summer in the Beaufort Sea.

By and large all of the published and unpublished information on the seasonal densities of birds at sea have been acquired from platforms of opportunity. Since bird observers have almost "traditionally" been aboard vessels on a noninterference basis, the observations have usually been collected on a "haphazard" or "opportunistic" sampling scheme during daylight hours. Few observers were able to repeat a survey along the same cruise track at a later date, and even fewer observers could designate the track to be taken. In general, the reports present fragmentary information on bird distribution and densities from which generalizations for even some of the more abundant and widely occurring species would be improper.

STUDY AREA

Observations of birds at sea as reported herein were made between Long Beach, California, homeport of the U.S. Coast Guard ice-breakers Glacier and Burton Island, and Point Barrow at the juncture of the Chukchi and Beaufort Seas. Most observations, however, were made in the Gulf of Alaska and in the southern and eastern Bering Sea. Specific localities where data were obtained are identified in the "Results" section. Shipboard observations in the pack ice of the Bering, Chukchi, and Beaufort Seas were made during the first half of the contract year under another U.S. Fish and Wildlife Service project (Research Unit #330/196 - "The distribution, abundance and feeding ecology of birds associated with the Bering Sea and Beaufort Sea pack ice") by George J. Divoky, Principal Investigator, and Robert Boekelhide (Note: this project was transferred to the Alaska Department of Fish and Game when Divoky changed employment in October, 1975).

METHODS

Throughout 1975 opportunistic surveys of birds at sea were made from both National Oceanic and Atmospheric Administration and U.S. Coast Guard vessels when operating within the regions of concern or transiting along probable tanker routes between west coast ports and Alaska. Since no vessel had dedicated shiptime for these bird surveys, our observers were aboard on a "noninterference basis" and the regions surveyed and timing of surveys were dictated by other projects.

Table 1 is a log of field reports prepared by U.S. Fish and Wildlife Service personnel, contractees, and collaborators covering their shipboard, aerial, and ground surveys during the periods 27 January to 6 December 1975 and 15 February to 31 March 1976. Data from 1975 field reports 2, 4, 5, 11, 13, 15, 16, 18, 20, 21, 22, 23, 24, 25, 26, 28, 30, 31, 32, and 34 form the bases for this report.

Data are summarized by month for each of 32 regions (Figure 1). These regions were subjectively delineated and represent, in part, regions encompassing sedimentary basins that were identified by the U.S. Department of the Interior as having potential for oil and gas development, in part, political boundaries and, in part, regions having similar oceanographic qualities. Data, however, can be retrieved for analyses using regions and time periods other than those that we selected.

Census data were collected on transects while the vessels were underway and on stations when the vessels were either stationary or drifting.

Census data from a single transect consisted of all birds observed within 300 m from the side of the vessel that was most favorable for viewing and within a 15-minute period. Data were collected and segregated on bird occurrence within each of three 100-m wide zones (0-100,

100-200, and 200-300 m), facilitating future evaluation of biases resulting from the visibility of each species and from the behavior of the birds with respect to the vessel.

Census data from a single station included all birds observed within each of three concentric zones about the ship of either 0-100 m, 100-200 m, and 200-300 m or 0-200 m, 200-400 m, and 400-600 m soon as the vessel came on to station. The number and kinds of birds observed from the outer most concentric ring to the horizon were recorded but not reported in this paper.

Census methods varied somewhat from cruise to cruise but especially among those done before and those done after the standardization of survey procedures. For the purposes of this report almost all data were used, and treated equally. Data which are later determined to be of questionable worth will be either adjusted or discarded for the final report. The standardized procedures and data sheets are contained in the program work statement for this research unit (Lensink and Bartonek 1975).

Data in this report are expressed as occurrence (number of transects or stations in which that species was seen), percent occurrence (percentage of all transects or stations in which a species was seen), number of birds within a transect or station, and number of birds within a transect or station per km². A footnote to each table of census data identifies those field reports (Table 1) contributing to the data set.

Matt Kirchhoff and Mark Phillips compiled the data for this report, and Art Sowls and Matt Kirchhoff prepared the maps of monthly density distribution.

RESULTS

Shipboard surveys of marine birds were conducted from Long Beach, California, to the vicinity of Point Barrow, Alaska, between 27 January and 6 December 1975 by U.S. Fish and Wildlife Service personnel, contractees, and cooperators. Data were drawn from 21 "opportunistic" cruises (Table 1), 2,663 transect counts (Table 2) and 416 station counts (Table 3). Sixty-four percent ($n = 1,700$) of the transect counts and 81 percent ($n = 337$) of the station counts were made within regions identified by the U.S. Department of the Interior as being outer continental shelf areas under consideration for oil and gas leasing, i.e., Beaufort Basin, Bristol Bay, Hope Basin, Kodiak Basin, Lower Cook Inlet, Navarin Basin, Northeast Gulf of Alaska, Northwest Gulf of Alaska, St. George Basin, and Ummak Basin (Maps 1 and 2). Other shipboard surveys by U.S. Fish and Wildlife Service personnel in the Chukchi and Beaufort Seas are reported under RU #330/196. Twenty-two percent ($n = 583$) of the transect counts and 19 percent ($n = 79$) of the station counts were made in regions adjacent to the aforementioned regions of leasing, with the remaining 14 percent ($n = 380$) of the transect counts being made while transiting between Alaska and ports in Washington and California.

Data on birds, by species, month, and region, as obtained by transect counts and station counts are presented in Tables 4-123 and 124-169, respectively. Monthly summaries of relative densities of birds within blocks of 10 minutes of latitude and 10 minutes of longitude as determined by shipboard transect counts are presented in Maps 3-14.

The opportunistic shipboard surveys of birds resulted in regional and seasonal patchiness in our data. Combined data for the Northwest Gulf of Alaska and the Northeast Gulf of Alaska regions provides the best year-round picture of bird densities of all regions reported; but January, March, July, August, and December are months of greatest data deficiency (Tables 45-52, 54-63, 143-149, 150-158). Data for the Kodiak Basin region provides irregular spatial coverage from May through November (Tables 30-36, 138-141). St. George Basin has reasonably good spatial and temporal coverage from May through November (Tables 107-113 and 161-165), but data from winter and spring are absent. The Bristol Bay region has irregular spatial coverage from June through November (Tables 11-16, 130-132). The Norton Basin region in July and September (Table 44) and the Hope Basin region in September (Tables 29 and 137) were traversed by icebreakers to and from unsuccessful cruises (because of ice conditions) in the Beaufort Sea. The Navarin Basin region, but not the sedimentary basin itself, was traversed at its eastern edge from June through September (Tables 40-43 and 142). Although the Umnak Basin region was irregularly traversed from May through November usually by vessels going into Unalaska, data were collected over the sedimentary basin (Eastern Aleutian Shelf) only in September (Tables 119-123, 168 and 169). Limited data were collected from the southernmost portion of the Lower Cook Inlet region from September through November (Tables 37-39).

Despite the patchiness of the opportunistic surveys Maps 3-14 of monthly bird densities portray some expected results. Bird densities during any month tended to be greater over the outer continental shelf regions than over the oceanic regions. Limited data from January and February in the Gulf of Alaska suggested that bird densities were greatest at the shelf edge than over either the outer continental shelf or oceanic region. [Note: The value of the nearshore waters and littoral zone to many kinds and numbers of birds must not be overlooked in these generalized statements, recognizing that all surveys reported herein were made from vessels which seldom come close to these habitats except when entering a port.] Bird densities increased from early spring through summer and from south to north with the onset of migration and decreased with the return migration in fall. Unimak and Akutan Passes had consistently high densities of birds. Densities in excess of 1,000 birds/km² first occurred in April and May in the Gulf of Alaska and then occurred from June through October in the Bristol Bay, St. George Basin, Umnak Basin, and Alaska Peninsula South regions.

DISCUSSION

Detailed analyses of density distribution of birds by species, by month, and by region with respect to impacts related to OCS development are being deferred until the final report when ADP methods will be used instead of the hand-processing of data as used in this report.

Our continued refinement and standardization of both techniques should improve the reliability of future counts. All persons who have censused birds at sea, whether from a vessel, aircraft, or the coast-line, are acutely cognizant of the inherent biases in the various techniques and of their own fallability when it comes to identifying an unfamiliar species or a familiar species under unfavorable conditions or sorting out and estimating numbers in the often enormous mixed flocks of shearwaters, fulmars and storm petrels.

Of the two techniques employed, we believe that the transect method can be used to estimate absolute values of density while the station method should only be used to provide indices to density.

CONCLUSIONS

Conclusions are not being made at this time since data gaps are plentiful and analyses have been only cursory.

NEEDS FOR FURTHER STUDY

Data on bird densities as obtained from shipboard surveys are both spatially and seasonally deficient for Lower Cook Inlet, Umanak Basin, Navarin Basin, Norton Basin, Hope Basin, and Beaufort Basin. Seasonal information is deficient for Kodiak Basin, Bristol Bay Basin and St. George Basin. Except for the Northeastern and Northwestern Gulf of Alaska regions the present data base is not deemed adequate to characterize bird population over or adjacent to the sedimentary basins identified by the U.S. Department of the Interior for leasing; and, therefore, they are insufficient for predicting all impacts from the proposed Federal action.

SUMMARY OF 4th Quarter OPERATIONS

U.S. Fish and Wildlife Service personnel have conducted opportunistic shipboard surveys aboard NOAA vessels R/V Moana Wave, Discoverer, Surveyor, and Miller Freeman during the 4th quarter (Table 1). Personnel were not put aboard the R/V Surveyor during legs of the cruise near the ice-edge since bird observations were being made by George J. Divoky, (KJ #330/196), and our involvement would have resulted in duplicative efforts. Observations obtained during the 4th and the 5th (July-September) quarters will substantially improve the spacial and seasonal distribution of censuses.

Major effort during the 4th quarter will be devoted toward placing of all data in computer formats for storage in the Environmental Data Service and as an essential step for ADP processing and analysis of data during the 5th quarter.

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Table 1. Log of U.S. Fish and Wildlife Service reports covering shipboard, aerial, and land surveys of marine birds, 1972-76.

Cruise- Field Report Number	Author- Observer	Vessel- Aircraft	Dates	Location ^{1/}	Survey Units		
					Tran- sect	Sta- tion	Experi- mental
75-001	L. Haddock (summarized by J. Benson)	Grumman Goose	6'72,4'73	NWGOA,KB,NEGOA	184	-	-
75-002	P. Isleib	Oceanographer	1/27-3/4'75	NEGOA,OBC,BCS	132	-	-
75-003	G. Hunt, K. Briggs	P2V	3/6,8,9'75	NEGOA,NWGOA,LCI	112	-	-
75-004	S. Hatch, B. Timson	Surveyor	4/21-6/14'75	NP,PWS,APS,KB, LCI,NEGOA,NWGOA	392	-	-
75-005	I. Warner, J. Guzzman	Discoverer	5/9-6/21'75	APS,KB,OA,UMB,BB, OBC,NP,NEGOA,SGB, NWGOA,ECB	69	-	-
75-006	G. Hunt, K. Briggs, E. Bailey	P2V	6/9,11,16'75	LCI,NWGOA, NEGOA,PWS	128	-	-
75-007	M. Dick, I. Warner, R. MacIntosh	(Field Study)	6/17-19'75	Kodiak Island	39	-	-

Table 1 Con't

Cruise- Field Report Number	Author- Observer	Vessel- Aircraft	Dates	Location ^{1/}	Survey Units		
					Tran- sect	Sta- tion	Experi- mental
75-008	J. Blankenship, N. Johnson, E. Bailey	P2V	6/18-20'75	HB,NaB,ECB	101	-	-
75-009	J. Bartonek, S. Hatch, B. Timson	P2V	6/26'75	LCI,NWGOA,NEGOA	71	-	-
75-010	J. Bartonek, S. Hatch, B. Timson	P2V	7/2-3'75	BFT	253	-	-
75-011	J. Benson, B. Timson	Surveyor	7/11-31'75	BCS,NP, KB,APS,UMB	90	29	5
75-012	D. Cline, N. Johnson, K. Wohl	P2V	7/15-16'75	LCI,APS, KB,BB, NWGOA	168	-	-
75-013	M. Rauzon, S. Hatch	Glacier	7/16-29'75	SCS,ONC,OO,OW,OBC, KB,APS,SGB,NB,ECB	174	-	-
75-014	J. Bartonek, D. Cline, C. Harrison	P2V	7/31-8/2'75	BB,SGB,LCI, NWGOA	272	-	-

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Table 1 Con't

Cruise- Field Report Number	Author- Observer	Vessel- Aircraft	Dates	Location ^{1/}	Survey Units		
					Tran- sect	Sta- tion	Experi- mental
75-015	M. Rauzon, J. Ruehle	Discoverer	8/6-9/11'75	NWGOA,KB,NP,APS, BB,SGB,ECB	223	64	-
75-016	K. Henderson, J. Benson, C. Handel	Surveyor	8/7-9/12'75	LCI,NWGOA,NEGOA, KB,PWS,APS, SGB,ECB	91	32	12
75-017	S. Hatch, C. Harrison	(Field Study)	8/11-8/25'75	Unimak Island	-	-	-
75-018	D. Nysewander	Miller Freeman	8/12-9/4'75	BCS,OBC,KB,APS, SGB,ECB,BB	149	63	-
75-019	B. Timson	(Field Study)	8/27-9/12'75	Pt. Barrow	-	-	-
75-020	I. Warner	Silas Bent	9/1-28'75	SEAS,NEGOA,NWGOA,KB, OAPS,APS,UMB	109	77	-
75-021	A. Sowls	Glacier and Burton Island	9/1-30'75	APS,SGB,ECB,SCS, OCS,ONC,TNP,OSK, OAPS,OO,NB,HB	124	1	-
75-022	C. Harrison	Miller Freeman	9/6-29'75	OA,UMB,BB,SGB,SCB	150	21	-
75-023	D. Nysewander	Discoverer	9/13-10/2'75	BB,SGB,NaB, ECB,APS,KB	90	19	2

Table 1 Con't

Cruise- Field Report Number	Author- Observer	Vessel- Aircraft	Dates	Location ^{1/}	Survey Units		
					Tran- sect	Sta- tion	Experi- mental
75-024	C. Handel	Surveyor	9/16-22'75	SEAS,NEGOA,KB	45	1	6
75-025	C. Handel, J. Benson	Surveyor	10/1-24'75	KB,SEAS,NWGOA PWS,NEGOA	112	23	12
75-026	M. Rauzon	Miller Freeman	10/2-24'75	SCB,BB,APS,ECB,SGB	110	30	-
75-027	J. Bartonek, C. Harrison, S. Hatch	P2V	10/7'75	LCI,NWGOA,NEGOA	106	-	-
75-028	K. Henderson	Discoverer	10/8-16'75	APS,KB,LCI	27	11	-
75-029	C. Harrison, S. Hatch, E. Bailey	P2V	10/17'75	NWGOA,NEGOA,PWS	71	-	-
75-030	J. Ruehle	Discoverer	10/21-11/10'75	NEGOA,NWGOA,PWS	64	25	-
75-031	K. Henderson	Surveyor	10/28-11/6'75	SEAS,NEGOA,NWGOA,KB, PWS,OGOA,LCI	38	-	-
75-032	S. Hatch	Surveyor	11/8-24'75	OBC,OSK,UMB,APS,KB	60	5	-
75-033	M. Kirchhoff, M. Rauzon	Miller Freeman	11/10-12/3'75	SGB,ECB,BB	106	11	-

Table 1 Con't

Cruise- Field Report Number	Author- Observer	Vessel- Aircraft	Dates	Location ^{1/}	Survey Units		
					Tran- sect	Sta- tion	Experi- mental
75-034	D. Hardy, D. Nysewander	Discoverer	11/18-12/6'75	SEAS,NWGOA	-	-	-
75-035	C. Harrison, S. Hatch, J. Ruehle	P2V	12/9'75	BB	13	-	-
76-001	C. Harrison, S. Hatch, E. Bailey	P2V	1/8'76	LCI,KB, NWGOA,SS	Information Not Available		
76-002	G. Sanger, M. Kirchhoff, M. Phillips	Moana Wave	2/15-2/20'76	NWGOA,NEGOA, BCS,SEAS	"	"	"
76-003	J. Hall, K. Wohl	(Field Study)	2/18-2/20'76	Middleton Island	"	"	"
76-004	M. Kirchhoff	Moana Wave	2/20-3/5'76	PWS,NEGOA,NWGOA	"	"	"
76-005	D. Hardy, D. Frazer	Discoverer	2/24-2/27'76	OGO,KB, BCS,OBC	"	"	"
76-006	C. Harrison, S. Hatch, A. Sowls	P2V	2/28-3/8'76	BB,SGB,UMB, APS,KB,SS, NWGOA,LCI	"	"	"
76-007	D. Frazer	Discoverer	3/1-3/13'76	KB,NWGOA,NEGOA	"	"	"

Table 1 Con't

Cruise- Field Report Number	Author- Observer	Vessel- Aircraft	Dates	Location ^{1/}	Survey Units		
					Tran- sect	Sta- tion	Experi- mental
76-008	C. Handel	Surveyor	3/8-3/12'76	(Seattle-Kodiak)	Information Not Available		
76-009	M. Phillips	Moana Wave	3/8-3/26'76	Information Not Available	"	"	"
76-010	G. Sanger, C. Handel, S. Bates, M. Rauzon	Miller Freeman	3/15-3/21'76	(Seattle-Kodiak)	"	"	"
76-011	M. Kirchhoff	Discoverer	3/16-4/3'76	Information Not Available	"	"	"

1/

APS-Alaskan Peninsula South
 BB-Bristol Bay
 BCS-British Columbia Shelf
 BFT-Beaufort Basin
 ECB-Eastern Central Bering Sea
 HB-Hope Basin
 KB-Kodiak Basin
 LCI-Lower Cook Inlet
 NaB-Navarin Basin
 NB-Norton Basin
 NCS-Northern California Shelf

NEGOA-Northeast Gulf of Alaska
 NWGOA-Northwest Gulf of Alaska
 OA-Oceanic Aleutians
 OAPS-Oceanic Alaskan Pen. South
 OBC-Oceanic British Columbia
 OGOA-Oceanic Gulf of Alaska
 ONC-Oceanic Northern California
 OO-Oceanic Oregon
 OS-Oregon Shelf
 OSC-Oceanic Southern California
 OSK-Oceanic South Kodiak

OW-Oceanic Washington
 PWS-Prince William Sound
 SCB-South Central Bering Sea
 SCS-Southern California Shelf
 SEAS-Southeast Alaska Shelf
 SGB-St. George Basin
 SS-Shelikof Strait
 TNP-Transitional North Pacific
 UCI-Upper Cook Inlet
 UMB-Umnak Basin
 WS-Washington Shelf

Table 2. Distribution of effort for censusing marine birds by the shipboard transect method, 1975.

Region	Region Abbre- viation	Number of Transects												Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Alaskan Peninsula South	APS					13	4	34	27	39	18	27		162
Bristol Bay	BB							30	11	19	57	59	9	185
British Columbia Shelf	BCS	4				8	26	8	11				9	66
Beaufort Basin	BFT													0
Eastern Central Bering Sea	ECB						9	14	44	20	10	14		111
Hope Basin	HB									30				30
Kodiak Basin	KB					42	15	51	38	53	27	21		247
Lower Cook Inlet	LCI									7	2	2		11
Navarin Basin	NaB						9	6	1	3				19
Norton Basin	NB										27			27
Northern California Shelf	NCS							7						7
Northeast Gulf of Alaska	NEGOA		60		27	134	74		2	71	57	64		489
Northwest Gulf of Alaska	NWGOA		5	4	7	40	10		11	15	33	22	2	149
Oceanic Aleutians	OA									23				23
Oceanic Alaskan Pen. South	OAPS									26		6		32
Oceanic British Columbia	OBC	18		2		11	20	28	33	20		18		150
Oceanic Gulf of Alaska	OGOA	8		9		9	10	16	8			1		61
Oceanic Northern California	ONC							5		24				29
Oceanic Oregon	OO							9		10				19
Oregon Shelf	OS													0
Oceanic Southern California	OSC									10				10
Oceanic South Kodiak	OSK								10	21		9		40
Oceanic Washington	OW							14						14
Prince William Sound	PWS				10	15	3			2	56			86
South Central Bering Sea	SCB					5	7			17	4			33
Southern California Shelf	SCS								19	18				37
Southeast Alaska Shelf	SEAS									3	5	7	7	22

(Table continued.)

Table 2. (continued)

Region	Region Abbre- viation	Number of Transects												Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
St. George Basin	SGB					61	39	28	139	158	22	42		489
Shelikof Strait	SS					14			12		5	4		35
Transitional North Pacific	TNP									26				26
Upper Cook Inlet	UCI													0
Umnak Basin	UMB					7		3	20	23		1		54
Washington Shelf	WS													0
Total		30	65	15	44	359	256	253	378	705	300	240	18	2,663

Table 3. Distribution of effort for censusing marine birds by the shipboard station method, 1975.

Region	Region Abbre- viation	Number of Stations												Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Alaskan Peninsula South	APS					1		4	5	9	7	4		30
Bristol Bay	BB							5		6	20			31
British Columbia Shelf	BCS													0
Beaufort Basin	BFT													0
Eastern Central Bering Sea	ECB								26	2	1	3		32
Hope Basin	HB									1				1
Kodiak Basin	KB								1	12	2	1		16
Lower Cook Inlet	LCI													0
Navarin Basin	NaB									1				1
Norton Basin	NB													0
Northern California Shelf	NCS													0
Northeast Gulf of Alaska	NEGOA		48		7	2	30			45	9	19		160
Northwest Gulf of Alaska	NWGOA		8		12	2	4		4	16	10	2	3	61
Oceanic Aleutians	OA									3				3
Oceanic Alaskan Pen. South	OAPS													0
Oceanic British Columbia	OBC													0
Oceanic Gulf of Alaska	GOA													0
Oceanic Northern California	ONC													0
Oceanic Oregon	OO													0
Oregon Shelf	OS													0
Oceanic Southern California	OSC													0
Oceanic South Kodiak	OSK													0
Oceanic Washington	OW													0
Prince William Sound	PWS											12		12
South Central Bering Sea	SCB													0
Southern California Shelf	SCS													0
Southeast Alaska Shelf	SEAS													0

(Table continued.)

Table 3. (continued)

Region	Region Abbre- viation	Number of Stations												Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
St. George Basin	SGB							3	15	27	7	8		60
Shelikof Strait	SS					1				1				2
Transitional North Pacific	TNP													0
Upper Cook Inlet	UCI													0
Umnak Basin	UMB							3	4					7
Washington Shelf	WS													0
Total		0	56	0	19	6	34	15	55	123	68	37	3	416

Table 4. Bird observations on shipboard transects, Alaska Peninsula South, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	10	76.9	89	3.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	7	53.8	555	22.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	23.0	33	1.3	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	7	53.8	119	4.8	Steller's Eider				
Leach's Storm Petrel	4	30.7	6	0.2	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	7.6	14	0.6	Unid. Duck	1	7.6	1	tr.
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 4. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	4	30.7	8	0.3
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	6	46.0	171	6.8	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	10	76.9	102	4.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	7.6	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	2	15.4	35	1.4
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	7	53.8	12	0.5	Xantus' Murrelet				
Slaty-backed Gull	1	7.6	1	tr.	Ancient Murrelet	3	23.0	24	1.0
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	4	30.7	21	0.8
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	7.6	4	0.2
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	10	76.9	102	4.1
Black-headed Gull					Horned Puffin	6	46.1	14	0.6
Bonaparte's Gull					Tufted Puffin	12	92.3	108	4.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	9	69.2	43	1.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 4. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	13	100.0	1490	59.6					

Cruise numbers data are compiled from: 4, 5

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Table 5. Bird observations on shipboard transects, Alaska Peninsula South, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	25.0	1	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	100.0	29	3.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	50.0	147	17.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	75.0	66	7.9	Steller's Eider				
Leach's Storm Petrel	3	75.0	20	2.4	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	25.0	14	1.7	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 5. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	25.0	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	25.0	2	0.2
Bonaparte's Gull					Tufted Puffin	4	100.0	55	6.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	25.0	3	0.4	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 5. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	4	100.0	338	40.4					

Cruise numbers data are compiled from: 5

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Table 6. Bird observations on shipboard transects, Alaska Peninsula South, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	5.9	2	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	20	58.8	141	2.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	4	11.8	24	0.4	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	15	44.1	3862	69.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	20	58.8	660	11.8	Steller's Eider				
Leach's Storm Petrel	6	17.6	10	0.2	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	3	8.8	7	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	8.8	7	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 6. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	1	2.9	1	tr.
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	5.9	2	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper	1	2.9	1	tr.	Unid. Tern				
Red Phalarope	1	2.9	1	tr.	Common Murre				
Northern Phalarope	1	2.9	1	tr.	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	26	76.4	155	2.8
Pomarine Jaeger	2	5.9	2	tr.	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	2.9	1	tr.
Unid. Jaeger	6	17.6	8	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	18	52.9	350	6.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	10	29.4	68	1.2
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	10	29.4	69	1.2
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	1	2.9	9	0.2
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	15	44.1	188	3.4
Black-headed Gull					Horned Puffin	24	70.5	426	7.6
Bonaparte's Gull					Tufted Puffin	33	97.0	1492	26.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	11	32.3	28	0.5	Snowy Owl				
Black-legged Kittiwake	9	26.4	189	3.4	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 6. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird	2	5.9	12	0.2					
Totals/Average	34	100.0	7716	138.0					

Cruise numbers data are compiled from: 11, 13

149
29

Table 7. Bird observations on shipboard transects, Alaska Peninsula South, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	4	14.8	4	0.1	Redhead				
Laysan Albatross	2	7.4	2	tr.	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	62.9	108	2.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	8	29.6	149	2.9	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	8	29.6	8754	168.7	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	13	48.1	75	1.4	Steller's Eider				
Leach's Storm Petrel	13	48.1	51	1.0	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	8	29.6	10	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	3.7	1	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose	1	3.7	1	tr.	Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 7. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone	1	3.7	6	0.1	Unid. Gull				
Black Turnstone	1	3.7	3	0.1	Common Tern				
Whimbrel					Arctic Tern	1	3.7	3	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	3.7	9	0.2	Common Murre	5	18.5	23	0.4
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	3.7	1	tr.	Unid. Murre	3	11.1	27	0.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	2	7.4	4	0.1	Black Guillemot	1	3.7	6	0.1
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	7	25.9	17	0.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	3.7	1	tr.	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	3.7	1	tr.
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	3.7	1	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	3.7	1	tr.
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	11.1	23	0.4
Black-headed Gull					Horned Puffin	9	33.3	25	0.5
Bonaparte's Gull					Tufted Puffin	26	96.3	313	6.0
Heermann's Gull					Unid. Puffin	2	7.4	2172	41.9
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	18.5	21	0.4	Snowy Owl				
Black-legged Kittiwake	5	18.5	13	0.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 7. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	27	100.0	11717	225.8					

Cruise numbers data are compiled from: 15, 16, 18

15232

Table 8. Bird observations on shipboard transects, Alaska Peninsula South, September 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	2	5.1	18	0.3	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	2.6	5	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	18	46.1	83	1.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	5	12.8	700	10.7	Bufflehead				
Unid. Shearwater	33	84.6	11359	174.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	9	23.1	47	0.7	Steller's Eider				
Leach's Storm Petrel	8	20.5	38	0.6	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	5	12.8	9	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	2.6	1	tr.
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	5	12.8	8	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 8. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	4	10.3	22	0.3
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	3	7.7	7	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern	3	7.7	11	0.2
Red Phalarope					Common Murre				
Northern Phalarope	1	2.6	4	0.1	Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger	5	12.8	7	0.1	Unid. Guillemot				
Parasitic Jaeger	1	2.6	1	tr.	Black Guillemot				
Long-tailed jaeger	1	2.6	1	tr.	Pigeon Guillemot				
Unid. Jaeger	1	2.6	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet	1	2.6	1	tr.
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	15.4	9	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet	1	2.6	2	tr.
Herring Gull					Cassin's Auklet	5	12.8	37	0.6
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	1	2.6	4	0.1
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	2.6	7	0.1	Unid. Small Alcid	18	46.2	183	2.8
Black-headed Gull					Horned Puffin	15	38.5	69	1.1
Bonaparte's Gull					Tufted Puffin	31	79.5	142	2.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	20	51.3	218	3.3	Snowy Owl				
Black-legged Kittiwake	2	5.1	28	0.4	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 8. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	3	7.7	32	0.5					
Unid. Bird									
Totals/Average	39	100.0	13243	203.1					

Cruise numbers data are compiled from: 15, 20, 21, 23

15535

Table 9. Bird observations on shipboard transects, Alaska Peninsula South, October 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose	1	5.6	1	tr.
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	5.6	4	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	16.7	3	0.1	Redhead				
Laysan Albatross	2	11.1	2	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	16	88.9	93	2.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	5	27.8	82	2.6	Barrow's Goldeneye				
Short-tailed Shearwater	2	11.1	6	0.2	Bufflehead				
Unid. Shearwater	6	33.3	4627	145.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	7	38.9	9	0.3	Steller's Eider				
Leach's Storm Petrel	7	38.9	40	1.3	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	5.6	2	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 9. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	2	11.1	36	1.1	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	4	22.2	22	0.7
Pomarine Jaeger	1	5.6	1	tr.	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	4	22.2	11	0.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	8	44.4	13	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	2	22.2	4	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	11.1	10	0.3
Black-headed Gull					Horned Puffin	3	16.7	5	0.2
Bonaparte's Gull					Tufted Puffin	7	38.9	11	0.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	9	50.0	42	1.3	Snowy Owl				
Black-legged Kittiwake	5	27.8	71	2.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 9. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	5.6	1	tr.					
Unid. Bird									
OTHER									
Pectoral Sandpiper	1	5.6	1	tr.					
Totals/Average	18	100.0	5097	159.8					

Cruise numbers data are compiled from: 23, 26, 28

Table 10. Bird observations on shipboard transects, Alaska Peninsula South, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Fm ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	2	7.4	3	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross	1	3.7	1	tr.	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	62.9	50	1.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	3.7	1	tr.	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	15	55.6	53	1.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	6	22.2	13	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	1	3.7	3	0.1
Double-crested Cormorant					White-winged Scoter	1	3.7	4	0.1
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	5	18.5	24	0.5	Unid. Duck	2	7.4	3	0.1
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 10. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	25	92.6	732	14.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	3.7	1	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	18	66.7	69	1.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	3.7	1	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	14	51.9	1346	27.1
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	5	18.5	23	0.5
Black-headed Gull					Horned Puffin	1	3.7	2	tr.
Bonaparte's Gull					Tufted Puffin	2	7.4	3	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	12	44.4	28	0.6	Snowy Owl				
Black-legged Kittiwake	5	18.5	15	0.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 11. Bird observations on shipboard transects, Bristol Bay Basin, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	19	63.3	30029	507.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant	1	3.3	5	0.1	Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 11. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	10.0	4	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	23	76.6	649	10.9
Pomarine Jaeger	4	13.3	5	0.1	Unid. Guillemot				
Parasitic Jaeger	1	3.3	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	3.3	2	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	10.0	6	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	3.3	3	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	5	16.6	14	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	21	70.0	90	1.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 12. Bird observations on shipboard transects, Bristol Bay Basin, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	18.1	10	0.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	27.3	1223	65.9	Barrow's Goldeneye				
Short-tailed Shearwater	1	9.0	387	20.8	Bufflehead				
Unid. Shearwater	7	63.6	693	37.3	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	9.0	4	0.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	9.0	6	0.3	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 12. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	18.1	2	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	9.0	2	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	10	90.9	867	46.7
Pomarine Jaeger	2	18.1	2	0.1	Unid. Guillemot	3	27.3	11	0.6
Parasitic Jaeger	2	18.1	3	0.2	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	18.1	7	0.4	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	36.4	9	0.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	9.0	3	0.2
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	9.0	43	2.3
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	10	90.9	167	9.0
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	9	81.8	54	2.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 13. Bird observations on shipboard transects, Bristol Bay Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
COMMON LOON					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	5.3	1	tr.	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	5.3	1	tr.	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	10	52.6	657	16.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	5.3	1	tr.	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	5.3	1	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	5.3	1	tr.
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 13. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	5.2	18	0.5
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	4	21.0	7	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	17	89.5	130	3.3
Pomarine Jaeger	9	47.4	18	0.5	Unid. Guillemot				
Parasitic Jaeger	1	5.3	2	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	5.3	20	0.5
Unid. Jaeger	2	10.5	2	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	5.3	2	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	5.3	3	0.1
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	5.3	3	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	3	15.8	3	0.1
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	9	47.4	62	1.6
Black-headed Gull					Horned Puffin	1	5.3	1	tr.
Bonaparte's Gull					Tufted Puffin	8	42.1	15	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	8	42.1	204	5.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 13. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ance	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	5.2	1	tr.					
Unid. Bird									
OTHER									
Unid. Shorebird	2	10.5	9	0.2					
Totals/Average	19	100.0	1162	29.3					

Cruise numbers data are compiled from: 15

Table 14. Bird observations on shipboard transects, Bristol Bay Basin, September 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose	1	1.8	6	0.1
Arctic Loon	7	12.3	8	0.1	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	6	10.5	8	0.1	Pintail	1	1.8	5	tr.
Red-Necked Grebe	2	3.5	2	tr.	Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	32	56.1	164	1.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	13	22.8	4700	38.5	Bufflehead				
Unid. Shearwater	30	52.6	500	4.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	12	21.1	73	0.6	Steller's Eider	1	1.8	1	tr.
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	4	7.0	4	tr.	Black Scoter	1	1.8	5	tr.
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	5.3	33	0.3	Unid. Duck	3	5.3	4	tr.
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant	2	3.5	23	0.2	Gyrfalcon				
Emperor Goose	1	1.8	6	0.1	Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 14. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover	4	7.0	15	0.1	Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	1.8	127	1.0
Sharp-tailed Sandpiper	1	1.8	1	tr.	Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	1.8	55	0.4	Thick-billed Murre				
Unid. Phalarope	1	1.8	1	tr.	Unid. Murre	40	70.2	321	2.6
Pomarine Jaeger	4	7.0	4	0.3	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	7	12.3	9	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	16	28.1	37	0.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	6	10.6	12	0.1
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	8	14.0	63	0.5
Thayer's Gull					Crested Auklet	8	14.0	19	0.2
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	11	19.3	25	0.2
Black-headed Gull					Horned Puffin	6	10.5	14	0.1
Bonaparte's Gull					Tufted Puffin	20	35.1	80	0.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	31	52.6	210	1.7	Snowy Owl				
Black-legged Kittiwake	22	38.6	107	0.9	Tree Swallow	1	1.8	1	tr.
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 14. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Pectoral Sandpiper	4	7.0	30	0.3					
Dunlin	2	3.5	30	0.3					
Unid. Shorebird	5	8.8	16	0.1					
Totals/Average	56	98.2	6590	53.9					

Cruise numbers data are compiled from: 18, 22, 23

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Table 15. Bird observations on shipboard transects, Bristol Bay Basin, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	3	5.1	4	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose	1	1.7	5	0.1
Arctic Loon	5	8.5	5	0.1	Mallard				
Red-throated Loon	3	5.1	5	0.1	Gadwall				
Unid. Loon	5	8.5	7	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	33	55.9	224	2.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	34	57.6	3370	35.4	Oldsquaw	3	5.1	4	tr.
Scaled Petrel					Harlequin Duck	1	1.7	11	0.1
Fork-tailed Storm Petrel	5	8.5	14	0.2	Steller's Eider				
Leach's Storm Petrel					Common Eider	1	1.7	2	tr.
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	3	5.1	9	0.1
Double-crested Cormorant					White-winged Scoter	4	6.8	49	0.5
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	5	8.5	13	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck	4	6.8	12	0.1
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 15. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	1	1.7	5	0.1	Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	1.7	16	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	2	3.4	2	tr.	Unid. Murre	41	69.5	177	1.8
Pomarine Jaeger	2	3.4	5	0.1	Unid. Guillemot				
Parasitic Jaeger	3	5.1	6	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	3.4	2	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet	1	1.7	1	tr.
Glaucous Gull	1	1.7	1	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	24	40.7	70	0.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	8	13.6	71	0.8
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	4	6.8	18	0.2
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	1.7	2	tr.
Thayer's Gull					Crested Auklet	8	13.6	30	0.3
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	25	42.4	133	1.4
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	6.8	5	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	30	50.8	356	3.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 16. Bird observations on shipboard transects, Bristol Bay Basin, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 16. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	66.7	7	0.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	11.1	1	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	7	77.8	32	2.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	1	11.1	8	0.5
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	44.4	12	0.8
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	4	44.4	23	1.5	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 17. Bird observations on shipboard transects, British Columbia Shelf, January 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	1	25.0	1	0.1	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	25.0	1	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 17. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	4	100.0	73	7.3
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	100.0	33	3.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	3	75.0	69	6.9	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	25.0	21	2.1
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	4	100.0	40	4.0
Mew Gull	3	75.0	23	2.3	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	25.5	7	0.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 18. Bird observations on shipboard transects, British Columbia Shelf, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	25.0	4	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	4	50.0	54	3.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	12.5	2	0.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	12.5	1	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 18. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	37.5	8	0.5
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	50.0	6	0.4	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	5	62.5	27	1.6
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	50.0	6	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 19. Bird observations on shipboard transects, British Columbia Shelf, June 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon.					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	5	19.2	8	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	6	23.0	17	0.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	18	69.2	399	7.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	7.6	7	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	21	80.7	79	1.5	Steller's Eider				
Leach's Storm Petrel	20	76.9	282	5.4	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	17	65.3	152	2.9	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 19. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	2	7.6	3	0.1
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	3.8	1	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	3.8	1	tr.
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	7.6	21	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	2	7.6	8	0.2
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	12	46.2	943	18.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	15	57.7	40	0.8
Mew Gull					Unid. Small Alcid	12	46.2	49	0.9
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	7	26.9	37	0.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 20. Bird observations on shipboard transects, British Columbia Shelf, July 1975.

Species Name	Occurrence	Z Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	Z Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	12.5	1	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	62.5	24	1.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	12.5	11	0.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	12.5	14	0.9	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	6	75.0	19	1.2	Steller's Eider				
Leach's Storm Petrel	4	50.0	26	1.7	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	3	37.5	25	1.6	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 20. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	12.5	5	0.3
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	3	37.5	73	4.7
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	3	37.5	11	0.7
Mew Gull					Unid. Small Alcid	3	37.5	23	1.5
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	6	75.0	71	4.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 20. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	8	100.0	303	19.5					

Cruise numbers data are compiled from: 11

197
71

Table 21. Bird observations on shipboard transects, British Columbia Shelf, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	4	36.4	5	0.3	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater	2	18.2	5	0.3	Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	27.3	34	2.0	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	27.3	4	0.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	27.3	4	0.2	Steller's Eider				
Leach's Storm Petrel	4	36.4	5	0.3	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	18.2	5	0.3	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 21. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	18.2	3	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	9.1	5	0.3	Unid. Murre	1	9.1	1	tr.
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	9.1	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	9.1	1	tr.	Unid. Large Alcid				
Skua	1	9.1	1	tr.	Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	18.2	10	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	9.1	5	0.3
Mew Gull					Unid. Small Alcid	1	9.1	5	0.3
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	9.1	3	0.2
Heermann's Gull					Unid. Puffin	3	9.1	3	0.2
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 22. Bird observations on shipboard transects, British Columbia Shelf, December 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	2	22.2	2	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe	2	22.2	18	1.1	Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	11.1	1	0.1	White-winged Scoter				
Brandt's Cormorant					Surf Scoter	1	11.1	1	0.1
Pelagic Cormorant	2	22.2	2	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	11.1	2	0.1	Unid. Duck	1	11.1	1	0.1
Whistling Swan					Red-breasted Merganser	1	11.1	6	0.4
Canada Goose					Bald Eagle	2	22.2	2	0.1
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 22. Continued.

Species Name	Occur- ence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull	1	11.1	3	0.2
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	22.2	2	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	11.1	2	0.1
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	44.4	34	2.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	33.3	60	3.6
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 23. Bird observations on shipboard transects, Eastern Central Bering Sea, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 23. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	8	88.8	284	15.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	22.2	3	0.2	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	11.1	1	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	1	11.1	2	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	4	44.4	31	1.7
Black-headed Gull					Horned Puffin	4	44.4	6	0.3
Bonaparte's Gull					Tufted Puffin	3	33.3	9	0.5
Heermann's Gull					Unid. Puffin	1	11.1	1	0.1
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	7	77.7	51	2.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 24. Bird observations on shipboard transects, Eastern Central Bering Sea, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	35.7	11	0.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	3	21.4	6	0.3	Bufflehead				
Unid. Shearwater					Oldsquaw				
Sealed Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 24. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	1	7.1	3	0.1	Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	2	14.3	2	0.1	Common Murre	3	21.4	11	0.5
Northern Phalarope					Thick-billed Murre	1	7.1	1	tr.
Unid. Phalarope					Unid. Murre	14	100.0	551	23.5
Pomarine Jaeger	3	21.4	3	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	14.3	2	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	7.1	1	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	1	7.1	2	0.1
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	12	85.7	58	2.5
Black-headed Gull					Horned Puffin	9	64.3	38	1.6
Bonaparte's Gull					Tufted Puffin	4	28.6	7	0.3
Heermann's Gull					Unid. Puffin	1	7.1	2	0.1
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	10	71.4	45	1.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 24. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Unid Shorebird	1	7.1	3	0.1					
Totals/Average	14	100.0	746	31.8					

Cruise numbers data are compiled from: 13

Table 25. Bird observations on shipboard transects, Eastern Central Bering Sea, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	1	2.3	1	tr.	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	38.6	54	0.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	6.8	6168	83.6	Barrow's Goldeneye				
Short-tailed Shearwater	33	75.0	56904	771.4	Bufflehead				
Unid. Shearwater	5	11.4	903	12.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	2.3	1	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider	1	2.3	5	0.1
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 25. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull	1	2.3	1	tr.
Unid. Turnstone	2	4.5	3	tr.	Unid. Immature Gull				
Ruddy Turnstone	1	2.3	5	0.1	Unid. Gull	1	2.3	1	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	3	6.8	6	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	3	6.8	11	0.2	Common Murre				
Northern Phalarope	1	2.3	1	tr.	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	32	72.7	397	5.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	18	40.9	45	0.6	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	4.5	11	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	2.3	1	tr.
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	6	13.6	18	0.2
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	8	18.2	17	0.2
Black-headed Gull					Horned Puffin	14	31.8	25	0.3
Bonaparte's Gull					Tufted Puffin	9	20.5	12	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	35	95.5	292	4.0	Snowy Owl				
Black-legged Kittiwake	2	4.5	7	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 26. Bird observations on shipboard transects, Eastern Central Bering Sea, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	3	15.0	9	0.3	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	5.0	3	0.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	6	30.0	192	5.4	Bufflehead				
Unid. Shearwater					Oldsquaw	1	5.0	1	tr.
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	10.0	2	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	1	5.0	1	tr.
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 26. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	5	25.0	8	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	5.0	9	0.3	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	3	15.0	4	0.1	Unid. Murre	1	5.0	38	1.1
Pomarine Jaeger	2	10.0	2	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	10.0	5	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	5.0	2	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	3	15.0	4	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	5.0	1	tr.	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	10.0	6	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	5.0	1	tr.
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	25.0	45	1.3	Snowy Owl				
Black-legged Kittiwake	13	65.0	84	2.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 27. Bird observations on shipboard transects, Eastern Central Bering Sea, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	3	30.0	9	0.5	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon	1	10.0	1	0.1	Gadwall				
Unid. Loon	3	30.0	7	0.4	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	10.0	1	0.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	20.0	7	0.4	Oldsquaw				
Scaled Petrel					Harlequin Duck	1	10.0	1	0.1
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider	2	20.0	9	0.5
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	4	40.0	32	1.9
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	10.0	6	0.4	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	30.0	7	0.4	Unid. Duck	3	30.0	52	3.0
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 27. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	10.0	1	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	10.0	1	0.1
Glaucous Gull	1	10.0	2	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	6	60.0	11	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	4	40.0	17	1.0
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	6	60.0	9	0.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 28. Bird observations on shipboard transects, Eastern Central Bering Sea, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	8	57.1	16	0.8
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider	1	7.1	5	0.3
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	3	21.5	98	4.9
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 28. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	8	57.1	78	3.9
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	2	14.3	4	0.2	Kittlitz's Murrelet				
Glaucous-winged Gull	5	35.7	9	0.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull	1	7.1	2	0.1	Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	2	14.3	4	0.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 29. Bird observations on shipboard transects, Hope Basin, September 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	5	16.7	46	1.0	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	16	53.3	49	1.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	6	20.0	22	0.5
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter	1	3.3	5	0.1
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 29. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	1	3.3	2	tr.
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	12	40.0	19	0.4
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	3.3	5	0.1	Unid. Murre	14	46.7	41	0.9
Pomarine Jaeger					Unid. Guillemot	7	23.3	20	0.4
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger	2	6.7	2	tr.	Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	7	23.3	13	0.3	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	10	33.3	23	0.5
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	13	43.3	29	0.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 30. Bird observations on shipboard transects, Kodiak Basin, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	2.3	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	30	71.4	689	8.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	18	42.8	1328	16.8	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	8	19.8	184	2.3	Oldsquaw	1	2.3	9	0.1
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	10	23.8	81	1.0	Steller's Eider				
Leach's Storm Petrel	2	4.7	7	tr.	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	6	14.2	77	1.0	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	2.3	7	0.1
Brandt's Cormorant	1	2.3	26	0.3	Surf Scoter				
Pelagic Cormorant	1	2.3	1	tr.	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 30. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	7	16.6	11	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	8	19.0	49	0.6
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	2.3	2	tr.	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	2.3	10	0.1	Unid. Murre	33	78.6	1311	16.6
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	4	9.5	8	0.1	Black Guillemot				
Long-tailed jaeger	1	2.3	1	0.1	Pigeon Guillemot	8	19.0	24	0.3
Unid. Jaeger	1	2.3	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet	2	4.7	6	0.1
Glaucous Gull					Kittlitz's Murrelet	1	2.3	2	tr.
Glaucous-winged Gull	25	59.5	100	1.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	3	7.1	20	0.3
Western Gull					Unid. Murrelet				
Herring Gull	1	2.3	1	tr.	Cassin's Auklet	1	2.3	2	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	28	66.6	201	2.6
Black-headed Gull					Horned Puffin	14	33.3	25	0.3
Bonaparte's Gull					Tufted Puffin	39	92.8	450	5.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	27	64.2	311	3.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 30. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	42	100.0	5020	63.6					

Cruise numbers data are compiled from: 4, 5

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Table 31. Bird observations on shipboard transects, Kodiak Basin, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	6.6	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	13	86.6	158	5.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	4	26.6	20	0.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	4	26.6	22	0.7	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	6	40.0	15	0.1	Steller's Eider				
Leach's Storm Petrel	8	53.3	33	1.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	13.3	6	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	6.6	1	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 31. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	6.6	1	tr.
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	8	53.3	63	2.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	6.6	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	2	13.3	3	0.1
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	26.6	12	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	6.6	5	0.2
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	13.3	6	0.2
Black-headed Gull					Horned Puffin	2	13.3	4	0.1
Bonaparte's Gull					Tufted Puffin	15	100.0	260	8.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	13	86.6	46	1.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 32. Bird observations on shipboard transects, Kodiak Basin, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon	1	1.9	2	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	3.9	2	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	50	98.0	568	6.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	23	45.0	1187	13.8	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	33	64.7	227	2.65	Steller's Eider				
Leach's Storm Petrel	3	5.8	4	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	7	13.7	15	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	1.9	3	0.4	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 32. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	4	7.8	5	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	4	7.8	15	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	1.9	2	tr.	Common Murre				
Northern Phalarope	1	1.9	1	tr.	Thick-billed Murre				
Unid. Phalarope	1	1.9	3	tr.	Unid. Murre	23	45.0	90	1.1
Pomarine Jaeger	5	9.8	12	0.1	Unid. Guillemot				
Parasitic Jaeger	4	7.8	7	0.1	Black Guillemot				
Long-tailed jaeger	1	1.9	1	tr.	Pigeon Guillemot				
Unid. Jaeger	4	7.8	6	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	9	17.6	16	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	4	7.8	87	1.0
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	8	15.7	36	0.4
Black-headed Gull					Horned Puffin	20	39.2	39	0.5
Bonaparte's Gull					Tufted Puffin	50	98.0	1783	20.8
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	27	52.9	203	2.4	Snowy Owl				
Black-legged Kittiwake	7	13.7	29	0.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 33. Bird observations on shipboard transects, Kodiak Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	7	18.4	24	0.3	Redhead				
Laysan Albatross	1	2.6	1	tr.	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	35	92.1	210	2.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	10	26.3	354	4.7	Barrow's Goldeneye				
Short-tailed Shearwater	1	2.3	3	tr.	Bufflehead				
Unid. Shearwater	18	47.4	1301	17.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	15	39.4	161	2.2	Steller's Eider				
Leach's Storm Petrel	14	36.8	52	0.7	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	9	23.6	13	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	2.6	13	0.2	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
Red-necked Goose					Black Oystercatcher				

Table 33. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone	2	5.3	5	0.1	Unid. Gull	2	5.3	4	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	5	13.2	28	0.4
Sharp-tailed Sandpiper					Alutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre	1	2.6	5	0.1
Northern Phalarope	1	2.6	6	0.1	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	8	21.1	248	3.3
Pomarine Jaeger	13	34.2	16	0.2	Unid. Guillemot				
Parasitic Jaeger	5	13.2	7	0.1	Black Guillemot				
Long-tailed jaeger	1	2.6	7	0.1	Pigeon Guillemot	1	2.6	5	0.1
Unid. Jaeger	6	15.8	7	0.1	Unid. Large Alcid	1	2.6	1	tr.
Skua					Marbled Murrelet	1	2.6	4	0.1
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	15.8	29	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	2.6	4	0.1
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
New Gull					Unid. Small Alcid	5	13.2	224	3.0
Black-headed Gull					Horned Puffin	7	18.4	79	1.0
Bonaparte's Gull					Tufted Puffin	34	89.5	379	5.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	15	39.5	152	2.0	Snowy Owl				
Black-legged Kittiwake	2	5.3	7	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 33. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Unid. Shorebird	1	2.6	8	0.1					
Totals/Average	38	100.0	3354	44.8					

Cruise numbers data are compiled from: 15, 16, 18

Table 34. Bird observations on shipboard transects, Kodiak Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail	1	1.9	1	0.1
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	5.7	5	0.1	Redhead				
Laysan Albatross	2	3.8	2	tr.	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	29	54.7	137	1.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	15	28.3	146	1.7	Barrow's Goldeneye				
Short-tailed Shearwater	17	32.1	1666	19.1	Bufflehead				
Unid. Shearwater	31	58.5	4838	55.5	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	18	33.9	61	0.7	Steller's Eider				
Leach's Storm Petrel	4	7.5	8	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	5	9.4	10	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 34. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	1.9	1	tr.
Black Turnstone					Common Tern				
Whimbrel	1	1.9	1	tr.	Arctic Tern	4	7.5	6	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre	3	5.7	3	0.3
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	5	9.4	29	0.3
Pomarine Jaeger	7	13.2	8	0.1	Unid. Guillemot				
Parasitic Jaeger	1	1.9	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	5	9.4	5	0.1	Unid. Large Alcid	2	3.8	2	tr.
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	1.9	1	tr.	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet	1	1.9	2	tr.
Herring Gull	1	1.9	2	tr.	Cassin's Auklet	3	5.7	4	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull	1	1.9	1	tr.	Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	5	5.7	4	tr.
Mew Gull					Unid. Small Alcid	11	20.7	75	0.9
Black-headed Gull					Horned Puffin	7	13.2	17	0.2
Bonaparte's Gull					Tufted Puffin	35	66.0	219	2.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	8	15.1	16	0.2	Snowy Owl				
Black-legged Kittiwake	9	17.0	30	0.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 34. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow	1	1.9	1	tr.					
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	52	96.2	7335	84.1					

Cruise numbers data are compiled from: 15, 20, 24

Table 35. Bird observations on shipboard transects, Kodiak Basin, October 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon	1	3.7	1	tr.	Unid. Goose				
Arctic Loon	1	3.7	1	tr.	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	3.7	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	5	18.5	39	0.9	Redhead				
Laysan Albatross	7	25.9	20	0.5	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	18	66.7	604	13.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	13	48.1	130	2.9	Barrow's Goldeneye				
Short-tailed Shearwater	2	7.4	84	1.9	Bufflehead				
Unid. Shearwater	13	48.1	317	7.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	11	40.7	84	1.9	Steller's Eider				
Leach's Storm Petrel	3	11.1	13	0.3	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	3.7	1	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	2	7.4	8	0.2	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	11.1	24	0.5	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 35. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	3.7	1	tr.	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	12	44.4	42	1.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	3.7	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet	1	3.7	1	tr.
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	17	63.0	54	1.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	3.7	1	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	7	25.9	12	0.3
Black-headed Gull					Horned Puffin	5	18.5	8	0.2
Bonaparte's Gull					Tufted Puffin	10	37.0	20	0.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	8	29.6	30	0.7	Snowy Owl				
Black-legged Kittiwake	11	40.7	47	1.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 35. Continued.

Species Name	Occur- ence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	X Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	27	100.0	1473	33.3					

Cruise numbers data are compiled from: 23, 25, 26, 28

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Table 36. Bird observations on shipboard transects, Kodiak Basin, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	1	4.8	1	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	4.8	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	80.9	84	2.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	2	9.5	2	0.1	Bufflehead				
Unid. Shearwater	10	47.6	143	4.2	Oldsquaw				
Scaled Petrel					Harlequin Duck	1	4.8	2	0.1
Fork-tailed Storm Petrel	5	23.8	8	0.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	2	9.5	8	0.2
Brandt's Cormorant					Surf Scoter	1	4.8	1	tr.
Pelagic Cormorant	1	4.8	1	tr.	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 36. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	10	47.6	66	1.9
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	4.8	1	tr.
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet	1	4.8	1	tr.
Glaucous-winged Gull	13	61.9	42	1.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	4.8	1	tr.	Unid. Small Alcid	4	19.0	12	0.4
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	5	23.8	7	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	9.5	2	0.1	Snowy Owl				
Black-legged Kittiwake	5	23.8	8	0.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 36. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	21	100.0	389	11.3					

Cruise numbers data are compiled from: 31, 32, 33

Table 37. Bird observations on shipboard transects, Lower Cook Inlet, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	57.1	9	0.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	7	100.0	1586	142.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	4	57.1	4	0.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 37. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Alcutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	85.7	19	1.7
Pomarine Jaeger	1	14.3	1	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet	1	14.3	1	0.1
Glaucous-winged Gull	2	28.6	2	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	28.6	2	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	14.3	1	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	14.3	2	0.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 37. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	7	100.0	1634	146.5					

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Cruise numbers data are compiled from: 20

Table 38. Bird observations on shipboard transects, Lower Cook Inlet, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	100.0	8	2.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	50.0	2	0.5	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 38. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	50.0	2	0.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	2	100.0	7	1.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	50.0	1	0.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 38. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	2	100.0	20	4.9					

Cruise numbers data are compiled from: 28

Table 39. Bird observations on shipboard transects, Lower Cook Inlet, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	100.0	8	1.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	50.0	1	0.3	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	50.0	4	1.0	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 39. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	100.0	6	1.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	1	50.0	2	0.5	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 39. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	2	100.0	21	5.0					

Cruise numbers data are compiled from: 31

Table 40. Bird observations on shipboard transects, Navarin Basin, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	9	100.0	242	12.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	6	66.7	43	2.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	11.1	1	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 40. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	11.1	1	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	2	22.2	13	0.7	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	7	77.8	67	3.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed Jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	11.1	1	0.1
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	11.1	1	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	33.3	10	0.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake	1	11.1	4	0.2	Black Swallow				
Ross' Gull					Unid. Swallow				

Table 40. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	9	100.0	383	19.5					

Cruise numbers data are compiled from: 5

Table 41. Bird observations on shipboard transects, Navarin Basin, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	16.7	1	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider	1	16.7	1	0.1
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	1	16.7	1	0.1
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 41. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	50.0	4	0.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	16.7	2	0.2	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	33.3	2	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	16.7	1	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	16.7	1	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	66.7	9	1.0	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 42. Bird observations on shipboard transects, Navarin Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	100.0	2	1.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 42. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	100.0	243	125.3
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	100.0	1	0.5	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	1	0.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	100.0	18	9.3
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	3	1.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 43. Bird observations on shipboard transects, Navarin Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	3	100.0	965	160.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	100.0	474	78.6	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 43. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	67.7	7	1.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	33.3	1	0.2	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	100.0	13	2.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	33.3	1	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	3	100.0	20	3.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	100.0	134	22.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 43. Continued.

Species Name	Occur- ence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	X Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	3	100.0	1615	267.8					

Cruise numbers data are compiled from: 23

Table 44. Bird observations on shipboard transects, Norton Basin, September 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	2	7.4	3	0.1	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	8	29.6	26	0.5	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	9	33.3	20	0.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	15	55.6	817	16.8	Bufflehead				
Unid. Shearwater	3	11.1	9	0.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	3.7	4	0.8	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	4	14.8	7	0.2
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 44. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	12	44.4	19	0.4
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	3.7	1	tr.	Unid. Murre	19	70.4	158	3.3
Pomarine Jaeger					Unid. Guillemot	1	3.7	65	1.3
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	3.7	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	5	18.5	7	0.2	Kittlitz's Murrelet				
Glaucous-winged Gull	2	7.4	2	tr.	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	3.7	1	tr.	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	5	18.5	149	3.1
California Gull					Least Auklet	1	3.7	20	0.4
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	8	29.6	65	1.3
Black-headed Gull					Horned Puffin	5	18.5	15	0.3
Bonaparte's Gull					Tufted Puffin	9	33.3	990	20.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	20	74.1	94	1.9	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 44. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	3.7	1	tr.					
Unid. Bird									
Totals/Average	27	100.0	2413	49.6					

Cruise numbers data are compiled from: 21

Table 45. Bird observations on shipboard transects, Northeast Gulf of Alaska, February 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	24	40.0	328	2.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	4	6.6	8	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	1.6	1	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 45. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern	26	43.3	312	2.4
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	4	6.6	11	0.1
Glaucous Gull	2	3.3	2	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	56	93.3	429	3.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	6.6	4	tr.	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	9	15.0	14	0.1	Unid. Small Alcid	9	15.0	22	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	16	26.6	29	0.2
Heermann's Gull					Unid. Puffin	1	1.6	1	tr.
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	44	73.3	398	3.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 46. Bird observations on shipboard transects, Northeast Gulf of Alaska, April 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	3.7	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	7	25.9	16296	423.9	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	2	7.4	24	0.6	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	3.7	1	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 46. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern	24	88.8	429	11.2
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	4	14.8	4	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	2	7.4	9	0.2	Kittlitz's Murrelet	1	3.7	5	0.1
Glaucous-winged Gull	14	51.8	60	1.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	2	7.4	8	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	2	7.4	3	0.1	Unid. Small Alcid	10	37.0	47	1.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	10	37.0	35	0.9
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 46. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	27	100.0	16895	440.2					

Cruise numbers data are compiled from: 4

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692

Table 47. Bird observations on shipboard transects, Northeast Gulf of Alaska, May 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon	15	11.2	38	0.6	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	6	4.5	23	0.2	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	29	21.6	103	1.0	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon	1	0.7	2	tr.
Western Grebe					Shoveler				
Black-footed Albatross	7	5.2	7	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	100	74.6	32543	302.1	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	0.7	1	tr.	Oldsquaw	9	6.7	77	0.7
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	18	13.4	53	0.5	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	0.7	2	tr.	White-winged Scoter	1	0.7	1	tr.
Brandt's Cormorant					Surf Scoter	1	0.7	1	tr.
Pelagic Cormorant	5	3.7	15	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	2.2	7	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant	1	0.7	1	tr.	Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 47. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	1.5	9	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	40	29.9	180	1.7
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	33	24.6	917	8.5	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	29	21.6	131	1.2
Pomarine Jaeger	2	1.5	3	tr.	Unid. Guillemot				
Parasitic Jaeger	2	1.5	4	tr.	Black Guillemot				
Long-tailed jaeger	2	1.5	2	tr.	Pigeon Guillemot	2	1.5	2	tr.
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	3	2.2	10	0.1
Glaucous Gull	1	0.7	2	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	54	40.3	199	1.9	Xantus' Murrelet	2	1.5	4	tr.
Slaty-backed Gull					Ancient Murrelet	1	0.7	24	tr.
Western Gull					Unid. Murrelet				
Herring Gull	96	71.6	353	3.3	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	6	4.5	12	0.1	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	24	17.9	102	1.0
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	89	66.4	406	3.8	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 47. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Ka ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Ka ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	134	100.0	38287	355.4					

Cruise numbers data are compiled from: 4, 5

Table 48. Bird observations on shipboard transects, Northeast Gulf of Alaska, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	7	9.4	11	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	4	5.4	5	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	51	68.9	304	2.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	51	68.9	2397	17.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	4.0	15	0.1	Oldsquaw	2	7.7	3	tr.
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	31	41.8	226	1.62	Steller's Eider				
Leach's Storm Petrel	9	12.1	9	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	8	10.8	29	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	1.4	1	tr.	White-winged Scoter				
Brandt's Cormorant					Surf Scoter	1	1.4	3	tr.
Pelagic Cormorant	1	1.4	2	tr.	Black Scoter				
Red-faced Cormorant					Unid. Scoter	4	5.4	5	tr.
Unid. Cormorant	3	4.0	9	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 48. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	5	6.7	72	0.5
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	5	6.7	10	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	30	36.4	212	1.5
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	17	23.0	69	0.5
Pomarine Jaeger	1	1.4	1	tr.	Unid. Guillemot				
Parasitic Jaeger	6	8.1	7	0.1	Black Guillemot				
Long-tailed jaeger	2	2.7	4	tr.	Pigeon Guillemot				
Unid. Jaeger	4	5.4	5	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet	3	4.0	9	0.1
Glaucous Gull					Kittlitz's Murrelet	1	1.4	2	tr.
Glaucous-winged Gull	9	12.1	29	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	6	8.1	16	0.1
Western Gull					Unid. Murrelet				
Herring Gull	27	36.5	61	0.4	Cassin's Auklet	2	2.7	7	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	1.4	2	tr.
Mew Gull					Unid. Small Alcid	35	47.3	218	1.6
Black-headed Gull					Horned Puffin	1	1.4	2	tr.
Bonaparte's Gull					Tufted Puffin	15	20.3	215	1.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	4.0	6	tr.	Snowy Owl				
Black-legged Kittiwake	60	81.1	689	4.9	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 49. Bird observations on shipboard transects, Northeast Gulf of Alaska, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Cadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	50.0	1	0.3	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	100.0	21	5.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	100.0	6	1.7	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 49. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	50.0	1	0.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	50.0	7	1.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 50. Bird observations on shipboard transects, Northeast Gulf of Alaska, September 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall	1	1.4	1	tr.
Unid. Loon	1	1.4	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	11	15.5	21	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	40	56.3	206	1.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	15	21.1	95	0.8	Barrow's Goldeneye				
Short-tailed Shearwater	5	7.0	23	0.2	Bufflehead				
Unid. Shearwater	30	42.2	426	3.7	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	14	19.7	36	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	4	5.6	6	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	2.8	2	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Cyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 50. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	10	14.1	27	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	2	2.8	2	tr.
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre	1	1.4	2	tr.
Northern Phalarope	2	2.8	2	tr.	Thick-billed Murre				
Unid. Phalarope	1	1.4	3	tr.	Unid. Murre	6	8.4	10	0.1
Pomarine Jaeger	8	11.3	11	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger	1	1.4	2	tr.	Pigeon Guillemot				
Unid. Jaeger	6	8.4	8	0.1	Unid. Large Alcid	11	15.5	19	0.2
Skua					Marbled Murrelet	2	2.8	4	tr.
Glaucous Gull					Rittlitz's Murrelet				
Glaucous-winged Gull	7	9.9	11	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	7	9.9	9	0.1	Cassin's Auklet	2	2.8	3	tr.
Herring/Glaucous-wg. Hyb.	3	4.2	3	tr.	Parakeet Auklet	2	2.8	5	tr.
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	1.4	1	tr.
Mew Gull					Unid. Small Alcid	12	16.9	25	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	37	52.1	90	0.8
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	23	32.4	70	0.6	Snowy Owl				
Black-legged Kittiwake	19	26.8	83	0.7	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 50. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Pectoral Sandpiper	1	1.4	1	tr.					
Unid. Shorebird	1	1.4	3	tr.					
Totals/Average	71	100.0	1193	10.3					

Cruise numbers data are compiled from: 16, 20, 24

Table 51. Bird observations on shipboard transects, Northeast Gulf of Alaska, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard	1	1.8	1	tr.
Red-throated Loon					Gadwall				
Unid. Loon	1	1.8	1	tr.	Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	5	8.8	8	0.1	Redhead				
Laysan Albatross	2	3.5	3	tr.	Canvasback				
Unid. Albatross					Greater Scaup	1	1.8	11	0.1
Fulmar	30	52.6	190	2.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	9	15.8	275	3.3	Barrow's Goldeneye				
Short-tailed Shearwater	2	3.5	2	tr.	Bufflehead				
Unid. Shearwater	12	21.1	117	1.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	13	22.8	288	3.5	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	1.8	3	tr.	White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	3	5.3	9	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter	4	7.0	11	0.1
Unid. Cormorant	3	5.3	10	0.1	Unid. Duck	1	1.8	2	tr.
Whistling Swan					Red-breasted Merganser	1	1.8	1	tr.
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 51. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	1	1.8	1	tr.
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	6	10.5	12	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	5.3	3	tr.
Pomarine Jaeger	2	3.5	2	tr.	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	1.8	1	tr.	Unid. Large Alcid	3	5.3	3	tr.
Skua					Marbled Murrelet				
Glaucous Gull	1	1.8	1	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	37	64.9	126	1.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	1.8	1	tr.
Western Gull					Unid. Murrelet				
Herring Gull	12	21.1	16	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	1.8	1	tr.	Unid. Small Alcid	6	10.5	12	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	2	3.5	6	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	3.5	16	0.2	Snowy Owl				
Black-legged Kittiwake	3	5.3	3	tr.	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 51. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing	1	1.8	1	tr.					
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin	2	3.5	2	tr.					
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	56	98.2	1139	13.8					

Cruise numbers data are compiled from: 25, 30, 31

Table 52. Bird observations on shipboard transects, Northeast Gulf of Alaska, November 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	3	4.7	3	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	1.6	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	46	71.9	386	3.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	1.6	1	tr.	Barrow's Goldeneye				
Short-tailed Shearwater	1	1.6	3	tr.	Bufflehead				
Unid. Shearwater	20	31.3	90	0.8	Oldsquaw	3	4.7	18	0.2
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	8	12.5	12	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant	1	1.6	1	tr.	Unid. Scoter				
Unid. Cormorant	2	3.1	2	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 52. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	9	14.1	10	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	15	23.4	125	1.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	22	34.4	57	0.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	13	20.3	19	0.2	Cassin's Auklet	1	1.6	1	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	1.6	1	tr.	Unid. Small Alcid	7	10.9	21	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	8	12.5	14	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	1.6	1	tr.	Snowy Owl				
Black-legged Kittiwake	14	21.9	24	0.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 52. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/ha ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/ha ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	62	96.9	790	6.6					

Cruise numbers data are compiled from: 30, 31, 32, 33

287
167

Table 53. Bird observations on shipboard transects, Northern California Shelf, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	6	85.7	8	0.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	5	71.4	8	0.7	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	5	71.4	8	0.7	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 53. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	14.3	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua	1	14.3	1	0.1	Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	14.3	1	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	28.6	3	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 53. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	7	100.0	30	2.4					

290
170

Cruise numbers data are compiled from: 13

Table 54. Bird observations on shipboard transects, Northwest Gulf of Alaska, February 1975.

Species Name	Occur- ance	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ance	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	33.3	14	0.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 54. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	50.0	27	1.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	16.6	1	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	5	83.3	57	3.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	2	33.3	3	0.2	Unid. Small Alcid	2	33.3	5	0.3
Black-headed Gull	5	83.3	57	3.6	Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 54. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	5	100.0	107	6.7					

Cruise numbers data are compiled from: 2

Table 55. Bird observations on shipboard transects, Northwest Gulf of Alaska, March 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant	1	25.0	1	0.1	Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 55. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	4	100.0	42	3.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	75.0	6	0.5	Xantus' Murrelet	1	25.0	2	0.2
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	25.0	4	0.3
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	25.0	1	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 56. Bird observations on shipboard transects, Northwest Gulf of Alaska, April 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	14.3	3	0.3
Brandt's Cormorant					Surf Scoter	1	14.3	2	0.2
Pelagic Cormorant	1	14.3	1	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	5	71.4	12	1.2	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose	1	14.3	7	0.7	Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 56. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	7	100.0	47	4.6
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	85.7	36	3.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	4	57.1	5	0.5	Unid. Small Alcid	2	28.5	7	0.7
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	14.3	3	0.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 57. Bird observations on shipboard transects, Northwest Gulf of Alaska, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	2	5.0	2	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	8	20.0	11	0.2	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	2.5	2	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	13	32.5	810	13.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	15	37.5	1082	17.8	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	8	20.0	130	2.1	Oldsquaw	1	2.5	14	0.2
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	7	17.5	9	0.2	Steller's Eider				
Leach's Storm Petrel	1	2.5	4	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	6	15.0	91	1.5	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	2.5	9	0.2	White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	3	7.5	3	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	4	10.0	7	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant	1	2.5	14	0.2	Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 57. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	9	22.5	28	0.5
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	7	17.5	14	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	9	22.5	1785	29.35	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	22	55.0	531	8.7
Pomarine Jaeger	1	2.5	148	2.4	Unid. Guillemot				
Parasitic Jaeger	1	2.5	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid	4	10.0	37	0.6
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	7	17.5	14	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	9	22.5	20	0.3	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	2	5.0	6	0.1
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	22	55.0	108	1.8
Black-headed Gull					Horned Puffin	2	5.0	3	0.1
Bonaparte's Gull					Tufted Puffin	7	17.5	97	1.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	32	80.0	219	3.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 57. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow	1	2.5	4	0.1					
Lapland Longspur									
Unid. Passerine									
Unid. Bird									

Table 58. Bird observations on shipboard transects, Northwest Gulf of Alaska, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	6	60.0	42	2.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	5	50.0	1550	80.1	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	10.0	11	0.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	30.0	297	15.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	20.0	2	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 58. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	10.0	12	0.6
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	10.0	1	0.1
Sharp-tailed Sandpiper					Alcution Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	10.0	12	0.6	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	60.0	238	12.3
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	10.0	1	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	10.0	2	0.1
Glaucous Gull					Kittlitz's Murrelet	1	10.0	1	0.1
Glaucous-winged Gull	3	30.0	8	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	10.0	4	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	10.0	1	0.1
Mew Gull					Unid. Small Alcid	7	70.0	32	1.7
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	7	70.0	101	6.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	10	100.0	104	5.4	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 59. Bird observations on shipboard transects, Northwest Gulf of Alaska, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	45.5	11	0.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	4	36.4	232	10.1	Barrow's Goldeneye				
Short-tailed Shearwater	1	9.1	376	16.4	Bufflehead				
Unid. Shearwater	4	36.4	65	2.8	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	8	72.7	115	5.0	Steller's Eider				
Leach's Storm Petrel	1	9.1	6	0.3	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	18.2	6	0.3	Unid. Duck	1	9.1	3	0.1
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 59. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	9.1	1	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	3	27.3	16	0.7
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	9.1	32	1.4	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	54.5	53	2.3
Pomarine Jaeger	2	18.2	4	0.2	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	9.1	3	0.1
Unid. Jaeger	1	9.1	2	0.1	Unid. Large Alcid	4	36.4	19	0.8
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	27.3	8	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	9.1	1	tr.
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	27.3	14	0.6
Black-headed Gull					Horned Puffin	2	18.2	3	0.1
Bonaparte's Gull					Tufted Puffin	10	90.1	192	8.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	36.4	24	1.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 60. Bird observations on shipboard transects, Northwest Gulf of Alaska, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	1	6.7	2	0.1	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	1	6.7	1	tr.	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	6.7	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	9	60.0	19	8.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	8	53.3	165	7.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	8	53.3	21	0.9	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	13.3	4	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	6.7	1	tr.	Unid. Duck	1	6.7	20	0.9
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 60. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull	5	33.3	6	0.3
Ruddy Turnstone					Unid. Gull				
Black Turnstone	1	6.7	1	tr.	Common Tern	1	6.7	3	0.1
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern	1	6.7	2	0.1
Red Phalarope					Common Murre				
Northern Phalarope	1	6.7	4	0.2	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	5	33.3	9	0.4
Pomarine Jaeger	2	13.3	2	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	13.3	3	0.1	Unid. Large Alcid	2	13.3	5	0.2
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	6.7	3	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	2	13.3	3	0.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	6.7	1	tr.
Mew Gull					Unid. Small Alcid	1	6.7	4	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	8	53.3	31	1.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	3	20.0	3	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 61. Bird observations on shipboard transects, Northwest Gulf of Alaska, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard	1	3.0	4	0.1
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	8	24.2	20	0.4	Redhead				
Laysan Albatross	5	15.2	5	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	19	57.2	170	3.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	5	15.2	14	0.3	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	8	24.2	38	0.8	Oldsquaw				
Scaled Petrel					Harlequin Duck	1	3.0	1	tr.
Fork-tailed Storm Petrel	19	57.6	68	1.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	4	12.1	8	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	3	9.1	4	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	6.1	5	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 61. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	2	6.1	4	0.1
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	5	15.2	133	2.8
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	3.0	2	tr.	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	6.1	4	0.1
Pomarine Jaeger	1	3.0	1	tr.	Unid. Guillemot	1	3.0	9	0.2
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	6.1	2	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	5	15.2	12	0.3	Kittlitz's Murrelet				
Glaucous-winged Gull	11	33.3	31	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	9	27.3	29	0.6	Cassin's Auklet	2	6.1	2	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	3.0	1	tr.
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	10	30.3	44	0.9	Unid. Small Alcid	3	9.1	4	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	12.1	13	0.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	9	27.3	23	0.5	Snowy Owl				
Black-legged Kittiwake	14	42.4	115	2.4	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 62. Bird observations on shipboard transects, Northwest Gulf of Alaska, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	2	9.1	2	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	16	72.7	111	2.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	4	18.2	13	0.3	Oldsquaw	1	4.5	1	tr.
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	6	27.3	14	0.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	4.5	1	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 62. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	4	18.2	6	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	27.3	21	0.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid	1	4.5	1	tr.
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	15	68.2	41	1.0	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	6	27.3	17	0.4	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	4.5	2	0.1	Unid. Small Alcid	3	13.6	4	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull	1	4.5	2	0.1	Tufted Puffin	2	9.1	4	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	11	50.0	40	1.0	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 63. Bird observations on shipboard transects, Northwest Gulf of Alaska, December 1975.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	100.0	10	2.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 63. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	50.0	1	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	100.0	10	2.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	50.0	3	0.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	50.0	2	0.5
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	2	100.0	7	1.7	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 65. Bird observations on shipboard transects, Oceanic Aleutians, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	8.7	2	0.1	Redhead				
Laysan Albatross	2	8.7	3	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	73.9	111	2.5	Lesser Scaup				
Pink-footed Shearwater	1	4.3	1	tr.	Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	13	56.5	326	7.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel	1	4.3	1	tr.	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	4.3	1	tr.	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 65. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ance	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull	1	4.3	1	tr.
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern	3	13.0	24	0.5
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	9	39.1	439	9.9	Thick-billed Murre				
Unid. Phalarope	1	4.3	125	2.8	Unid. Murre	2	8.7	2	0.1
Pomarine Jaeger	1	4.3	1	tr.	Unid. Guillemot				
Parasitic Jaeger	1	4.3	3	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	4.3	2	0.1
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	4.3	1	tr.
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	5	21.8	9	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	2	8.7	4	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	3	13.0	6	0.1
Thayer's Gull					Crested Auklet	6	26.1	12	0.3
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	4.3	3	0.1
Black-headed Gull					Horned Puffin	6	26.1	29	0.7
Bonaparte's Gull					Tufted Puffin	19	82.6	154	3.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	17	73.9	235	5.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 65. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	4.3	1	tr.					
Unid. Bird									
Totals/Average	23	100.0	1396	31.5					

Cruise numbers data are compiled from: 22

Table 66. Bird observations on shipboard transects, Oceanic Alaska Peninsula, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	7.7	2	0.1	Redhead				
Laysan Albatross	2	7.7	2	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	65.4	57	1.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	1	3.8	4	0.1	Bufflehead				
Unid. Shearwater	6	26.9	9	0.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	7.7	2	0.1	Steller's Eider				
Leach's Storm Petrel	14	57.7	44	1.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	3.8	2	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	3.8	1	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 66. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	11.5	3	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger	3	11.5	5	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	3	11.5	4	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	11.5	5	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	10	38.5	36	0.9
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	11	42.3	48	1.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 67. Bird observations on shipboard transects, Oceanic Alaska Peninsula, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	33.3	3	0.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	50.0	4	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 67. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	4	66.7	6	0.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	2	33.3	2	0.2	Kittlitz's Murrelet				
Glaucous-winged Gull	1	16.7	1	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	1	16.7	1	0.1
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	66.6	5	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	50.0	4	0.3	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 68. Bird observations on shipboard transects, Oceanic British Columbia, January 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	29.4	8	0.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	5.9	2	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 68. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	5.9	2	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	17.6	8	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	22.5	4	0.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull	1	5.9	1	tr.	Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	2	11.8	9	0.3
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	2	11.8	3	0.1
Bonaparte's Gull					Tufted Puffin	4	23.5	17	0.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	11	64.7	24	0.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 69. Bird observations on shipboard transects, Oceanic British Columbia, March 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	100.0	6	1.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	100.0	2	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 69. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	50.0	1	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
New Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	50.0	4	0.6
Bonaparte's Gull					Tufted Puffin	2	100.0	7	1.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	50.0	2	0.3	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 70. Bird observations on shipboard transects, Oceanic British Columbia, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	9.0	2	0.1	Redhead				
Laysan Albatross	1	9.0	2	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	8	72.7	56	2.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	18.2	7	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 70. Continued.

Species Name	Occurrence	Z Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	Z Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	9.0	1	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger	1	9.0	1	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	9.0	1	0.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	9.0	1	0.1
Mew Gull					Unid. Small Alcid	2	18.2	2	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	3	27.3	5	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 70. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	10	90.9	78	3.5					

Cruise numbers data are compiled from: 5

Table 71. Bird observations on shipboard transects, Oceanic British Columbia, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	5.0	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	3	15.0	3	0.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	15.0	7	0.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel	1	5.0	1	tr.	Harlequin Duck				
Fork-tailed Storm Petrel	16	80.0	62	1.5	Steller's Eider				
Leach's Storm Petrel	20	100.0	231	5.5	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 71. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	5.0	1	tr.
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	2	10.0	11	0.3
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	3	15.0	7	0.2
Mew Gull					Unid. Small Alcid	6	30.0	9	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	20.0	8	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 72. Bird observations on shipboard transects, Oceanic British Columbia, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	4	14.2	4	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	9	32.1	22	0.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater	1	3.6	1	tr.	Common Goldeneye				
Sooty Shearwater	10	35.7	7536	39.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	23	82.1	82	1.3	Steller's Eider				
Leach's Storm Petrel	24	85.3	225	3.5	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	19	67.9	104	1.6	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 72. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	3.6	1	tr.
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger	1	3.6	1	tr.	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger	1	3.6	1	tr.	Pigeon Guillemot				
Unid. Jaeger	1	3.6	2	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	10.7	5	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	5	17.9	33	0.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 72. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird	1	3.6	9	0.1					
Totals/Average	26	92.9	3026	47.4					

Cruise numbers data are compiled from: 11, 13

Table 73. Bird observations on shipboard transects, Oceanic British Columbia, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	7	21.2	11	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	2	6.1	4	0.1	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	9.1	7	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	9.1	6	0.1	Steller's Eider				
Leach's Storm Petrel	24	72.7	145	2.5	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	7	21.2	9	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 73. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	6.1	3	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	3.0	1	tr.
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	6.1	2	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	3.0	2	tr.
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 74. Bird observations on shipboard transects, Oceanic British Columbia, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	10.0	3	0.1	Redhead				
Laysan Albatross	4	20.0	4	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	5.0	1	tr.	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	15.0	5	0.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	4	20.0	9	0.3	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	10.0	5	0.2	Steller's Eider				
Leach's Storm Petrel	2	10.0	3	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 74. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	5.0	1	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	10.0	4	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	4	20.0	5	0.2
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 74. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Unid. Shorebird	1	5.0	1	tr.					
Totals/Average	12	60.0	41	1.3					

Cruise numbers data are compiled from: 21

Table 75. Bird observations on shipboard transects, Oceanic British Columbia, November 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	5.6	1	tr.	Redhead				
Laysan Albatross	1	5.6	1	tr.	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	16	88.9	31	0.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	16.7	3	0.1	Oldsquaw				
Scaled Petrel	3	16.7	4	0.1	Harlequin Duck				
Fork-tailed Storm Petrel	7	38.9	10	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck	2	11.1	5	0.1
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 75. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	5.6	2	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	5.6	1	tr.
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	7	38.9	10	0.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	5.6	1	tr.
Black-headed Gull					Horned Puffin	2	11.1	2	0.1
Bonaparte's Gull					Tufted Puffin	16	88.9	38	1.0
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	16.7	4	0.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 75. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	18	100.0	114	3.1					

Cruise numbers data are compiled from: 32

234
354

Table 76. Bird observations on shipboard transects, Oceanic Gulf of Alaska, January 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	50.0	10	0.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 76. Continued.

Species Name	Occurrence	Z Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	12.5	2	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	75.0	7	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	12.5	1	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	3	37.5	4	0.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	50.0	4	0.3	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 77. Bird observations on shipboard transects, Oceanic Gulf of Alaska, March 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	8	88.8	54	1.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	5	55.5	13	0.5	Steller's Eider				
Leach's Storm Petrel	1	11.1	1	tr.	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 77. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	22.2	14	0.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	5	55.5	16	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	11.1	1	tr.	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
					Rhinoceros Auklet				
					Unid. Small Alcid				
					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	9	100.0	30	1.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	9	100.0	22	0.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 78. Bird observations on shipboard transects, Oceanic Gulf of Alaska, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	11.1	1	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	9	100.0	110	5.5	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	33.3	3	0.2	Steller's Eider				
Leach's Storm Petrel	2	22.2	3	0.2	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 73. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	33.3	17	0.8
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	11.1	1	0.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	11.1	2	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 79. Bird observations on shipboard transects, Oceanic Gulf of Alaska, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	8	80.0	21	1.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	2	20.0	11	0.5	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	5	50.0	503	23.5	Oldsquaw				
Scaled Petrel	2	20.0	5	0.2	Harlequin Duck				
Fork-tailed Storm Petrel	6	60.0	10	0.5	Steller's Eider				
Leach's Storm Petrel	6	60.0	12	0.6	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	10.0	2	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 79. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	20.0	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	2	20.0	2	0.1
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	10.0	4	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	20.0	2	0.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 79. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Waterfowl									
Belted Kingfisher									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	10	100.0	577	26.9					

Cruise numbers data are compiled from: 4, 5

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Table 80. Bird observations on shipboard transects, Oceanic Gulf of Alaska, July 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	11	68.8	44	1.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	18.8	6	0.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	6	37.5	774	31.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	5	31.4	8	0.3	Steller's Eider				
Leach's Storm Petrel	4	25.0	7	0.3	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	3	18.8	3	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 80. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Ka ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/ka ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	6.3	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	6.3	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	5	31.3	11	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 81. Bird observations on shipboard transects, Oceanic Gulf of Alaska, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	37.5	3	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	7	87.5	103	7.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	12.5	2	0.1	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	37.5	12	0.9	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	5	62.5	17	1.2	Steller's Eider				
Leach's Storm Petrel	4	50.0	6	0.4	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	12.5	1	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 81. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	12.5	1	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	12.5	1	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	25.0	12	0.9	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
New Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	12.5	3	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	12.5	1	0.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 81. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	7	87.5	164	11.8					

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Cruise numbers data are compiled from: 15

Table 82. Bird observations on shipboard transects, Oceanic Gulf of Alaska, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	1	100.0	1	0.5	Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 82. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	1	100.0	1	0.6					

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Cruise numbers data are compiled from: 31

Table 83. Bird observations on shipboard transects, Oceanic Northern California, July 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel	1	20.0	2	0.2	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	20.0	1	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 84. Bird observations on shipboard transects, Oceanic Northern California, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	4.2	1	tr.	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	2	8.3	3	0.1	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	8.3	9	0.3	Oldsquaw				
Scaled Petrel					Marlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel	3	12.5	6	0.2	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	4	16.7	4	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 84. Continued.

Species Name	Occurrence	2 Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	2 Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	4.2	1	tr.
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	4.2	1	tr.
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 84. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	10	41.7	25	0.8					

Cruise numbers data are compiled from: 21

Table 85. Bird observations on shipboard transects, Oceanic Oregon, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	11.1	1	0.7	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel	9	100.0	41	2.7	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 85. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	11.1	1	0.7
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 85. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Rm ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Rm ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	9	100.0	43	2.8					

Cruise numbers data are compiled from: 13

Table 86. Bird observations on shipboard transects, Oceanic Oregon, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	20.0	2	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	20.0	3	0.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	10.0	1	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 86. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	10.0	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 87. Bird observations on shipboard transects, Oceanic Southern California, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 87. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern	1	10.0	9	0.6
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger	1	10.0	1	0.1	Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet	1	10.0	2	0.1
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Field Swallow				

Table 87. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	4	40.0	12	0.8					

Cruise numbers data are compiled from: 21

Table 88. Bird observations on shipboard transects, Oceanic South Kodiak, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	30.0	4	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	6	60.0	25	1.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	4	40.0	8	0.4	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	4	40.0	12	0.7	Oldsquaw				
Scaled Petrel	6	60.0	25	1.4	Harlequin Duck				
Fork-tailed Storm Petrel	3	30.0	4	0.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	10.0	2	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 88. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	20.0	2	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 89. Bird observations on shipboard transects, Oceanic South Kodiak, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	9.5	3	0.1	Redhead				
Laysan Albatross	4	19.0	5	0.2	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	7	33.3	11	0.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	4.8	1	tr.	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 89. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	4.8	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	7	33.3	11	0.4	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 90. Bird observations on shipboard transects, Oceanic South Kodiak, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	11.1	1	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	7	77.8	20	1.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	11.1	1	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	3	33.3	5	0.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 90. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	11.1	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	11.1	1	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	11.1	2	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	8	88.9	32	1.8
Heermann's Gull					Unid. Puffin	1	11.1	1	0.1
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	22.2	2	0.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 90. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	9	100.0	67	3.8					

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Cruise numbers data are compiled from: 32

Table 91. Bird observations on shipboard transects, Oceanic Washington, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	21.4	3	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	7.1	1	tr.	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	7.1	2	0.1	Steller's Eider				
Leach's Storm Petrel	11	78.6	40	1.8	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	7.1	1	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 91. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	11	78.5	47	2.1					

Cruise numbers data are compiled from: 13

Table 92. Bird observations on shipboard transects, Prince William Sound, April 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	10.0	2	0.2	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe	1	10.0	1	0.1	American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	3	30.0	15	1.2
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	10.0	3	0.2	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	20.0	18	1.5	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 92. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	7	70.0	14	1.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	60.0	37	3.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	2	20.0	18	1.5
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	10.0	2	0.2
Glaucous Gull	1	10.0	2	0.2	Kittlitz's Murrelet				
Glaucous-winged Gull	9	90.0	60	4.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.	2	20.0	2	0.2	Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	5	50.0	15	1.2	Unid. Small Alcid	3	30.0	6	0.5
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	3	30.0	8	0.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	7	70.0	69	5.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 92. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	10	100.0	266	21.6					

Cruise numbers data are compiled from: 4

Table 93. Bird observations on shipboard transects, Prince William Sound, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	3	20.0	4	0.2	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	2	13.3	2	0.1	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	9	60.0	41	2.0	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	6.6	1000	48.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	4	26.6	23	1.1
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	6.6	2	0.1
Brandt's Cormorant					Surf Scoter	1	6.6	5	0.2
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant	2	13.3	5	0.2	Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle	1	6.6	1	0.1
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 93. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	12	80.0	63	3.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	4	26.6	364	17.7	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	9	60.0	106	5.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	2	13.3	4	0.2
Unid. Jaeger	7	46.6	4	0.2	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	7	46.6	59	2.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	6.6	2	0.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	6.6	1	0.1	Unid. Small Alcid	15	100.0	248	12.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull	2	13.3	3	0.2	Tufted Puffin	5	33.3	39	1.9
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	14	93.3	119	5.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 93. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Dunlin	1	6.6	1	0.1					
Totals/Average	15	100.0	2096	102.0					

Cruise numbers data are compiled from: 4

Table 94. Bird observations on shipboard transects, Prince Willism Sound, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 94. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern	1	33.3	3	0.5
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	33.3	6	1.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	2	66.6	17	3.0
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	100.0	7	1.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	33.3	2	0.4	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	1	33.3	1	0.2
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	100.0	86	14.9
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	66.6	95	16.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 95. Bird observations on shipboard transects, Prince William Sound, September 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 95. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	2	100.0	4	1.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 95. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Fine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	2	100.0	4	1.2					

Cruise numbers data are compiled from: 16

291
411

Table 96. Bird observations on shipboard transects, Prince William Sound, October 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon	2	3.6	3	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	1.8	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	1.8	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	3.6	4	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	17	30.4	58	0.7	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	3.6	8	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	3	5.4	4	0.1	White-winged Scoter	1	1.8	1	tr.
Brandt's Cormorant					Surf Scoter	1	1.8	1	tr.
Pelagic Cormorant	2	3.6	2	tr.	Black Scoter				
Red-faced Cormorant	1	1.8	24	0.3	Unid. Scoter				
Unid. Cormorant	11	19.6	43	0.5	Unid. Duck				
Whistling Swan					Red-breasted Merganser	1	1.8	1	tr.
Canada Goose					Bald Eagle	1	1.8	1	tr.
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 96. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	26	46.4	390	4.7
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	1.8	1	tr.
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	2	3.6	13	0.2	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	5	8.9	5	0.1
Pomarine Jaeger					Unid. Guillemot	2	3.6	29	0.4
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	1.8	2	tr.
Unid. Jaeger	2	3.6	5	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	9	16.1	21	0.3	Kittlitz's Murrelet				
Glaucous-winged Gull	14	25.0	30	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	23	41.1	54	0.7	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	16	28.6	43	0.5	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	23	41.1	89	1.0	Snowy Owl				
Black-legged Kittiwake	12	21.4	24	0.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 96. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven	1	1.8	29	0.4					
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird	4	7.1	12	0.1					
Totals/Average	56	100.0	872	10.5					

Cruise numbers data are compiled from: 25, 30, 31

Table 97. Bird observations on shipboard transects, South Central Bering Sea, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross	1	20.0	1	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	80.0	27	3.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	60.0	5	0.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	20.0	1	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 97. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	20.0	8	0.9
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	20.0	5	0.6	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	2	40.0	27	3.0
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	40.0	134	14.7
Black-headed Gull					Horned Puffin	1	20.0	1	0.1
Bonaparte's Gull					Tufted Puffin	2	40.0	5	0.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	40.0	3	0.3	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 98. Bird observations on shipboard transects, South Central Bering Sea, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	7	100.0	76	5.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	14.3	1	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	4	57.1	36	2.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 98. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	28.5	2	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	14.3	1	0.1	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	28.5	2	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	14.3	1	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	2	28.5	17	1.2
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	14.3	47	3.1
Black-headed Gull					Horned Puffin	1	14.3	1	0.1
Bonaparte's Gull					Tufted Puffin	4	57.1	10	0.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	57.1	14	1.0	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 98. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	7	100.0	208	14.1					

Cruise numbers data are compiled from: 5

300
420

Table 99. Bird observations on shipboard transects, South Central Bering Sea, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	11.8	2	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	17	100.0	189	6.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	9	52.9	52	1.8	Steller's Eider				
Leach's Storm Petrel	2	11.8	2	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck	1	5.9	1	tr.
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 99. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover	2	11.8	2	0.1	Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	17.6	5	0.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	5.9	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	1	5.9	3	0.1
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	11.8	25	0.8
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	14	82.3	68	2.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	23.5	4	0.1	Snowy Owl				
Black-legged Kittiwake	2	11.8	3	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 99. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	17	100.0	369	12.4					

Cruise numbers data are compiled from: 18, 24

Table 100. Bird observations on shipboard transects, South Central Bering Sea, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross	1	25.0	1	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	100.0	18	2.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	25.0	1	0.1	Barrow's Goldeneye				
Short-tailed Shearwater	1	25.0	2	0.3	Bufflehead				
Unid. Shearwater	3	75.0	10	1.4	Oldsquaw				
Scaled Petrel	4	100.0	6	0.8	Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 100. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	25.0	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	25.0	1	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	1	25.0	1	0.1
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	25.0	1	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	3	75.0	14	1.9
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	50.0	4	0.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 101. Bird observations on shipboard transects, Southern California Shelf, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	6	31.6	7	0.2	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater	7	36.8	20	0.6	Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	12	63.1	543	17.3	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	5	26.3	5	0.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	5.3	1	tr.	Steller's Eider				
Leach's Storm Petrel	8	42.1			Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 101. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	3	15.8	13	0.4	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	5.3	1	tr.
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet	3	15.8	10	0.3
Slaty-backed Gull					Ancient Murrelet				
Western Gull	2	10.5	14	0.5	Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	5.3	2	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 102. Bird observations on shipboard transects, Southern California Shelf, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	1	5.6	1	tr.	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	5.6	2	0.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	5.6	4	0.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican	5	27.8	18	0.6	Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	5.6	1	tr.	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 102. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	6	33.3	32	1.0
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	5	27.8	100	3.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	5.6	6	0.2	Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	5.6	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull	8	44.4	40	1.3	Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 102. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	2	11.1	9	0.3					
Unid. Bird									
OTHER									
Unid. Shorebird	1	5.6	2	0.1					
Totals/Average	13	72.2	216	6.9					

Cruise numbers data are compiled from: 21

Table 103. Bird observations on shipboard transects, Southeast Alaska Shelf, August 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Stellar's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 103. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	33.3	1	0.2
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	33.3	5	1.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 103. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	2	66.7	6	1.4					

Cruise numbers data are compiled from: 20

Table 104. Bird observations on shipboard transects, Southeast Alaska Shelf, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	1	20.0	1	0.1	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	20.0	1	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	40.0	6	0.6	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	20.0	2	0.2	Black Scoter				
Red-faced Cormorant					Unid. Scoter	1	20.0	81	8.4
Unid. Cormorant	1	20.0	1	0.1	Unid. Duck	1	20.0	3	0.3
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 104. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull	1	20.0	1	0.1
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre	2	40.0	23	2.4
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	20.0	9	0.9
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	5	100.0	17	1.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	2	40.0	5	0.5	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	2	40.0	2	0.2	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	3	60.0	8	0.8	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 104. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	5	100.0	160	16.7					

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438

Cruise numbers data are compiled from: 24

Table 105. Bird observations on shipboard transects, Southeast Alaska Shelf, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	14.3	3	0.2
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	14.3	1	0.1
Brandt's Cormorant					Surf Scoter	4	57.1	13	1.0
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 105. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	28.6	23	1.8
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	85.7	52	4.0	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	2	28.6	3	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	7	100.0	31	2.4	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	1	14.3	1	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 105. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	7	100.0	120	9.2					

Cruise numbers data are compiled from: 25, 31

Table 106. Bird observations on shipboard transects, Southeast Alaska Shelf, December 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	14.3	1	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	1	14.3	1	0.1
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	14.3	1	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 106. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	28.6	72	5.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	42.9	6	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	57.1	8	0.6	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 107. Bird observations on shipboard transects, St. George Basin, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail	1	1.6	2	tr.
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	22	36.6	90	1.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	1	1.6	1	tr.	Bufflehead				
Unid. Shearwater	9	15.0	723	8.8	Oldsquaw	1	1.6	3	tr.
Scaled Petrel					Harlequin Duck	1	1.6	2	tr.
Fork-tailed Storm Petrel	5	8.3	133	1.6	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	5.0	6	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant	1	1.6	30	0.4	Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 107. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone	1	1.6	1	tr.	Unid. Gull	39	65.0	135	1.6
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	4	6.6	53	0.6	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	40	66.6	683	8.3
Pomarine Jaeger	9	15.0	13	0.2	Unid. Guillemot				
Parasitic Jaeger	1	1.6	1	tr.	Black Guillemot	2	3.3	2	tr.
Long-tailed jaeger					Pigeon Guillemot	3	5.0	5	0.1
Unid. Jaeger	4	6.6	7	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	10	16.6	23	0.3	Kittlitz's Murrelet				
Glaucous-winged Gull	7	11.6	15	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	3	5.0	3	tr.	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	2	3.3	3	tr.
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	10	16.6	160	1.9
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	5	8.3	30	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	47	78.3	180	2.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 108. Bird observations on shipboard transects, St. George Basin, June 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²
Common Loon	1	2.5	1	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	29	74.3	752	9.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	2	5.1	55	0.7	Bufflehead				
Unid. Shearwater	10	25.6	150	1.9	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	20	51.2	6112	76.9	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	5.1	3	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	2.5	1	tr.
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 108. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	2.5	2	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	2.5	9	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper	1	2.5	1	tr.	Unid. Tern				
Red Phalarope	9	23.0	193	2.4	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	38	97.4	752	9.5
Pomarine Jaeger	6	15.3	7	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	2.5	1	tr.
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	2.5	2	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	3	7.6	5	0.1
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	3	7.6	75	1.0
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	16	41.0	86	1.1
Black-headed Gull					Horned Puffin	3	7.6	3	tr.
Bonaparte's Gull					Tufted Puffin	6	15.3	20	0.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	37	94.8	518	6.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake	9	23.0	18	0.2	Black Swallow				
Ross' Gull					Unid. Swallow				

Table 108. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler	1	2.5	1	tr.					
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	39	100.0	8767	110.3					

Cruise numbers data are compiled from: 5

450
330

Table 109. Bird observations on shipboard transects, St. George Basin, July 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	14	50.0	104	2.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	2	7.1	24	0.5	Barrow's Goldeneye				
Short-tailed Shearwater	2	7.1	8	0.2	Bufflehead				
Unid. Shearwater	8	28.6	8626	192.0	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	6	21.4	71	1.6	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	3.5	1	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 109. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	3.5	2	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	5	17.9	46	1.0	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	3.5	4	0.1	Unid. Murre	24	85.7	339	7.6
Pomarine Jaeger	7	25.0	14	0.3	Unid. Guillemot				
Parasitic Jaeger	1	3.5	3	0.1	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	7	25.0	26	0.6	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	3.5	1	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	12	42.9	40	0.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	3.5	3	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	3.5	1	tr.
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	11	39.3	40	0.9
Black-headed Gull					Horned Puffin	7	25.0	17	0.4
Bonaparte's Gull					Tufted Puffin	20	71.4	331	7.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	16	57.1	104	2.3	Snowy Owl				
Black-legged Kittiwake	1	3.5	3	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 109. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	28	100.0	9858	219.5					

Cruise numbers data are compiled from: 11, 13

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Table 110. Bird observations on shipboard transects, St. George Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	102	73.4	3930	18.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	38	27.3	35335	163.6	Barrow's Goldeneye				
Short-tailed Shearwater	8	5.8	3294	15.3	Bufflehead				
Unid. Shearwater	99	71.2	15816	73.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	45	32.4	1546	7.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	0.7	1	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant	1	0.7	1	tr.	Unid. Scoter				
Unid. Cormorant					Unid. Duck	1	0.7	1	tr.
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 110. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone	5	3.6	12	0.1	Unid. Gull	2	1.4	2	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	14	10.1	84	0.4
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	2	1.4	2	tr.	Common Murre				
Northern Phalarope	2	1.4	16	0.1	Thick-billed Murre				
Unid. Phalarope	9	6.5	151	0.7	Unid. Murre	87	62.6	2856	13.2
Pomarine Jaeger	33	23.7	62	0.3	Unid. Guillemot				
Parasitic Jaeger	6	4.3	10	0.1	Black Guillemot				
Long-tailed jaeger	4	2.9	10	0.1	Pigeon Guillemot				
Unid. Jaeger	24	17.3	36	0.2	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	2	1.4	2	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	39	28.1	99	0.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	3	2.2	112	0.5
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	0.7	1	tr.
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	3	2.2	4	tr.
Thayer's Gull					Crested Auklet	6	4.3	26	0.1
California Gull					Least Auklet	3	2.2	13	0.1
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	30	21.6	153	0.7
Black-headed Gull					Horned Puffin	20	14.4	45	0.2
Bonaparte's Gull					Tufted Puffin	74	53.2	544	2.5
Heermann's Gull					Unid. Puffin	1	0.7	3	tr.
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	98	70.5	555	2.6	Snowy Owl				
Black-legged Kittiwake	6	4.3	10	0.1	Tree Swallow				
Red-legged Kittiwake	1	0.7	1	tr.	Black Swallow				
Ross' Gull					Unid. Swallow				

Table 111. Bird observations on shipboard transects, St. George Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose	1	0.6	4	tr.
Arctic Loon	4	2.5	4	tr.	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	5	3.2	6	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	104	65.8	5219	14.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	45	28.5	21002	60.2	Bufflehead				
Unid. Shearwater	70	44.3	13689	39.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	40	25.3	1410	4.4	Steller's Eider				
Leach's Storm Petrel	4	2.5	24	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	1	0.6	2	tr.	Spectacled Eider				
Brown Pelican					Unid. Eider	2	1.3	3	tr.
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	3	1.9	5	tr.	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 111. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	3	1.9	5	tr.	Sabine's Gull	3	1.9	7	tr.
Unid. Turnstone	1	0.6	3	tr.	Unid. Immature Gull				
Ruddy Turnstone	4	2.5	25	0.1	Unid. Gull	8	5.1	21	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	8	5.1	32	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	8	5.1	103	0.3	Common Murre				
Northern Phalarope	14	8.9	199	0.6	Thick-billed Murre				
Unid. Phalarope	15	9.5	95	0.3	Unid. Murre	102	64.6	2445	7.0
Pomarine Jaeger	22	13.9	49	0.1	Unid. Guillemot				
Parasitic Jaeger	5	3.2	5	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	21	13.3	45	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	4	2.5	4	tr.	Kittlitz's Murrelet				
Glaucous-winged Gull	76	48.1	239	0.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	11	7.0	31	0.1
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	4	2.5	46	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	5	3.2	15	tr.
Thayer's Gull					Crested Auklet	18	11.4	70	0.2
California Gull					Least Auklet	2	1.3	3	tr.
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	25	15.8	159	0.5
Black-headed Gull					Horned Puffin	19	12.0	55	0.2
Bonaparte's Gull					Tufted Puffin	94	59.5	1960	5.6
Heermann's Gull					Unid. Puffin	1	0.6	2	tr.
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	63	39.9	844	2.4	Snowy Owl				
Black-legged Kittiwake	65	41.1	670	1.9	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow	1	0.6	1	tr.

Table 111. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	0.6	4	tr.					
Unid. Bird									
OTHER									
Unid. Shorebird	6	3.8	99	0.3					
Totals/Average	158	100.0	48604	139.2					

Cruise numbers data are compiled from: 15, 18, 21, 22, 23

Table 112. Bird observations on shipboard transects, St. George Basin, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Fa ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	7	31.8	15	0.3	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	3	13.6	5	0.1	Mallard				
Red-throated Loon	3	13.6	4	0.1	Gadwall				
Unid. Loon	5	22.7	7	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	22	100.0	1010	20.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	13.6	3	0.1	Barrow's Goldeneye				
Short-tailed Shearwater	7	31.8	55	1.1	Bufflehead				
Unid. Shearwater	11	50.0	12161	248.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	7	31.8	22	0.5	Steller's Eider				
Leach's Storm Petrel					Common Eider	1	4.5	1	tr.
Ashy Storm Petrel					King Eider	2	9.1	3	0.1
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	4	18.1	8	0.2
Double-crested Cormorant					White-winged Scoter	2	9.1	6	0.1
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	5	22.7	9	0.2	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck	3	13.6	9	0.2
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 112. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	1	4.5	1	tr.	Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	4.5	1	tr.
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	2	9.4	2	tr.	Unid. Murre	18	81.8	103	2.1
Pomarine Jaeger	4	18.1	6	0.1	Unid. Guillemot				
Parasitic Jaeger	1	4.5	2	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	11	50.0	33	0.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	3	13.6	8	0.2
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	4.5	4	0.1
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	3	13.6	19	0.4
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	1	4.5	4	0.1
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	13	59.1	65	1.3
Black-headed Gull					Horned Puffin	4	18.1	5	0.1
Bonaparte's Gull					Tufted Puffin	17	77.3	54	1.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	21	95.5	135	2.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake	1	4.5	2	tr.	Black Swallow				
Boss' Gull					Unid. Swallow				

Table 112. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	22	100.0	13773	281.4					

Cruise numbers data are compiled from: 26, 28

Table 113. Bird observations on shipboard transects, St. George Basin, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	2.4	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	3	7.1	602	9.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	5	11.9	6	0.1	Oldsquaw	3	7.1	17	0.3
Scaled Petrel					Harlequin Duck	2	4.8	6	0.1
Fork-tailed Storm Petrel	1	2.4	1	tr.	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider	2	4.8	14	0.2
Unid. Storm Petrel					Spectacled Eider	1	2.4	26	0.4
Brown Pelican					Unid. Eider	6	14.3	38	0.6
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter	1	2.4	2	tr.
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 113. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	26	61.9	89	1.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	5	11.9	7	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	39	92.9	121	1.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	2.4	2	tr.
Thayer's Gull					Crested Auklet	6	14.3	126	2.0
California Gull					Least Auklet	1	2.4	7	0.1
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	6	14.3	152	2.4
Black-headed Gull					Horned Puffin	3	7.1	15	0.2
Bonaparte's Gull					Tufted Puffin	8	19.0	24	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	2	4.8	265	4.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 114. Bird observations on shipboard transects, Shelikof Strait, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	10	71.4	239	8.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	2	14.3	3	0.1	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	7.1	8	0.3
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	14.3	2	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 114. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	4	28.5	7	0.3
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	7.1	2	0.1
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	7.1	4	0.2	Common Murre				
Northern Phalarope	2	14.3	4	0.2	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	11	78.6	72	2.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	7.1	1	tr.
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	7.1	4	0.2
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	11	78.6	29	1.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	28.5	6	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	7.1	1	tr.	Unid. Small Alcid	1	7.1	10	0.4
Black-headed Gull					Horned Puffin	2	14.3	4	0.2
Bonaparte's Gull					Tufted Puffin	11	78.6	38	1.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	35.7	11	0.4	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 115. Bird observations on shipboard transects, Shelikof Strait, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	8	66.7	17	0.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	5	41.7	97	4.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	4	33.3	154	6.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	4	33.3	31	1.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	8.3	1	tr.	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 115. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	5	41.7	35	1.5
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	9	75.0	87	3.7
Pomarine Jaeger	2	16.7	2	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	2	16.7	4	0.2
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	8.3	1	tr.	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	2	16.7	4	0.2
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	16.7	42	1.8
Black-headed Gull					Horned Puffin	2	16.7	3	0.1
Bonaparte's Gull					Tufted Puffin	5	41.7	31	1.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	6	50.0	12	0.5	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 116. Bird observations on shipboard transects, Shelikof Strait, October 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	40.0	6	0.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	40.0	4	0.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 116. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	40.0	2	0.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	60.0	7	0.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	2	40.0	6	0.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	3	60.0	9	0.9	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 117. Bird observations on shipboard transects, Shelikof Strait, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	25.0	1	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	25.0	1	0.1
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 117. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	25.0	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	50.0	5	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.	1	25.0	3	0.4	Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	1	25.0	1	0.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 118. Bird observations on shipboard transects, Transitional North Pacific, September 1975.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	2	7.7	2	0.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel	11	42.3	19	0.5	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 118. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	2	7.7	13	0.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 119. Bird observations on shipboard transects, Umnak Basin, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	71.4	88	6.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	5	71.4	11	0.8	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	28.5	2	0.1	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 119. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	42.8	4	0.3
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	2	28.5	43	2.9	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	14.3	3	0.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	14.3	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.	1	14.3	1	0.1	Parakeet Auklet	1	14.3	6	0.4
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	28.5	12	0.8
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	4	57.1	9	0.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	42.8	7	0.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 120. Bird observations on shipboard transects, Umnak Basin, July 1975.

Species Name	Occur- ance	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ance	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	2	66.6	120	22.8	Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	66.6	4	0.8	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 120. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	66.6	61	11.6
Pomarine Jaeger	1	33.3	3	0.6	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	33.3	1	0.2
Unid. Jaeger	1	33.3	1	0.2	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	66.6	28	5.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	66.6	20	3.8
Black-headed Gull					Horned Puffin	1	33.3	1	0.2
Bonaparte's Gull					Tufted Puffin	3	100.0	150	28.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	66.6	2	0.4	Snowy Owl				
Black-legged Kittiwake	1	33.3	1	0.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 121. Bird observations on shipboard transects, Umnak Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	20.0	76	1.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	5.0	2	0.1	Barrow's Goldeneye				
Short-tailed Shearwater	1	5.0	11	0.3	Bufflehead				
Unid. Shearwater	4	20.0	615	14.5	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	5.0	5	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 121. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	5.0	18	0.4	Unid. Murre	6	30.0	132	3.1
Pomarine Jaeger	2	10.0	5	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	5.0	1	tr.
Unid. Jaeger	1	5.0	1	tr.	Unid. Large Alcid	1	5.0	1	tr.
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	30.0	16	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	4	20.0	32	0.8
Black-headed Gull					Horned Puffin	1	5.0	14	0.3
Bonaparte's Gull					Tufted Puffin	6	30.0	662	15.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	25.0	24	0.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 121. Continued.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	20	100.0	1616	38.1					

Cruise numbers data are compiled from: 15, 18

Table 122. Bird observations on shipboard transects, Umnak Basin, September 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	4.3	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	23	100.0	344	8.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	11	47.8	101	2.4	Oldsquaw				
Scaled Petrel	1	4.3	1	tr.	Harlequin Duck				
Fork-tailed Storm Petrel	11	47.8	85	2.0	Steller's Eider				
Leach's Storm Petrel	4	17.4	5	0.1	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 122. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	2	8.7	3	0.1	Sabine's Gull	2	8.7	3	0.1
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	10	43.5	56	1.3	Thick-billed Murre				
Unid. Phalarope	2	8.7	3	0.1	Unid. Murre				
Pomarine Jaeger	1	4.3	1	tr.	Unid. Guillemot				
Parasitic Jaeger	1	4.3	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid	1	4.3	1	tr.
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	26.1	17	0.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	4.3	3	0.1
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	4.3	4	0.1
Thayer's Gull					Crested Auklet	2	8.7	2	0.1
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	3	13.0	13	0.3
Black-headed Gull					Horned Puffin	2	8.7	20	0.5
Bonaparte's Gull					Tufted Puffin	21	91.3	51	1.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	4.3	16	0.4	Snowy Owl				
Black-legged Kittiwake	14	60.9	52	1.3	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 123. Bird observations on shipboard transects, Umnak Basin, November 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	100.0	1	0.7
Scaled Petrel					Harlequin Duck	1	100.0	5	3.3
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 123. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	100.0	8	5.3	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	1	100.0	15	10.0
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	100.0	7	4.7
Bonaparte's Gull					Tufted Puffin	1	100.0	7	4.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 123. Continued.

Species Name	Occur- ence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	X Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	1	100.0	43	28.7					

Cruise numbers data are compiled from: 33

Table 124. Bird observations on shipboard stations, Alaska Peninsula South, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	100.0	79	69.9	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 124. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	100.0	1	0.9
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	15	13.3	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	100.0	320	283.2
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet	1	100.0	2	1.8
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	100.0	1	0.9
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	10	8.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 124. Continued.

Species Name	Occur- ence	1 Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	2 Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	1	100.0	428	378.8					

Cruise numbers data are compiled from: 4

Table 125. Bird observations on shipboard stations, Alaska Peninsula South, July 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	25.0	8	1.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	50.0	1129	142.7	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	25.0	4	0.5	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	25.0	1	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	50.0	17	2.2	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 125. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	2	50.0	16	2.0
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	4	100.0	159	20.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	25.0	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	75.0	22	2.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	25.0	5	0.6
Black-headed Gull					Horned Puffin	3	75.0	4	0.5
Bonaparte's Gull					Tufted Puffin	4	100.0	49	6.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	75.0	23	2.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 125. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird	1	25.0	12	1.5					
Totals/Average	4	100.0	1450	183.3					

Cruise numbers data are compiled from: 11

381 501

Table 126. Bird observations on shipboard stations, Alaska Peninsula South, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	20.0	35	5.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	20.0	1	0.2	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 126. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern	1	20.0	3	0.4
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern	1	20.0	1	0.2
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	80.0	6	0.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	20.0	2	0.3
Bonaparte's Gull					Tufted Puffin	4	80.0	70	10.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	20.0	9	1.3	Snowy Owl				
Black-legged Kittiwake	4	80.0	15	2.2	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 126. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit	1	20.0	2	0.3					
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	5	100.0	280	41.2					

Cruise numbers data are compiled from: 16

384

504

Table 127. Bird observations on shipboard stations, Alaska Peninsula South, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	33.3	34	3.3	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	6	66.7	139	13.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	5	55.6	565	55.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	11.1	36	3.5	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 127. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	1	11.1	12	1.2	Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	11.1	1	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	22.2	29	2.9
Pomarine Jaeger	1	11.1	1	0.1	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	11.1	3	0.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	44.4	21	2.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	7	77.8	364	35.8	Snowy Owl				
Black-legged Kittiwake	1	11.1	50	4.9	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 127. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	11.1	1	0.1					
Unid. Bird									
OTHER									
Unid. Shorebird	1	11.1	1	0.1					
Totals/Average	9	100.0	1257	123.6					

Cruise numbers data are compiled from: 15, 20, 22

Table 128. Bird observations on shipboard stations, Alaska Peninsula South, October 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	71.4	35	4.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose	1	14.3	1	0.1	Black Oystercatcher				

Table 128. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	7	100.0	117	14.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	7	85.7	22	2.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 129. Bird observations on shipboard stations, Alaska Peninsula South, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	100.0	26	5.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	25.0	5	1.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 129. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	25.0	1	0.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	100.0	36	8.0	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	50.0	2	0.4	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 130. Bird observations on shipboard stations, Bristol Bay Basin, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	20.0	4	0.7	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 130. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	20.0	1	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	5	100.0	1386	245.3
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	60.0	22	3.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	20.0	9	1.6
Bonaparte's Gull					Tufted Puffin	1	20.0	4	0.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	100.0	130	23.0	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 130. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird	1	20.0	9	1.6					
Totals/Average	5	100.0	1565	281.5					

Cruise numbers data are compiled from: 11

396

976

Table 131. Bird observations on shipboard stations, Bristol Bay Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	16.7	1	0.2	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	4	66.7	14	2.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	1	16.7	34	5.0	Bufflehead				
Unid. Shearwater	4	66.7	108	15.9	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	16.7	122	11.9	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 131. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	16.7	1	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	16.7	2	0.3
Pomarine Jaeger	1	16.7	1	0.2	Unid. Guillemot				
Parasitic Jaeger	1	16.7	1	0.2	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	16.7	4	0.6	Kittlitz's Murrelet				
Glaucous-winged Gull	4	66.7	180	26.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet	2	33.3	4	0.6
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	16.7	10	1.5
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	50.0	298	44.0	Snowy Owl				
Black-legged Kittiwake	3	50.0	19	2.8	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 132. Bird observations on shipboard stations, Bristol Bay Basin, October 1975.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	1	5.0	1	tr.	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	1	5.0	1	tr.	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	12	60.0	126	5.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	14	70.0	236	10.4	Oldsquaw				
Scaled Petrel					Harlequin Duck	1	5.0	1	tr.
Fork-tailed Storm Petrel	1	5.0	2	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider	1	5.0	1	tr.
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	4	20.0	7	0.3
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	3	15.0	13	0.6	Black Scoter	1	5.0	7	0.3
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

400
520

Table 132. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	1	5.0	1	tr.
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	5.0	6	0.3	Thick-billed Murre				
Unid. Phalarope	2	10.0	2	0.1	Unid. Murre	10	50.0	19	0.8
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	5.0	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	5.0	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	5	25.0	43	1.9	Kittlitz's Murrelet				
Glaucous-winged Gull	20	100.0	538	23.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	5.0	12	0.5	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	10	50.0	58	2.6
Black-headed Gull					Horned Puffin	1	5.0	1	tr.
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	18	90.0	434	19.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 132. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	20	100.0	1511	66.9					

Cruise numbers data are compiled from: 26

402

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Table 133. Bird observations on shipboard stations, Eastern Central Bering Sea, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	11	38.5	63	2.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	17	65.4	458	17.7	Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	3	11.5	11	0.4	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 133. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone	1	3.8	2	0.1	Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	3.8	2	0.1
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	3	11.5	5	0.2	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	16	61.5	116	4.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	8	30.8	34	1.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	7.7	2	0.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet	1	3.8	1	tr.
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	7.7	3	0.2
Black-headed Gull					Horned Puffin	4	15.4	3	0.2
Bonaparte's Gull					Tufted Puffin	7	26.9	5	0.2
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	21	80.8	161	6.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 134. Bird observations on shipboard stations, Eastern Central Bering Sea, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	50.0	1	0.4	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 134. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	50.0	1	0.4	Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	100.0	24	10.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 134. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Unid. Shorebird	1	50.0	1	0.4					
Totals/Average	2	100.0	27	11.9					

Cruise numbers data are compiled from: 15

408
528

Table 135. Bird observations on shipboard stations, Eastern Central Bering Sea, October 1975.

Species Name	Occurrence	Σ Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	Σ Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 135. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	100.0	1	0.9	Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	21	18.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 136. Bird observations on shipboard stations, Eastern Central Bering Sea, November 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	33.3	3	0.9
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 136. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	2	66.7	3	0.9	Kittlitz's Murrelet				
Glaucous-winged Gull	2	66.7	5	1.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull	2	66.7	5	1.5	Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 137. Bird observations on shipboard stations, Hope Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 137. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	100.0	90	321.4	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	2	7.1	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 138. Bird observations on shipboard stations, Kodiak Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	100.0	14	12.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	100.0	3	2.7	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 138. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	100.0	5	4.4	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	100.0	55	48.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	9	8.0	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	100.0	25	22.1
Black-headed Gull					Horned Puffin	1	100.0	2	1.9
Bonaparte's Gull					Tufted Puffin	1	100.0	10	8.9
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	13	11.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 139. Bird observations on shipboard stations, Kodiak Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	12	100.0	133	9.8	Redhead				
Laysan Albatross	4	33.3	14	1.0	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	12	100.0	328	24.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 139. Continued.

Species Name	Occur- ence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	8.3	139	10.2
Pomarine Jaeger	1	8.3	1	tr.	Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	16.7	2	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	8.3	1	tr.	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	10	83.3	129	9.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 140. Bird observations on shipboard stations, Kodiak Basin, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	100.0	23	10.2	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 140. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	100.0	188	83.19	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	50.0	1	0.4	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	100.0	14	6.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 141. Bird observations on shipboard stations, Kodiak Basin, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	100.0	10	8.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	100.0	2	1.8	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 141. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	2	1.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 142. Bird observations on shipboard stations, Navarin Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	100.0	1099	972.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	100.0	149	131.9	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 142. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	2	1.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	224	198.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 143. Bird observations on shipboard stations, Northeast Gulf of Alaska, February 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	13	27.1	395	7.3	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	2.1	5	tr.	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 143. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	14	29.2	73	1.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	2.1	1	tr.
Glaucous Gull	3	6.3	5	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	30	62.5	2100	38.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	6	12.5	13	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	14	29.2	87	1.6	Unid. Small Alcid	2	4.2	6	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	2.1	1	tr.
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	34	70.8	408	7.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 144. Bird observations on shipboard stations, Northeast Gulf of Alaska, April 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
COMMON LOON					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	1	14.3	1	0.2	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	14.3	3	0.6	White-winged Scoter	2	28.6	6	1.2
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	14.3	16	3.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	14.3	1	0.2	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 144. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	42.9	32	6.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	14.3	1	0.2
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	85.7	45	8.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	6	85.7	82	16.1	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull	1	14.3	1	0.2	Tufted Puffin	2	28.6	3	0.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	71.4	70	13.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 144. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	7	100.0	261	51.3					

Cruise numbers data are compiled from: 4

Table 145. Bird observations on shipboard stations, Northeast Gulf of Alaska, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	50.0	2	0.9
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	50.0	2	0.9
Brandt's Cormorant					Surf Scoter	1	50.0	2	0.9
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	50.0	3	1.3	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 145. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	100.0	5	2.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	50.0	14	6.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	50.0	6	2.7	Unid. Small Alcid	1	50.0	7	3.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	100.0	11	4.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 146. Bird observations on shipboard stations, Northeast Gulf of Alaska, June 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon	4	13.3	7	0.2	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	11	36.7	36	1.1	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	22	73.3	167	4.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater	11	36.7	195	5.8	Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	12	40.0	26	0.8	Steller's Eider				
Leach's Storm Petrel	5	16.7	7	0.2	Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	3	10.0	7	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	2	6.7	3	0.1	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 146. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull	5	16.7	83	2.5
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	10.0	34	1.0
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	11	36.7	53	1.6
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	20.0	14	0.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger	1	3.3	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	3.3	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	13.3	20	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	18	60.0	63	1.9	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	5	16.7	12	0.4
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	9	30.0	15	0.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	28	93.3	381	11.2	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 147. Bird observations on shipboard stations, Northeast Gulf of Alaska, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	1	2.2	1	tr.	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon	1	2.2	1	tr.	Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	26	57.8	551	10.8	Redhead				
Laysan Albatross	1	2.2	1	tr.	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	30	66.7	2890	56.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	13	28.9	454	8.9	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	4	8.9	7	0.1	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	5	11.1	30	0.6	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	2	4.4	4	0.1	Black Scoter				
Red-faced Cormorant	1	2.2	4	0.1	Unid. Scoter	1	2.2	5	0.1
Unid. Cormorant					Unid. Duck	1	2.2	20	0.4
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 147. Continued.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	10	22.2	66	1.3
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	2.2	1	tr.	Thick-billed Murre				
Unid. Phalarope	1	2.2	4	0.1	Unid. Murre				
Pomarine Jaeger	1	2.2	1	tr.	Unid. Guillemot				
Parasitic Jaeger	4	8.9	4	0.1	Black Guillemot				
Long-tailed jaeger	1	2.2	1	tr.	Pigeon Guillemot				
Unid. Jaeger	1	2.2	1	tr.	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	18	40.0	56	1.1	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	29	64.4	295	5.8	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	2.2	3	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	12	26.7	29	0.6
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	37	82.2	3584	70.3	Snowy Owl				
Black-legged Kittiwake	4	8.9	93	1.8	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 148. Bird observations on shipboard stations, Northeast Gulf of Alaska, October 1975.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	22.2	1	0.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	3	33.3	8	0.8	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	11.1	2	0.2
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	11.1	3	0.3	Unid. Duck	1	11.1	3	0.3
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 148. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull	4	44.4	7	0.7
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	7	77.8	25	2.5	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull	8	88.9	18	1.8	Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	44.4	20	2.0	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 149. Bird observations on shipboard stations, Northeast Gulf of Alaska, November 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	11	57.9	346	16.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	2	10.5	2	0.1	Barrow's Goldeneye				
Short-tailed Shearwater	1	5.3	1	0.1	Bufflehead				
Unid. Shearwater	6	31.6	46	2.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	10.5	2	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 149. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	5	26.3	92	4.4
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	7	36.8	25	1.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	5.3	1	0.1	Kittlitz's Murrelet				
Glaucous-winged Gull	17	89.5	126	5.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	11	57.9	44	2.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 150. Bird observations on shipboard stations, Northwest Gulf of Alaska, February 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	12.5	1	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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Table 150. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	8	100.0	556	61.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	12.5	1	0.1	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	3	37.5	6	0.7	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	5	62.5	69	7.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

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Table 151. Bird observations on shipboard stations, Northwest Gulf of Alaska, April 1975.

Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	X Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	8.3	4	1.2
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter	1	8.3	1	0.3
Brandt's Cormorant					Surf Scoter	1	8.3	1	0.3
Pelagic Cormorant	2	16.7	50	14.7	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle	2	16.7	2	0.6
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 151. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	6	50.0	18	5.3
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	2	16.7	8	2.4
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet	1	8.3	4	1.2
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	12	100.0	296	87.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	7	58.3	40	11.8	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 152. Bird observations on shipboard stations, Northwest Gulf of Alaska, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	1	50.0	1	0.4	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	50.0	2	0.9	White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	50.0	1	0.4	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	100.0	11	1.8	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 152. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	50.0	15	6.6
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Alentian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	50.0	275	99.6	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	50.0	5	2.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	50.0	2	0.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	50.0	20	8.9	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	50.0	15	6.6
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	50.0	20	8.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 153. Bird observations on shipboard stations, Northwest Gulf of Alaska, June 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	3	75.0	18	4.0	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater	3	75.0	116	25.7	Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	50.0	11	2.4	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

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463

Table 153. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	25.0	2	0.4
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	25.0	12	2.6	Kittlitz's Murrelet				
Glaucous-winged Gull					Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	25.0	2	0.4	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin	1	25.0	1	0.2
Bonaparte's Gull					Tufted Puffin	2	50.0	5	1.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	75.0	17	3.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 154. Bird observations on shipboard stations, Northwest Gulf of Alaska, August 1975.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	25.0	2	0.4	Black Scoter				
Red-faced Cormorant	2	50.0	8	1.8	Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 154. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	25.0	4	0.9	Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	50.0	2	0.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	100.0	10	2.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	25.0	1	0.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	50.0	7	1.6
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	25.0	23	5.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	100.0	44	9.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

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467

Table 155. Bird observations on shipboard stations, Northwest Gulf of Alaska, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	4	25.0	86	4.8	Redhead				
Laysan Albatross	1	6.3	1	0.1	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	11	68.8	779	43.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	6	37.5	98	5.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	2	12.5	14	0.8	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant	2	12.5	5	0.3	Unid. Scoter				
Unid. Cormorant	1	6.3	35	1.9	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 155. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	5	31.3	30	1.7
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	2	12.5	5	0.3	Thick-billed Murre				
Unid. Phalarope	1	6.3	13	0.7	Unid. Murre	1	6.3	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	6.3	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	6	37.5	11	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	8	50.0	40	2.2	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	6.3	3	0.2	Unid. Small Alcid	1	6.3	2	0.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	6.3	1	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	14	87.5	1375	76.0	Snowy Owl				
Black-legged Kittiwake	1	6.3	10	0.6	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Rosa' Gull					Unid. Swallow				

Table 155. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine	1	6.3	6	0.3					
Unid. Bird	1	6.3	3	0.2					
OTHER									
Unid. Shorebird	1	6.3	1	0.1					
Totals/Average	16	100.0	2516	139.1					

Cruise numbers data are compiled from: 16, 20

Table 156. Bird observations on shipboard stations, Northwest Gulf of Alaska, October 1975.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	30.0	5	0.4	Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	6	60.0	50	4.4	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	2	20.0	7	0.6	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	10.0	2	0.2	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant	1	10.0	1	0.1	White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	10.0	1	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 156. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	4	40.0	63	5.6
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern	1	10.0	2	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	10.0	1	0.1
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	3	30.0	7	0.6	Kittlitz's Murrelet				
Glaucous-winged Gull	6	60.0	123	10.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	40.0	26	2.3	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	1	10.0	3	0.3	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	7	70.0	41	2.6	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 156. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	10	100.0	332	29.4					

594
474

Cruise numbers data are compiled from: 25, 28, 30

Table 157. Bird observations on shipboard stations, Northwest Gulf of Alaska, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	50.0	11	4.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

595
475

Table 157. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	50.0	57	25.2
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	2	100.0	19	8.4	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	50.0	3	1.3	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	2	100.0	41	18.1	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 158. Bird observations on shipboard stations, Northwest Gulf of Alaska, December 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	2	66.7	16	4.7	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

598
878

Table 158. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	33.3	10	3.0
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	33.3	1	0.3
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	3	100.0	16	4.7	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake					Snowy Owl				
Black-legged Kittiwake	3	100.0	10	3.0	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 158. Continued.

Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/Km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
Totals/Average	3	100.0	53	15.6					

Cruise numbers data are compiled from: 34

480

009

Table 159. Bird observations on shipboard stations, Oceanic Alaska Peninsula, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross	3	100.0	30	8.9	Redhead				
Laysan Albatross	3	100.0	4	1.2	Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	3	100.0	222	65.5	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	33.3	1	0.3	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 159. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	33.3	2	0.6	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	33.3	1	0.3
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	3	100.0	94	27.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 160. Bird observations on shipboard stations, Prince William Sound, October 1975.

Species Name	Occur- ence	I Occurrence	No. Birds	Birds/Km ²	Species Name	Occur- ence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	8.3	2	0.2	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel	2	16.7	2	0.2	Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter	3	25.0	14	1.1
Unid. Cormorant	4	33.3	11	0.9	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 160. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	10	83.3	245	18.9
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	25.0	5	0.4
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	4	33.3	12	0.9	Kittlitz's Murrelet				
Glaucous-winged Gull	1	8.3	3	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	4	33.3	9	0.7	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull	5	41.7	8	0.6	Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	10	83.3	35	2.7	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 161. Bird observations on shipboard stations, St. George Basin, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	33.3	4	1.2	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyr Falcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 161. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	33.3	8	2.4
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	66.7	17	5.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	33.3	1	0.3	Kittlitz's Murrelet				
Glaucous-winged Gull	3	100.0	6	1.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	3	100.0	95	28.0
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	66.7	9	2.7	Snowy Owl				
Black-legged Kittiwake	1	33.3	20	5.9	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 161. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird	1	33.3	11	3.2					
.									
Totals/Average	3	100.0	171	50.4					

Cruise numbers data are compiled from: 11

489
609

Table 162. Bird observations on shipboard stations, St. George Basin, August 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	13	86.6	202	12.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	12	80.0	476	29.8	Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	6.7	2	0.1	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 162. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	3	20.0	3	0.2
Black Turnstone	1	6.7	3	0.2	Common Tern				
Whimbrel					Arctic Tern	1	6.7	3	0.2
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	11	73.3	601	37.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	6.7	1	0.1	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	6.7	1	0.1	Kittlitz's Murrelet	1	6.7	2	0.1
Glaucous-winged Gull	3	20.0	3	0.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet	1	6.7	2	0.1
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet	1	6.7	2	0.1
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	1	6.7	7	0.4
Black-headed Gull					Horned Puffin	1	6.7	7	0.4
Bonaparte's Gull					Tufted Puffin	4	26.7	12	0.8
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	12	80.0	125	7.8	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 163. Bird observations on shipboard stations, St. George Basin, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	26	96.3	2674	87.6	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	5	18.5	325	10.7	Bufflehead				
Unid. Shearwater	11	40.7	989	32.4	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	7	25.9	38	1.3	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 163. Continued.

Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occur- ence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover	1	3.7	16	0.5	Sabine's Gull	2	7.4	2	0.1
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone	1	3.7	2	0.1	Unid. Gull	1	3.7	30	1.0
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope	1	3.7	29	1.0	Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope	1	3.7	12	0.4	Unid. Murre	2	7.4	9	0.3
Pomarine Jaeger	1	3.7	2	0.1	Unid. Guillemot				
Parasitic Jaeger	1	3.7	1	tr.	Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	4	14.8	13	0.4	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	20	74.1	311	10.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	13	48.1	53	1.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	10	37.0	408	13.4	Snowy Owl				
Black-legged Kittiwake	17	62.9	1907	62.5	Tree Swallow				
Red-legged Kittiwake	2	7.4	5	0.2	Black Swallow				
Ross' Gull					Unid. Swallow				

Table 163. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Unid. Shorebird	2	7.4	2	0.1					
Totals/Average	27	100.0	6828	223.8					

Cruise numbers data are compiled from: 15, 18, 22, 23.

Table 164. Bird observations on shipboard stations, St. George Basin, October 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon	1	14.3	3	0.4	Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon	1	14.3	4	0.5	Gadwall				
Unid. Loon	1	14.3	1	0.1	Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	5	71.4	56	7.1	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater	1	14.3	18	2.3	Bufflehead				
Unid. Shearwater	3	42.9	76	9.6	Oldsquaw				
Scaled Petrel					Harlequin Duck	1	14.3	1	0.1
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider	1	14.3	4	0.5
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider	1	14.3	1	0.1
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	2	28.6	3	0.4	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	28.6	21	2.7	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 164. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	14.3	2	0.3	Thick-billed Murre				
Unid. Phalarope	1	14.3	1	0.1	Unid. Murre	4	57.1	12	1.5
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	4	57.1	15	1.9	Kittlitz's Murrelet				
Glaucous-winged Gull	7	100.0	157	19.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	14.3	1	0.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	7	100.0	157	19.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 165. Bird observations on shipboard stations, St. George Basin, November 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	7	87.5	4464	493.8	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw	1	12.5	1	0.1
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 165. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	4	50.0	11	1.6
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	4	50.0	12	1.3	Kittlitz's Murrelet				
Glaucous-winged Gull	8	100.0	592	65.5	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	8	100.0	283	31.3	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 165. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Raven									
Water Pipit									
Bohemian Waxwing									
Orange-crowned Warbler									
Townsend's Warbler									
Wilson's Warbler									
Pine Siskin									
Savannah Sparrow									
White-crowned Sparrow									
Lapland Longspur									
Unid. Passerine									
Unid. Bird									
OTHER									
Red-necked Grebe	1	12.5	2	0.2					
Totals/Average	8	100.0	5368	593.8					

501
621

Cruise numbers data are compiled from: 33

Table 166. Bird observations on shipboard stations, Shelikof Strait, May 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	100.0	1	0.9	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 166. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope	1	100.0	2	1.8	Thick-billed Murre				
Unid. Phalarope					Unid. Murre				
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	1	0.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull	1	100.0	3	2.7	Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin				
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	4	3.5	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 167. Bird observations on shipboard stations, Shelikof Strait, September 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar	1	100.0	1	0.9	Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater	1	100.0	51	45.1	Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel	1	100.0	63	55.8	Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant					Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 167. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	1	100.0	3	2.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger	1	100.0	1	0.9	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	1	100.0	7	6.2	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid				
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	1	100.0	20	17.7
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	1	100.0	1	0.9	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 168. Bird observations on shipboard stations, Umnak Basin, July 1975.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant					Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	2	66.7	8	2.4	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

Table 168. Continued.

Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull	1	33.3	5	1.5
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	2	66.7	10	3.0
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot				
Long-tailed jaeger					Pigeon Guillemot	1	33.3	5	1.5
Unid. Jaeger	1	33.3	1	0.3	Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull	1	33.3	31	9.1	Kittlitz's Murrelet				
Glaucous-winged Gull	3	100.0	135	39.8	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	66.7	10	3.0
Black-headed Gull					Horned Puffin	2	66.7	10	3.0
Bonaparte's Gull					Tufted Puffin	3	100.0	14	4.1
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	2	66.7	8	2.4	Snowy Owl				
Black-legged Kittiwake	1	33.3	10	3.0	Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

Table 169. Bird observations on shipboard stations, Umnak Basin, August 1975.

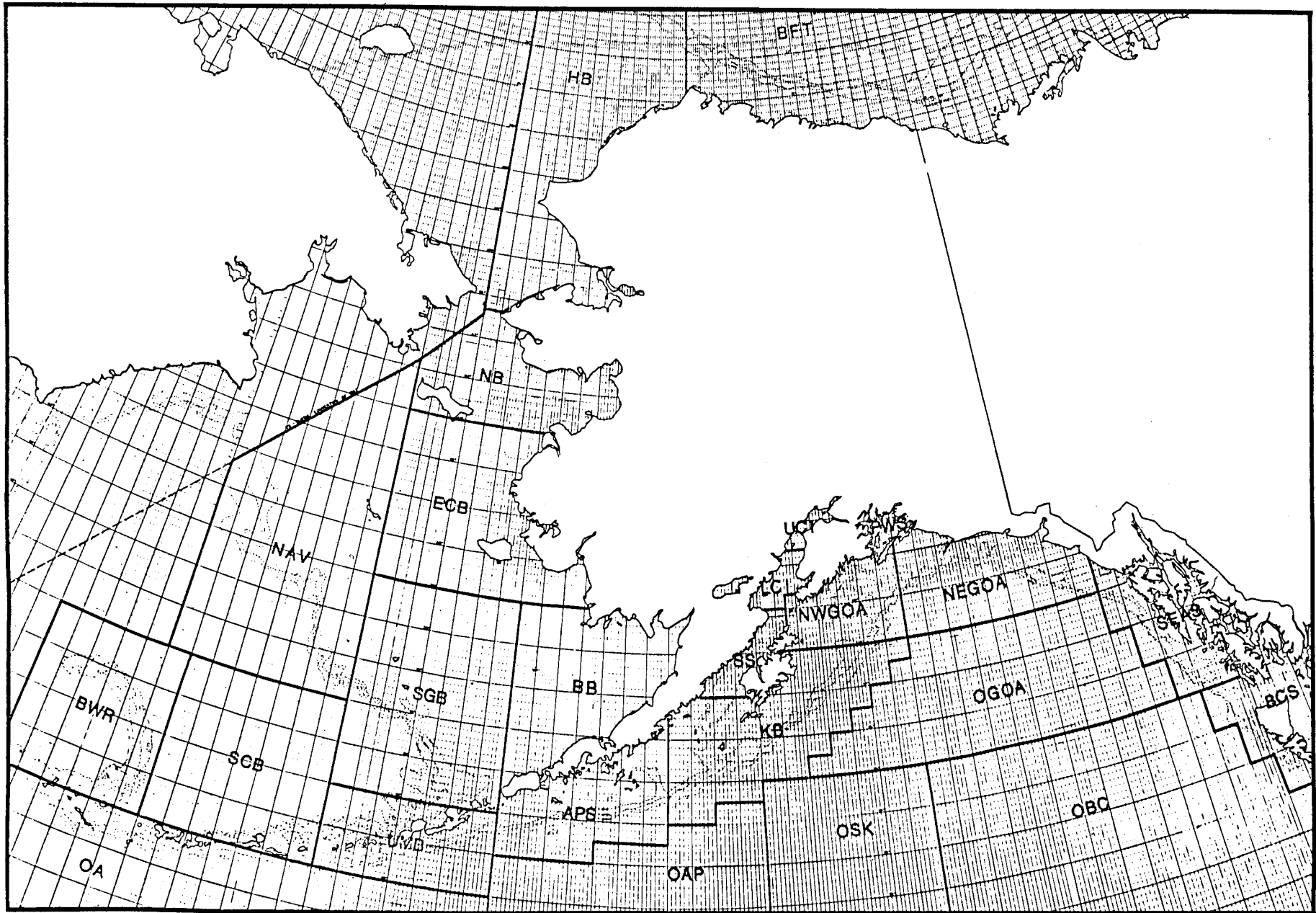
Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²	Species Name	Occurrence	I Occurrence	No. Birds	Birds/km ²
Common Loon					Snow Goose				
Yellow-billed Loon					Unid. Goose				
Arctic Loon					Mallard				
Red-throated Loon					Gadwall				
Unid. Loon					Pintail				
Red-Necked Grebe					Green-winged Teal				
Horned Grebe					American Widgeon				
Western Grebe					Shoveler				
Black-footed Albatross					Redhead				
Laysan Albatross					Canvasback				
Unid. Albatross					Greater Scaup				
Fulmar					Lesser Scaup				
Pink-footed Shearwater					Unid. Scaup				
New Zealand Shearwater					Common Goldeneye				
Sooty Shearwater					Barrow's Goldeneye				
Short-tailed Shearwater					Bufflehead				
Unid. Shearwater					Oldsquaw				
Scaled Petrel					Harlequin Duck				
Fork-tailed Storm Petrel					Steller's Eider				
Leach's Storm Petrel					Common Eider				
Ashy Storm Petrel					King Eider				
Unid. Storm Petrel					Spectacled Eider				
Brown Pelican					Unid. Eider				
Double-crested Cormorant					White-winged Scoter				
Brandt's Cormorant					Surf Scoter				
Pelagic Cormorant	1	25.0	4	0.9	Black Scoter				
Red-faced Cormorant					Unid. Scoter				
Unid. Cormorant	1	25.0	15	3.4	Unid. Duck				
Whistling Swan					Red-breasted Merganser				
Canada Goose					Bald Eagle				
Black Brant					Gyrfalcon				
Emperor Goose					Peregrine Falcon				
White-fronted Goose					Black Oystercatcher				

511
631

Table 169. Continued.

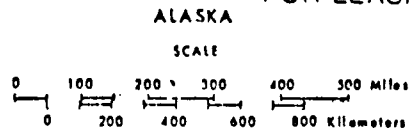
Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²	Species Name	Occurrence	% Occurrence	No. Birds	Birds/Km ²
American Golden Plover					Sabine's Gull				
Unid. Turnstone					Unid. Immature Gull				
Ruddy Turnstone					Unid. Gull				
Black Turnstone					Common Tern				
Whimbrel					Arctic Tern				
Sharp-tailed Sandpiper					Aleutian Tern				
Unid. Sandpiper					Unid. Tern				
Red Phalarope					Common Murre				
Northern Phalarope					Thick-billed Murre				
Unid. Phalarope					Unid. Murre	3	75.0	12	2.7
Pomarine Jaeger					Unid. Guillemot				
Parasitic Jaeger					Black Guillemot	2	50.0	3	0.7
Long-tailed jaeger					Pigeon Guillemot				
Unid. Jaeger					Unid. Large Alcid				
Skua					Marbled Murrelet				
Glaucous Gull					Kittlitz's Murrelet				
Glaucous-winged Gull	4	100.0	423	95.9	Xantus' Murrelet				
Slaty-backed Gull					Ancient Murrelet				
Western Gull					Unid. Murrelet				
Herring Gull					Cassin's Auklet				
Herring/Glaucous-wg. Hyb.					Parakeet Auklet				
Thayer's Gull					Crested Auklet				
California Gull					Least Auklet				
Ring-billed Gull					Rhinoceros Auklet				
Mew Gull					Unid. Small Alcid	2	50.0	5	1.1
Black-headed Gull					Horned Puffin				
Bonaparte's Gull					Tufted Puffin	2	50.0	46	10.4
Heermann's Gull					Unid. Puffin				
Ivory Gull					Short-eared Owl				
Unid. Kittiwake	4	100.0	68	15.4	Snowy Owl				
Black-legged Kittiwake					Tree Swallow				
Red-legged Kittiwake					Black Swallow				
Ross' Gull					Unid. Swallow				

634
512

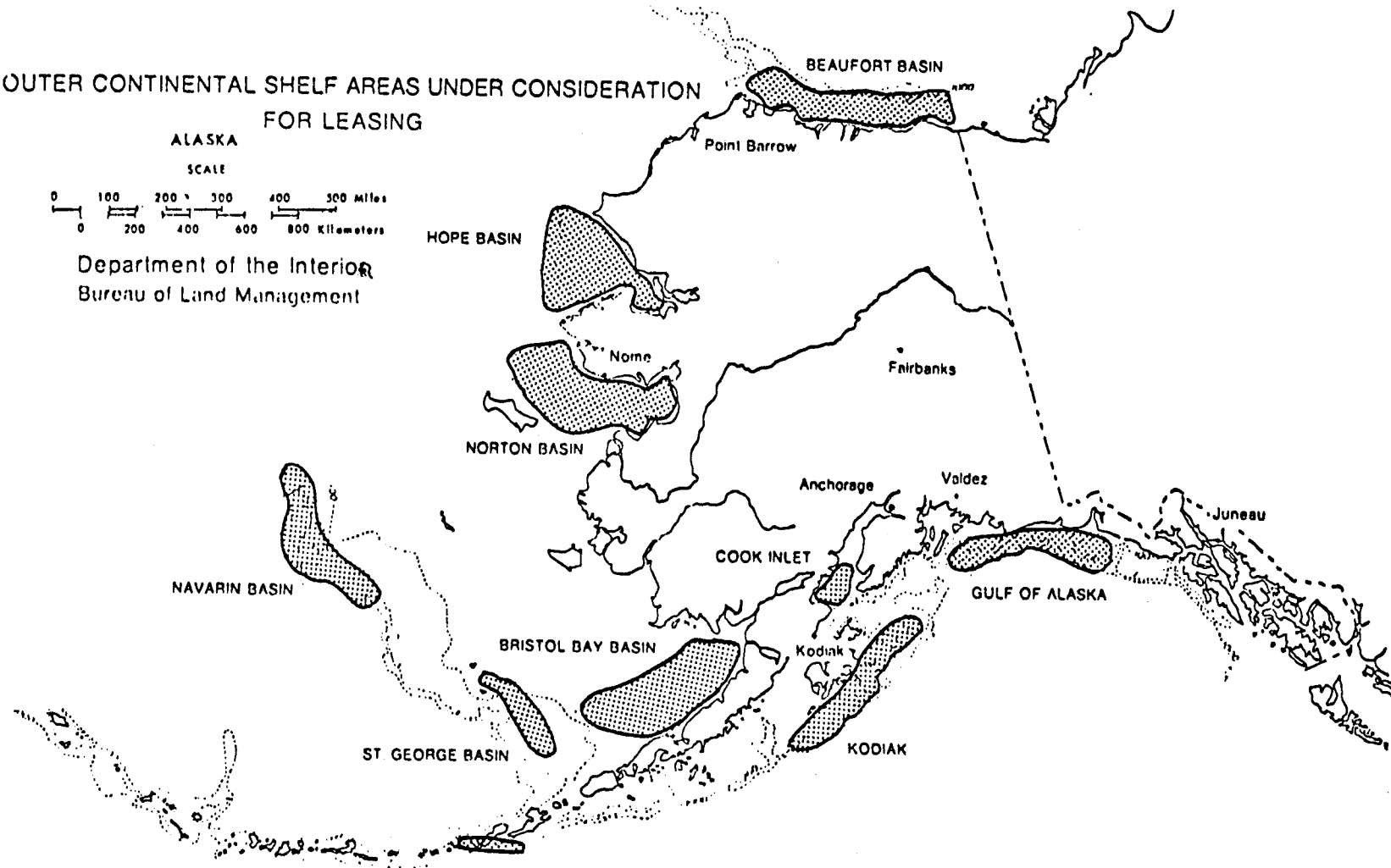


Map 1. Oceanographic regions for which bird survey data are summarized.

OUTER CONTINENTAL SHELF AREAS UNDER CONSIDERATION
FOR LEASING



Department of the Interior
Bureau of Land Management

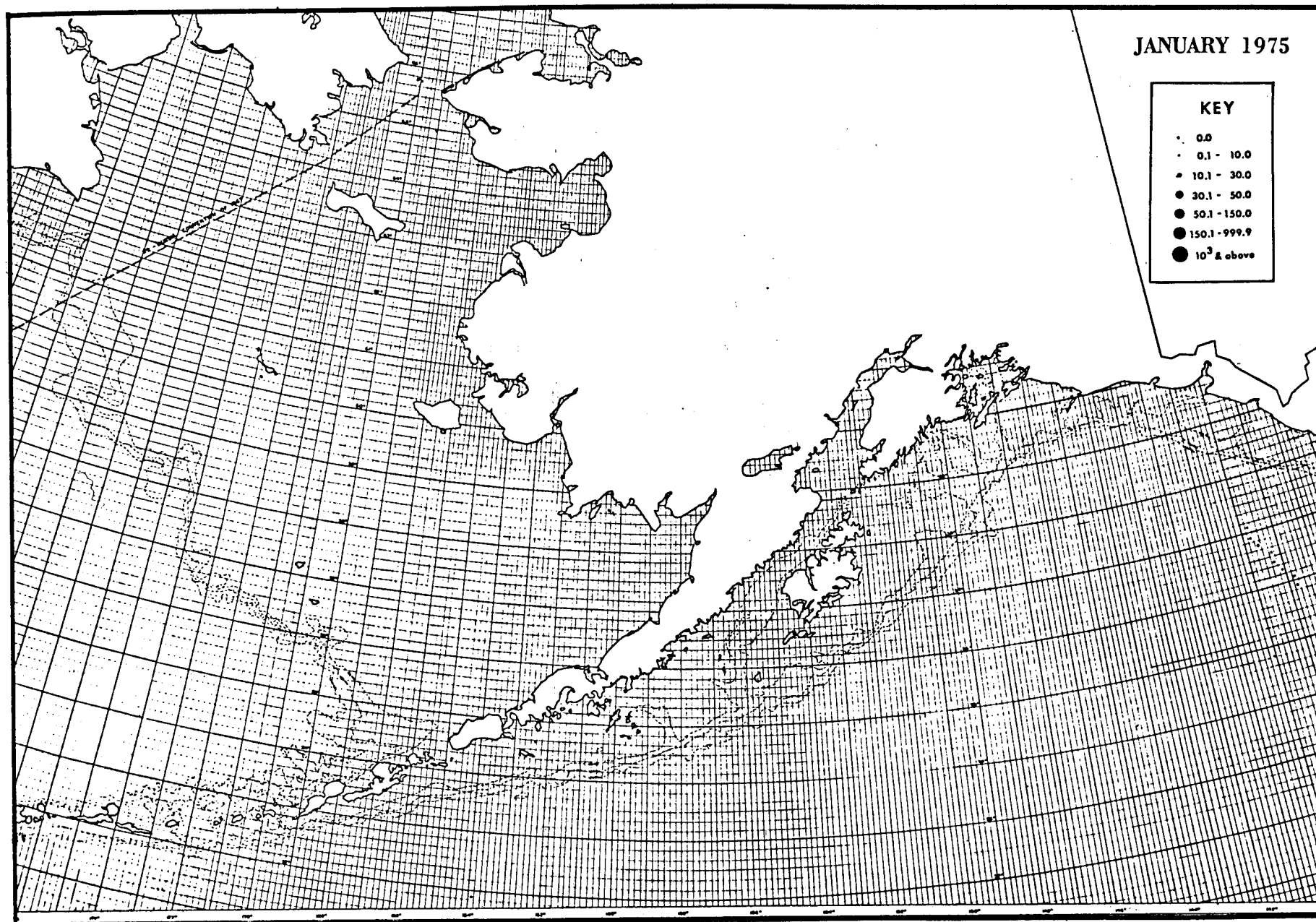


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635

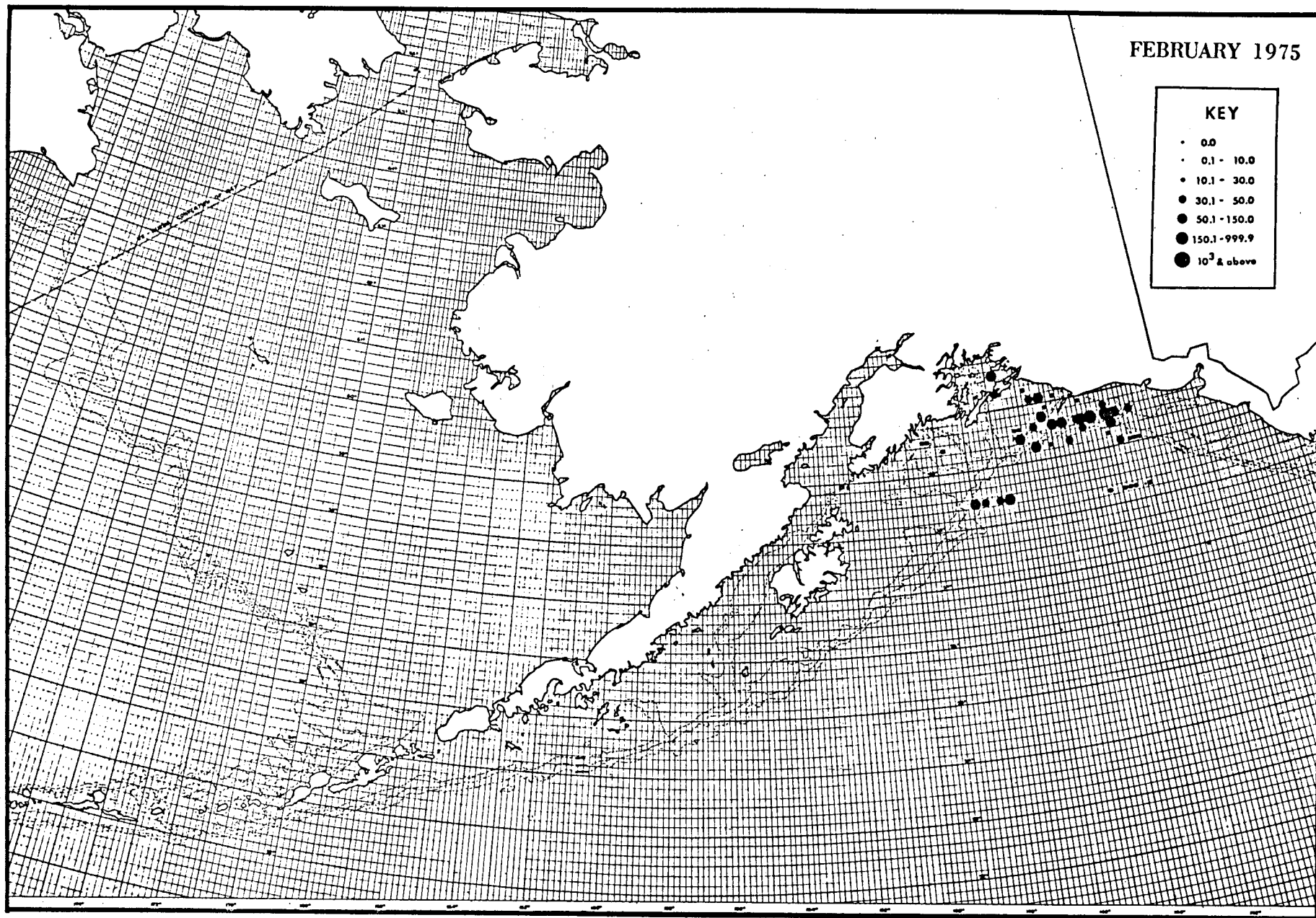
Map 2. Outer continental shelf areas under consideration for leasing (from U.S.D.I. News Release, BLM, November 14, 1974, "BLM announces new tentative OCS lease sale schedule through 1978").

636
514



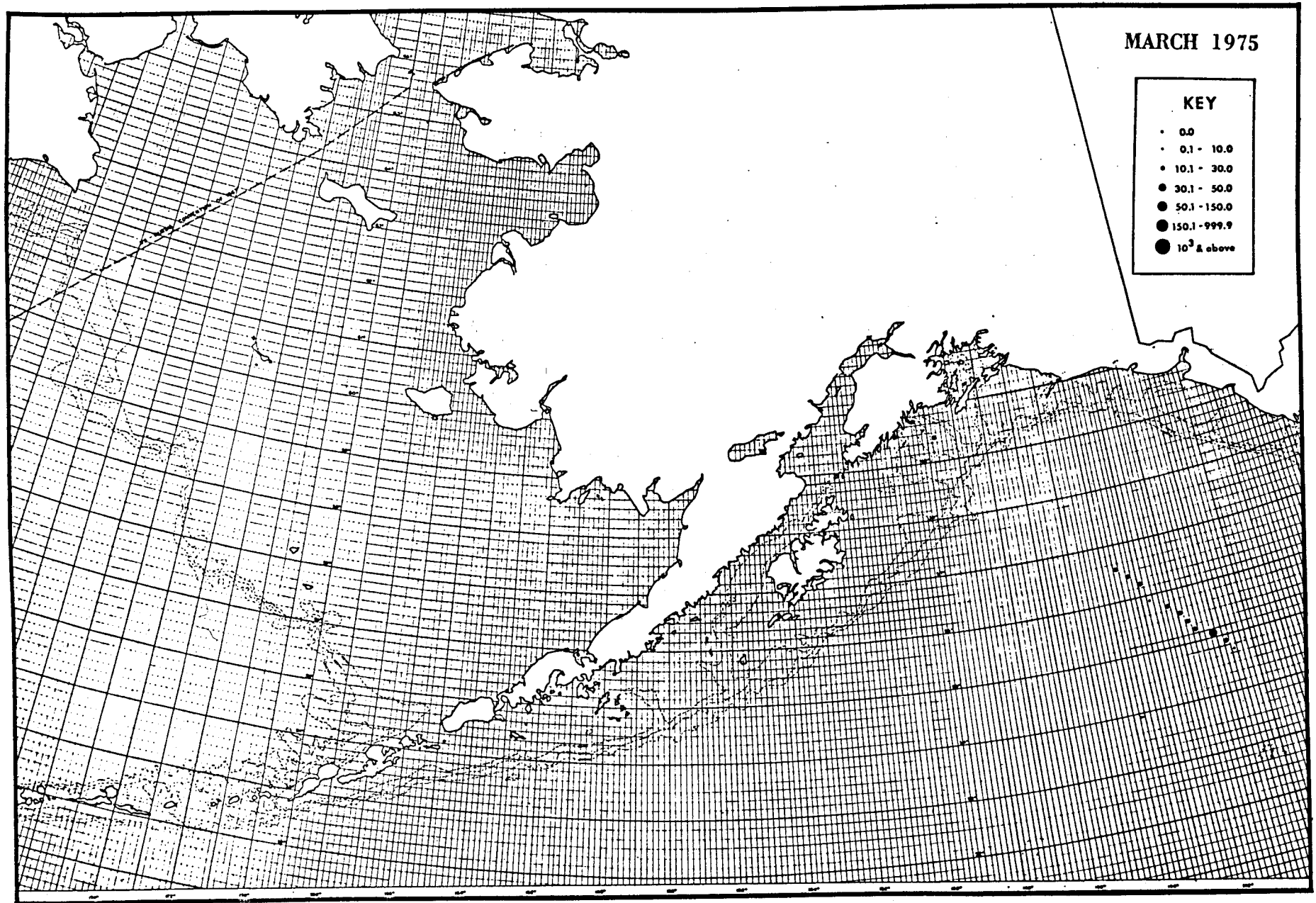
Map 3. Shipboard transects showing density of birds per Km², January 1975.

637
515



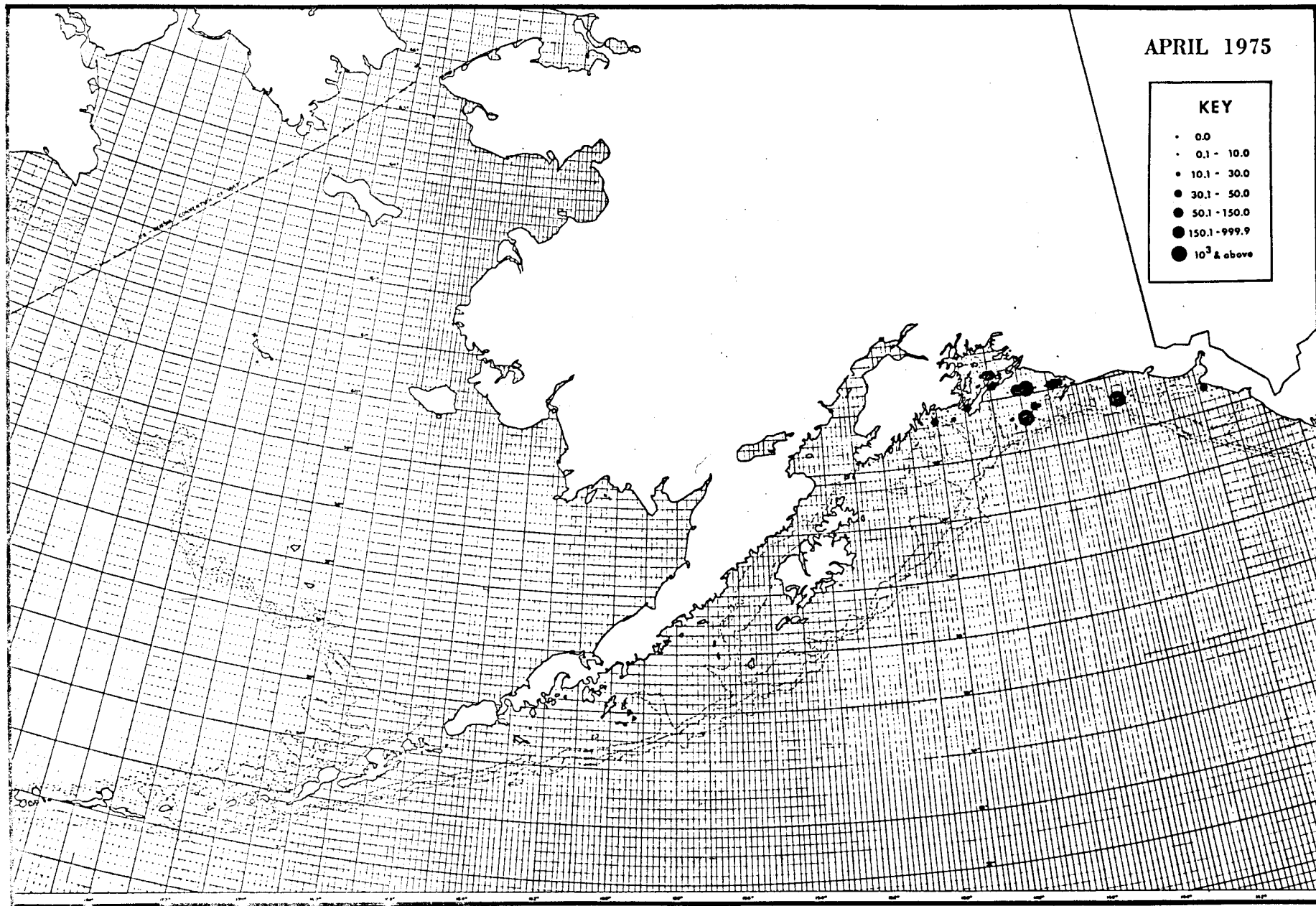
Map 4. Shipboard transects showing density of birds per Km², February 1975.

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516



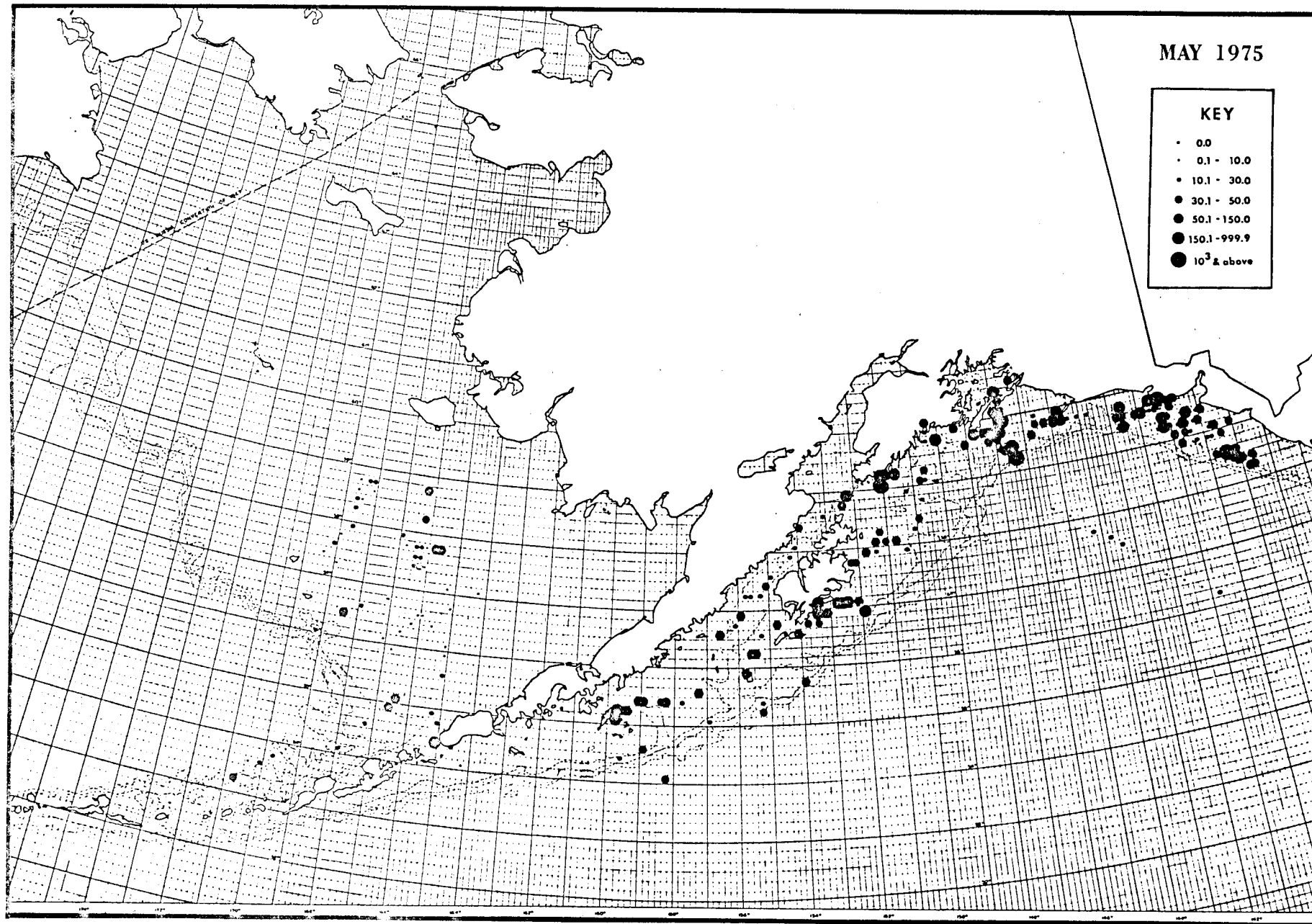
Map 5. Shipboard transects showing density of birds per Km², March 1975.

639
517

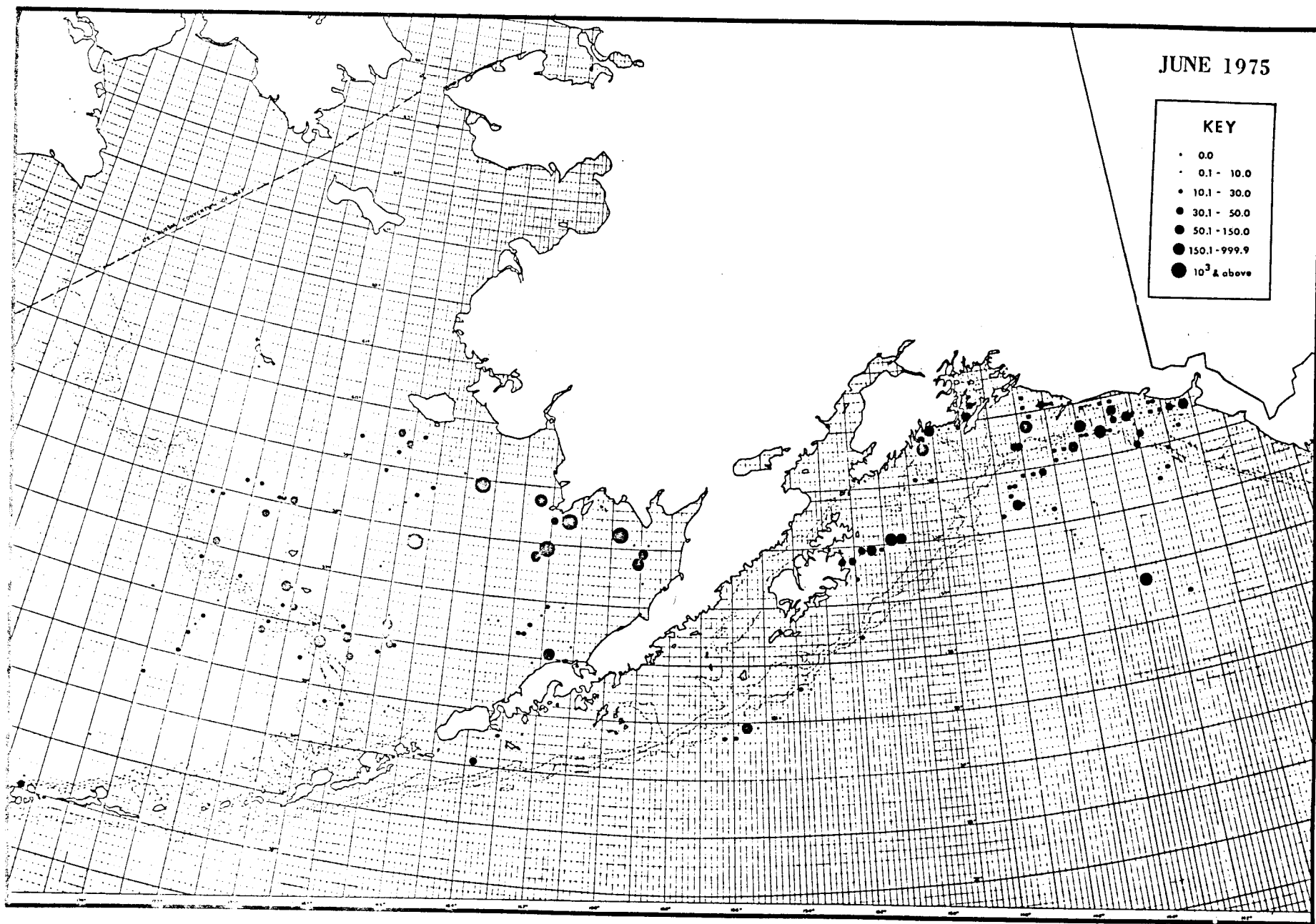


Map 6. Shipboard transects showing density of birds per Km², April 1975.

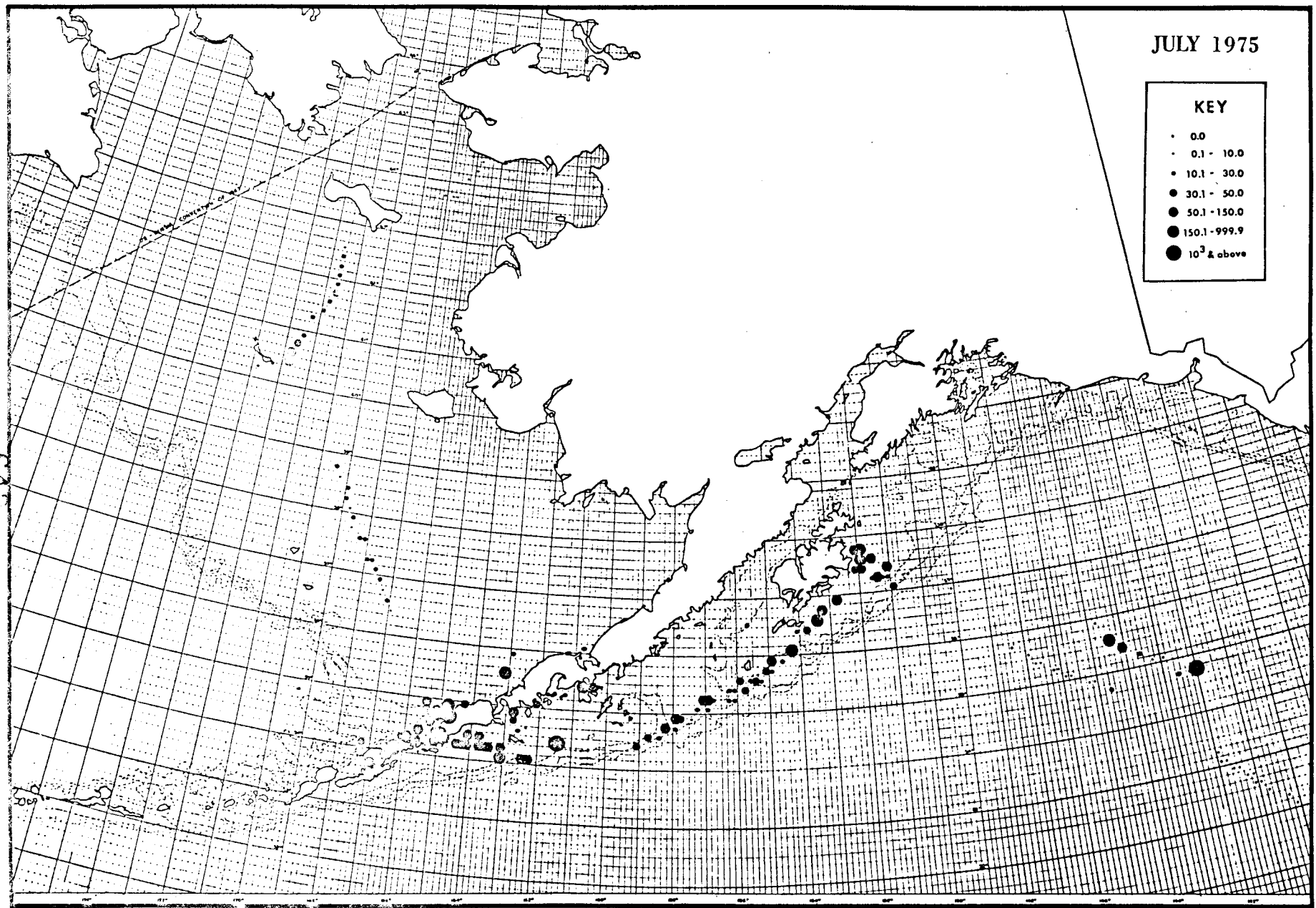
640
518



Map 7. Shipboard transects showing density of birds per Km², May 1975.

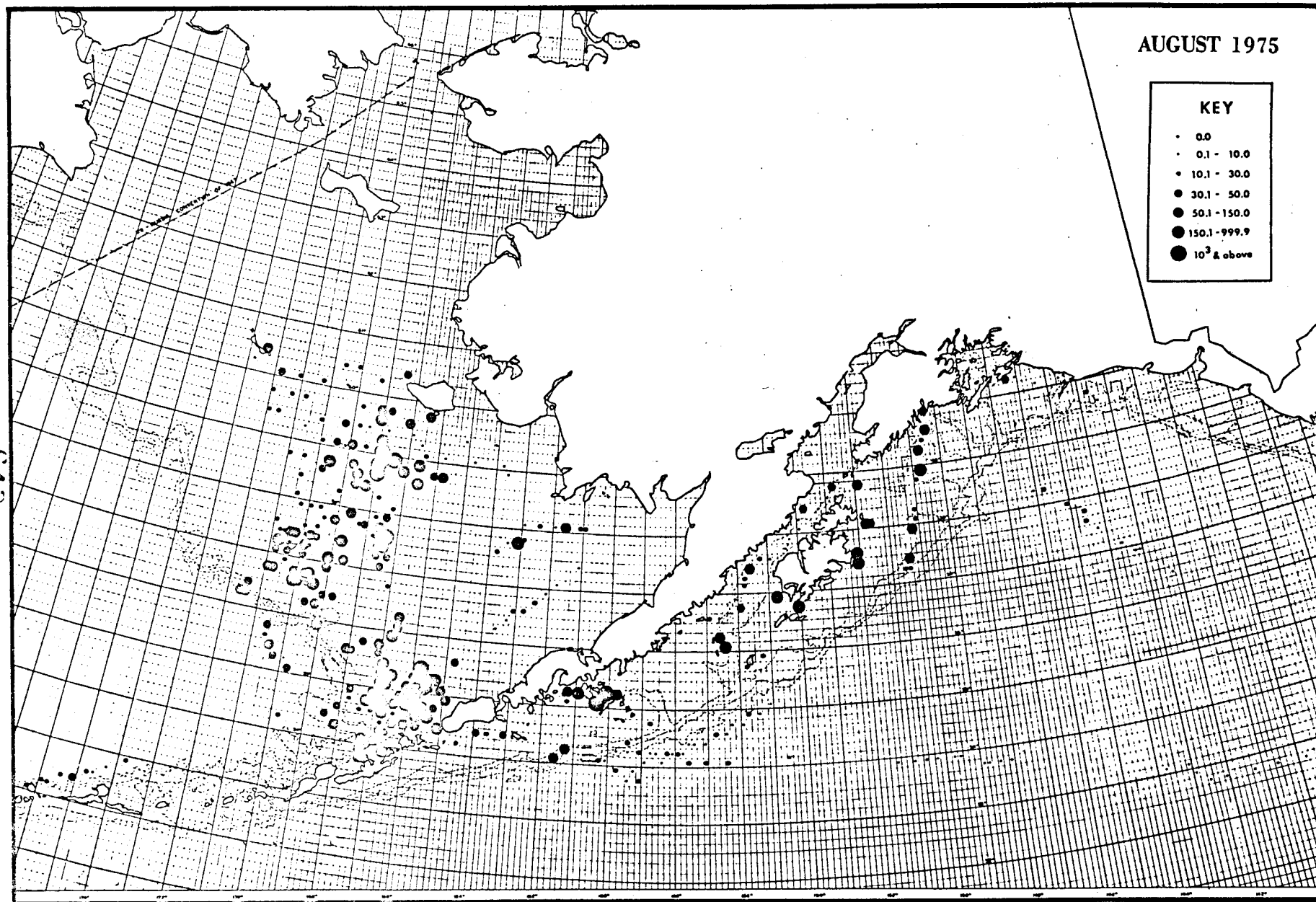


Map 8. Shipboard transects showing density of birds per Km², June 1975.



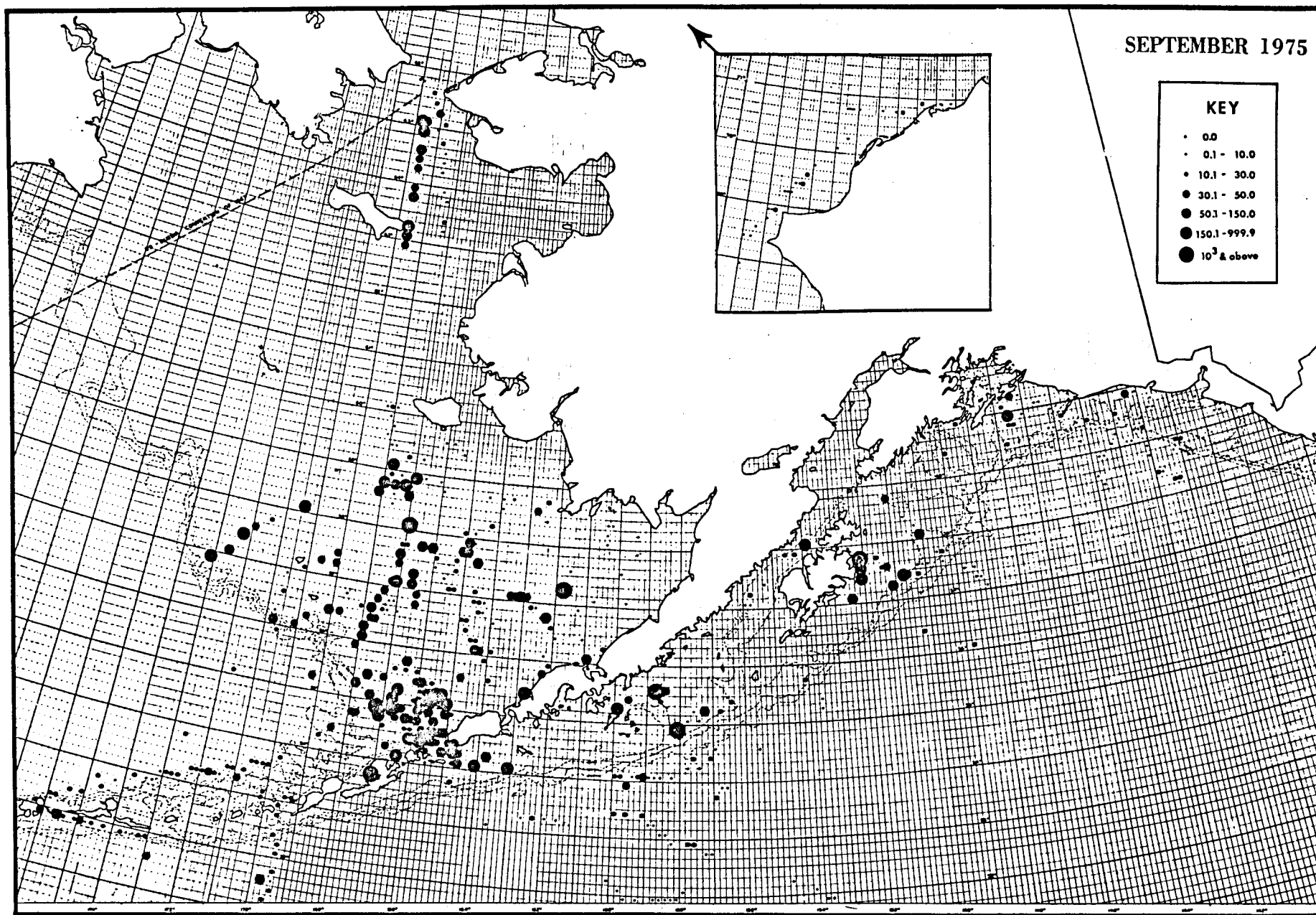
Map 9. Shipboard transects showing density of birds per Km², July 1975.

643
521



Map 10. Shipboard transects showing density of birds per Km², August 1975.

644
522



Map 11. Shipboard transects showing density of birds per Km², September 1975.

