

AERIAL SURVEY OF THE PROPOSED WESTERN ADDITION
TO THE ARCTIC NATIONAL WILDLIFE RANGE

Audrey J. Magoun
May, 1974

From April 23, 1974, until April 27, 1974, Averill Thayer, Manager of the Arctic National Wildlife Range, and I conducted an aerial survey of the proposed western addition to the Arctic National Wildlife Range. We left Fairbanks on April 22 at 1245 in a Supercub piloted by Mr. Thayer and arrived in Arctic Village at 1530. We began the survey the following day and, because of excellent weather, were able to complete the entire survey in five days of flying. The following is the itinerary for the survey:

Date	Start Time	End Time	Break	Survey Time	Weather	Drainages
4/23	0740	1610	0 hrs 40min	7 hrs 50 min	+10°F, wind N6 mph, hazy, clear.	Crow Nest Creek, Ottertail Creek, Deadman Creek, Old John Lake area, Titus Mtn, Salmon Mtn, Tetsyeh Mtn area, flowage north of John Frank's cabins.
4/24	0715	1505	1 hr 5 min	6 hrs 40min	0°F, wind N6 mph, clear.	Upper Chandalar drainage, Cane Creek, Red Sheep Creek, Flatrock Creek, flowage between Water Creek Mtn and Yasuda Mtn, upper Junjik drainage.
4/25	0800	1810	1 hr 40min	8 hrs 30min	+10°F, wind calm, clear, hazy to the N of Arctic Village.	Upper Canning River, its tributaries including the Marsh Fork, Eagle Creek, Cache Creek, Ignek Creek.
4/26	0910	1720	1 hr 35min	6 hrs 35min	+15°F, wind calm, clear.	Upper Ivishak drainage, Echooka drainage, east across the mountains to the Canning River, Marsh Fork and low mtns. at the head of the Marsh Fork.
4/27	0855	1500	1 hr 25min	4 hrs 40min	+15°F, wind N3 mph, scattered clouds S of Arctic Vill.	Upper Junjik and its tributaries, upper Wind River, Smoke Creek, and the drainage east of Smoke Creek.

In addition, fluctuations of a smaller scale occurred in the foothills north of the Continental Divide with a few caribou in the foothills and about 500 caribou around Porcupine Lake in 1971-72; in the following winter virtually no caribou wintered along the northern edge of the mountains, while 2,000 caribou spent the winter around Porcupine Lake. This past winter saw around 5,000 caribou (at least in October) in the foothills with virtually no caribou around Porcupine Lake. These fluctuations appear to be tied closely with weather conditions and snow cover. However, the area around Arctic Village is probably nearly always an important wintering area for the Porcupine caribou and may well be one of the most critical areas in their range.

I have outlined in green the areas that had heavy caribou use during late winter, 1974. The area that includes the headwaters of Pogopuk Creek and the remainder of the upper Kavik River should also be considered part of the concentration area for caribou, but, since we did not fly over that area, I did not include it within the concentration area boundary. Had we flown all along the outer edge of the mountains, we probably would have seen sign of caribou all along that route.

Moose

One of the difficulties in determining moose concentration areas on the south side of the Brooks Range was that the abundance of caribou tracks in the Chandalar and Junjik River valleys obliterated most of the moose tracks that might have been there. In addition, the presence of spruce trees in these areas made moose observation more difficult than in areas of willow. Therefore, the relative abundance of moose in the study area is probably biased in favor of areas where caribou tracks were less abundant and spruce trees not so numerous. However, R.R.C.S. Ltd. biologists had

noted a scarcity of moose in the Chandalar River valley and the Junjik River valley, 8 and 9 moose in 1972 and 1973, respectively, in the Upper Chandalar River valley and only 1 moose in the Junjik River valley in 1973. During this survey at least a dozen passes had been made over the Chandalar valley north of Arctic Village to the mouth of the Junjik and no moose were sighted during these flights. The five moose that were sighted in areas where spruce trees were common were all a considerable distance from Arctic Village--two in Smoke Creek, two in Crow Nest Creek, and one in the upper Chandalar River valley.

The areas outlined in red on the map were considered moose concentration areas not only because of the number of moose sighted but also because of a large number of moose tracks and relatively extensive stands of willow.

The area marked on the Ribdon River had many moose tracks, but no moose were seen there nor were willow stands particularly extensive.

The jagged line on the Wind River indicates that the southern limit of the concentration area could not be determined because spruce trees and caribou tracks made moose and their tracks difficult to see.

Moose tracks occurred in most of the drainages that we flew on the north side of the mountains. Though the moose seemed to be concentrated in areas near the northern edge of the mountains, it was obvious from tracks that some moose had traveled far up the drainages into the mountains sometime during late winter. For instance, moose tracks occurred in all the willow stands along the Marsh Fork though we saw no moose in the Marsh Fork during the survey. The presence of moose in the northern drainages is closely linked to the presence of riparian willow stands which provide food for moose during the winter. According to R.R.C.S. Ltd. (1973), willow stands that are tall enough to protrude above the snow in winter are very limited

east of the Canning River. A very low number of moose was reported by these biologists north of the Continental Divide and east of the Canning River in 1972 and 1973. According to their 1973 report, R.R.C.S. Ltd. biologists stated that the first significant willow stands occur west of the Canning River and moose become much more common in the area of the proposed western addition though "the majority of North Slope moose sightings occurred west of the Sagavanirtok River" where moose habitat is even more extensive.

In spring 1972, R.R.C.S. Ltd. biologists counted 73 moose in the Canning River-Kavik River drainage (R.R.C.S. Ltd., 1973), and in spring 1973 they counted a minimum of 85 moose in that area (C.A.G.S.L., 1974) which they felt was nearly 100% of the moose in those two drainages. We counted 28 moose in the Canning River drainage but did not fly the Kavik River drainage. Biologists for R.R.C.S. Ltd. believe that there is movement of moose between these two areas (C.A.G.S.L., 1974). In March, preceding our survey, Roland Quimby reported 35-40 moose in the Cache Creek-Eagle Creek area. This number is low compared to the previous two springs of 1972 and 1973, when around 60 moose were found in that area. An even lower number of moose was counted during this survey. It may be that mild winter conditions allowed the moose to begin dispersing earlier this year or perhaps browse conditions caused them to seek new areas.

Our counts of moose in other areas were not complete counts, and we may have missed as much as 30% of the moose in the areas we flew though our figures are close to R.R.C.S. Ltd. figures in most cases. In the Ivishak River, from its headwaters to the edge of the mountains, we counted 10 moose compared to R.R.C.S. Ltd. counts of 8 and 34 in 1972 and 1973, respectively. In the Ehooka drainage, from Cache On Lake to Wahoo Lake, our count was 17

moose compared to R.R.C.S. Ltd. counts of 18 and 21 in 1972 and 1973, respectively. Though we found moose tracks in the Ribdon, we saw no moose; R.R.C.S. Ltd. biologists counted 17 and 19 moose in this river in 1972 and 1973, respectively. We did not fly the Lupine, Saviukviayak and Kavik Rivers; but because of their location and terrain, they no doubt provided habitat for moose also. R.R.C.S. Ltd. counts of moose along Lupine River yielded 8 moose in 1973; no count was given for the Saviukviayak, and the Kavik River drainage yielded 22 moose in late April in 1973. Because our count of 23 moose in the Cache Creek-Eagle Creek area was relatively low, had we done a survey of the Kavik River, we might have seen a considerable number of moose.

Movements of moose on the North Slope are not well known nor is much known about their impact on the willows along the drainages. Movements from one drainage to another may be quite extensive as several cases have shown (R.R.C.S. Ltd., 1973). In the spring of 1972 almost the entire winter moose population in the upper Kongakut River (18 moose) migrated into the Firth River drainage, probably in search of new browse. Moose populations may be expected to fluctuate from year to year in various drainage on the North Slope and will be influenced by willow growth which appears to be most favorable to moose west of the Canning River.

Moose Sightings

Date	Bull	Cow	Yearling in 1973	Calves of Spring 1973	Unclassified	Total	Area
23 April					1	1	Upper Koness Creek
23 April		1	1			2	Crow Nest Creek
24 April	1				1	2	Upper tributary of Junjik River
24 April		1				1	Chandalar River Valley near m. of Cane Creek
25 April	2					2	Middle of Ikiakpak Valley
25 April	1	3	2	1	14	21	Mouth of Cache and Eagle Creeks
25 April	1					1	Tributary of Canning R. that has headwaters north of Mt. Salisbury
25 April		2				2	Tributary of East Fork of Canning R. about 3 mi. S of the confluence of Marsh Fork and main Canning
25 April		1	1			2	Tributary of East Fork of Canning R. 10 mi. south of its mouth
26 April	1	1	1			3	Upper Ivishak River
26 April		2				2	Gilead Creek
26 April	2					2	In foothills south of Gilead Creek
26 April	2				1	3	Headwaters of Gilead Creek
26 May					9	9	Headwaters of Echooka River NW of Wahoo Lake
26 May					8	8	" " "
26 May	2					2	Juniper Creek where it leaves the mountains

Moose Sightings, continued.

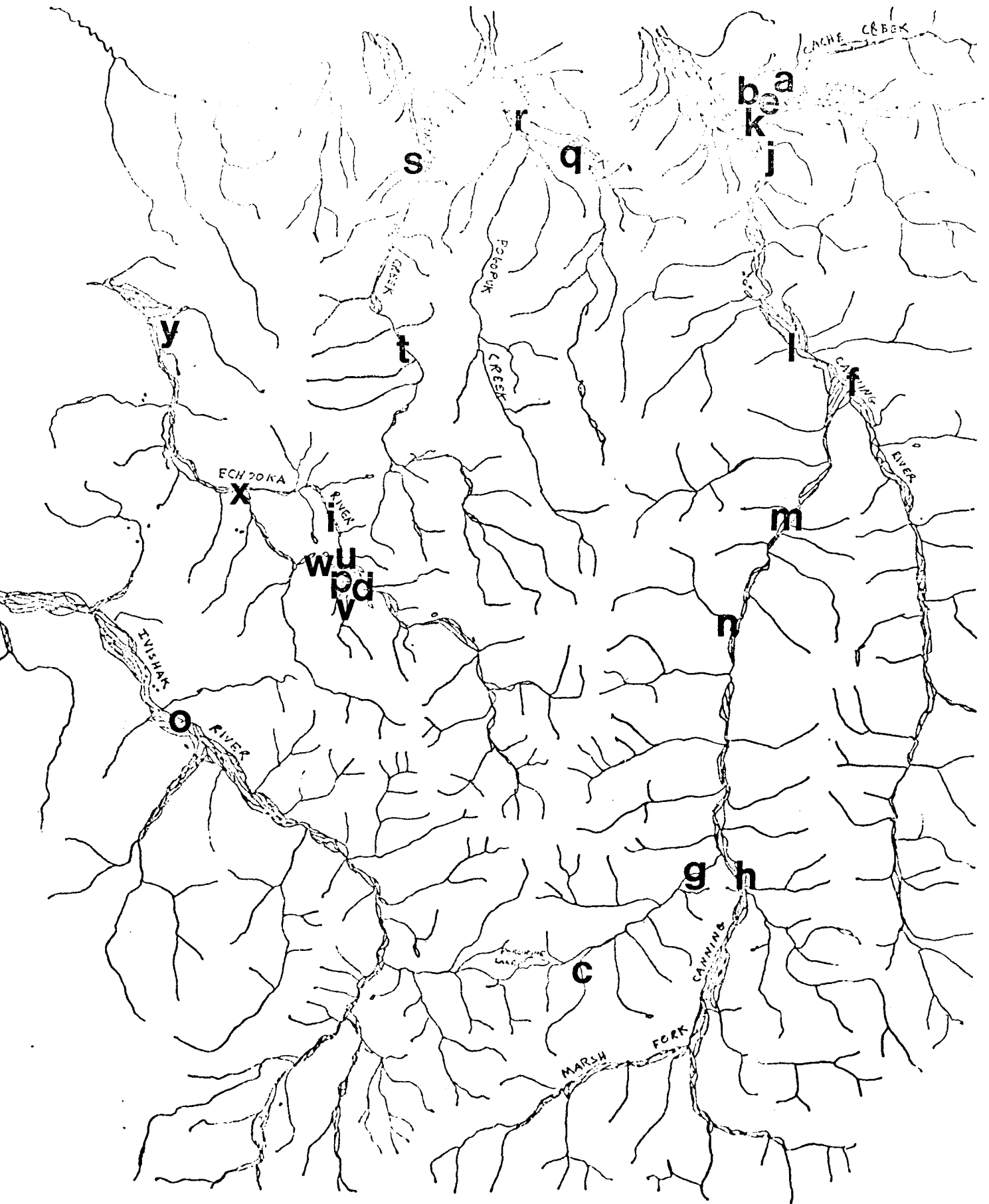
Date	Bull	Cow	Yearling in 1973	Calf of Spring 1973	Unclassified	Total	Area
26 May		2				2	Headwaters of Juniper Creek
27 May					9	9	Headwaters of Wind River
27 May	2					2	Headwaters of Wind River
27 May		1	1			2	Headwaters of Wind River
27 May		1		1		2	Headwaters of Wind River
27 May	2					2	Headwaters of Wind River
27 May		1	1			2	Upper Wind River
27 May	2					2	Smoke Creek
TOTAL:						86	

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|-----|-----------|---|--|
| 23. | 6 July | w | Bull; possibly same as 16, 21, and 22. |
| 24. | 11 July | x | Bull; possibly same as 16, 21, 22, and 23. |
| 25. | 13 August | y | 2; cow with a younger cow possibly a two year old. |

MOOSE OBSERVATIONS (See Figure 13)

	Date	Map Code	Remarks
1.	2 May	a	1; not classified.
2.	"	b	3; not classified.
3.	8 May	c	1; not classified; ran for approx. 0.25 mi after it saw us.
4.	22 May	d	1; not classified.
5.	"	e	4; not classified.
6.	23 May	f	1; not classified.
7.	"	g	1, not classified.
8.	28 May	h	2; young bull and cow.
9.	2 June	i	1; not classified.
10.	5 June	j	1; not classified.
11.	"	k	3; not classified.
12.	7 June	l	Bull.
13.	8 June	m	Bull; possibly same as 12.
14.	9 June	n	Bull; possibly same as 12 and 13.
15.	18 June	o	Cow.
16.	27 June	p	Bull.
17.	"	q	Cow with twin calves.
18.	"	r	Bull.
19.	"	s	3 bulls.
20.	"	t	Cow.
21.	28 June	u	Bull; possibly same as 16.
22.	29 June	v	Bull; possibly same as 16 and 21.

Figure 13 - Locations of moose (Alces alces) observations summer 1975.



AN INVENTORY OF WILDLIFE RESOURCES
Marsh Fork
Summer 1973

by

Audrey J. Magoun

and

Patrick Valkenburg

)
1974

LYNX, Lynx canadensis

The biologists at Fish Camp (WBCC) saw a lynx on 31 May. It was crossing the Marsh Fork on the ice from Fish Camp to the east side of the river. Lynx are rare on the Arctic Slope, but common along the Sheenjek and Coleen rivers, south of the Continental Divide, where snowshoe hares are common. Rausch (1951) believes that lynx are found far to the north of their usual ranges in years when hare populations are high or declining. Hare populations have been high in interior Alaska for the past three years or so.

MOOSE, Alces alces

There is reason to believe that moose are a recent arrival in northeast Alaska. Leffingwell (1919) traveled up the Canning River as far as Cache Creek in the early 1900's, and he makes no mention of the presence of moose. However, Rausch (1951) found moose regularly along the Colville River and stated that the Nunamiut Eskimo had hunted them for a very long time.

According to RRCS Ltd. biologists, there were about 70 moose in the Canning River drainage in late winter 1973. Of these, about 20 were in the Marsh Fork drainage and about 30 were along the Canning River. About the time of breakup (late May) 1972, about 40 moose were concentrated at the confluence of the Marsh Fork and Canning.

The only moose we saw in the drainage were a cow, calf, and yearling on 17 June. They were feeding in tall brush along a tributary near the mouth of the Marsh Fork (see Appendix V).

In late July, we saw tracks of a large moose and those of a cow and calf between Campsites 13 and 14. We had backtracked the large animal for at least six miles, and it appears that it had been traveling steadily north. Also in late July, RRCS Ltd. reported seeing a bull near Sheep Camp.

A scattering of droppings and a few old tracks were seen in most of the

willow patches that occur along the Marsh Fork and its tributaries. Virtually all droppings were of the type produced in winter. This fact and the presence of several shed antlers indicate that moose are really only winter residents in the Marsh Fork.

The remains of an old bull moose that had died during early winter were fed upon in early June by a grizzly bear. The bear remained in the vicinity of the carcass for several days until it was shot by a hunter. The remains of another dead moose were discovered opposite Fish Camp.

Moose are heavily dependent on willows, and willows are well browsed in some places. Browsing was heaviest near the mouth of the Marsh Fork and lighter at the southern end of the drainage.

Hunting probably has no effect on moose populations in the Canning River. We found the skull and antlers of a moose near Campsite 15, and it is possible that this animal was shot, as there were cut willows near it. Some guides believe that moose hunting in this area is more trouble than it is worth, because several hundred pounds of meat must be brought out if an animal is shot. However, one guide expressed interest in hunting in the drainage, but to our knowledge, he has not done so yet. Due to the open terrain, moose will be vulnerable if hunting them becomes feasible.

CARIBOU, Rangifer tarandus

Large numbers of caribou occur rather irregularly in the Marsh Fork drainage, although a few may be found there throughout the year. Carter Pass and the Marsh Fork appear to be a spring migration route for some of the caribou that spend the winter near Arctic Village or in the Junjik River Valley. In 1973, many bands of caribou used this route to go north in spring. In some years caribou winter in the upper Marsh Fork; in 1972-73, about 2,000 wintered there, and in 1971-72, several hundred did so (RRCS, Ltd.).

SOME OBSERVATIONS OF MAMMALS
IN THE
ARCTIC NATIONAL WILDLIFE RANGE;
SUMMER, 1972

By
Patrick Valkenburg
Audrey J. Magoun
and
Frederick C. Dean

MOOSE, Alces alces

Moose were most commonly seen during the latter part of May when many used the willow areas around the mouths of Cache and Eagle Creeks. On several days during the last week of May, we counted 25 moose in the above locality--undoubtedly there were many more which we could not see due both to the long distance and thick cover. We observed many moving east along Eagle and Cache Creeks in late May, and by the end of the first week in June, we saw very few on the river flats.

After the second week of June, moose were rarely seen, and we saw none at all during July. On 2 August, Valkenburg saw a cow feeding on aquatics in Eagle Lake, and, when we returned to base on 15 August, three were feeding in the lake. For the first few days after our return, these individuals continued to use the lake, but we apparently scared them enough each morning so that they stopped feeding there.

MOOSE--Summary of Observations

Date	No.	Location	Comments
5/23	12-20	Canning R. flats near Eagle Creek	
5/24	25±	Canning R. flats near Eagle Creek	Moose in groups (5-6) and singles and pairs which may be cows and yearlings.
5/26	2	Eagle Creek, 1 mile E. of base camp	Cow and yearling
5/27	23±	Canning R. flats near Eagle Creek	All ages and sexes; seen for at least three days
6/2	3	Flats of Canning R. near Eagle Creek	
6/4	5	N. side Eagle Creek	
6/6	1	One mile NE. base camp	Cow
6/6	6	Canning R. flats	Mixed sex and age
6/8	1	Mouth of Eagle Creek	Bull
6/10	1	Willows at lookout #2	Cow
6/11	2	Willows at lookout #2	Bull, cow
6/11	1	Two miles NW. of lookout #1	
6/12	3	Two miles NW. of lookout #1	Bull with budding spikes, two cows
6/12	1	One mile NW. of lookout #1	Cow?
6/12	5	Flats of Canning R. near Eagle Creek	
6/16	1	Lookout #2	Cow
6/16	2	Lookout #2	Cow and yearling
6/16	1	One mile W. of lookout #1	Bull

MOOSE--Summary of Observations (Cont.)

Date	No.	Location	Comments
6/22	1	Two miles NE. base camp	Yearling (lying in snow)
6/23	2	Two miles NE. base camp	Cow with yearling
7/2	1	Lookout #3	Yearling, sniffed at dead caribou.
7/28		Moose tracks along Canning R. near lookout #5	Going S.
8/2	1	Eagle Lake	Cow (feeding on aquatics in lake)
8/15	3	Eagle Lake	Cow and cow with yearling feeding on aquatics in lake
8/16	3	Eagle Lake	Cow and yearling (probably same as 8/15); yearling
8/16	2	Eagle Lake area	Cow and yearling (probably same as 8/15)
8/17	1	Eagle Lake	Yearling
8/17	1	Two miles E. of base camp	Cow
8/18	1	Balsam poplars of Cache Creek	
8/19	1	Eagle Lake	Cow feeding in lake
8/21	1	Willows near base camp	Small cow