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RESULTS OF A BIRD AND MAMMAL
SURVEY IN THE WEST-CENTRAL ALEUTIANS
SUMMER 1982

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Special thanks are due the crew of the "Sea Spray" for their efforts in assisting us with our circumnavigation.

I. INTRODUCTION

This was the fifth and final season of an effort to census and map all wildlife populations within the Aleutian Islands Unit of the Alaska Maritime National Wildlife Refuge. The original plan was to complete the census in 5 consecutive seasons from 1977 to 1981. Four of the past survey efforts (1977-1980) were completed as scheduled, but a survey was not accomplished in 1981 due to budget limitations and lack of a vessel. As in the past, this year's survey was coupled with, and bracketed by, work on the endangered Aleutian Canada goose in the western Aleutians. Circumnavigation transects were conducted from 30 June through 5 July (Table 1). A total of 277 km of coastline was surveyed on the islands of Little Sitkin, Rat and Tanaga in 1982 (Fig. 1).

TABLE 1. CIRCUMNAVIGATION ITINERARY FOR 1982.

<u>Date</u>	<u>Location & Activity</u>	<u>Personnel</u>
30 June	Arrive at & circumnavigate Little Sitkin Island.	Ambroz, Bradley, Deines, Dragoo, Early, Forsell
1 July	Arrive at & circumnavigate Rat Island.	Ambroz, Deines, Dragoo, Early, Forsell, Klett
2-5 July	Arrive at & circumnavigate Tanaga Island.	Ambroz, Bradley, Deines, Dragoo, Early, Forsell, Klett, Ostwald

Only the results of the 1982 survey are included in this report. Refer to the individual reports from 1977 through 1980 for data from previous years. A separate report is being written on surveys conducted of Atka, Amelia, Seguam, and the Islands of the Four Mountains by Ed Baily.

II. SPECIAL THANKS

Due to budget constraints this fiscal year, the refuge utilized volunteer biologists, in lieu of biological technicians, to assist with the circumnavigation effort. Chris Ambroz, Dana Bradley, Don Dragoo and Mark Ostwald all performed their duties in an outstanding manner. All volunteers did an exceptional job under sometimes difficult field conditions. It was only through their diligent efforts that the surveys were accomplished in a timely manner. Special thanks should also be extended to the crew of the charter vessel "Sea Spray". Their cooperation and professional attitude helped make it a safe and successful field season.

III. METHODS AND MATERIALS

Refer to the 1979 report "Results of Bird and Mammal Surveys of the Western Aleutians", which is available in the AIU files, for the methods used in calculating population estimates.

Vessel support was provided by the chartered 94 foot (28.7m) steel hulled commercial crab vessel "Sea Spray". The vessel is equipped with winches which were used to lower Zodiac inflatable boats over the side for circumnavigation work. There was also adequate deck and storage space for all equipment, and sufficient berthing for all personnel.

175°

180°

175°

-5-

170°

BERING

SEA

+

+

+

+

Buldir I.

Kiska Island

RAT ISLANDS

Little Sitkin I.
Rat I.
Amchitka Island

Semisopachnoi I.

Amchitka Pass

Gareloi I.

Amatignak I.
Ulak Island
DELAROF ISLANDS

Tanaga I.

Great Sitkin I.

Kanaga I.
Adak I.
Tanaga I.

Atka Island

AMILIA ISLANDS

Sequani
Amukta Pass

Chagulak I.
Yuna
Amukta I.

PACIFIC

OCEAN

N



20 40 60 80 100 200

SCALE IN MILES

Fig. 1. WEST-CENTRAL ALEUTIAN ISLANDS CIRCUMNAVIGATED IN 1982.

The people in the inflatables were equipped with binoculars (usually 7x35, 8x40, or 10x40), tally whackers, waterproof paper, pencils, maps and appropriate safety and protective gear. The coastline of each island was divided into transects. These transects were then surveyed individually and the resulting data were recorded seperately (Appendix I).

IV. ISLAND DESCRIPTIONS

Little Sitkin Island is approximately round in shape. It is about 11 km long and 9km wide, with an area of 6,357ha and a perimeter of some 34.9km. There is one prominent 1188m peak on the north-east side of the island. This member of the Rat Island group is edged almost entirely by cliffs and has numerous offshore rocks and islets. Because of the cliffs, access to the island's interior is difficult.

Rat Island is another member of the Rat Island group. This long narrow island is approximately 15km by 3km in size and comprises 2,778ha. The rocky coastline is 31.6km long and has many cliffs and precipitous headlands (Sekora, 1973). The nearshore waters are extremely kelpy and foul, making it difficult to approach the island closely. There are also numerous offshore rocks and islets. Rat Island is dominated by a 344m high peak located near the center of the island.

Tanaga Island, a member of the Andreanof Island group, is one of the largest islands in the refuge, totalling some 51,822ha. Its irregular coastline is 210km long and is indented with many bays and inlets. The northern section of Tanaga is fairly mountainous and is dominated by a volcanic cone which rises to 1806m. The coast of Cape Sajaka is precipitous, with rocky cliffs and steep slopes having many waterfalls. There are a few beaches on Tanaga but most of the coastline is rocky and foul, with areas of extremely dense kelp beds. There are many offshore rocks and islets, some of these (i.e. Whip, Tidgituk) are fairly large in size.

V. MIGRATORY BIRDS

A total of 28 species of migratory birds were observed during the summer circumnavigation/survey work conducted in 1982. Population estimates were attempted for most of the species encountered. No estimates were made for any of the waterfowl species observed. In the past, coastal and inland counts of these species were coupled with notes on habitat characteristics to generate population estimates (Day et al., 1979). Since no inland transects or habitat evaluations were conducted this year, any attempt to estimate waterfowl population levels would not be reliable. In cases where only one member of a species was recorded estimates were not made.

Each island surveyed will be discussed seperately due to the intrinsic differences between habitats and avifaunal populations found on each. Table 2 summarizes the estimated populations of migratory birds for each island.

Table 2. POPULATION ESTIMATES OF MIGRATORY BIRDS ON INDIVIDUAL ISLANDS, 1982.
(Numbers in parenthesis are percentages.)

<u>Species</u>	<u>Little Sitkin</u>	<u>Rat</u>	<u>Tanaga</u>	<u>Species Total</u>	<u>Total Composition</u>
Cormorant spp.	111 (4.9)	157 (10.0)	555 (13.5)	823	10.36
Pelagic cormorant	54 (2.4)	6 (0.4)	128 (3.1)	188	2.37
Red-faced cormorant	46 (2.0)	7 (0.5)	18 (0.4)	71	0.89
Murre spp.	--	--	20 (0.5)	20	0.25
Common murre	222 (9.8)	--	--	222	2.80
Thick-billed murre	24 (1.0)	--	--	24	0.30
Pigeon guillemot	218 (9.6)	56 (3.6)	200 (4.9)	474	5.97
Horned puffin	660 (29.0)	56 (3.6)	640 (15.5)	1356	17.07
Tufted puffin	400 (17.5)	210 (13.6)	1176 (28.6)	1786	22.50
Ancient murrelet	115 (5.1)	125 (8.1)	118 (2.9)	358	4.51
Parakeet auklet	4 (0.2)	2 (0.1)	25 (0.6)	31	0.39
Crested auklet	--	4 (0.3)	125 (3.0)	129	1.62
Whiskered auklet	106 (4.7)	--	1 (-)	107	1.35
Kittlitz's murrelet	--	--	20 (0.5)	20	0.25
Auklet spp.	--	--	7 (0.2)	7	---
Glaucous-winged gull	299 (13.1)	900 (58.3)	940 (22.8)	2139	26.93
Tern spp.	--	--	13 (0.3)	13	0.16
Bald eagle	11 (0.5)	14 (1.0)	37 (0.9)	62	0.78
Peregrine falcon	6 (0.2)	6 (0.4)	3 (-)	15	0.19
Common raven	--	--	33 (0.8)	33	0.42
Black oystercatcher	--	2 (0.1)	58 (1.4)	60	0.76
Shorebird spp.	--	--	4 (0.1)	4	---
Total	2,276 (100)	1,545 (100)	4,121 (100)	7,942	99.96

Little Sitkin Island (Table 3, Fig. 2)

Little Sitkin was the first island circumnavigated in 1982. Its 34.9km coastline was surveyed on 30 June. The weather was good enough to allow two teams of three people each to complete the survey in one day. Although kelp was heavy in some areas, the observers were usually able to remain within about 100 to 200m of shore. Observation conditions were generally good with fairly light winds and small seas.

Little Sitkin Island does not have an abundance of seabirds. Due to the presence of Arctic foxes on the island, nesting is usually restricted to inaccessible beaches or offshore islets. As in the 1972 nesting survey (Sekora 1973), no large colonies of seabirds were found on Little Sitkin.

Both red-faced and pelagic cormorants were encountered during the survey. Concentrations varied and few nests were found. No murre colonies were located although both common and thick-billed murre were counted. Several other species of alcids were also seen. Horned puffins were the most numerous, while the largest single concentration of alcids consisted of a raft of 106 whiskered auklets in transect A-B. The most numerous species seen was the glaucous-winged gull. Four species of waterfowl were seen in low numbers. Three bald eagle aeries and two peregrine falcon aeries were located. Unfortunately, not all of the aeries were mapped.

Rat Island (Table 4, Fig. 3)

Rat Island was circumnavigated on 1 July. As with Little Sitkin, two crews, of three people each, required only one day to survey the 31.6km of coastline. The perimeter of Rat Island is extremely foul and has many areas of dense kelp. It was difficult to get close to shore in many areas. More close-in observations were possible on the north side than on the south side of the island. The thickness of the kelp beds on the south side made it necessary to survey some areas from outside the kelp line. Weather conditions ranged from good on the south coast to occasionally poor on the north shore. Wind driven sea spray and intermittent rain showers were also encountered. Due to these sometimes adverse conditions, some individuals and/or species may have been missed.

The presence of Arctic foxes and the island's namesake on Rat Island has reduced the number of nesting sites for seabirds. No nesting colonies were observed on the island proper, colonies being restricted to offshore islets. Once again, this concurs with data reported by Sekora (1973).

Both red-faced and pelagic cormorants were seen during circumnavigation. The observers were unable to distinguish between these two species for the majority of sightings. The most numerous alcid seen was the ancient murrelet. No murre were observed. Glaucous-winged gulls were represented by more individuals than any other species. Three species of waterfowl were encountered, with the harlequin duck being the most numerous. Four bald eagle aeries and two peregrine falcon aeries were located.

Table 3. POPULATION COUNTS & ESTIMATES OF MIGRATORY BIRDS FOR LITTLE SITKIN ISLAND, 1982.

<u>Species</u>	<u>Count</u>	<u>Estimate</u>
Cormorant spp.	110i 2n	107i (nb) 2pr
Pelagic cormorant	53i 1n	52i (nb) 1pr
Red-faced cormorant	36i 15n	16i (nb) 15pr
Common murre	111i	111pr
Thick-billed murre	12i	12pr
Pigeon guillemot	99i	109pr
Horned puffin	132i	330pr
Tufted puffin	80i 6n	200pr --
Ancient murrelet	115i	115i
Parakeet auklet	4i	4i
Whiskered auklet	106i	106i
Glaucous-winged gull (ad.) (imm.)	283i 15i	142pr 15i (nb)
Common eider (♀)	3i	--
Harlequin duck	3i	--
Aleutian green-winged teal (♂)	1i	--
Red-breasted merganser (♂)	1i	--
Bald eagle (ad.) (imm.) (total) (aeries)	4i 2i 6i 3a	-- -- 11i N/A
Peregrine falcon (total) (aeries)	4i 2a	6i N/A

i = individual
 pr = breeding pair
 a = aerie
 n = nest
 nb = non-breeders
 N/A = Non applicable

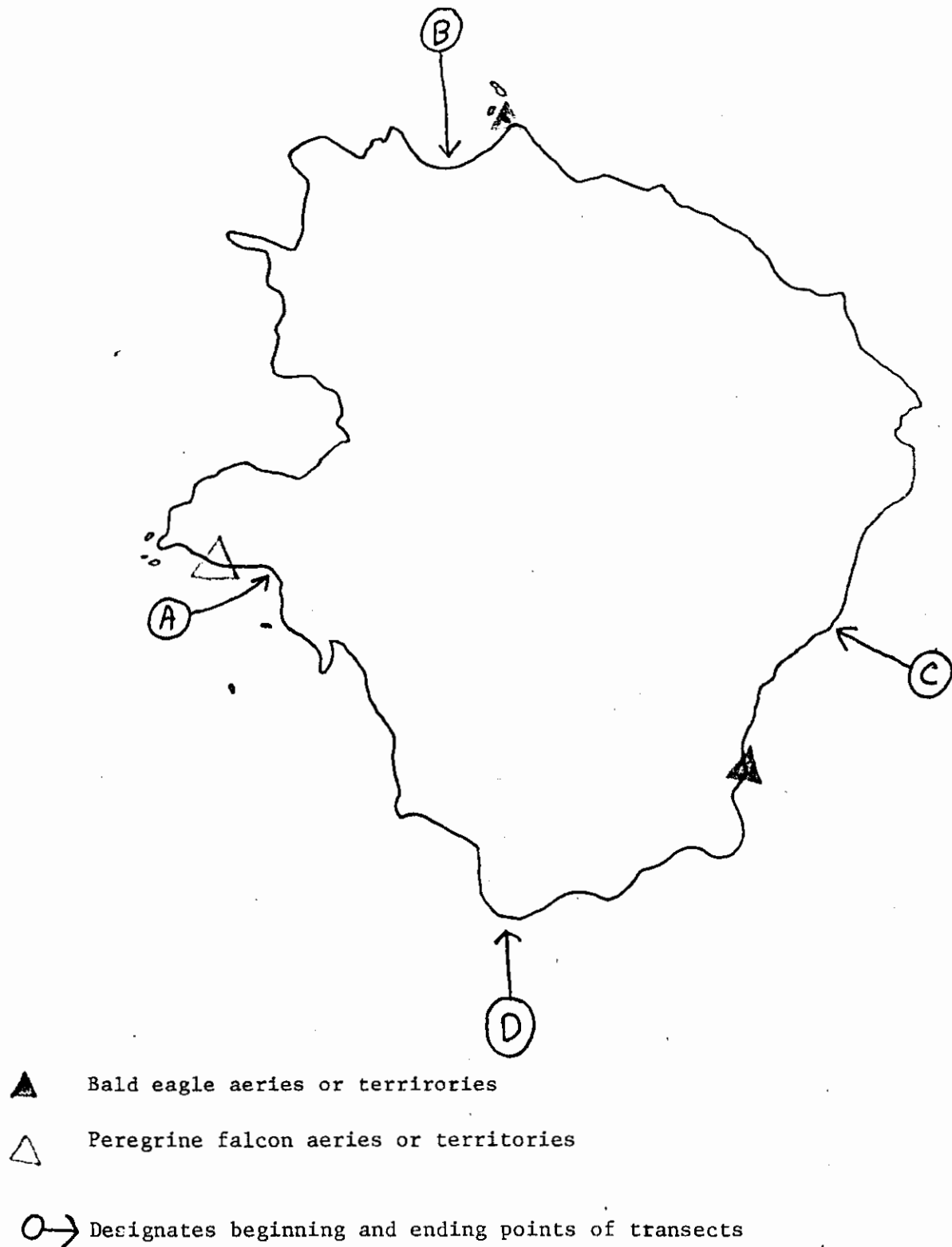


Figure 2. WILDLIFE CONCENTRATIONS FOR LITTLE SITKIN IS., 1982.

Table 4. POPULATION COUNTS & ESTIMATES OF MIGRATORY BIRDS FOR RAT ISLAND, 1982.

<u>Species</u>	<u>Count</u>	<u>Estimate</u>
Cormorant spp.	157i	157i
Pelagic cormorant	6i	6i
Red-faced cormorant	7i	7i
Pigeon guillemot	25i	28pr
Horned puffin	11i	28pr
Tufted puffin	42i	105pr
Ancient murrelet	125i	125i
Parakeet auklet	2i	2i
Crested auklet	4i	4i
Least auklet	1i	---
Glaucous-winged gull (ad.)	384i	192pr
(imm.)	516i	516i
Common eider (♂)	38i	---
(♀)	12i	---
Harlequin duck	52i	---
Aleutian green-winged teal	2i	---
Bald eagle (ad.)	16i	---
(imm.)	2i	---
(total)	18i	14i
(aeries)	4a	N/A
Peregrine falcon (total)	4i	6i
(aeries)	2a	N/A
Black oystercatcher	1i	1pr
Parasitic jaeger	1i	---
Whimbrel	1i	---

i = individual
pr = breeding pair
a = aerie
N/A = Non applicable

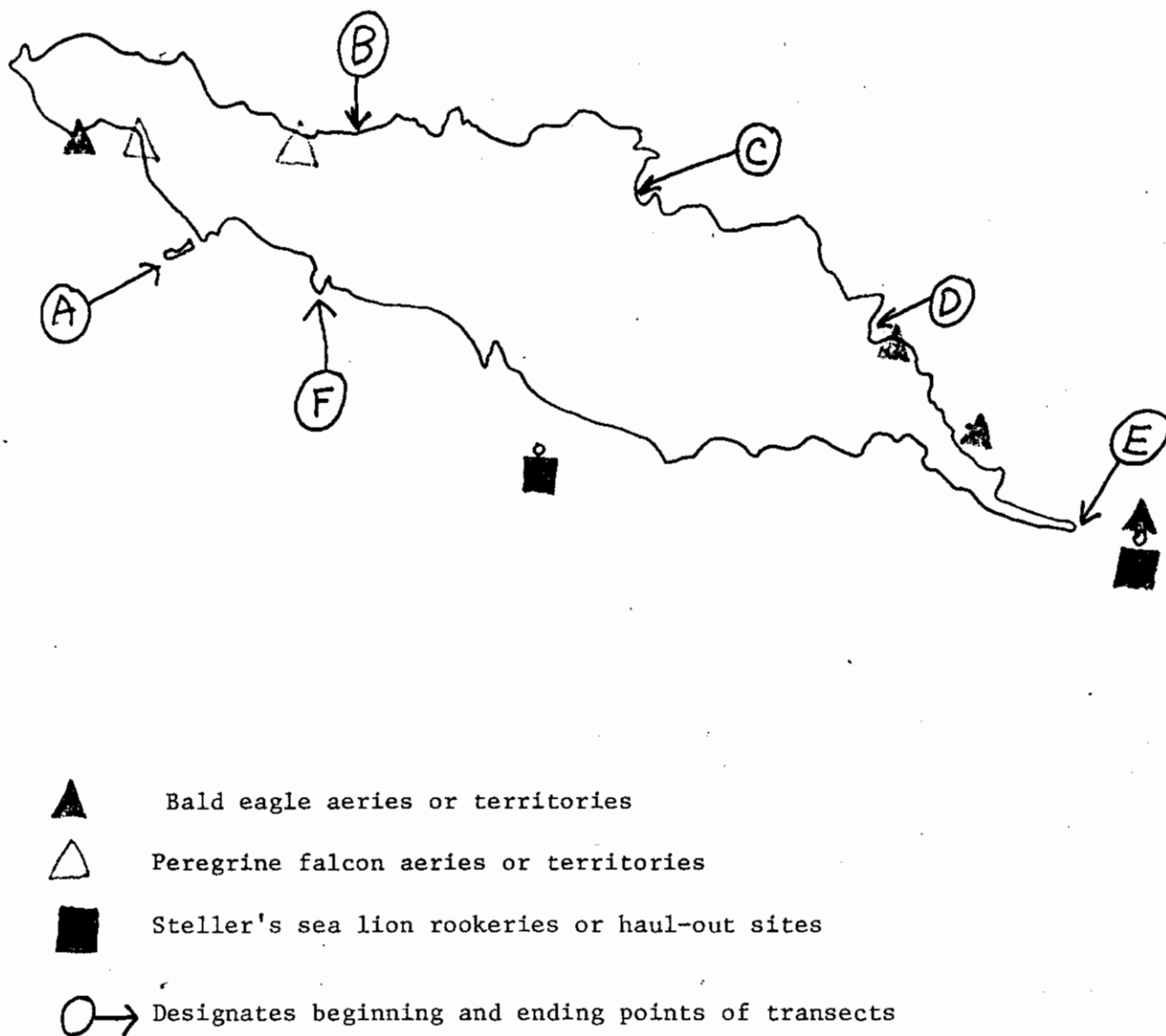


Figure 3. WILDLIFE CONCENTRATIONS FOR RAT IS., 1982.

Tanaga Island (Table 5, Fig. 4)

Four days (2-5 July) were required to circumnavigate Tanaga Island, the last island surveyed in 1982. Tanaga was also the final island to be surveyed in the western Aleutians, thus completing a project started in the summer of 1977. Most of the observations at Tanaga were made from Zodiacs, but part of the north coast was surveyed from the "Sea Spray" due to rough seas. Due to the presence of vertical sea cliffs and deep water, the vessel was able to remain close enough to shore (100-800m) to allow good observation.

Several small islands occur around Tanaga. For the most part, the animals observed on these islands are included in the total count for Tanaga. However, data from Whip and Tidgituk Islands were recorded separately.

The observation conditions during the four day survey varied from excellent to poor. Strong wind, rain and rough seas made observing difficult on some transects. Kelp, reefs and rocks sometimes prevented boats from getting as close inshore as was desired. Mechanical problems with the outboard motors on the Zodiacs also caused some delays in the survey.

Sekora (1973) reported three tufted puffin colonies on the north side of Tanaga. Only one small colony was sighted in that area this year. A scattering of cormorant nests were seen at various points around the island. One possible tern colony, north of Tidgituk Island, was also noted.

Both red-faced and pelagic cormorants were reported during the survey. Most were recorded simply as cormorant species. The tufted puffin was the most numerous alcid counted. At least nine other members of the Alcidae family were also seen. Glaucous-winged gulls were abundant around Tanaga. Five species of waterfowl were encountered. The harlequin duck was by far, the most numerous bird counted during the circumnavigation of Tanaga. Ten bald eagle aeries and one peregrine falcon aerie were seen. Unfortunately, once again not all of these nest sites were located on maps. A number of individuals of both raptor species were also observed but their proximity to aeries was not noted.

Whip Island (Table 6, Fig. 5)

Whip Island is a small islet to the southwest of Lash Bay on the south side of Tanaga. Two species of alcids were found there. One Aleutian green-winged teal nest was located and one bald eagle aerie that contained a chick.

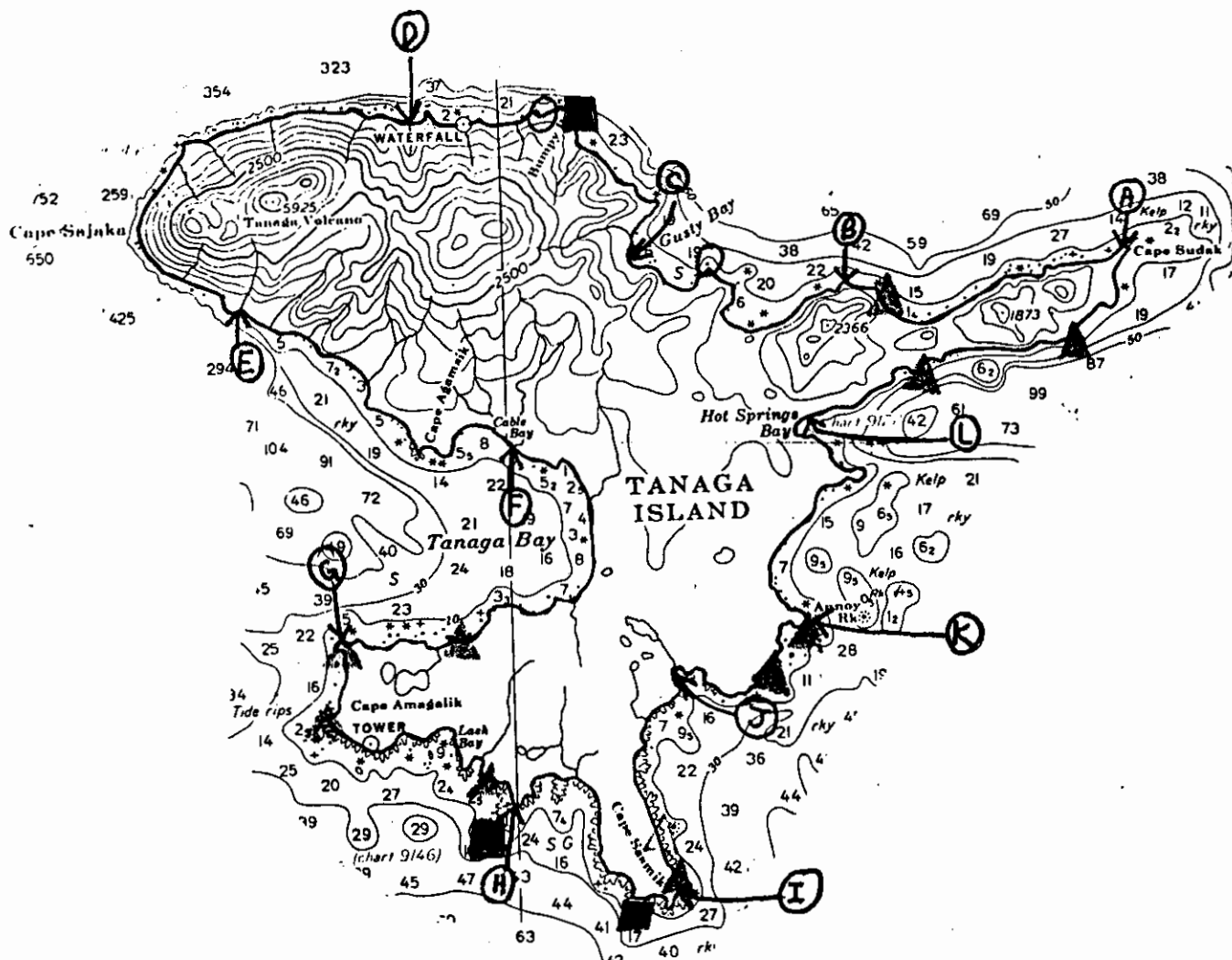
Tidgituk Island (Table 6, Fig.5)

Tidgituk Island is located southeast of Whip Island near Tanaga's South Bay. Both horned and tufted puffins were seen there. Twelve pairs of northern phalaropes were found nesting on the island as well as one pair of bald eagles.

Table 5. POPULATION COUNTS & ESTIMATES OF MIGRATORY BIRDS FOR TANAGA ISLAND, 1982.

<u>Species</u>	<u>Count</u>	<u>Estimate</u>
Cormorant spp.	546i 13n	529i (nb) 13pr
Pelagic cormorant	77i 19n	52i (nb) 19
Red-faced cormorant	7i 4n	2i (nb) 4
Murre spp.	10i	10pr
Pigeon guillemot	91i	100pr
Horned puffin	128i	320pr
Tufted puffin	235i	588pr
Ancient murrelet	118i	118i
Kittlitz's murrelet	20i	20i
Parakeet auklet	25i	25i
Crested auklet	125i	125i
Least auklet	1i	--
Whiskered auklet	1i	--
Auklet spp.	7i	--
Glauous-winged gull (ad.)	584i	292pr
(imm.)	356i	356i (nb)
Arctic tern	1i	--
Tern spp.	13i	13i
Common eider (♂ ⁷)	67i	--
Harlequin duck	1300i	--
Aleutian green-wing teal	43i	--
Red-breasted merganser	5i	--
Mallard	5i	--
Bald eagle (ad.)	54i	--
(imm.)	7i	--
(total)	61i	37i
(aeries)	10a	N/A
Peregrine falcon (total)	5i	3i
(aeries)	1a	N/A
Common raven	33i	33i
Common loon	1i	1i
Shorebird spp.	4i	--
Black oystercatcher	57i	29pr

i = individual
 pr = breeding pair
 a = aerie
 n = nest
 nb = non-breeders
 N/A = Non applicable



- ▲ Bald eagle aeries or territories
- △ Peregrine falcon aeries or territories
- Steller's sea lion rookeries or haul-out sites
- Puffin colonies
- Designates beginning and ending points of transects

Figure 4. WILDLIFE CONCENTRATIONS FOR TANAGA IS., 1982.

Table 6. POPULATION COUNTS OF MIGRATORY BIRDS FOR WHIP & TIDGITUK ISLANDS, 1982.

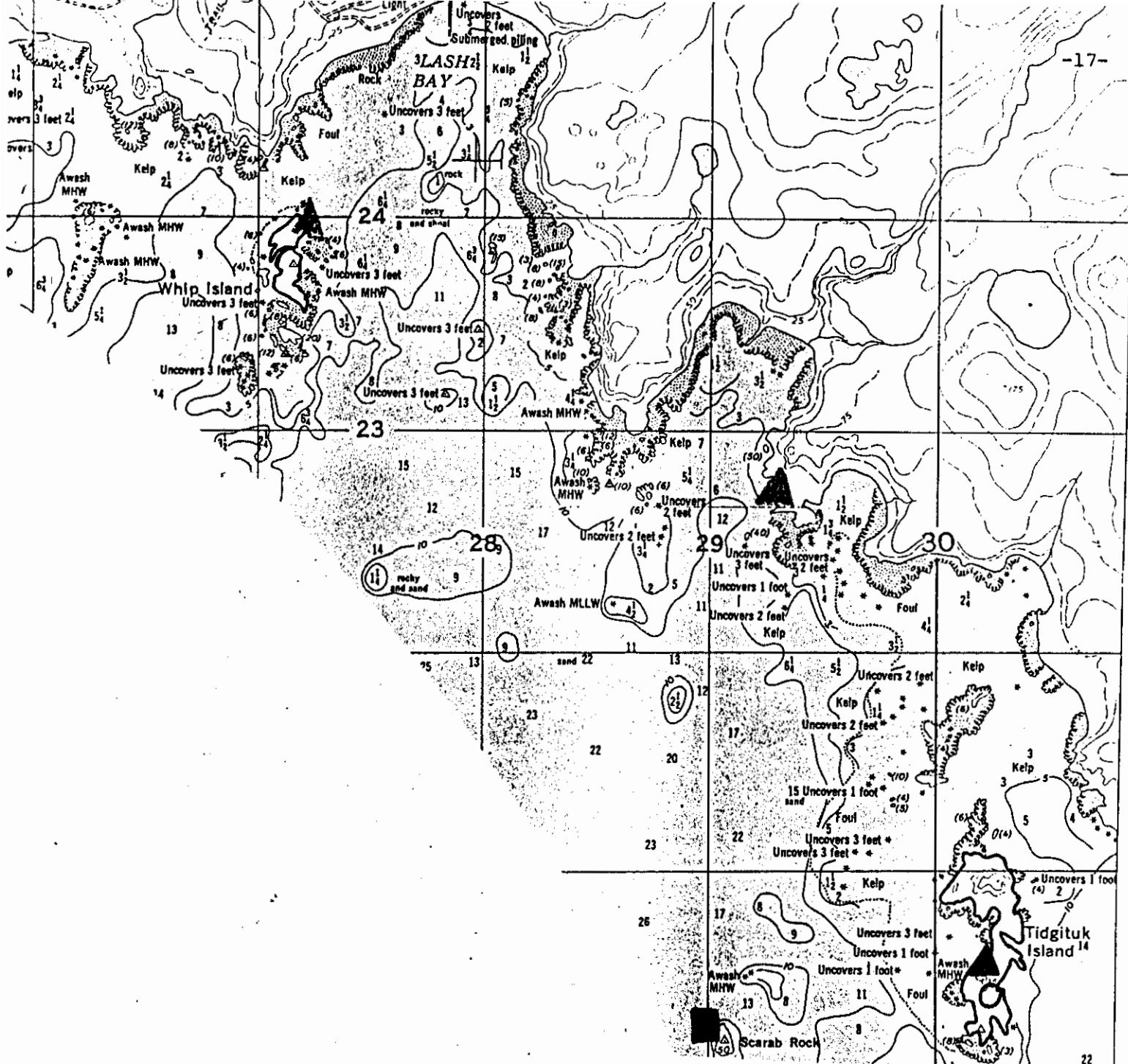
Whip Is.:

<u>Species</u>	<u>Number Birds Counted</u>
Horned puffin	2
Tufted puffin	52
Glaucous-winged gull (ad.)	30
Common eider (♂)	13
(♀)	13
Aleutian green-winged teal (♂)	4
(♀)	4
Bald eagle *(ad.)	2
(imm.)	1
(total)	3
Black oystercatcher	20

Tidgituk Is.:

<u>Species</u>	<u>Number Counted</u>
Horned puffin	11i
Tufted puffin	23i
Common eider (♂)	10i
(♀)	2i
Aleutian green-winged teal	4i
Bald eagle *(ad.)	2i
(imm.)	2i
(total)	4i
Black oystercatcher	22i
Northern phalarope	24i

* No Aeries Located



- ▲ Bald eagle aeries or territories
- Northern phalarope colony
- Steller's sea lion rookeries or haul-out sites

Figure 5. WILDLIFE CONCENTRATIONS FOR WHIP & TIDGITUK IS., 1982.

VI. MARINE MAMMALS

Table 7 summarizes marine mammal counts for each island. All of the marine mammal observations were made either from Zodiacs or the "Sea Spray". The most common species seen were the sea otter (Enhydra lutris), Steller's sea lion (Eumetopias jubata), and harbor seal (Phoca vitulina). Several whales were also sighted during circumnavigation.

Little Sitkin Island (Table 7 & 8, Fig. 2)

The number of sea otters counted was higher than in previous surveys. Otters were found both singly and in groups in the waters around Little Sitkin Island. Eleven percent of the otters recorded were pups.

The number of Steller's sea lions seen appears to have decreased. Most of these pinnipeds were counted while hauled out on beaches, rocky headlands, or offshore rocks/islets. Observers were usually not able to distinguish between the sexes. Only 4% could be identified with certainty as bulls. No pups were seen.

The number of harbor seals seen this year is approximately the same as in 1965. Most of the seals were seen along the southwest coast. Females with pups were usually observed while hauled out. About 14% of the seals observed were pups.

Rat Island (Table 7 & 8, Fig. 3)

The coastal waters of Rat Island have a luxuriant growth of kelp. Although these kelp beds sometimes made it difficult to stay near shore, they provided good sea otter habitat. The number of otters counted in 1982 was down somewhat from that of previous years. Pups represented 13% of the otters recorded.

The number of sea lions counted was higher than in past surveys. Most of the sea lions were seen at two haul-out sites on offshore islets. Only 4% of the observed animals were identified as pups.

As was the case at Little Sitkin, the number of harbor seals seen this year was approximately the same as in 1965. Most seals were tallied at the western tip of the island. Once again, females with young were usually observed while hauled out. Fourteen percent of the seals seen were pups.

Tanaga Island (Tables 7 & 8, Fig. 4)

The number of sea otters counted at Tanaga this year was higher than in past surveys. There are many areas with lush kelp beds that are utilized by otters. There seemed to be a large number of otters hauled out on offshore rocks in some areas. About 14% of the otters counted were pups.

More Steller's sea lions were counted this year than in any of the past surveys. Most were seen at three major haul-out sites. No pups were identified.

There were nearly twice as many harbor seals counted in 1982 as there were in 1965. The largest concentration of seals was in the South Bay/Cape Sasnik area. Less than 1% of the seals sighted were pups.

Table 7. Marine mammal populations of individual islands, 1982.

	<u>Little Sitkin</u>	<u>Rat</u>	<u>Tanaga</u>
Sea otter			
Adult	199	193	1062
Pup	23	28	169
Total	222	221	1231
Total km shoreline	34.9	31.6	210.1
Density	6.4	7.0	5.9
Sea lion			
Bull	4	--	1
Pup	--	40	--
cow/yearling	14	--	
Other	86	910	464
Total	104	950	465
Harbor seal			
Adult	12	101	517
Pup	2	14	4
Total	14	115	521
Density	0.4	3.6	2.5

TABLE 8. COMPARISON OF 1982 MARINE MAMMAL COUNTS WITH THOSE OF PAST SURVEYS.

	Sea otter		
	Kenyon & Spencer 1959	Kenyon & Rice 1965	Refuge Survey 1982
Little Sitkin	50	135	222
Rat	270	326	221
Tanaga	<u>902</u>	<u>1059</u>	<u>1231</u>
Total	1222	1520	1674

	Steller's sea lion			
	Kenyon & Rice 1961	Kenyon & King 1965	Sekora 1973	Refuge Survey 1982
Little Sitkin	--	--	335e	104c
Rat	750e	650e	305e	950c
Tanaga	<u>175e</u>	<u>130e</u>	<u>356e</u>	<u>465c</u>
Total	925	780	996	1519

e = estimate c = count

	Harbor seal	
	Kenyon & King 1965	Refuge Survey 1982
Little Sitkin	12	14
Rat	110	115
Tanaga	272	521
Tidgituk	<u>--</u>	<u>10</u>
Total	394	660

Two species of cetaceans were seen during the circumnavigation of Tanaga Island. A pod of five beaked whales (probably Berardius bairdi) was seen off the west tip of the island. Three smaller beaked whales (possibly Mesoplodon stejnegeri) were found washed up on a beach in Tanaga Bay. See Section VII. D. for more detail about these beached whales.

VII. MISCELLANEOUS ACTIVITIES AND OBSERVATIONS

A. Nocturnal Bird Counts

The unnamed island to the northwest of Davidof Island was checked for the presence of nocturnal species on the night of 30 June/1 July. This island was called "Tomfredof" by our party. Ancient murrelets, whiskered auklets, and Leach's and fork-tailed storm petrels were found to occur there. Two timed call counts of one minute each were conducted during which the calls of four species were counted (Table 9). Estimates of the populations of three nocturnal species were also made. An estimated 2000 ancient murrelets, 1000 fork-tailed storm petrels and 500 Leach's storm petrels were present on "Tomfredof" at the time of the survey.

TABLE 9. CALLS OF NOCTURNAL BIRDS COUNTED ON "TOMFREDOF" ISLAND, 30 JUNE/1 JULY 1982.

<u>Time Call Count Was Made</u>	<u>AnMu</u>	<u>FtSp</u>	<u>LeSp</u>	<u>WhAu</u>
0210	11	8	12	0
1230	12	16	0	1

B. Nest Counts and Estimates

Several offshore islets were checked for the presence of burrow-nesting seabirds. In some cases it was possible to completely census all of the burrows present. At other times, due to weather, lack of time, etc., burrows on only a small portion of the islet were counted and an estimate of burrow numbers was made. The estimates and guesses were made by Doug Forsell.

Little Sitkin

One small islet was landed on and a count was made of all burrows present. A total of 297 burrows was counted. These burrows were most likely occupied by puffins.

Rat Island

An islet off of the southwest tip of Rat Island was checked for burrows. A portion of the island was counted and estimates were made from this. Some burrows were probed to determine which species were indeed nesting there. In this way, it was confirmed that Cassin's auklets do in fact use this islet. It was estimated that approximately 3000 to 4000 Cassin's nest

there. Both horned and tufted puffins were observed on or near the island. It was estimated that at least 200 puffins nest there. Ancient murrelets are probably also present, and although this wasn't confirmed, Doug Forsell guessed that about 300 might nest there. The presence of Leach's storm-petrel was established with more than 1000 nests-estimated. Fork-tailed storm petrels were also present, though unconfirmed, and they may occupy 500-1000 nest burrows on this small islet.

Tanaga Island

It was estimated that Pillbox Rock, on the north side of Tanaga, contains about 150 tufted puffin nests.

Whip Island

It was estimated that about 200 tufted puffins nested on this islet. There were presumably 500-1000 Leach's storm-petrel burrows. Fork-tailed storm-petrels were also probably present.

Tidgituk Island

An estimated 100 tufted puffins had burrows on Tidgituk. Leach's storm-petrel was guessed to have approximately 1000 nests there. The fork-tailed storm-petrel was probably present as well.

C. Other Wildlife Observations

A few species of wildlife, other than those falling under the above headings were also sighted during the survey.

Little Sitkin Island

The party that went ashore on Little Sitkin observed peregrine falcons, bald eagles, song sparrows, Lapland longspurs, rosy finches, and rock sandpipers, in addition to those species mentioned earlier.

Rat Island

The Rat Island shore party also saw rosy finches, Lapland longspurs, snow buntings, common ravens, and bald eagles. Ptarmigan were observed in 1978 by Day et al but were not observed this year. Rats were observed.

Tanaga Island

Three beaked whales were found washed up on a beach in Tanaga Bay. Table 10 lists the measurements that were taken of these whales. None of the beached whales had any apparent external injuries. The lower jaws were collected from two of these whales. The whole skull was collected from the third. One stomach sample was also taken.

TABLE 10. MEASUREMENTS OF BEAKED WHALES ON TANAGA ISLAND, 5 JULY 1982

<u>Measurements</u> (in cm)	<u>Whale #1</u>	<u>Whale #2</u>	<u>Whale #3</u>
Total length	235.0	242.0	268.5
Fluke width	95.0	99.0	96.0
Height of dorsal fin	14.2	17.0	13.5
Length of dorsal fin	24.0	30.0	27.5
Length of flipper	12.5	13.0	13.0
Width of blowhole	10.0	11.2	12.5
Blubber thickness	4.3	4.4	4.0
Length of snout	--	--	29.2

Although the following observations did not take place during the actual circumnavigation of Tanaga, they should be noted:

A pod of about five killer whales was sighted while the "Sea Spray" was underway from Rat Island to Tanaga on 2 July.

On 3 July, while the "Sea Spray" was anchored in Hot Springs Bay at Tanaga, a pod of 6-8 Dall porpoise swam near the ship for about an hour. These cetaceans frequently rode our bow wave throughout the summer.

D. Land Mammals and Non-Migratory Birds

Although no formal transects were established or conducted, some land mammals and non-migratory birds were observed. Shore parties landed on Little Sitkin and Rat Islands for the purpose of establishing the presence of, and counting, Arctic fox (Alopex lagopus). The presence of rock ptarmigan (Lagopus mutus) and Norway rats (Rattus norvegicus) were recorded.

Little Sitkin Island

Two Arctic foxes were seen at den sites by a two person shore party. Two rock ptarmigan were observed.

Rat Island

Two people were put ashore here as well. A total of five Arctic foxes were seen by the shore party. Four additional foxes were observed during circumnavigation. No ptarmigan were found, but rats were observed.

Tanaga Island

No shore parties were utilized here for the sole purpose of counting foxes, etc. However, seven Arctic foxes were seen during circumnavigation of the island. Ptarmigan have been observed in the past on Tanaga but none were observed this year (John Martin - personal communication).

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APPENDIX

TRANSECT LOG

Island: Little Sitkin

SPECIES Bird/Nest	Transect				Island south of Sitkin Point			
	A-B	B-C	C-D	D-A				
Cormorant sp.	2J 9A	3J 14A	5J 42A	33	2m 2		109	4
Pelagic	9	6J 36A-1N	1	1			13	60%
Red-faced		2J 32A-15N			2		27	40%
Blk-legged Kittiwake								
Murre sp.								
Common		107	4					
Thick-billed	1	11						
Pigeon Guillemot	23	51	12	12	1			
Horned Puffin	9	67	38	6	12			
Tufted Puffin	5 3N	20	3N 7	3	45			
Ancient Murrelet	32	49	17	17				
Parakeet Auklet	3	1						
Crested Auklet								
Whiskered Auklet	106		1					
Glaucous-wgd Gull (Ad)	21	79	59	122	2			
(Immature)			8	7				
(Fledging)								
Aleutian Terns								
Common Eider (Males)								
(Females)	2	1						
(Broods)								
Harlequin				3				
Eurasian Grn-wgd Teals		18 in meiz						
Red-breasted Mergansers		18						
Bald Eagle (Ad)	2	1 1 ad	1					
(Immature)		1 chick		1				
Peregrine Falcon		2	2					

Island: RAT

SPECIES Bird/Nest	Transect						Rat's Table Island East of Rat
	A-B	B-C	C-D	D-E	F-A	E-G	
Cormorant sp.	Jun 16 Ad. 28	21	50v. 39 Ad 4	3		46 ^{100%}	
Pelagic					6		
Red-faced		1			6		
Blk-legged Kittiwake							
Murre sp.							
Common							
Thick-billed							
Pigeon Guillemot	3	8	8	1		2	3
Horned Puffin		3			3		5
Tufted Puffin	1		1		1		39 <small>Estimate 2000 birds</small>
Ancient Murrelet	25	5	15	14	9	57	300 guess Prob. Present
Parakeet Auklet						2	
Crested Auklet		1				3	
BLACK OSTEALCATCHER			1				
LEAST AUKLET				1			
Glaucous-wgd Gull (Ad)	148	22	16	3	^{not feeding} 47	103	45
(Immature)	32	3	5		77	282	117
(Fledging)							
Aleutian Terns							
Common Eider (Males)	36	1	1				
(Females)	12						
(Broods)							
Harlequin			2		5	45	
Eurasian Grn-wgd Teals		12 10 ⁺					
Red-breasted Mergansers							
Bald Eagle (Ad)	5 (1 acie) (confirmed)	1	3 (probably same)	4 (1 acie confirmed)		1	2
(Immature)	1						possibly 1 fledgling
Peregrine Falcon	4						
Parasitic Jaeger	1						
Whimbrel (TYPE w/ white Rump)				1			

TRANSECT LOG page 2

Transect SPECIES	A-B	B-C	C-D	D-E	F-A F-A	E-F	Rat's Table Island
Sea Otter (Ad)	44	23	28	27	19	44	8
(Pup)	3	4	8	8	1	4	
Sea Lion (Bulls)	} 88					} 342 Islet	480
(Cows)							
(Yearlings)							
(Pups)							
Seal (Ad)	54	22	9	16			
(Pup)		1		13			
ARCTIC FOX	2	1	1				
Cassia's Auklet							3000 - estimate within 50%
Fork-Tailed Storm-Petrel							4000 birds
Leach's Storm-Petrel							P.P. 500-1000
							1000+

Date	Jul 1, 82						
Time: Start/End	1300-1430	1430-1530	1600-1845		1320-1400	1400-1600	
Observer	F. DENNIS T. EACHT C. KROEGER				Forsell S. B. ... S. M. ...		
Wind Sp/Dir	SW 20 K.				20K SW		SW 20K
Visibility (mi)	20+	20+	20+		20+	20+	
Seas (ft)/Waves (ft)	3/1	2/0.5	2/0.5		2/3	3/4	
Observation Conditions	Good	Good	Good		Moderate	Poor	
Distance from Shore	200 m				200-700m		200-700m

Comments: Perimeter of island extremely foul and hazy. Difficult to get close
 water in many areas. Therefore some species/individuals may have been missed.
 More close observations done on N. side than South side - on South side half
 observations made from outside help line. Habitat on south shore extremely
 poor for seabirds. Grass slopes in most areas very accessible to Fox

TRANSECT LOG

Island: Tauaga 1 of 2

Transect	A-B	B-C	C-D	D-E	E-F	F-G	G-H	All box Rock (N.S. side)
Cormorant sp.	34	92	143 imm 11 Ad 6 Nests	33	26	30 Imm 1 Ad	23 imm.	
Pelagic	1 Nest 7	14 nest 16	23 imm 5 Ad.	1	7	1 Ad		
Red-faced		4 nest 4	12 imm 1 Ad.					
Blk-legged Kittiwake								
Murre sp.			3	2		1		
Common								
Thick-billed								
Pigeon Guillemot	13	3	6	1	8	7		
Horned Puffin	7	6	36	26	8	1		
Tufted Puffin		42	119 ~50 Pr. (imm)	28	3	14		150 nests g (6)
Ancient Murrelet	1	27	4	5	24	6	1	
Parakeet Auklet			1	11		1		
Crested Auklet	1		1	1	28	21		
Kittitz's Murrelet					18	2		
✓ BLACK OSTERCATCHER	4	1						
Glaucous-wgd Gull (Ad)	118	60	116	40	53		35	
(Immature)	89	56	9	6	50		21	
(Fledging)								
✓ ARCTIC Aleutian Terns							1 NEST	
Common Eider (Males)	1		3			27		
(Females)								
(Broods)								
Harlequin	3	14				364	3	
Eurasian Grn-wgd Teals		1				8		
Red-breasted Mergansers		3				1		
Bald Eagle (Ad)	4 imm	2	2		11	8	3	
(Immature)						3	1	
Peregrine Falcon	2							
✓ RAVEN	2	4	1			3		
✓ Mallard		2						
✓ LEAST AUKLET							1	AT=14

* not recorded
el
r Chris

884 TOTAL
368 / 212

TRANSECT LOG page 2

Transect SPECIES	A-B	B-C	C-D	D-E	E-F	F-G	G-H	
Sea Otter (Ad)	122	1	21	2	8	115	89	
(Pup)	29		1	1		17	1	
Sea Lion (Bulls)		1	} ↑ 240 ↓				} 3	
(Cows)								
(Yearlings)								
(Pups)								
Seal (Ad)	25	22			11	46	68	
(Pup)						1	1	
Unidentified auklet					2			
beaked whale				5				
Date	3 July	3 July	4 July	4 July	4 July	4 July 82	5 July 82	
Time: Start/End	1330-1450	1230-1330	1830-1930	1730-1830	1700-1730	1200-1330	1200-1300	
Observer	T. EARLY D. FORSELL D. BRADLEY	T. EARLY D. FORSELL D. BRADLEY	D. Bradley V. KICH D. FORSELL	D. Bradley D. Forsell F. DEINES	D. FORSELL D. BRADLEY F. DEINES	T. Early, M. Ostwald, D. Driggs	T. EARLY, F. DEWES, A. OTTUM	
Wind Sp/Dir	15-20 NN	15-20 NN	W 10-15K	N 20K	20 KW		15 SW	
Visibility (mi)	20+	20+	20+	15	15		10-15	
Seas (ft)/Waves (ft)	NW 5ft 1ft	NN 5ft .5ft	N 5ft 2ft	N 4-8ft 3ft	W 4-8 3ft		SW 3' 1'	
Observation Conditions	Good	Good	Good	Fair/good	Fair/good	Fair/good	EXCELLENT	
Distance from Shore	100- 200m	100- 200m	3m-800m	240-800m	240-800m	100-150m	200m	

Comments: -ABBC-

SEE PAGE 2 OF TANAGA

D-E sighting of five beaked whales. 30'-35 ft length, dorsal fin last 1/3 bo
didn't show fluke, light ochre brown, dorsal fin brown, high forehead - bulbous
brown scars. *slightly + alcate*



TRANSECT LOG

Island: Tanaga 2 of 2

b = bird
 PP = probably present
 g = guess (Doug)
 E = estimate within 50%

(H-I)

Transect	H-I	I-J	J-K	K-L	L-A	Whip Island	Tidigituk Island
SPECIES Bird/Nest							
Cormorant sp.	101 ^{old} / 46 ^{im}	22A / 25J ^{FN}	52	9	14		
Pelagic	4 nests		1	2 Ad. / 4 Im	9 Ad / 25 Im		
Red-faced							
Blk-legged Kittiwake							
Murre sp.	3		1				
Common							
Thick-billed							
Pigeon Guillemot	39	6		6	2		
Horned Puffin	21		1	5	17	2	11
Tufted Puffin	28			1		52. 200g burros	13 birds / 100 burros E
Ancient Murrelet	35		6		9	PP	PP
Parakeet Auklet	5	6		1			
Crested Auklet	59	5	3	4	2		
✓ Unidentified Auklet		4			1		
✓ Tern spp.	12	1					
Glaucous-wgd Gull (Ad)	68	28	25	11		30	
(Immature)	95	19	7	1			
(Fledging)	3						
Aleutian Terns							
Common Eider (Males)	4		9			13	10
(Females)						13	2
(Broods)							
Harlequin	3	19	1		32 / 18		
Eurasian Grn-wgd Teals	6		27	1		B (48) / 2+PR	
Red-breasted Mergansers				1			
Bald Eagle (Ad)	9	4	4	3	4	1 arric / 1 ad T chick	2
(Immature)		1	1		1		2
Peregrine Falcon	2	1					
✓ Common Raven	11	7	1	2	2		
✓ Black Ouster Catcher	39	5		8		20	22
✓ unidentified shorebirds	4						
Leaches storm petrel							
Fork-tailed storm petrel							

500 ^{up} / PP 10006 G / PP

AZ-14

TRANSECT LOG page 2

Transect	H-I	I-J	J-K	K-L	L-A	Tidgituk Island			
SPECIES									
Sea Otter (Ad)	353	79	56	153	63				
(Pup)	82	11	3	9	15				
Sea Lion (Bulls)	Scarab rock	↑							
(Cows)	157	4							
(Yearlings)	Herd rock	↓							
(Pups)	60								
Seal (Ad)	193	2	24	75	51	9			
(Pup)	1		1		1	1			
✓ Arctic Fox	2		2	2	1				
✓ mallard	307								
✓ Common Loon	1								
✓ Whiskered auklet	1								
✓ Northern phalarope	24								
Date	5 July 82	2 July 1982	2 July 82	3 July 1982	3 July 82				
Time: Start/End	1230-1930	1150-1430	1245-1530	1009-1250	1250-				
Observer	P. Forsell S. Ambroz S. Bradley	V. Kille, T. King M. Oswald	F. Deines, D. Forsell, A. Simon	F. Deines, C. Ambroz, D. Deane	F. Deines, C. Ambroz, D. Deane				
Wind Sp/Dir	SW 0-25K	SW 30-35K	SW 30-35K						
Visibility (mi)	0-4mi	5 mi	5 mi.						
Seas (ft)/Waves (ft)	0-8 0-4	3'/2'	chop 2-5ft.						
Observation Conditions	fair poor	Fair/Poor	Fair	Good	Good				
Distance from Shore	100-500m	100 m	100m	100m	100m				

Comments: STRONG WSW winds and rain made transects I-K difficult. Kelp also extended about 250-300 m offshore w/ many rocks + reefs.

H-I - Islands were checked, several Terns sited, possible tern colony on the main land north of Tidgituk Island. Tidgituk Island - 4 eagles 2 ad 2 im, 12 pairs of nesting northern phalaropes, black oystercatchers nesting on both islands (Whip + Tidgituk), Sea Lion colonies found on Scarab Rock (157) and Herd rock (60)