

During the winter of 1955-56, data comparable to those of the past five years were gathered on barren-ground caribou movements, distribution, numbers, utilization and increment in the western Arctic. Methods and techniques have been thoroughly described in past reports. Similiar surveys were not conducted in Manitoba and Keewatin because of personnel limitations. However, reports from the Manitoba Game Branch, Royal Canadian Mounted Police, and Arctic Division were analysed.

Flying commenced in Saskatchewan in February. During that month two aircraft and four observers, in addition to pilots, expended 50 hours in flying time. The regular surveys in the Mackenzie District were carried out in late March and April from Yellowknife. Extra thorough coverage was possible by using only light, inexpensive, Cessna 180 aircraft. During the two months about 18,000 survey miles were flown. Map 1 shows the survey routes and the areas covered during this work. In Saskatchewan biologists T. Harper and R. Ruttan, and Game Officer "Chick" Terry participated with J. P. Kelsall of the Canadian Wildlife Service in the flying. In the Northwest Territories Kelsall was assisted by pilots A. Shankoff and D. MacKay.

#### RESULTS

Map 2 shows the major areas of caribou occupancy in the west. Major lines of movement winter ranges are shown by broad arrows, and the winter ranges by shading. Not all caribou in the west were confined to the mapped areas. They were, in fact, much more scattered in distribution than has generally been the case in recent years. North of Great Bear Lake there was no area of concentration. The caribou were literally scattered all over the range and were found in small, scattered groups in both forest and tundra areas. The same is true of the huge tundra area between the Coppermine River and Bathurst Inlet. To a lesser extent caribou were also found widely scattered throughout those forest areas not shown on the map as areas of concentration. In all such cases the number of animals involved was relatively small. The winter distribution of caribou in Manitoba is shown in map number 3.

#### AREAS OF OCCUPANCY AND NUMBERS OF CARIBOU

##### North of Great Bear Lake

North of Great Bear Lake the caribou were using some areas

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formerly considered summer range. Exceedingly light snow conditions on the barrens were most favourable for wintering caribou. This may account in some measure for the widely scattered distribution.

The few animals in the Deerpass Bay area are included in the "North of Great Bear" group since they apparently entered the area from the north. Those animals on Caribou Point, during this winter, are considered as belonging to the area to the south because of the directions of movement. The estimate of numbers north of the lake - 10,500 - is not presented with great confidence as the flying was planned to cover several known range areas, and is therefore biased. The estimate shows an increase over 1955, when only 5,000 were estimated for the area, but this cannot be depended on.

#### Between Great Bear and Great Slave Lakes

Map 2 shows decided caribou concentrations between the two big lakes. This is somewhat misleading. When census data were gathered the groups shown southeast and northwest of Port Radium had merged in one large area. They are considered in Table 1 as a single group numbering 10,500. The groups shown at Keller Lake and McVicar Arm were very scattered during the census and could only be estimated on a percentage basis (Table 1). The Yellowknife group actually moved to the range shown from south of Great Slave Lake. It is included in this group because it wintered north of the lake and because it moved northward in the spring. The estimate for it - 13,700 - is optimistic since it was reduced by heavy hunting pressure by the time of its spring movement. The 1955 resurvey showed 59,500 caribou in this whole region; the 1956 estimate shows only 33,100 animals.

#### Between Athabasca and Great Slave Lakes

Concentrations shown at Snowdrift and near Rutledge Lake were reasonably constant during the winter. The Snowdrift group was remarkable in that it remained in one area for more than five months, although subjected to the heaviest hunting pressure ever witnessed by the author. Other caribou in the region were scattered and could not be estimated only on a percentage basis (Table 1).

A further reduction in caribou in the Mackenzie District is shown in the 1955 and 1956 estimates for the area between Lake Athabasca

and Great Slave Lake. The 1955 estimate was 32,400, the past winter's estimate is only 23,000.

West-central Barrens

Caribou wintered in the west-central barrens for some years previous to 1955. In that winter they were absent, but they were back in 1956. A good herd wintered between Kent Peninsula and southern Bathurst Inlet, as they had been for some years previous and east to the Illice River. It was estimated to be 10,200 in number. Additional scattered groups west of Bathurst Inlet to the Coppermine are thought to have numbered at least 4,000. There were no groups in 1955 which could be exactly compared to these. Likely the ones west of Bathurst would have entered forested ranges between Great Bear Lake and Great Slave Lake had snow conditions on the barrens been more severe. The group east of Bathurst came in from the south and southwest in late autumn but their movements before that are unknown. Possibly they came originally from more easterly barren-ground ranges.

Saskatchewan

Northern Saskatchewan had good numbers of caribou throughout the winter. Following a thorough survey in late February Harper estimated 58,800. Most of these appear to have moved into the province from adjoining Manitoba. A remarkable lack of adult bulls was apparent among wintering animals in both provinces. On our survey transects bulls appeared to make up less than one per cent of total animals. It is hoped that this merely indicates that the bulls wintered in areas not surveyed; possibly north of tree-line in the Territories. If not, a situation which could seriously affect increment may be developing.

CALF CROP

There seems to have been another disastrously low calf crop in 1955. Segregation counts secured during the winter in various areas were as follows:

AREA	No. Calves	Total Animals	% Calves
Yellowknife	234	2,655	8.8
North of Bear Lake	10	119	8.4
South of Slave Lake	15	219	6.9
Bear to Slave Lake	15	368	4.1
Saskatchewan	17	326	5.2
TOTALS	291	3,687	7.9

An average calf crop of 7.9 per cent of total animals can only be considered poor. A good crop would be one approaching, or even exceeding, 20 per cent. The best count secured, and the most significant because of the number of animals segregated, is that secured on the Yellowknife group. The 8.8 calf percentage found there is artificially high; when the segregations were made, considerably more than 1,000 adults had been removed by hunters, and it is likely that the real calf crop was one or two per cent lower.

#### Manitoba

No comparable aerial surveys of caribou populations in northern Manitoba and Keewatin District were undertaken during the winter of 1955-56. Information on the distribution, and numbers of caribou, calf percentages, and native utilization of caribou in Manitoba for this period has been kindly presented by Mr. J. D. Robertson, of the Manitoba Game Branch, The Pas, Manitoba.

Caribou wintered in fair numbers in three areas of northern Manitoba during the winter of 1955-56. These are indicated in figure 3. They were on the upper Churchill River east of north Indian Lake, on the Seal River east of Big Sand Lake, and on the Cochrane River north of Brochet. Smaller herds wintered on the upper Nelson River east of Gillam, and on Reindeer Lake south of Brochet. The Cochrane River concentration appeared to be continuous with other winter concentrations in the Wollaston Lake area of Saskatchewan. Although no survey counts were made Mr. Robertson estimated the total population in Manitoba as about 25,000 animals. This is a decline from former winter populations. Last year's resurvey data were not comparable but winter populations have been as high as 90,000.

Calf counts were obtained by spot checks of caribou herds during late winter and spring. In some of the eastern herds encountered calf percentages were between 10 and 15 per cent of the herd. The ratio of calves to adults was as low as 4 and 5 per cent in some western herds examined.

Caribou taken by natives in northern Manitoba this past winter in the various areas was estimated by Mr. Robertson as follows:

York-Shamattawa.....	158
Split Lake.....	1,230
Oxford House.....	1
Limestone.....	50
Churchill.....	60
Nelson House.....	31
South Indian.....	415
Pukatawagan.....	12
Brochet.....	3,548
Duck Lake.....	2,000
North River.....	<u>1,500</u>
Total.....	9,005

These figures were, in the main, obtained from the local Manitoba Conservation Officers. At Brochet, the Indian Affairs Branch were able to obtain the kill figures from 39 Chipewyan hunters. The average kill per hunter was applied to the others who would not volunteer the information, to obtain the total kill.

#### Keewatin District

Because of a temporary shortage of field personnel, the Canadian Wildlife Service did not undertake an aerial survey of caribou wintering in Keewatin District this past winter. An officer of the Service in charge of experimental wolf control operations in the Eskimo Point area, reported that about 5,000 caribou wintered along the Hudson Bay coast from Eskimo Point north to the Wilson River area.

The Northern Affairs spring inspection tour reported caribou as rare and decreasing in all areas visited in Keewatin District.

#### DISCUSSION

In the Mackenzie District, wintering caribou numbered 80,900. In the previous winter the estimate for the same area was 96,900. A decrease is indicated, particularly since it is quite possible that more than 10,000 entered the area from the east in 1956, and consequently may not have been included in the previous winter's estimates for the same area.

Since human utilization has not noticeably slackened, and since annual increment remains dangerously low, a decrease was to be expected. The demonstrated average of 7.9 per cent calves is too low to permit more than incidental human utilization. An annual loss of 5 per cent has been attributed arbitrarily to predation and an additional 5 per cent to accidents, disease, and the like. Any amount of human utili-

zation in 1956, however little would create a deficit and more than 6,000 were likely taken at Yellowknife and Snowdrift alone.

At least one of the reasons behind the rapid drop in caribou numbers was demonstrated during the past winter by the Snowdrift Indians. Caribou in the Snowdrift area moved to their winter range in November. Throughout the winter they were subject to continuous, daily hunting pressure by about 40 hunters of the Snowdrift community. By early January at least 1,000 animals had been taken, and hunting continued until May. Men, women, children and dogs were fed almost exclusively on caribou for five months although Snowdrift is one of the good fishing sites in Great Slave Lake. The census flights in April showed only 2,300 remaining from a herd which had likely numbered more than 5,000.

The scanty information available suggests that the caribou herds have continued to decline in the Keewatin as well as the Mackenzie District.

Information from the Manitoba Game Branch on native utilization indicates that human utilization remains at a high level--about 35 per cent of the herds per annum. This is similar to the percentages observed in the west near Yellowknife and Snowdrift.

#### SUMMARY AND CONCLUSIONS

All the evidence of the past year indicates a continued decline in caribou numbers. Calf counts indicate an annual increment of less than 10 per cent in the western areas, and slightly higher in Manitoba. Utilization figures, where available, indicate an annual decrement of the order of 30 per cent. This does not take into account losses to predators, accident etc.

The continued decline is undoubtedly caused by a number of factors, of which one at present is excessive utilization. Thus we should be wary of placing all our confidence for the future in predator control. It is considered that, under present circumstances, predator control alone cannot reverse the downward trend of the caribou in the face of the level of human utilization indicated in this report.

The Inter-departmental Caribou Conservation Committee met in

Vancouver, British Columbia, in June 1956. This committee made a number of recommendations particularly pertinent to the critical caribou situation and these are presently under consideration by all agencies concerned. It is only necessary to add here that the elimination of all sources of caribou loss (including over-utilization by humans) must be given first priority in any action taken. This is essential if the caribou are to be maintained and/or brought back to desirable numbers at reasonable cost and within an acceptable period of time.

Presented by the  
Canadian Wildlife Service,  
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Table 1. Census of Caribou Which Wintered in the Western Arctic

Area Reference	Size Occupied Area - Square Miles	No. Miles Flown	Width of Transect in Miles	No. Square Miles Surveyed	% Coverage of Occupied Area	Total Caribou Seen	Caribou per Surveyed Square Mile	Estimated Total No. of Caribou in area
Bear Lake Northeast	2,496	254	.49	124.5	5.0	523	4.2	10,500
Yellowknife	696	150	.49	73.5	10.6	1,448	19.7	13,700
Snowdrift	768	152	.49	74.5	9.7	216	2.9	2,300
Rutledge Lake	1,216	258	.49	126.4	10.4	1,227	9.7	11,800
Bathurst Inlet East	682	56	1.50	84.0	12.3	1,259	15.0	10,200
X South of Slave Lake - estimate on basis of 147 caribou seen in a 3% coverage of area								4,900
X Islands in Slave Lake - estimate only								4,000
X Barrens west of Bathurst - estimate on basis of 300 caribou seen in 7.5% of coverage of area								4,000
X North of Great Bear Lake - estimate on basis of 513 caribou seen in 5% coverage of area								10,300
X Deerpass Bay - estimate only								300
X Keller Lake and McVicar Arm - estimate on basis of 445 caribou seen in 5% coverage of area								8,900
<b>TOTAL</b>								<b>80,900</b>

X - Animals too thinly scattered to permit drawing limits around the areas occupied.