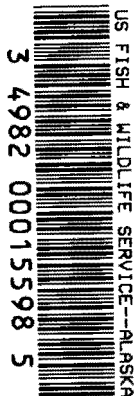


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ALEUTIAN CANADA GOOSE SURVEY AT  
AGATTU ISLAND, ALEUTIAN ISLANDS, ALASKA  
SPRING 1984

by  
FREDRIC G. DEINES  
and  
BOB WILLGING

Key Words: Aleutian Canada Goose  
Aleutian Islands  
Near Islands Group  
Agattu Island  
Transplanted geese  
Endangered species  
Introduced predator control  
Abundance  
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**TITLE** Survey of Aleutian Canada Geese on Agattu Island,  
Aleutian Islands, Alaska, Spring -- 1984

**DATE** November 1, 1984

**I.D. NO.**

**AUTHOR(S)**  
Fred Deines and Bob Willging

**CITATION**

**OBJECTIVE** Document Aleutian Canada geese returning to Agattu Island, concentrating on banded birds, thoroughly searching for goose nests on the eastern side and some of the southern side, and removing as much fencing material from the Goose Creek area as possible.

**METHOD OF STUDY** Survey of the returning geese followed methods used in the past on Agattu and Alaid/Nizki. Attempting to document returning geese and determine band numbers if possible utilizing 10 x 40 binoculars and spotting scope. The effort was concentrated in the Goose Creek area but also included other areas while searching for nests. Searching for nests followed techniques developed on Buldir with the two biologists walking about 10m abreast and thoroughly searching for goose nests. Removal of the fencing was done by hand and some material was disposed of at sea.

**MAIN FINDINGS** During the period of 26 May to 24 June 1984, two biologists made 339 observations of geese. Of this number, 43 were of banded geese, 97 unbanded and 259 undiscernable. Three Aleutian Canada goose nests containing 5, 3, and 4 eggs each respectively and a brood of goslings were found while searching for nests. All fencing material was taken down in the Goose Creek area and the majority removed and disposed of at sea.

**CONCLUSIONS** That, due mainly to the transplanting of wild Aleutian Canada geese from Buldir Island to Agattu Island, recolonization and nesting of this endangered subspecies on Agattu has begun.

**MANAGEMENT IMPLICATIONS** Baring any unforeseen future problems or catastrophes, recolonization of Agattu by Aleutian Canada geese will continue and will eventually assist in removal of the subspecies from the endangered species list.

**ADDITIONAL REMARKS**

**UPDATES OR SUPERSEDES I.D. NO.**

**PROGRAM**

**COPIES OF PUBLICATION OR REPORT CONTACT** Refuge Manager, Aleutian Islands Unit,  
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## INTRODUCTION

Agattu Island, located in the Near Islands group of the western Aleutians, lies 32.4 km (22 miles) southeast of Attu Island and 24 km (15 mi) south of Shemya, Alaid and Nizki Islands. Agattu is the second largest and most southerly of the group. The island has an area of approximately 22,484 ha (55,558 acres), a circumference of about 112 km (70 miles), and a maximum elevation of approximately 634 m (2080 feet).

Agattu is similar in terrain and vegetation to other Aleutian Islands (Sekora 1973). Much of the island is composed of hills and plateaus interspersed with numerous valleys and shallow lakes (Sekora 1973). The shoreline is rocky, precipitous, and ringed with many inshore pinnacles and sea stacks (Sekora 1973). The interior of the island is covered with a lichen tundra type community (Forsell and Ambroz 1982). An Elymus-umbel community occurs along most of the coastal beaches and slopes, with a grass-forb community in coastal valleys (Forsell and Ambroz 1982).

A variety of seabirds, waterfowl and song birds seasonally inhabit Agattu. Large colonies of murres (Uria) and black-legged kittiwakes (Rissa tridactyla) occur at Aga Cove on the eastern shore. Pigeon guillemots (Cephus columba), tufted puffins (Fregata cirrhata), cormorants (Phalacrocorax) and Lapland longspurs (Calcarius lapponicus) are common. Peregrine falcons (Falco peregrinus) are relatively common. A breeding colony of about 396 Steller's sea lions (Eumetopias jubata) was reported by Dragoo and Deines (1983). Harbor seals (Phoca vitulina) and sea otters (Enhydra lutris) are present on off shore rocks and waters.

For a more detailed description of the wildlife resource found on the island, refer to the "Catalog of Alaskan Seabird Colonies" (Sowls et al. 1978), the 1978 and 1979 "Bird and Mammal Surveys for the Western Aleutians", the "Preliminary Report of Aleutian Canada Goose Surveys in Near Islands (Agattu and Nizki -- Spring of 1983)" (Zeillemaker et al. 1983) and the "Aleutian Canada Goose Survey, Agattu Island" (Dragoo and Deines 1983).

Wildlife populations on Agattu, especially ground nesting birds (waterfowl and seabirds) are slowly recovering following removal of introduced arctic fox (*Alopex lagopus*) from the island. It is well documented that the decline in Aleutian Canada goose numbers and the resulting endangered status is largely due to predation by arctic fox introduced to the Aleutians in the 1800's by Russian fur traders, and the 1920's and 1930's by American fur farmers. In 1923 four fox were released on Agattu Island and 1,000 fox were pelted on Agattu from 1929 to 1936 (Martin et al. 1982). In 1969 fox eradication efforts began on Agattu with lethal baits being dropped from planes (Martin et al. 1982). Various eradication efforts continued until 1979 when the island was declared fox free. In 1974, 41 Aleutian Canada geese from the Patuxent Wildlife Research Center and nine wild geese from Buldir Island were released on Agattu (Martin et al. 1982). Subsequent releases took place from 1978 to 1980 and 1982 to 1984.

In order to further document the return of transplanted geese to Agattu and determine if goose nesting was occurring on Agattu, a survey was accomplished from 13 May to 20 June 1984. The objectives of this survey were to record numbers of geese present on the island, read and record band numbers whenever possible, and systematically search likely habitat for nests. As time permitted, the fencing material used formerly for goose retention in the Goose Creek area was to be removed and disposed of at sea.

#### METHODS

Between 26 May and 24 June 1984 two personnel were stationed at the base camp cabin in Aga Cove along the eastern shore of Agattu. Biological Technician's Natasha Kline and Sue Steinacher established the field camp with Steinacher being replaced by Volunteer Biologist Cathy Edgerton on 8 June. Working from the base camp, the crew conducted an intensive survey for returning and nesting geese. Initially the work concentrated on documenting the returning geese in Aga Cove and the surrounding areas.

All Aleutian Canada geese observed were recorded and attempts were made to discern the presence or absence of leg bands. Band numbers were read and recorded whenever possible using binoculars and spotting scopes.

After the first week and a half, the emphasis of the project switched from goose observation to goose nest searches. The majority of the eastern coastline from McDonald Cove south to and including the Cape Sabak area was thoroughly searched for nests. This was accomplished using a combination of "day hikes" and longer overnight "spike camps". Searches for goose nests were concentrated in the Elymus/umbel habitat along the coastline, although some additional inland areas of likely habitat were also checked. The technique used while searching for goose nests followed those developed on Buldir (Early 1979). On Agattu this technique involved having personnel walk about five to ten meters

apart depending on terrain and weather while thoroughly and systematically searching for goose nests. This technique generally caused geese to flush from their nests as the searchers approached. An intense investigation of the immediate area where birds flushed was then conducted to locate the nest. When nests were found, notes on its location, elevation, surrounding habitat and number of eggs it contained were taken. This was accomplished as quickly as possible to minimize impacts on the geese. The eggs were then covered with goose down from the nest, if it was present, before the searchers departed the area. It should be noted that general goose observations were also recorded while nest searches were being conducted, but those efforts were secondary to the nest search.

Removal of the fencing material from the Goose Creek area was accomplished to eliminate that potential hazard to geese and other birds and remove material from wilderness lands. This arduous task was accomplished using fencing pliers, sledge hammers, and a come along jack with chain. The fence material was removed from the posts, rolled and secured with wire in manageable sized bundles and stockpiled. The posts were then removed using the jack and chain, bundled with wire, and also stockpiled. Deeply embedded brace posts were pounded completely into the ground rather than being removed. Later in the summer while releasing transplanted geese from Buldir, some of the fence material was removed and disposed of at sea. Additional details of the goose surveys can be found in the daily log of activities in the appendix.

## RESULTS AND DISCUSSION

A total of 399 observations of Aleutian Canada geese were made on Agattu during the 1984 survey (Table 1) as compared to 100 made in 1983 (Dragoo and Deines 1983). Most geese were observed in the area near Aga Cove (Fig. 1). Since all of the geese transplanted to Agattu have been released at Goose Creek in Aga Cove and the base camp is located nearby, the area received the greatest amount of effort. It should also be noted that the old A-frame goose shelters remaining in the Goose Creek area made excellent observation blinds. Many observations were also recorded in the Cape Sabak area at the southeastern tip of the island (Fig. 2) while searching for nests. Since the geese are mobile and observers often surveyed an area more than once, the number of duplicate observations is unknown. A sighting was counted as an observation if there was a definite spatial or temporal separation between individual geese or groups of geese.

Of the 399 observations, only 140 were of a nature (close enough in distance, long enough in time, or both) to discern the presence or absence of bands. A total of 43 observations were made of banded geese. This represents 10.8 percent of the total observations and 30.7 percent of the observations where the presence or absence of a band could be determined. Twenty-five (58.1%) of the 43 bands observed could be read, and 15

Table 1. Summary of Aleutian Canada Goose Observations, Agattu Island, 26 May - 24 June, 1984

Date	Total Number of Geese Observed	Number of Observations of Banded Geese	Number of Observations of Unbanded Geese	Number of Observations of Unknown Geese	Recorded Colored Leg Band Numbers
26 May	8	0	0	8	
27 May	17	5	3	9	
28 May	37	5	14	18	C51, C52, C57, C49
29 May	15	2	1	12	C52
30 May	15	1	3	12	346*
31 May	22	5	2	15	C39, C45, C50, C52
1 June	26	0	0	26	
2 June	33	2	9	22	322
3 June	20	2	7	11	
4 June	11	1	1	9	E29
5 June	28	2	2	24	E29, C49
6 June	14	1	2	11	264
8 June	27	5	6	16	E29, C49 E45
9 June	2	0	2	0	
10 June	11	3	4	4	C51
11 June	9	2	3	4	
12 June	2	0	0	2	
13 June	6	1	1	4	
14 June	3	1	2	0	E29
15 June	12	1	10	1	E29
16 June	2	0	2	0	C79, X10
18 June	52	5	17	30	C52, C59
20 June	1	0	0	1	
22 June	14	0	0	14	
23 June	10	0	4	6	
24 June	2	0	2	0	
TOTAL	399	44	97	259	25

\* neck collar found on beach

different band numbers were recorded, 13 on live birds, two on dead birds and one neck collar found by itself (Table 2). Ninety-seven geese, 24.3 percent of the total observations and 69.3 percent of discernable observations, were observed to have no bands. The banded carcass, assumed killed by a peregrine falcon (C-79) and the band near a few bones (X-10), were found on 16 June by Beedee Pond. Neck collar 346 was found on 30 May on the beach without a carcass or remains. The bird probably either lost the collar or died after release. It was never observed on the wintering grounds. The total number of different geese on

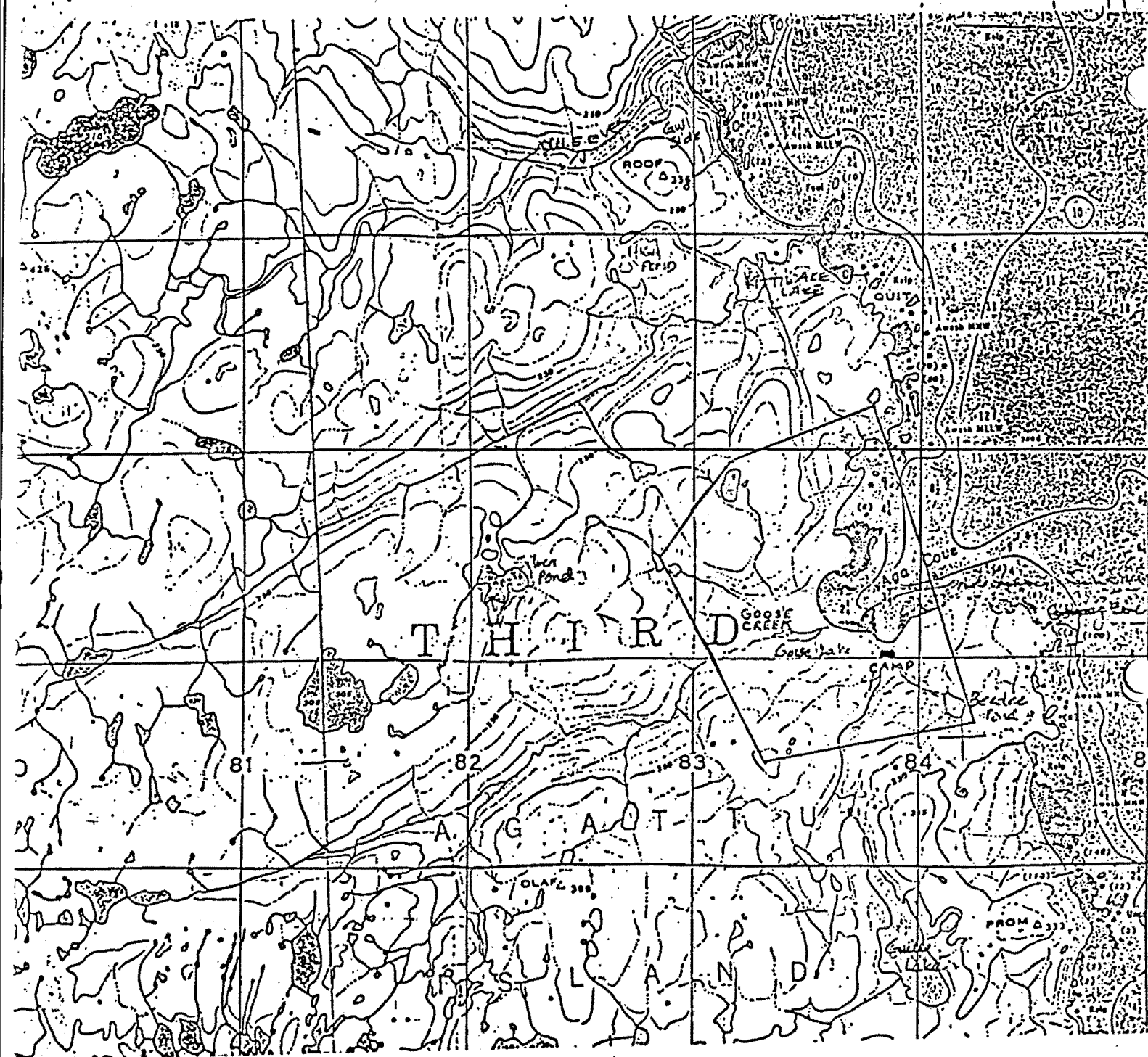


FIGURE 1. LOCATION OF GOOSE CREEK AND BASE CAMP, AGATTU (MOST GEESE WERE OBSERVED IN THE DELINEATED AREA).

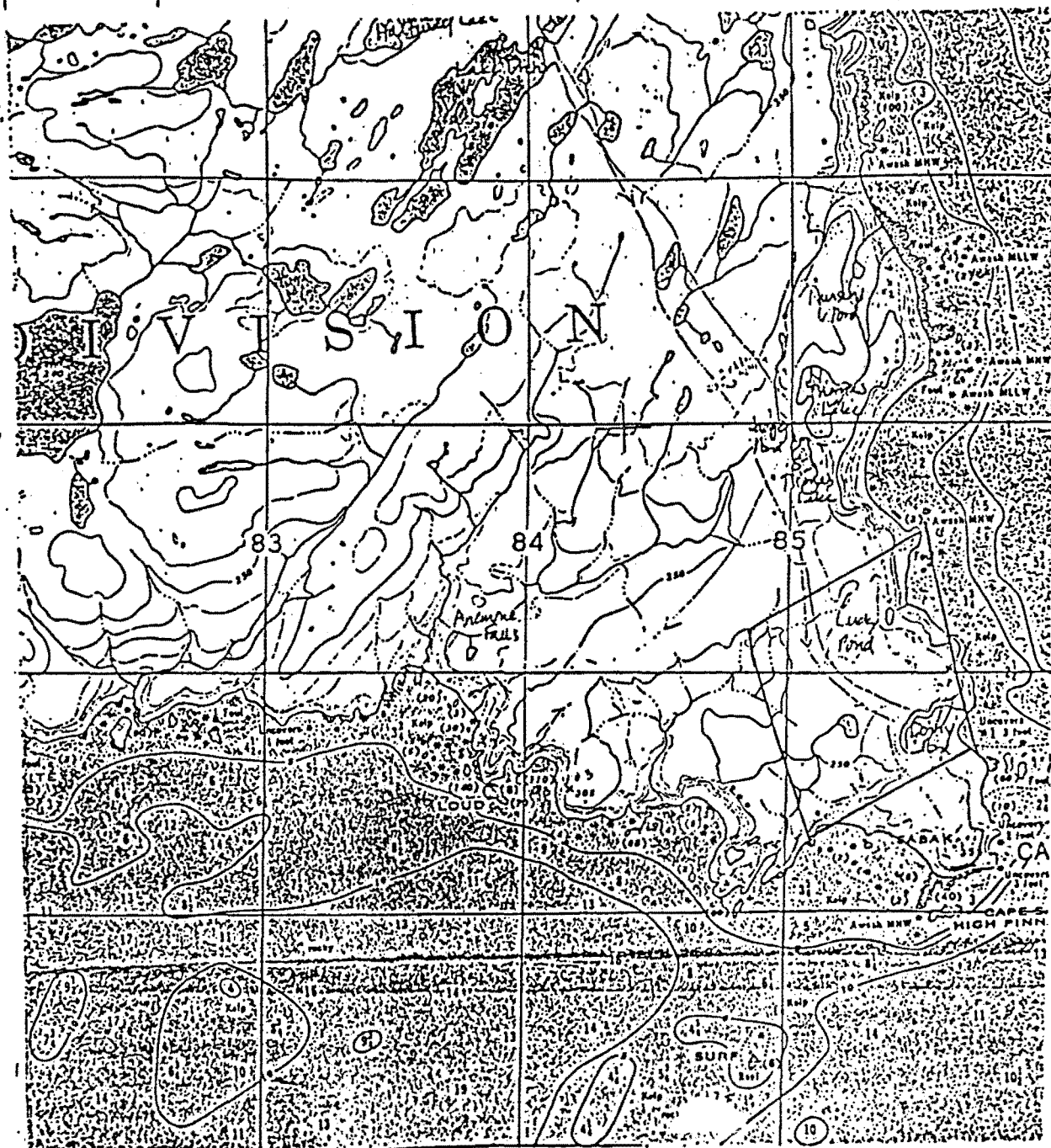


FIGURE 2. CAPE SABAK, AGATTU. LARGE NUMBERS OF GEESSE WERE OBSERVED IN THE DELINEATED AREA.



Table 2. Data on Banded Aleutian Canada Geese Observed on Agattu Island 26 May - 23 June 1984

Colored Band Number	Release Site	Release Date	Sex and Age at Banding	Hatching Year	Source	Date and No. of Observ. on Wintering Grounds
264	Aga Cove	08/80	F-HY	80	Amchitka	80/81-6X, 83/84-15X
322	Aga Cove	08/80	F-L	80	Buldir	80/81-6X, 81/82-34X, 82/83-23X, 83/84-15X, 84/85-4+X
346	Aga Cove	06/78	M-SY	77*	Amchitka	
C-39	Aga Cove	07/83	F-L	83	Buldir	84/85-25X
C-45	Aga Cove	07/83	M-L	83	Buldir	84/85-17X
C-49	Aga Cove	07/83	M-L	83	Buldir	
C-50	Aga Cove	07/83	M-L	83	Buldir	
C-51	Aga Cove	07/83	F-L	83	Buldir	84/85-23X
C-52	Aga Cove	07/83	F-L	83	Buldir	84/85-1X
C-57	Aga Cove	07/83	F-L	83	Buldir	84/85-10X
C-59	Aga Cove	07/83	M-L	83	Buldir	83/84-1X, 84/85-9X
C-79**	Aga Cove	07/83	M-AHY	82	Buldir	
E-29	Aga Cove	08/83	M-L	83	Buldir	83/84-22X, 84/85-2X
E-45	Aga Cove	07/38	M-L	83	Buldir	83/84-23X, 84/85-3X
X-10***	Aga Cove	08/82	F-L	82	NP**	

\* All colored bands are leg bands except number 346 which is a neck collar found alone on the beach.

\*\* Band recovered from goose possibly killed by a peregrine falcon.

\*\*\* Band and a few bones found on ground near Beedee Pond.

Agattu was estimated to be between 42 and 52 birds.

As in 1983, there was little or no movement of the banded geese between Agattu and Alaid/Nizki islands. Of the 12 live banded geese observed, only three were banded prior to 1983. These birds were either released in 1978 or transplanted in 1980 to Agattu and had not been observed at Agattu or Alaid/Nizki in 1982 or 1983. As with the previous Agattu spring goose surveys, the majority of the banded birds recorded at Aga Cove were from the release of the previous year. This affixation to Aga Cove is to be expected for non-breeding birds following the year of release as they tend to home to the site of their first flight. As the birds mature the following year, they become more secretive while involved with breeding activity and become more selective of preferred habitat. The increasing number of unbanded birds observed on Agattu each year probably results from one of three sources: (1) wild birds from other islands mating with birds released on Agattu while both are on the wintering grounds, (2) geese pioneering from established breeding populations at Chagulak and/or Buldir which may be at or near saturation densities and (3) birds produced on Agattu by geese released there in previous years. Since the first goose nesting at Agattu occurred

with the wing-clipped birds released in 1974 and several large releases of transplanted geese have been made on Agattu since then, the majority of the unbanded birds could be Agattu produced.

A banded goose (C-52) was observed on 28 May at Aga Cove and on 31 May and 18 June at Cape Sabak, indicating some movement between those areas. This type of movement was also noted in 1983 when the remains of a banded goose were found at Cape Sebak (Dragoo and Deines 1983).

Three nests and one brood were located during the survey. They contained 5 eggs, 3 eggs, 4 eggs, and 4 goslings respectively. The nests and brood were the first to be found on Agattu since the initial transplant effort and the first for truly wild birds in 70 years. Of the 41 Patuxent geese released in 1974, four pairs nested, two successfully, and five goslings were produced (Martin et al. 1982). None of the birds were seen after 1975, and no subsequent nesting was observed until 1984.

The characteristics of the three nests found in 1984 were similar. Each was found on a steep, grass covered slope (Table 3).

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Table 3. Site Characteristics of Three Aleutian Canada Goose Nests Found on Agattu Island, 1984

Date Located	Number of Eggs	Site Vegetation	Aspect	Degree of Slope	Elevation in Feet
2 June	5	Elymus-umbel	S	15	340
18 June	3	Elymus-umbel	W	35	250
20 June	4	Elymus	W	20	290

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Habitat and general site conditions compare favorably with habitat used by geese nesting at Buldir. The average clutch size of the three nests found on Agattu was four eggs per nest. This is lower than the 5.5 eggs per nest recorded during the 1982 Buldir nesting study (Deines and Early 1982). The reason for the difference is unknown, but it may indicate younger birds involved with the Agattu nests. Two nest sites had west aspects, and one had a south aspect. In each case the observers located the nests only after the incubating female flushed. Females stayed on the nests until observers were very close, in one case only 0.7 m (two feet) away. When flushed, females tended to remain in the vicinity and vocalize considerably. Figure 3 indicates the routes taken by observers for each of the nest located.

Locating three nests and a brood in the Cape Sabak area is an indication of that areas acceptability and the presence of preferred habitat for goose nesting there. This was first suspected in 1983 when the largest flock of geese (16) observed that year was at Cape Sebak (Dragoo and Deines 1983). The utilization of

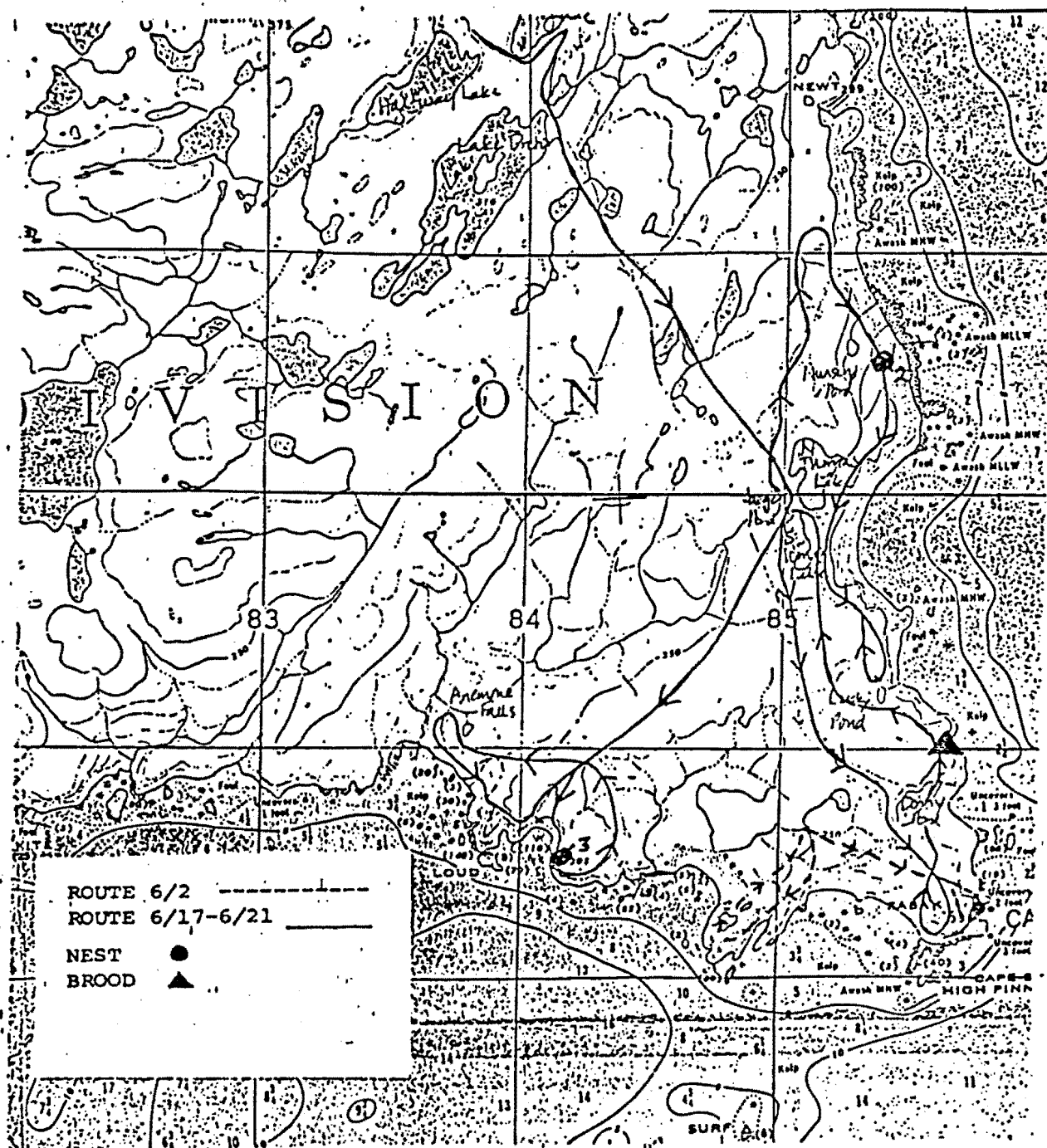


FIGURE 3. ROUTES OF SUCCESSFULL NEST SEARCHES AND NEST LOCATIONS

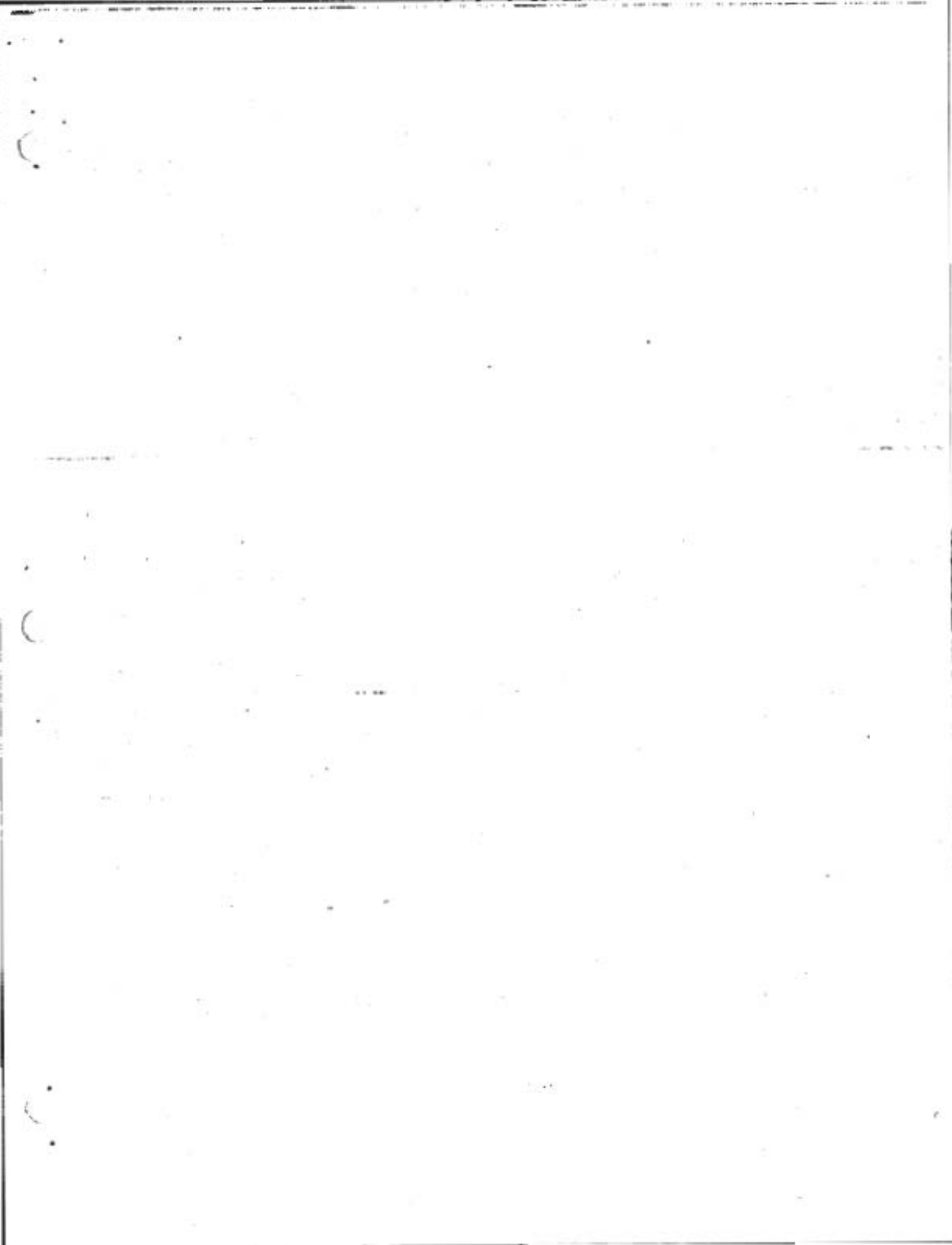
the southern portion of Agattu corresponds with the nesting preference at Buldir. It is unfortunate that weather and time would not allow additional searching along the south side of Agattu farther to the west.

It should be noted that the goose nests were well concealed and the female flushed close so that a great amount of search effort was required to locate each nest. Since only two observers were available for the survey, it is possible that some nests, perhaps several, went undetected. The searches for nests of a small recolonizing population on an island the size of Agattu can be compared to searching for the proverbial "needle in the haystack". The fact that two surveyors were able to locate three nests and one brood in such an expansive area was indeed fantastic.

A list of incidental bird and mammal observations and a summary of weather conditions are contained in the appendix.

#### RECOMMENDATIONS

1. No further transplants of Aleutian Canada geese should be made to Agattu.
2. Further spring migration or nesting surveys of Aleutian Canada geese on Agattu should be carefully evaluated before implementing to minimize disturbance to the birds thereby providing optimum conditions for recolonization of the island by the geese.
3. Fence posts and/or wire remaining in the Goose Creek at Aga Cove should be removed at the next available opportunity and disposed of at sea to return the area to a natural condition.



A P P E N D I X

INCIDENTAL BIRD OBSERVATIONS  
AGATTU 1984

Species	Date First Seen	#/hi	Location	Breeding
1. Common Loon	5/26	1/	Aga Cove	
Loon sp.	5/27	1	Aga Cove	
2. Red-faced Cormorant	5/26		Aga Cove	X
3. Aleutian Canada Goose	5/26	2/	Aga Cove	X
4. Emperor Goose	5/28	1	Cove S of AC	
5. Mallard	5/27	3	AC - GC	X
6. Green-winged Teal	5/18	7	AC - GC	X
7. Common Goldeneye	5/27	1	AC - GL	
8. Greater Scaup	5/28	3	Aga Cove	
9. Tufted Duck	5/28	2	BeeDee Lake	
10. Harlequin Duck	5/27	2	Aga Cove	
11. Common Eider	5/26		Aga Cove	X
12. Glaucous-winged Gull	5/26			X
13. Black-legged Kittiwake	5/26		Aga Cove	X
14. Common Murre	5/26		Aga Cove	X
15. Thick-billed Murre	5/27		Aga Cove	X
16. Pigeon Guillemot	5/27	8/	Aga Cove	
17. Ancient Murrelet	5/27	8	Aga Cove	
18. Horned Puffin	5/26		Aga Cove	X
19. Tufted Puffin	5/26		Aga Cove	X
20. Common Raven	5/26	1/2	Aga Cove	X
21. Winter Wren	5/26	1/	AC-Cabin	X
22. Rosy Finch	5/26	1	AC-Cabin	
23. Song Sparrow	5/26		AC-Cabin	X
24. Lapland Longspur	5/26		AC-Cabin	X
25. Eye-browed Thrush	5/26	1	AC-Cabin	
26. Black Scoter*	5/27	2	Aga Cove	
27. Leach's Storm-petrel	5/25		Aga Cove	
28. Fork-tailed Storm-petrel	5/25		Aga Cove	
29. Parasitic Jaeger	5/28	2	W of AC	
30. Rock Sandpiper	5/28	2	W of AC	X
31. Red-throated Loon	5/31	2	Cape Sabak	
32. Snow Bunting	5/31	2	Cape Sebak	
33. Pelagic Cormorant	6/2	3(+)	Cape Sabak	X
34. Pintail	6/4	1	GC	
35. Peregrine Falcon	6/5	2	AC, CS	X
36. Red-breasted Merganser	6/11, 6/24	1 , 1	McDonald Cove, AC	
37. Eurasian Wigeon	6/13	2	Goose Lake	

\* First Agattu Record.

MAMMAL LIST - AGATTU

Species	Date First Seen	#/hi	Present during		Breeding
			1983	1984	
1. Steller's Sea Lion	5/26	13	X	X	X
2. Harbor Seal	5/26	2	X	X	
3. Sea Otter	5/28	1	X	X	X

# WEATHER DATA, AGATTU - 1984

Date	Time	Location	Rel. Hum.	Cloud Cover	Temp. max.	Temp. min.	Wind Speed	Wind Dir.	Bar. Pres.	Ceiling Level(ft)	Snow	Rain	Comments
5/27	2350	AgaCove Cabin	No record	100%	56F	40F	1-3	S	30.05	1500'+	0"	0"	Some sun earlier beautiful!
5/28	0850	"	"	98%	56F	39F	3-7	NE	30.02	500'+	"	-	Variable ceiling lower on N. end.
5/28	2300	"	"	100%	53F	44F	1-4	Var.	29.99	300'	"	N/A	Light drizzel & fog.
5/29	0930	"	"	100%	53F	41F	3-8	N	29.76	100'	"	.19	Drizzel & fog.
5/29	2230	"	"	100%	52F	43F	2-4	NW	29.72	1500'+	"	-	Fog raised, overcast but clearing hi ceiling.
5/30	0945	"	"	100%	45F	39F	2-7	EN	29.68	300'	"	0.15	Foggy, drizzly.
5/30	2350	"	"	100%	49F	41F	2-5	W	29.48	300'	"	-	Foggy, rain.
5/31	0845	"	"	100%	43F	40F	6-9	S	29.42	300'	"	0.16	Foggy, drizzly.
6/3	0015	"	"	100%	48F	40F	30-40	N	29.27	500'	"	.54*	Foggy, Windy, driz.
6/4	1015	"	"	95%	48F	39F	0-3	N	29.30	1500'	"	-	Still, warmish, hi ceiling, looks nice!
6/4	2130	"	"	100%	52F	43F	2-6	N	29.33	1500'+	"	-	Still, nice.
6/5	0390	"	"	100%	50F	39F	6-8	NE	29.33	1000'	"	.06	Cool, breezy
6/5	2200	"	"	98%	77F	41F	2-5	NE	29.40	1500'+	"	-	Lovely day!!
6/6	0900	"	"	98%	51F	41F	5-7	NNE	29.58	1000'+	"	-	Looks very promising.
6/6	2215	"	"	90%	85F	50F	0-3	NNE	29.80	1500'+	"	-	BEAUTIFUL DAY!!!
6/7	1000	"	"	90%	46F	33F	0-4	N	28.96	1500'+	"	-	Another nice one!
6/7	2100	"	"	95%	61F	44F	2-5	ENE	30.12	1500'+	"	-	
6/8	0945	"	"	100%	45F	43F	2-5	S	30.11	~500'	"	0.005	Overcast, drizzly.
6/8	2150	"	"	100%	52F	43F	2-4	S	29.85	~500'	"	0.09	Overcast, drizzly.
6/9	0925	"	"	100%	46F	42F	15-35	NW	29.75	1000'	"	0.138	Overcast, very windy.
6/9	2105	"	"	100%	54F	42F	14-26	NNW	29.95	1000'+	"	-	Overcast & windy.
6/10	0925	"	"	95%	54F	42F	10	N	30.05	1000'+	0	0	Cloudy & windy, but dry.

(Trip to McDonald Cove)

\* Rainfall was not read for five days.



Date	Time	Loca- tion	Rel. Hum.	Cloud Cover	Temp.* max. min.	Wind Speed Dir.	Bar. Pres.	Ceiling Level(ft)	Snow	Rain	Comments
6/12	2115	AgaCove Cabin	No Record	100%	64F 40F	10 SSW	29.80	30-100'	0		Cloudy & misty; has rained all day; fog is settling low.
6/13	1055	"	"	100%	44F 43F	5-6 SSW	29.59	500'	"	.16**	Overcast, light wind and mist.
6/13	2030	"	"	100%	52F 46F	3-10SSW	29.59	~500'	"	-	
6/14	1005	"	"	100%	58F 43F	4-7 SSW	29.51	300'	"	.005	
6/14	2125	"	"	95%	59F 43F	2-4 SSW	29.56	750'	"	-	
6/15	1000	"	"	98%	52F 44F	3-5 SSW	29.59	1000'+	"	-	
6/15	2140	"	"	70%	65F 48F	6-9 NNW	29.78	1000'+	"	-	Cleared during the day.
6/16	1010	"	"	95%	48F 46F	3-5 SSW	29.79	750'+	"	-	
6/16	2115	"	"	95%	62F 48F	4-6 SW	29.85	750'+	"	-	Cleared again dur- ing aft. following a.m. showers.
6/17	1025	"	"	100%	62F 42F	0 -	29.81	0'	"	0.12	Thick fog, rain and drizzle.
6/21	2110	"	"	100%	48F 43F	20 SSW	29.11	400'	"	1.00***	
6/22	1005	"	"	100%	44F 44F	8-18 SSW	29.00	300'	"	(overflowed) .165	
6/22	2110	"	"	15%	58F 44F	4-6 NW	29.49		"	(overnight only) -	Cleared in aftn.
6/23	1015	"	"	60%	54F 43F	5-10 NNW	29.59	1500'+	"	0.03	
6/23	2155	"	"	2%	66F 49F	5-7 N	29.73		"	-	Max. temp. prob- ably in the sun.
6/24	1110	"	"	100%	58F 40F	4 N	29.75	500'	"	0.025	
6/24	2130	"	"	98%	65F 48F	2-5 N	29.18	1500'+	"	-	
6/25	0915	"	"	20%	52F 42F	3 N	29.80	2000'	"	0	First morning with blue sky!
6/25	2055	"	"	98%	72F 47F	2-6 S	30.15	400'	"	-	Max. temp. in sun.

\* Moved to the south side of cabin.

\*\* Rainfall was not read for three days.

\*\*\* Four and one-half days accumulation.

Library  
U.S. Fish & Wildlife Service  
1011 E. Tudor Road  
Anchorage, Alaska 99503