The Caribou of the northern Yukon Territory
A history of man's interest in them with special reference to wildlife biology

by

Peter G. Kevan

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"DRAFT" - DO NOT QUOTE

CWS
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c.1

SOME ERRATA

page/line

5/26	Prudhoe
5/29	on October 21 - 22,
36/21	(in McEwen 1952c)
37/10	occurs
38/4	occurs
38/23 -24	... area (Moore in McEwen 1953b, 1954b)
42/-	heading missing REFERENCES
47/6-8	(... 1963 for ... ... former)

INTRODUCTION

The caribou of the northern Yukon Territory have no doubt been exploited ever since man ventured into the area. Excavations in the Old Crow area show man's presence there at least 10,000 years ago when caribou formed a major part of their diet (needs validation and reference).

In recent times, the caribou of the northern Yukon have been subjected to man's death-dealing hand as whalers and miners depleted their herds for meat, and forest fires burned up their wintering grounds. This part of their history is lucidly described by Lang (1952) whose remarks are worth quoting in full.

"The country bordered by the Arctic Ocean on the north, the Mackenzie River on the east, the Peel River on the south and the Yukon River as far as Fort Yukon and then a line due north to the Arctic Ocean on the west, comprises an area of roughly 90,000 square miles.

"The rainfall on this area is fairly abundant and allows for a rich growth of Arctic vegetation including a plentiful supply of caribou lichen. The flora belongs to the Alaskan species whereas on the east side of the Mackenzie, the Hudsonian species of flora predominates. The climate east is noticeably drier and the vegetation is not nearly as luxurious as on the west side of the Delta.

"The topography consists to a large extent of gently rolling country covered by tundra vegetation, broken here and there by patches of rough mountains and drained by numerous creeks and small rivers.

"This country has, from time immemorial, been a favourite range of vast numbers of caribou. How many head were roaming here before the advent of firearms is anyone's guess, but it probably was not less than two per square mile and quite likely more.

"Before the coming of the white man the only enemies of the caribou were wolves, bears, eagles and primitive natives. The wolves were probably the more dangerous; bears and eagles were only bad in the Spring when the young fawns were small. The Loucheaux Indians, while depending almost entirely on the caribou for a livelihood during a large part of the year, didn't kill any more than needed, and made good use of every part of the carcass for human as well as dog feed. Along the Arctic Coast, the Eskimo, living mostly on sea animals and fish, didn't bother the caribou much.

"The animals roamed at will in large herds all over the area, touching the Arctic Coast and the foothills of the west side of the Mackenzie Delta every year. At times some herds crossed the Delta's upper reaches to the east side.

"This ideal state of affairs for the caribou began to change in the 1860's and 70's, with the arrival of whaling ships and firearms. The whalers wintered at several harbours along the coast but mainly at Herschel Island. There being no police in the country then, the Captains had absolute authority over all their surroundings. They needed large quantities of fresh meat for their crews and constantly employed native hunters to bring in game (and to the old Eskimo this was an opportunity too good to miss; they left their families in camps close by the ships when the whalers supplied them with such luxuries as tea, tobacco, flour, sugar, and calico in return for fresh meat obtained easily by the Eskimo with the aid of rifles and plenty of ammunition.) The slaughter must have been terrific. The white men wanted only the choice parts of the carcass and many animals were killed for the tongues only. There may have been other causes besides excessive hunting responsible for the decline, as some of the old-timers told me about years when wolves were exceptionally bad - but the fact remains that, by about 1890, the herd of caribou on the east side of the Mackenzie Delta, approximately where the present-day Reindeer Reserve now is, was completely exterminated. On the west side of the Delta the old Loucheaux Indians tell me they had to travel inland 30-40 miles west, before getting into caribou country - and not until 1926 did the caribou again appear as far west as the Delta. The same thing held along the coast; the Eskimo had to go further and further inland towards the south to get meat. Apparently, the caribou were driven towards the center of the area, and towards the south and west. The Indians here to a large extent still used bows and arrows and muzzle loading guns, and as there were none there to buy meat, they followed their old customs of killing only what they needed and not wasting any.

"More trouble was in store for the caribou - white men looking for gold pressed in from the south and west - they needed meat and they got it from the large herds crossing the Yukon River into Alaska and back in seasonal migrations. In 1898, gold was found in the Klondyke and within Dawson City, prices were skyrocketing and fresh meat was in demand by the prospectors, who now employed Indian hunters to get it. More and more people poured into Alaska and the caribou herds that crossed the Yukon River became smaller every year, only in the center of the area around the small village of Old Crow did the caribou survive the fairly large numbers as there was only a minimum of hunting there - by a small band of Loucheaux Indians who took only what they needed.

"Fortunately for the caribou times began changing. About the turn of the century, the R.C.M. Police arrived, and brought law and order with them.

"Whales were getting scarce and "whalebone" dropped in price to a level that took the large profits out of the whale industry; this was due to the fact that substitutes were being found to take its place in buggy whips and women's corsets.

"With the outbreak of World War I, the whaling was finished, and the pressure on the caribou from the north came to an end. The gold rush in the Klondyke slackened in the early 1900's and about 1910 there was little hunting done from that direction. This left the depleted caribou herds to increase from the centre of their 90,000 square mile block of country and increase they did. They were now only bothered by native hunters along the borders, and their natural enemies, the wolves, bears and eagles. The natives themselves were now on the decrease due to white men's disease such as T.B., Measles and 'Flus.

"In 1926 the caribou reappeared in the foothill country west of the Mackenzie Delta where they hadn't been seen in numbers for 35 years, and since that year they have not failed to appear there - during the Fall and Winter. From 1928 to 1942 I have every year personally hunted caribou in the Richardson Mountains and observed the herds there. They generally appeared in large numbers about October. I have counted as many as 5,000 or 6,000 from one hilltop at times when they were undisturbed. By comparing notes with other hunters - reports from the same dates - I would estimate that not less than 25,000 to 30,000 animals were on the move, in a strip of country about 20 miles wide towards the west inland from the Delta and about 30 miles in length north and south. I later checked with hunters from Old Crow and they reported large herds there too, at about the same dates, so that the total number in the area must have been very large.

"Of course, the whole area is not covered with animals, they move in large herds, moving from three to four miles per day. When really travelling they cover 10-12 miles easily in 24 hours. They disappear from a given locality within a day or two when moving and may turn up there again one or two days later just as suddenly. If the mild west wind that generally comes every year in December or January blows for very long the snow melts on the hills and later freezes to a hard crust which makes it very difficult for the animals to get at the lichen, thus they move rapidly in search of better feeding grounds in other localities, which results in thin, underfed animals. Fire is another hazard. The caribou dislike crossing burnt country and will travel a long way to get around it, which is easily understood, as caribou lichen burns fast and takes many years to come back, and they depend almost entirely on it for food.

"This winter, 1951-52, the caribou arrived in October in the foothills west of the Delta in large numbers, larger in fact than any of the old natives had ever seen before, and they have been around all winter, moving over the area in great herds. A rough guess at their numbers is difficult but it probably exceeds 60,000 to 70,000 in a strip of country about 35 miles wide east and west and running from the Peel River to the Arctic Coast. Thus sudden increase in numbers is, I think, partly due to fires that occurred in Alaska and many places in the Yukon. In the summer of 1950, I flew from Aklavik to Dawson City in early July and fires were burning in many areas. When I came back over the same route in late August, the visibility was hampered by smoke all the way, originating from fires still burning in many places in the centre of the caribou country. But in spite of these hazards, there is no doubt about it: the caribou are doing well and increasing fast. I think this year they were trying to cross the Delta in search of other feeding grounds (they have made attempts at crossing before. In 1931 some actually crossed; also in 1933 I saw their tracks on lakes close to the Mackenzie almost across to the east side). If they ever did cross in large numbers it would cause a lot of trouble with the Reindeer herds there, as the caribou probably would draw off many deer with them to the barren grounds towards the east. They will probably stay in great numbers for many years about where they are thickest now, mainly in the eastern part of the great block of 90,000 square miles. The feeding is good and many of them have stayed there one or more fawning seasons and many thousands more stay fawning this spring in the eastern section.

"I believe, and many old natives do too, that the cows prefer the return to localities where they raised their fawns the previous year, and the young animals like to return to the parts in which they were born, if no serious hazards prevent it.

"I have seen this principle apply to semi-wild cattle and sheep in Australia when I was there as a young man and I fail to see why it should not apply to caribou also.

"As for the threat from hunters, I don't think it is very great at present as far as this section is concerned. In all there are probably only about 400 hunting licences issued to natives within reach of this herd. That takes in Old Crow, Arctic Red River, McPherson and Aklavik. (The Arctic Coast is at present almost unpopulated). And of the 400, not more than 150 actually hunt and probably only about half of these do any hunting of meat for sale, beyond their own needs. It has also been my experience that the natives never waste any part of the caribou - the whole carcass, stomach and all is used as food for human beings and dogs, and as a matter of fact they couldn't afford to waste any, even if they were so inclined, for the principal reason that caribou are pretty hard to hunt at most times. They are great travellers and when pressed by gunfire move on at a pretty fast clip for 10 to 12 miles, and that is quite a distance for natives with a dog team over rough country and creeks and valleys, and then after the hunt he has to go back to his camp again and the caribou will probably move another ten miles in the meantime.

"Meat caches left in the hills for a short while, especially in October and early November, are sometimes raided by Grizzly Bear, and a bear can destroy a surprising amount of meat in a short time. (I have seen one occasion where a bear carried a whole bull caribou for over a mile and cached it between rocks). Wolves also rob caches but more often they prefer to kill their own meat. Two-legged wolves, when hunting is hard, have also been known to rob caches and while this may not strictly be classed as waste, the owner of the cache would probably call it so. But such incidents are more or less unavoidable and not of great importance. The native chiefs are checking up strictly on any form of carelessness in handling meat and especially the last few years, since Game Wardens are in residence in the District, the waste may be called nil.

"Altogether probably about 1,200-1,300 animals were shot in the western section this year, not counting Old Crow, and that number certainly isn't anywhere near the natural increase you can expect of the great herds roaming the eastern part of the great block this year. In fact, it strikes me that the caribou now are in very much the same happy state in which we found them, at the beginning of this discussion, and with wise game regulations, they can remain in that state and at the same time serve as a valuable and much-needed supply of food for the natives of the surrounding country.

"It would be nice to leave off here, but it may be worth considering another danger that may lurk in the future, although maybe yet remote. This is the overcrowding of animals in certain sections, and their consequently lessened resistance to diseases.

"In 1933 and 1934, the reindeer herd from Alaska which the Dominion Government later bought, was in transit along the Arctic Coast. There were, as is well know, some difficulties getting enough herders for the drive and many animals escaped and mixed with the caribou herds. Indians told me about killing spotted caribou the likes of which was never known before. They were spotted reindeer and some went as far south as Peel River and many more besides the spotted ones went unnoticed. These reindeer brought in footrot and T.B. In 1935, thirty-six natives told me of finding many dead caribou with raw foot, and some had matter on the lungs, when opened. Some more animals were dead and in starving condition in 1937. But after that year I didn't hear about any more, so apparently the sick animals died off without affecting the herd to any great extent. However, germs of both diseases may still be lurking in the soil and by infecting the old animals may be able to run wild at a future date if the range becomes overcrowded. Let us hope that doesn't happen."

The Canadian Wildlife Service started investigating the caribou of the northern Yukon in the late 1940's. Work continued through the 1950's in conjunction with the United States Department of the Interior, Fish and Wildlife Service in Alaska. In 1960, the United States set aside the 'Arctic National Wildlife Range', the largest unit in the National Wildlife Refuge System with 8,900,000 acres in the extreme north-eastern part of Alaska bordering the Yukon. Canada did not take advantage of the situation, and Canadian interest in the northern Yukon and Alaskan caribou dwindled so that surveys conducted in 1960 marked the end of active interest in Canada until 1970. Then the pressure of oil company exploration activities and the threat of pipelines from Prudhoe Bay passing through the northern Yukon and down the west shore of the Mackenzie Delta or through Old Crow Flats goaded Canada to act. To this end, a meeting hosted by the Yukon Conservation Society was held in Whitehorse, Yukon Territory, on October 21-23, November 1970 at which it was decided a reserve adjoining the Alaskan reserve should be established.

The aim of this report is to consolidate previous work done on the caribou of the northern Yukon Territory in order that future work can be undertaken to fill in gaps in our knowledge of these animals. To the end, I have

examined the files in the Canadian Wildlife Service office in Inuvik, N.W.T., and attempted to arrange the information in a useful way. Unfortunately, the information is not consistent, neither in its presentation nor its method of acquisition. Much is apparently contradictory and fragmentory as a result of too much weight being placed on the concepts of individually discreet herds and constancy of migration routes. For the purposes of this resumé, it is convenient to assume that all caribou north of the Peel River constitute one herd and that their migration route is unknown beyong being orientated north and south.

I have divided the year into the following periods or seasons which appear to fit what is known about other caribou in Canada and Alaska:

1. Wintering
2. Spring Migration
3. Calving and Summer Wandering
4. Fall Migration

Probably Calving and Summer Wandering can be separated, but without more detailed information than is presently available, this is not practical. According to these seasons, I have tabulated the information I have gathered from about forty reports, letters, memoranda, and other communications in the hopes that a picture will result.

Table I

WINTERING

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
Generally	Porcupine Flats (Porcupine R., Bell R., and Eagle R.)	Y	This area burned in 1950, therefore wintering on coast in 1951.	McDonald, 6
Generally	Upper Peel R., Wind R., Hart R., and Bonnetplume R.	Y		Stevens, 6
Generally	Headwaters of the Peel R., and Porcupine R.	Y		14
Frequently	Along Yukon coast	200-300		14
Generally	Old Crow Flats	variable	Animals occasionally winter here in variable numbers.	Anon., 1
1949 - 1950	Old Crow Flats	20,000	Chandalar Herd. In winter 1948-1949 wintered in E. Chandalar Valley, Alaska.	Soper, Elkins Chatelain, 2
2-5 December 1949	Aklavik-Moose R.	0		McCall, 3
2-5 December 1949	Aklavik-Rat Pass-Rat R.-25 miles-Stony R.-Ft. McPherson-Aklavik	0		McCall, 3
7 December 1949	S and W of Ft. McPherson -Vittrekwa R. and Yukon border	200		McCall, 3
1951 - 1952	Between Bell R. and Porcupine R. on muskeg area	Y		Bonnetplume, 5
1951 - 1952	Firth R.	0		Kayaktuk, 4
10 December 1951	Headwaters of Sheep R. and Rat R.	Considerable	In small scattered herds.	Harrison, 6

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
? December 1951	Sheep R. and Fish Creek Sinclair Rock (67°10'N, 137°W)	fewer 0		McDonald, 6
12 December 1951	Between Babbage R. and Peel R. in hills along coast	Y		Allen, 6
19 December 1951	Mount Goodenough	15 + another herd		McLeod, 6
Before 23 December 1951	On Yukon coast	Y		Maines and Macdougal, 6
Mid to end December 1951	30-40 miles from Aklavik, in the hills	Y	Moving north.	McEwen, 6
February 1952	Firth R.	0		Akgeak, 4
February - March 1952	Opposite Herschel Island to Blow R.	unusual numbers	(Part of spring migration north?)	Kayaktuk, 4
8 March 1952	Shute Creek	2000-3000	(Migrating?)	Mead, 5
1953 - 1954	West and South of Richardson Mountains	Y		McEwen, 10
1953 - 1954 sometime	Between Porcupine R., "Fish" Lake, and Eagle R.	numerous old tracks		McEwen, 10
1953 - 1954 until March	Porcupine lowlands	Y	Extrapolation from 10.	McEwen, 10
mid-January-March 1954	Stony Creek area (67°10'N, 136°20'W)	Y	Hunters.	McEwen, 10
mid-January-March 1954	Rock R. area	Y		McEwen, 10

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
3-13 February 1954	Stony Creek	200	Moving north. Observer hunted.	Roberts, 10
until 12 March 1954	Bear Creek area	300	Moving south.	Vittrekwa, 10
27 January 1955	Rat R., Loon Lake, Stony R.	0		McEwen, 39
7 February 1955	Pleasant Lake-Whitestone District near Whitestone Village at the confluence of Porcupine R. and East Porcupine R.	Y		38
28-29 November 1955	Rat R. McDougall Pass Porcupine R. to Old Crow Bell R.	0 0 0 0 0	 Few tracks on 12-24.	36
28-29 November 1955	South of Bell R.	Y		Natives, 36
21 January 1956	Head of Stony Creek	Y		35
14 December 1956	Between Blow R. and Babbage R.	Y	Small bands between 2 to 3 to 20.	Zubko, 24
31 December 1956	Between Blow R. and Babbage R.	1000		Zubko, 23
31 December 1956	In Richardson Mountains west of Aklavik	Y		Bryant, 23
20-22 February 1957	Ogilvie Mountains	concentrated		Fuller, 12
8 March 1957	Richardson Mountains	0		21
	Head of Cache Creek	0	Tracks of about 12 very old tracks of about 100.	21

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
8 March 1957	On Yukon Coast between Blow R. and Babbage R.	79		21
	Babbage R.	156	29% calves.	21
27-28 March 1957	Ogilvie Mountains	concentrated	Wintering in Ogilvie Mountains is common.	Fuller, 12
22 November 1957	Aklavik-Ogilvie Mts.-Eagle Plains	0		Callison, 20
ca. 2 December 1957	To Aklavik via Ft. Yukon	0	Some in Collen R. area west of Yukon border 30 miles.	Geophysicist, 20
December 1957	Northern Yukon	0		Bryant, 20
1958 - 1959	Herschel Island	600		14
mid-November 1958 to 12 Jan. 1959	Herschel Island	600		Wright, 19
12 January 1959	Herschel Island	600		Mounties, 18
12 January 1959	Mouth of Malcolm R.	1500		Mounties, 18
12 January 1959	Mouth of Malcolm R.	1500		Wright, 19
12 January 1959	Malcolm R. to Stokes Pt.	Y	In small concentrations.	Wright, 19
24 January 1959	Aklavik - 138°40'W	0		Radvanyi, 19
	138°40'W-S.E. of Stokes Pt.	37		
	Just S.W. of Stokes Pt.	62	2 herds, 30 and 32.	
	Just further on	1		

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
24 January 1959	Herschel Island	157		Radvanyi, 19
	Mouth of Malcolm R.	0		
	to Firth R.	0		
	to Blow R.	0		
	to Aklavik	0		
9 February 1960	Aklavik to headwaters of Rat R.	0		Radvanyi, 13
	Rock R.	0	Tracks only.	13
	Eagle R.	0	Tracks only.	13
	South end of Whitefish L. (67°09'N)	400-500		13
	Porcupine R. to between Observation Monument and junction of Bell R.	ca. 60		13
	Bell R.	0		13
	Driftwood	0		13
9 February 1960	Rat R.	0		16
	Rock R.	0	Tracks	16
	Eagle R.	0	Tracks plentiful	16
	Whitefish Lake-Porcupine R.	400-500		16
	On Porcupine R. between Observation Monument and Bell R.	60		16
Mid-February 1960	Eagle R., Rock R., and Porcupine R. areas	500		14

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
24 March 1960	Eagle R., Rock R., Porcupine R. areas	21		14
24 March 1960	At a lake at 67°12'N 137°45'W	21		15
24 March 1960	Eagle R.-Whitefish Lake and part of Porcupine R. west of Whitefish Lake	0	Fairly fresh tracks.	15
24 March 1960	Rat R.-Bell R.-Rock R.	0		15
24 March 1960	Porcupine R.-Driftwood R.-Old Crow	0		15
24 March 1960	Lakes west of Dave Lord Creek-Porcupine R.-Driftwood R.-source	0		15
24 March 1960	Richardson Mountains	0		15

Table 2

SPRING MIGRATION

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
May 1950	Headwaters of Firth R. and Coleen R.	20,000	Chandalar herd	Chatelain, 2
Spring 1951	Opposite Herschel Island	Y	Fawns, 9 found dead.	Akgeak, 4
March 1951	South of Lapierre House		Mainly cows going north for five days.	Bonnetplume, 5
Spring 1952		20,000		'Mac', 22
February-March 1952	Opposite Herschel Island	unusual		Kayaktuk, 4
March-April 1952	North to Summit Lake		Not fawning.	Bonnetplume, 5
8 March 1952	Shute Creek	2,000-3,000	(Migrating?)	Mead, 5
25 March 1952	Yukon coast	20,000		McEwen, 3
2 April 1952	Yukon coast	many		Hunt & Zubko, 3
18 April 1952	Yukon coast	2,700		McEwen, 4
19 April 1952	Summit Lake Glacier Lake	4,000 2,500	Travelling N.E. Tracks along Bell R. from junction of Bell, Eagle, and Rock Rivers.	McEwen, 5
19 April 1952	South past Porcupine R.	0		McEwen, 5
	N of Summit Lake-Fish, Sheep and Bear Rivers	0		McEwen, 5
3 March 1953	Rat R.	0		McEwen, 7
3 March 1953	Bell R.	0		7
3 March 1953	Between Porcupine R. and Eagle R.	0	Many old tracks.	7
3 March 1953	Porcupine R.	56		7

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
Mid-March 1953	On west slopes of Richardson Mountains	Y		Zubko, 7
16 March 1953	10 miles N.E. of confluence of Porcupine and Bell Rivers	Y	On ridges, moving north.	Zubko, 7
19 March 1953	35 miles N of 16 March 1953	Y		Zubko, 7
17 March 1953	W. branch Porcupine R. below Fishing Station and at head of Kandik R.	0	A few old tracks.	Munro, 7
17 March 1953	W. of International boundary between Old Rampart and Black R.	0	Oldtracks, scattered.	Munro, 7
17 March 1953	Bank Creek	70	Plus the tracks of others.	Munro, 7
21 March 1953	N. of Porcupine R. and along W. slope of Richardson Mountains to headwaters of West fork of Blow R.	8	Plus areas with fresh tracks of others.	Munro, 7
23 March 1953	Slopes of Richardson Mountains S to 40 miles N of Porcupine R.	5,763		Munro, 7
25 March 1953	S and W of Salmon Cache	2,501	Moving towards Porcupine R.	Munro, 7
25 March 1953	Porcupine R.-Johnson Creek-Fishing R. in an area of valleys.	400	Plus lots of tracks of others.	Munro, 7
26 March 1953	10 miles N of 23 March 1953	4,000 +		Munro, 7
26 March 1953	Both sides Porcupine R. within 10 miles of Salmon Cache	7,095	Same as 2,501 on 25 March 1953.	Munro, 7

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
26 March 1953	20 miles S of Old Crow-Keele Range-Upper Fishing R. (=Dave Lord Creek) running E and W to headwaters of Black R.	0	Tracks running E and W.	Munro, 7
26 March 1953	S and W side of Cody Creek valley, W side Porcupine R.	0	Tracks.	Munro, 7
26 March 1953	Headwaters of East Porcupine and along Ogilvie R.	0	Few tracks, not connected to above.	Munro, 7
27 March 1953	Between Ogilvie R. and headwaters of Eagle R.	0	Quite a number of old tracks.	Munro, 7
27 March 1953	Porcupine R. on ridges of Richardson Mountains to N.E. as far as the head of the Berries R.	2,000		Munro, 7
31 March 1953	Porcupine R. to head of Driftwood R.	4,540		Munro, 7
31 March 1953	Waters R.	ca. 10		Munro, 7
31 March 1953	20 miles N of Driftwood R.	only 795	Should be 4,000.	Munro, 7
1 April 1953	W slopes of Richardson Mountains at:			
	- northern-most	355	There were 5,763 in this group.	Munro, 7
	- head of W branch of Blow R.	1080		
	- E of head of Driftwood R. a N-S valley	13349		
	- headwaters of Berries R.	2490		
2 April 1953	Porcupine R. crossing	0		Munro, 7
	S of Old Crow between Fishing R. and Black R.	987	Moving N.E. 500 ahead	Munro, 7

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
7 May 1953	Opposite Herschel Island	15		Canam, 7
15 May 1953	In Barn Mountains between Blow R. and Babbage R. to NE.	117	Tracks seen, these are the hind-most animals.	Munro, 7
21 May-15 June 1953	Lower reaches of Firth R.	749 +	New calves with herd.	Munro, 7
18 March-5 April 1954	Fort McPherson-Old Crow-Firth R.-Herschel Island	0		Fraser, 10
22 March 1954	Porcupine R. near Driftwood R.	0	Three fresh tracks, exception to above.	Fraser, 10
15 March 1954	W of Bell R. headwaters	200	Mainly adult bulls moving NE, no tracks beyond.	McEwen, 10
23 March 1954			Survey aborted.	McEwen, 10
7 April 1954	Through McDougall Pass between Little Bell R. and Bell R.	0	Few tracks running in N-S direction.	McEwen, 10
7 April 1954	To Observation Monument (67°27'N, 138°03'W)	0		McEwen, 10
7 April 1954	Porcupine R. 5 miles above Driftwood R.	0	Large numbers of 2 week old tracks.	McEwen, 10
7 April 1954	6 miles N of Porcupine R.	150		McEwen, 10
7 April 1954	Up Driftwood R. to its headwaters	0	Very few tracks.	McEwen, 10
7 April 1954	S side of Porcupine R. on bare ridge.	200		McEwen, 10
7 April 1954	To SW of above	132	In small groups moving northerly to crossing of Porcupine R.	McEwen, 10

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
7 April 1954	To SE in a valley 10 miles E of and parallel to Dave Lord Creek.	0	Tracks and trails.	McEwen, 10
7 April 1954 (long before winter?)	From 67°12'N, 138°58'W to E via river valley flowing into Porcupine R. 12 miles downstream from Cody Creek.	0	Large number of old tracks.	McEwen, 10
7 April 1954	Just W of confluence of Porcupine R. and Bell R.	0	Numerous tracks.	McEwen, 10
7 April 1954	Along Eagle R. and E.	0	Fresh tracks heading N-S.	McEwen, 10
22 April 1954	Porcupine R. E of Driftwood R.	thousands	On 50 mile front	Rice, 10
5 May 1954	W channel Mackenzie R., along coastal plain to:			
	- Blow R.	0		McEwen, 10
	- Up E Blow R. for 10 miles	0		
	- W to W branch Blow R.	0		
	- To SW from Shingle Point to foothills, then NE to coast (8 miles W of previous trip)	0		
5 May 1954	Coast to Blow River	0	Few fresh tracks at edge of mountains (68°40'N, 136°55'W)	McEwen, 10
ca. 5 May 1954	Porcupine R. near Driftwood R.	largest	Crossing Porcupine moving N through Blow R. pass to coastal plain.	Moore, 11
after 5 May 1954	Firth R. and Malcolm R.		NW crossing Firth R. and Malcolm R., passing between foothills and Kamakok base.	Moore, 11

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
10 February 1955	Cody Creek	Y	Moving NW (wintering?)	'Natives at Old Crow', 37
1st week of March 1956	Vittrekwa R. and Rock R. region	5,000-6,000	Began N migration.	'Indian Hunters', 32
during March 1956	Hungry Lake to head of Caribou R.	vast	First time here for 15 years.	'Hunters', 32
14 March 1956	Head of Eagle R.	large	Large herd (information vague).	Moore, 33
17 March 1956	Head of Eagle R.	45	See 33, 14 March 1956.	Bryant, 34
17 March 1956	Headwaters of Stony Creek	1,000-1,200		Bryant, 34
17 March 1956	Along Eagle R.	0	Tracks of 10 or 12.	Bryant, 34
17 March 1956	Porcupine R. Bell R. (crossing) Driftwood R. (crossing)	0 0 0		Bryant, 34 Bryant, 34 Bryant, 34
17 March 1956	As above for this date	N.A.	No major northward movement.	Bryant, 34
13 April 1956	Cache Creek; 68°12'N, 136°05'W	60-70		Bryant, 31
13 April 1956	From 68°25'N to 67°45'N	0		Bryant, 31
1 May 1956	Headwaters of Peel R. and E Porcupine R.	Y	Moving NW.	Olson, 30
1 May 1956	Just E of Black R. tributaries headwaters	Y	Moving N.	Olson, 30
2 May 1956	From Blackstone R., Hart R. and Ogilvie R., head of Porcupine R.	large	Moving N.	Olson, 29

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
2 May 1956	20 miles W of Porcupine R. just N of 66°N	many	Head of major movement seems at 66°30'N.	Olson, 29
8 March 1958	Richardson Mountains	0		Bryant, 21
8 March 1958	Head of Cache Creek	0	Tracks of 12 plus very old tracks of 100.	Bryant, 21
8 March 1958	Yukon Coast between Blow R. and Babbage R.	79		Bryant, 21
8 March 1958	Babbage R.	156	29% calves.	Bryant, 21
21 May 1959	Aklavik to Herschel Island	0		Radvanyi, 14
24 March 1960	Eagle R., Rock R., Porcupine R.	21	(wintering still?)	Radvanyi, 14
24 March 1960	SEE TABLE I FOR THIS DATE		(wintering still?)	Radvanyi, 14
1961		100,000	(calf production good, ? summering)	Alaska Dept. of Fish and Game, and U.S.F.W.S., 42
end March 1965	Horn Lake	2,000		Supt. of Game, 41
9 April 1965	Canoe Lake	Y		Supt. of Game, 41
by 23 April 1965	Passed through Richardson Mountains at Blow R.-Rapid Creek area	Y		Supt. of Game, 41

Table 3

SUMMER

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
Generally	Highland W of Richardson Mountains	Y		Soper, 1
Generally	Hills between Herschel Island and Babbage R.	Y	Beleives: saw none at Mount Fitton.	Hoydahl, 6
Generally	Yukon Coast	(65,000)	32.5% calves (Bryant, 1957) 40% calves (helicopter crew to Radvanyi, 1959)	14
Generally May	Yukon Coast ?		Return from Alaska (winter area?)	Kayaktuk, 4
Generally June and July	Firth R. to Alaska	Y		Kayaktuk, 4
Summer 1948	Sheep Creek	thousands	Moving towards Alaska.	Akgeak, 4
17 June to 10 July 1948	From Firth R. SE to 68°39'N, 138°40'W then NE to Shingle Point	few	Few near Firth R. Very few to Shingle Point.	Hoydahl, 6
July 1949	Highland W of Aklavik	0		Soper, 1
July 1949	Aklavik-Yukon Coast-Herschel Island	0		Soper, 1
15 August 1949	Mount Fitton	Y	Passed in solid file for 2 days (start of Fall migration).	Hoydahl, 6
latter part September 1949	Blow R. (both sides)	10,000		Hoydahl, 6
May 1950	Headwaters of Firth R. and Colleen R.	Y	Chandalar herd (Spring migration).	Chatelain, 2
1 August 1950	Mount Fitton	Y	Passed intermittently in small bands for 2-3 weeks (start of Fall migration).	Hoydahl, 6

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
Spring 1951	Opposite Herschel Island	Y	Fawns found, 9 frozen.	Akgeak, 4
June 1951	Firth R. to Kongakut R.	Y	Moving W to Kongakut R.	Akgeak, 4
August 1951	Opposite Herschel Island	large	Moved N then 2 weeks later returned. Part of herd that moved S to Aklavik in October and November 1951.	Akgeak, 4
10 October 1951	Mount Fitton	Y	Passed intermittently in small bands for 2-3 weeks.	Hoydahl, 6
15 October 1951	Shingle Point	500		Hoydahl, 6
September-October 1951	Blow R.	large	Moving S.	Hoydahl, 6
1 September 1951	Opposite Herschel Island	Y	Moving SE along coast.	'Natives', 6
13 September 1951	Shingle Point	Y	Moving about.	Stephenson & Biname, 6
7 May 1953	Opposite Herschel Island	15		Canam, 7
14 May 1953	10 miles E of Old Crow		Tracks of 2,000 crossing Porcupine R.	Munro, 7
15 May 1953	Bam Mountains between Blow R. and Babbage R. to NW.	117	Hind-most animals.	Munro, 7
21 May-15 June 1953	Lower Firth R.	749	Plus some new calves.	Munro, 7
end May-mid June 1953	25 miles from N of Malcolm R.	large	There were more to the W.	Canam, 8
17 June 1953	W of Alaska border to Kongakut R.	142		Munro, 7
17 June 1953	W of Fith R. to Alaska border	125	Moving W to above.	Munro, 7

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
17 June 1953	E of Firth R.	43	Moving W to above.	Munro, 7
20 June 1953	As for 17 June 1953; Munro, 7		Westward movement.	Munro, 7
	From Malcolm R. to Kongakut R.	most		
	From Firth R.-S to Old Crow	0	Extensive concentrations of old tracks especially parallel to Firth R. through the highest part of the mountains.	
mid-June 1953	S and W of Barter Island	many	On coastal plain and foothills.	Scott 'Pilots', 7
ca. 2 July 1953	Between Flaxman and Tigvariak Island	1,000		Scott 'Another Observer' 7
9 July 1953	Mouth of Canning R.	2,000		Scott, 7
8 July 1953	Firth R., 10 miles below Joe Creek	27,000	Crossing the river in E-SE direction. They had crossed the Kongakut R. from W.	Sumner in Scott, 7
9 July 1953	Near Joe Creek, 15 to 20 miles E-SE of above 8 July 1953	2,500	Main lot of herd.	Sumner in Scott, 7
6 August 1953	Aklavik-Blow R. forks-Yukon coast-Shingle Point-headwaters of Babbage R.-Firth R., Rat R., Joe Creek, and down Firth R.	1	New trails present.	McEwen, 8
7 August 1953	Firth R.,-King Point-SE to Barn Mountains-W Branch of Blow R. to forks-E branch 8 miles from forks-Aklavik	87	These 87 were 16 miles W of W branch of Blow R. Otherwise 0.	McEwen, 8
30 August 1953	Old Crow Mountain	5,000	(Fall migration?) (September 15 in 1954).	McEwen, 11

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
5 May 1954	W channel along coastal plain to Blow R.-up E Blow R. for 10 miles-W to W branch of Blow R.-to SW from Shingle Point to foothills-then NE to coast (8 miles W of previous route)-to Blow R.	0	Few fresh tracks at edge of mountains (68°40'N, 136°55'W)	McEwen, 10
5 May 1954	Porcupine R. near Driftwood R. Blow R. pass to coastal plain Firth R. and Malcolm R-foothills to Kamakok	largest Y Y	 Moving N. Moving N.W. (spring migration partially)	Moore, 11
May, June, until 1st week July 1954	'The base' Komakok	large	Passing.	Moore, 11
21 June 1954	Old Crow Flats-Firth R.-Malcolm R.	0		McEwen, 11
21 June 1954	Between Firth R. and Mackenzie Delta	484		McEwen, 11
21 June 1954	W side upper Blow R.	2		McEwen, 11
21 June 1954	Headwaters of Blow R.	2		McEwen, 11
late June 1954	Babbage R. to Mackenzie Delta on coast	170		McEwen, 11
late June 1954	Malcolm R. to Mackenzie Delta on coast	314		McEwen, 11
late June 1954	Babbage R. to Malcolm R.	209	1.9/sq. mile, herd composition given.	McEwen, 11
late June 1954	Babbage R. to Mackenzie Delta	279	4.2/sq. mile, herd composition given.	McEwen, 11
8 July 1954	Aklavik to Herschel Island except at Ptarmigan Point	0 4		McEwen, 11 McEwen, 11

Date	Localities	Number of Animals	Notes	Observer and/or Reference Number
2 August 1954	Aklavik to Old Crow	0		McEwen, 11
April-May-June 1954	Mount Fitton	few	Groups of less than 100 moving down the Blow R. in N-NW direction.	Hoydahl, 11
12 August 1954	Near Mount Fitton	1,000-1,500		Hoydahl, 11
until 22 August 1954	To within 8 miles of Shingle Point	3,000	In scattered groups.	Hoydahl, 11
27 August 1954	Aklavik-Old Crow-Rat R.	0		Zubko, 11
27 August 1954	Porcupine R.	0		Zubko, 11
28 August 1954	W branch Blow R.	ca. 463	(Fall migration). As for the previous 15 days general movement S up to Blow R. towards Driftwood R. drainage.	Zubko, 11
28 August 1954	Coalmine Lake	ca. 93	(Fall migration).	Zubko, 11
August to mid-September 1954	Coastal plain	Y	First near Shingle Point later in "Fish" R., "Cache" Creek, and S to "Canoe Lake".	McEwen, 11
25 June 1959	Yukon Coast		Moving W towards Alaska.	Keogaguk, 17
21 May 1959	Aklavik-Herschel Island	0	(Return trip).	17
27 June 1959	S of Herschel Island	not many	(Walking trip for 5 days).	17
mid-June 1959	Mouth of Clarence R.	400	40% of females with calves	'Helicopter pilot' 17

Table 4

FALL MIGRATION

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
Generally in September	Richardson Mountains	Y	Move from Yukon coast.	Akgeak, 4
15 August 1949	Mount Fitton	many	Moved past in solid file for 2 days.	Hoydahl, 6
latter part of September 1949	Blow R.	10,000	(Summer movement, start of migration?) (start of migration?)	Hoydahl, 6
October 1949			Caribou moving SE along water courses of Mackenzie Delta in Yukon towards Upper Peel, Wind, Hart and Bonnetplume Rivers.	Stevens, 6
1 August 1950	Mount Fitton	Y	Intermittent small bands passed for 2-3 weeks (summering?)	Hoydahl, 6
Fall 1950	W of Aklavik	some		Stevens, 3
September 1950	Driftwood R.-Salmon Cache-Old Crow	15,000	From summering in highland W of Richardson Mountains. Regular migration N-S to treeless area E of Old Crow.	Webster, 1
October 1950	Old Crow	20,000	Chandalar Herd.	Chatelain, 2
1951			Caribou moved S along foothills following water courses of Fish, Cache, and John Marten Creeks to arrive at Cache Creek between October 15 and 21. Route similar to that proposed by Stevens for 1949, but perhaps closer to Mackenzie Delta.	McEwen, 6

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
13 September 1951	Shingle Point	Y	Moving about.	Stephenson & Biname, 6
September to October 1951	Blow R.	large	Moving S.	Hoydahl, 6
early October 1951	Foothills of Richardson Mountains bordering Mackenzie Delta	Y	Had moved from above.	Stephenson & Biname, 6
early October 1951	Moose R.	300,000 (sic? = 30,000)	Moved N for 4-5 days, 2 weeks later returned greatest number seen since 1943.	Hansen, 6
10 October 1951	Mount Fitton	Y	Intermittent small bands passed for 2-3 weeks (migrating?).	Hoydahl, 6
15 October 1951	Shingle Point	500		Hoydahl, 6
15-21 October 1951	Cache Creek	Y		Biname, 6
15-21 October 1951	Cache Creek	Y	Moving S continually for 3 days.	McLeod, 6
October and November 1951	To Aklavik	Y	Part of herd moved S.	Akgeak, 4
November 1951	S along Fish, Sheep, and Bear Creeks to Summit Lake		Moved.	Bonnetplume, 5
later	Along Bell R. to Fish Lake (Salmon Cache)		Males and females separate ca. November 15.	Bonnetplume, 5
ca. 30 August 1953	Old Crow Mountain area	5,000		Moore 9, 11
20 September 1953	Aklavik to Herschel Island	0	(Return trip).	Zubko, 8
20 September 1953	Fish Creek-Mackenzie Delta	0		Zubko, 9

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
ca. 27 September 1953	Old Crow Flats	thousands		Moore, 9, 11
29 September 1953	Fish Creek area (68°27'N, 36°14'W) to a creek W of Blow R. at (68°44'N, 137° 32'W)	8,494	Most in Fish Creek area. They had come from E from headwaters of Babbage R. parallel to the coast to Blow R., up its E branch to Fish Creek. Thence seemed to head towards Little Bell R. and Rat R. A little to the N of the route flown out showed only a few caribou.	McEwen, 9, 11
29 September 1953	Fish Creek-Mackenzie Delta	0	No tracks.	McEwen, 9
29 September 1953	Fish Creek forks	largest	Had not crossed the E. branch of the Creek.	Cooper, 10
1 October 1953	Between John Marten Creek and Unnamed Lake (68°12'N, 135°30'W)	Y	Mainly adult bulls.	'One hunter', 10
6 October 1953	E branch of Fish Creek S to Canoe Lake and John Marten Creek	Y	Main herd. Scattered groups.	Cooper, 10
13 October 1953	Cache Creek area	Y		Cooper, 10
August to mid September 1954			First on coastal plain near Shingle Point, later in "Fish" R., Cache Creek area S to Canoe Lake.	McEwen, 11
27 August 1954	Firth R.-Blow R.- especially at King Point	fairly large		McEwen, 11

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
27 August 1954	Aklavik, Old Crow, Rat R. Porcupine R.	0 0		Zubko, 11
28 August 1954	W branch Blow R. Coalmine Lake	ca. 463 ca. 93	General movement S up to Blow R. towards Driftwood R. drainage.	Zubko, 11
10 September 1954	68°18'N, 135°36'W to 68°22'N, 136°15'W	181		Zubko, 11
10 September 1954	Fish R. to Moose Channel	144		Zubko, 11
10 September 1954	E branch of Blow R.	92		Zubko, 11
10 September 1954	Blow R.-Aklavik	66		McEwen, 11
12 September 1954	Canoe Lake, Cache Creek to the Mission Camp to a lake (68°50'N, 137°18'W) W of Blow R.	1,652	108 at Lake.	McEwen, 11
12 September 1954	From lake (above) down W branch of Blow R. to the divide	1,163		McEwen, 11
12 September 1954	S of divide to headwaters of Johnson Creek	635		McEwen, 11
12 September 1954	Old Crow Flats Old Crow Mountain	0 0		McEwen, 11 McEwen, 11
15 September 1954	Old Crow Mountain	Y		McEwen, 11
15 September 1954	Old Crow Flats	0		McEwen, 11
15 September 1954	N of Old Crow Flats ca. 68°27'N, 140°10'W	ca. 100		McEwen, 11
15 September 1954	To headwaters of Babbage R.	62	Trails NE-SW Babbage R. pass.	McEwen, 11

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
15 September 1954	Blow R. pass	ca. 110		McEwen, 11
15 September 1954	SE Blow R. to trees on Driftwood R. (67°37'N, 138°10'W)	ca. 2,310		McEwen, 11
15 September 1954	W side of Richardson Mountains	38	Fresh trails too.	McEwen, 11
15 September 1954	Headwaters of Bell R. at 2,500'	50		McEwen, 11
15 September 1954	W branch of Blow R.	Y	Moving S.	'Hunters', 11
15-20 September 1954	Fish R., Cache Creek	Y	Had been going S, started N.	'Hunters', 11
4 October 1954	W to Ptarmigan Point	0	Moved inland (McEwen, 11)	'Local Pilot', 11
by 4 October 1954	W of Aklavik	0		'Hunters from Aklavik', 11
by 4 October 1954	Rat R.	0		'Natives of Ft. McPherson', 11
31 October 1954	Peel R.	large	SSE, probably moving S along hills W of Porcupine R.	RCMP, Old Crow 11
28-29 November 1955	Rat R. McDougall Pass Porcupine R. to Old Crow Bell R.	0 0 0 0 0	 Few tracks, 12-24	Bryant, 36
28-29 November 1955	S of above	Y	Caribou to S of above	'Natives', 36

Dates	Localities	Number of Animals	Notes	Observer and/or Reference Number
Fall 1956	Blow R. and Fith R. areas	max. 500	At one time (i.e. per flight).	Zubko, 25
16 August 1956	Just N of Old Crow	30,-40,000		'Wien Airlines Pilot', 28
last week in August 1956	Head of Driftwood and Blow R.		Herd moved NE from above.	Olson, 28
ca. 19 September 1956 (probably)	Old Crow to Driftwood R.	"maanny"	"Sounds like the main herd".	Bryant, 27
20 September 1956	Old Crow	large	Concentration.	'report' Bryant, 25
30 August 1957	Aklavik to foothills of Richardson Mountains to ca. 50 miles NW of Aklavik	2,000	32.5 % calves.	Bryant, 40

Reference No. and References

1 Soper 1951a

2 Soper 1951b

3 McEwen 1952b

4 McEwen 1952c

5 McEwen 1952d

6 McEwen 1952a

7 Munro 1953

8 McEwen 1953a

9 McEwen 1953b

10 McEwen 1954a

11 McEwen 1954b

12 Fuller 1957

13 Radvanyi 1960a

14 Olson 1960

15 Radvanyi 1960b

16 Radvanyi 1960a

17 Radvanyi 1959c

18 Radvanyi 1959a

19 Radvanyi 1959b

20 Bryant 1957c

21 Bryant 1957a

22 Bryant 1956h

23 Bryant 1956g

24 Bryant 1956f

25 Bryant 1956e

26 Bryant 1956c

27 Bryant 1956d

28 Olson 1956c

29 Olson 1956b

30 Olson 1956a

31 Bryant 1956b

32 Anonymous 1956

33 Moore 1956

34 Bryant 1956a

35 Radio broadcast

36 Bryant 1955

37 Webster 1955

38 Anonymous 1955

39 McEwen 1955

40 Bryant 1957b

41 Anonymous 1965

42 Anonymous 1963

Symbols in Tables

Y caribou present.

Notes in parentheses, my comments.

DISCUSSION

Wintering

From the records tabulated above (Tables 1, 2, 3 and 4), it seems evident that the caribou of the northern Yukon spent the winter somewhere south of Old Crow and in the drainage basin of the Porcupine River. Fuller (1957) mentions concentrations in the Ogilvie Mountains in winter are common. This is substantiated further by Olson's observations (1956a, b). Stevens (1949) in McEwen (1952a) suggests wintering in the drainage basin of the upper reaches of the Peel River. Bonnetplume (1951) in McEwen (1952d) tells of wintering animals in the muskeg area between the Bell River and the Porcupine River, and south of Lapierre House, and also of a separate herd of larger animals which inhabit an area about 100 miles northeast of Dawson between the Ogilvie and Blackstone Rivers. Radvanyi (1960a) records animals from Whitefish Lake to the Porcupine River in winter and McEwen (1954a) records similarly along the western side of the Richardson Mountains, and also the eastern side in winter, 1951 (McEwen, 1952a). According to McDonald (in McEwen, 1952a) caribou winter in the Porcupine flats area (i.e. area of Porcupine, Bell and Eagle Rivers), but because much of the area was burned in 1950, they wintered on the coast in 1951. Allen, and Maines and Macdougal (in McEwen, 1952a) recorded animals wintering along the coast in December 1951; although Stephenson and Biname (in McEwen, 1952a) recorded southerly migration in October. In February and March, Kayaktuk (McEwen, 1952c) recorded unusual numbers of animals opposite Herschel Island and near the Blow River. Again in 1959 there are records of animals wintering along the coast and on Herschel Island (Radvanyi, 1959a, b). There is some evidence to suggest occasional wintering animals on the Old Crow Flats (Soper, 1951a), and in the winter

of 1949-50, the Chandalar herd from Alaska moved into the region (Chatelain in Soper, 1951b).

In summary, it appears that all the areas in northern Yukon have been caribou wintering grounds at some time. In general, it seems that most animals spend the winter anywhere from the Porcupine Flats area as far south as the headwaters and drainage basin of the Peel River and in the Ogilvie Mountains. But due to the variability of the habits of these caribou, this generality is of limited value.

Spring Migration

It is possible that a general northward drift of the animals occurs in February. The herds seem to consolidate in March and move north rapidly. The most complete observations are by Munro (1953) who records the spring migration from mid-March 1953 on the western slopes of the Richardson Mountains to the second week in May, 1953 on the north coast. In other years, these times and places are different (Anonymous, 1965, Olson 1956b, Bryant 1956a, Anonymous 1956, McEwen 1954b, 1954a, 1952d, 1952b). The observations, other than by Munro (1953) are fragmentory and difficult to interpret in terms of the routes the animals may take. There are no observations from the east slopes of the Richardson Mountains, despite flights over this area. Most observations come from the Porcupine-Driftwood River system, and presumably the animals continue north via the Blow River (Anonymous 1965). No observations have been made of animals using the other passes mentioned below as possible fall migration routes. These should be examined, especially the Babbage River and Timber Creek possibility.

Summering Grounds

There is little doubt that most animals spend their summers along the north coastal slope. There is almost no information on the precise locality of the calving grounds, if indeed such exists any more specifically than the north coastal slope. In June, when most calving probably occur (Kelsall, 1968) animals have been recorded in the lower Firth River with some new calves to west of the Alaska border to Kongakut River (Munro 1953, McEwen 1952e), and east to between the Firth River and the Mackenzie Delta on the coast (McEwen 1954b). During the summer, westerly movements have been recorded well beyond the international border to the Kongakut River and possibly beyond (Anonymous 1965, Munro 1953, McEwen 1952c). The animals return by almost the same route later, but may move to higher land (McEwen 1952a, Munro 1953, and others) possibly seeking cooler weather and escape from biting flies.

Fall Migration

It is difficult to separate the end of the summer wanderings from start of the fall migration. I have included some observations at the end of summer or the beginning of fall in both Tables 3 and 4. Most of the information points to the start of migration in the fall in August when the animals move along the coastal plain and foothills of the Buckland, Barn, and Richardson Ranges of mountains. By the end of August, the animals appear congregated, primarily near the Blow River, although this may range from the Firth River (McEwen 1956) to within 50 miles northwest of Aklavik (Bryant 1957b) or the Old Crow Mountain area (Moore in McEwen 1953b, 1954b).

As for the migration routes, these obviously vary from year to year and probably as to the numbers of animals using various routes. The best document routes are through the Blow River and Driftwood River pass area (Soper 1951a, McEwen 1954b, Olson 1956c, and others) and along the eastern slopes of the Richardson Mountains above the Mackenzie Delta (McEwen 1952a). There are observations of caribou in the McDougall Pass area (which joins the migration routes) in the fall (McEwen 1952d), but most records there are for spring movements. There is little evidence to support fall migration routes through the Babbage River and Timber Creek pass, nor through the Firth River-Timber Creek-Crow River pass system. However, it is most important to realize that very few observations have been made in these areas, and none during the fall. Munro (1953) considers a westerly migration route along these routes, and examination of topographic maps shows low land, between 1,000 and 2,000 feet above sea level, continuously through each of Old Crow Flats and the Porcupine River drainage. Thus further survey is needed west of the Blow River to examine the various passes as likely migration routes.

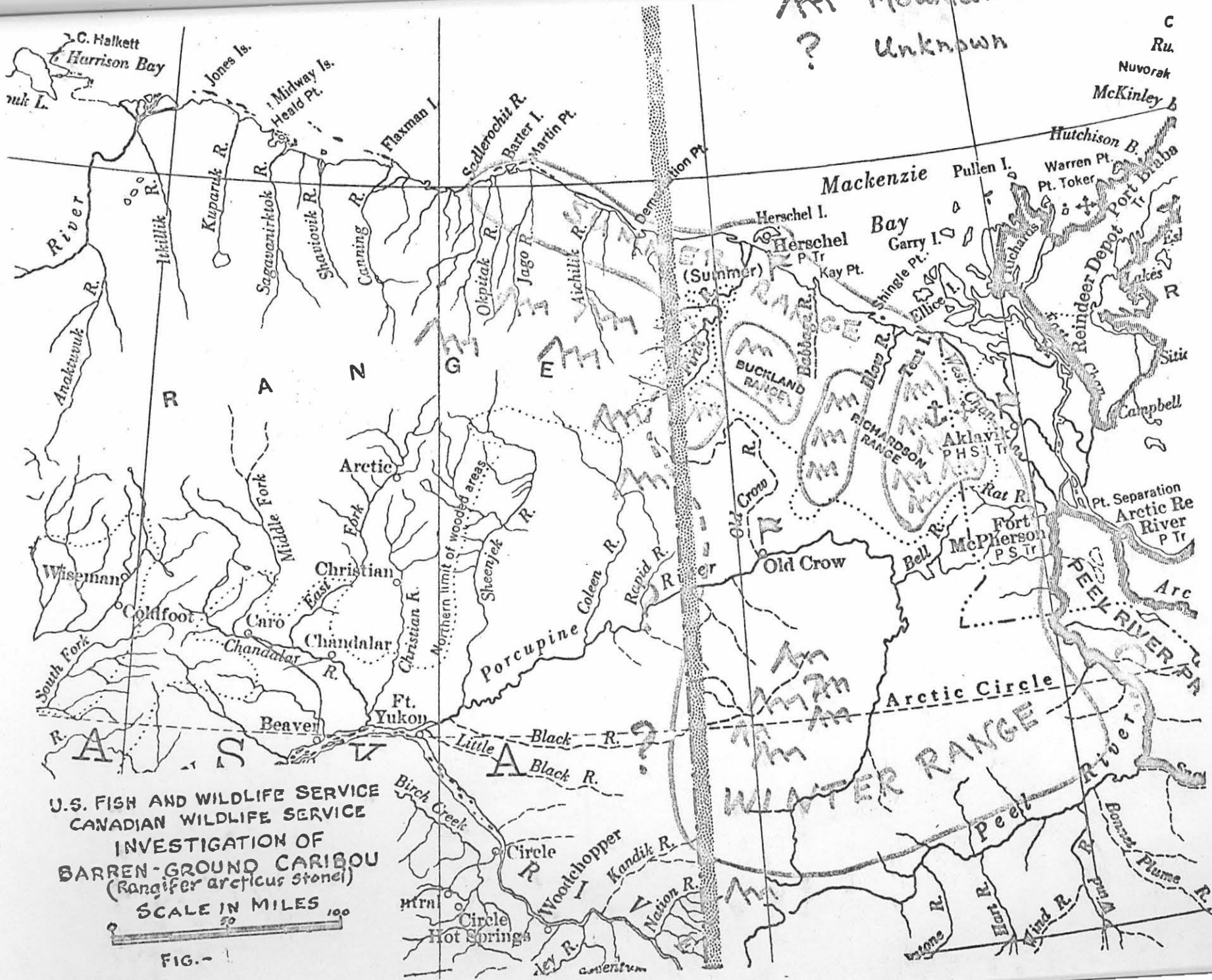
The migration seems to start in August, but may be as late as October (McEwen 1952a), and the animals are generally south of the mountains by mid-September and presumably in their wintering grounds (see above) in which they may or may not move further south. There is confusion here as animals are known to winter along the coast and range widely from year to year, and possibly group to group (of the same herd) within their wintering range. Presumably the main rut takes place in November (Kelsall 1968) when the animals are on the wintering grounds.

Figure I shows the generalized range of caribou in northern Yukon according to their migration routes and time of year.

Figure I

The proposed range of the caribou

of northern Yukon Territory



U.S. FISH AND WILDLIFE SERVICE
CANADIAN WILDLIFE SERVICE
INVESTIGATION OF
BARREN-GROUND CARIBOU
(Rangifer arcticus stonei)
SCALE IN MILES 0 50 100

FIG.-

CONCLUSIONS

It is apparent that the caribou of the northern Yukon range widely. Wintering grounds are particularly large and variable. The spring migration seems restricted to west of the Richardson Mountains. Summer range and calving seems restricted to the north coastal slope and northern foothills of the northern mountains, but varies greatly in its east-west extent. The fall migration appears to use the mountain passes available, and the east side of the Richardson Mountains (see Fig. I).

Using the above broad approach, almost all theories so far presented can be accounted for. The present information is not suitable for analyses such as are presented by Kelsall (1968) as it is fragmentory, incomplete, and somewhat subjective. Future observations from standardized surveys conducted over a number of years, throughout the area north of the Peel River, seems to me to be the only satisfactory way of illucidating the precise nature of the northern Yukon Caribou Herd.

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Postscript

Surveys were conducted in 1947, 1948, 1949, and 1950 by Stevens and McCall. At that time, reports were submitted to the District Administrator at Fort Smith and not to Canadian Wildlife Service and are likely unavailable now (Stevens, pers. comm.). Other material missing from files in Inuvik includes reports from U.S. surveys. Particularly important may be the U.S.F.& W.S. reports of 1955 and 1961 (see Anon., 1963) for the latter; and memorandum A.W.F. Banfield to E.H. McEwen, C.W.S., Aklavik, 27 June 1955 for the former; and the report by Scott (1953) in Alaska Co-operative Research Unit Quarterly Report 4 (4).

Munro's work (1953) contains some review material of previous work done on the caribou of the northern Yukon Territory, and should not be overlooked.