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Porcupine Caribou Herd Harvest in Yukon

JUNE 1989 - MAY 1990

ANNUAL PROGRESS REPORT

R. Ward, C. Smits, R. Quock

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Yukon
Renewable Resources

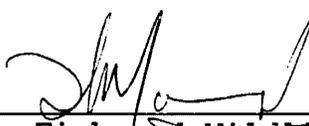
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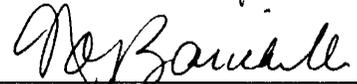
Annual Progress Report

R. Ward, C. Smits, R. Quock

Fish and Wildlife Branch
Yukon Department of Renewable Resources
P.O. Box 2703
Whitehorse, Yukon
Y1A 2C6



Director, Fish and Wildlife Branch



Senior Big Game Biologist

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SUMMARY

This report summarizes the reported harvest of caribou from the Porcupine Caribou Herd in Yukon for the period June 1, 1989 - May 31, 1990. It is intended to act as a supplement to the 1989 Porcupine Caribou harvest report. The 1989 report summarized the historic harvest data for the Porcupine Caribou Herd to May 31, 1989.

Methods of data collection were the same as those used for the 1989 report. Data was collected through: 1) the Indian harvest survey program, 2) the Dempster Highway check station, 3) resident hunter questionnaire returns, 4) declarations by non-resident sport hunters, and 5) the N.W.T. native harvest survey for Fort McPherson. Cross checks were made to ensure that duplicate counts of caribou reported through more than one method were not made.

The total reported 1989/90 harvest on the Porcupine Caribou herd in Yukon was 1,155 animals. This is down by 23% from 1988/89, primarily as a result of a reduction in the harvest by Old Crow residents from 1,164 in 1988/89 to 532 in 1989/90. In contrast, the harvest by Fort McPherson residents increased from 190 to 422 in the same period.

A total of 125 caribou (11% of the total harvest) were reported to be taken within 8 km on either side of the Dempster Highway. This harvest was reported through a combination of the Yukon Indian

harvest survey program, the Dempster Highway check station, resident hunter questionnaire returns and declarations by non-resident sport hunters. The harvest by Fort McPherson residents is not included in this tally because exact kill locations are unknown. Excluding the Ft. McPherson harvest, fifty-eight percent of the caribou were taken north of the Eagle River. Although the exact locations of the Ft. McPherson harvest are not known, 98% of the Fort McPherson harvest was also north of the Eagle River.

The overall harvest was slightly skewed towards bulls which comprised 54% of the total harvest. Cows and calves made up 43% and 3% of the harvest respectively.

ACKNOWLEDGEMENTS

Many people were involved in collecting and summarizing the data presented in this report. The Dempster Highway check station was personed primarily by Dave MacAulay who, as always, did a first rate job. When Dave was off duty, Ken Knutson, Sharon Benjamin, and Tony Grabowski ably filled the gap. Tony Grabowski also supervised the operation of the check station. Conservation officers Sharon Benjamin, Ken Knutson, Tony Grabowski, Kevin Bowers, Jack McClintock and Daryl Anderson provided additional information collected while on patrol along the Dempster. Neta Oeulett, George Mason, Virginia Kemble and Larry Bill were field workers for the Indian harvest survey program. Paul Fraser, GNWT Department of Renewable Services, provided us with information on the harvest by Fort McPherson residents. Mary Cardwell keypunched our data while Tena Fox and Debbie van de Wetering assisted with compiling and summarizing the data.

Introduction

Accurate information on recruitment, mortality, immigration, and emigration rates for wildlife populations is needed in order to facilitate wildlife management. Harvest is a significant source of mortality, and information of harvest levels is crucial in understanding the population dynamics of the wildlife population and thus instrumental in determining a sustainable harvest level. Good harvest information is difficult to acquire for a population such as the Porcupine Caribou Herd which migrates across international and territorial boundaries and is harvested by three groups (Indians, non-Indian residents and non-resident sport hunters) which are subject to different harvest regulations and reporting systems.

The Porcupine Caribou herd migrates in and out of the Yukon during its annual life cycle. The young are born on the coastal plain in northeastern Alaska and northwestern Yukon in late May and early June. After the post calving period, spent along the north coast during summer, the herd once again moves south and east towards their wintering grounds in either Alaska or Yukon or both. Caribou are harvested from the Porcupine Caribou Herd at differing times during the year by Indians, non-Indian residents, and non-resident sport hunters. The largest proportion of the harvest in Canada occurs during the fall and winter as the herd travels to and is on its winter range. A smaller harvest occurs in the

spring as the herd passes near Old Crow on its northward migration towards the calving grounds.

The harvest of the Porcupine Caribou in Yukon is monitored and summarized annually as part of the Yukon Government's ongoing efforts to manage the herd. This report summarizes the reported harvest of the Porcupine Caribou Herd in Yukon for the period June 1, 1989 to May 31, 1990. It is meant to supplement the 1989 report (Ward et al., 1989) which summarized historic Yukon harvest data for the Porcupine Caribou Herd up to May 31, 1989.

METHODS

The data collection methods were the same as in 1989.

As mentioned previously, Porcupine Caribou herd harvest information was collected using different harvest survey programs for each user group (Indians, non-Indian residents, and non-resident sport hunters). Harvest by Yukon Indians, most of which were taken by Old Crow residents, was collected as part of the Yukon Indian Harvest program (Quock and Jingfors, 1988). Their harvest was estimated through voluntary recall surveys. Hunters were contacted twice a year by a community field worker and were asked the number of animals harvested, the sex and age (calf or adult), and the general location of the kill.

Harvest information for the residents of Fort McPherson was collected by the Northwest Territories Department of Renewable Resources through their Indian harvest survey program which was similar to the Yukon program (P. Fraser, GNWT Department of Renewable Resources files).

Information on the harvest along the Dempster Highway was collected primarily through hunter declarations at the check station operated at km 65 of the Dempster Highway between October 20 and December 4, 1988. The check station was open for an average of 8 hours daily. The hours of operation varied but were

tailored to check as many hunters as possible as they passed southward after their hunt.

Hunters stopping at the check station were asked the number of caribou killed, the sex, general age class, date and time of the kill, and the location of the kill in relation to the highway. This information was augmented with the results from the Fort McPherson Indian harvest survey program and harvest reports collected by conservation officers while on patrol along the Dempster.

Resident hunters are required to report their hunting activities through the hunter questionnaire program. Questionnaires are sent to each person purchasing a hunting licence. Hunters are requested to report on which species they hunted for, number of days hunting effort, whether they were successful, and the location of any kills they made.

The non-resident harvest was determined through compulsory declarations.

As with last year's analysis, cross checks were made to ensure that duplicate counts were not made of animals reported through more than one harvest reporting system.

RESULTS AND DISCUSSION

The total reported harvest in Yukon for the period June 1, 1989 to May 31, 1990 was 1,155 (Table 1). The total reported harvest undoubtedly under-estimates the true harvest for several reasons. First, two sources of information on the harvest of Porcupine Caribou are missing from this tally. The harvest between January 1 and May 31, 1990 by Indians from Yukon communities other than Old Crow and the harvest by residents of Aklavik were not available when this report was produced. In addition, only 72% of the known hunters in Old Crow were interviewed during the spring, 1990 surveys. The true total harvest by Old Crow residents was therefore likely somewhat higher than the reported harvest. Finally, the reported harvest may under-estimate the true Porcupine Caribou harvest for the reasons discussed in the following section on possible data biases.

Forty-seven percent of the total reported harvest were taken by Yukon resident Indians (46% by Old Crow residents alone), 37% by Fort McPherson residents, 8% by resident non-Indians, 2% by non-resident sport hunters and 7% were collected by Yukon Department of Renewable Resources, Fish and Wildlife Branch as part of an ongoing study of caribou body condition (Smits, et al. 1990).

The 1989/90 reported harvest is down by 348 (23%) animals from the 1988/89 reported harvest (Ward et al. 1989). This is primarily

due to a decline in the reported harvest by Old Crow residents from 1,164 in 1988/89 to 532 in 1989/90. In contrast, the Fort McPherson harvest in Yukon increased from 190 in 1988/89 to 422 in 1989/90. The reasons for these fluctuations are probably due to seasonal shifts in the migratory patterns of the herd.

The seasonal shifts in caribou distribution (Table 1) influences the accessibility of the herd to the various user groups. The harvest by Old Crow Indians was concentrated in the spring and fall when the caribou were crossing the Porcupine River as part of their annual migration between their summer and winter ranges. The harvest along the Dempster Highway, which includes much of the harvest by Indians other than those from Old Crow, took place between September and March, while a portion of the herd was wintering adjacent to the highway.

A total of 124 caribou (11% of the total reported harvest) were taken within 8 km of the Dempster highway during 1989/90. Thirty-four of these were reported at the Dempster check station (Fig. 1), an additional 24 not recorded at the check station were reported through hunter questionnaires, 8 were reported through the native harvest survey program, 5 through compulsory submissions by non-resident sport hunters and 53 were collected as part of Yukon Fish and Wildlife Branch body condition studies on the herd. The harvest by Fort McPherson residents is not included in this tally because exact kill locations were not available.

Most of the reported 1989/90 harvest along the Dempster Highway was concentrated near the Yukon/N.W.T. border. Fifty-eight percent of the harvest along the Dempster corridor occurred north of the Eagle River (Fig. 2). Ninety-eight percent of the Fort McPherson harvest was also taken north of the Eagle River.

The geographic distribution of the harvest along the Dempster probably reflects the distribution of the herd in relation to the highway. In 1989/90, as in 1988/89, most of the animals that reached the highway wintered near the Yukon/NWT border (U.S. Fish and Wildlife Service files). In contrast, in 1985, when much of the herd crossed the highway near Chapman Lake, 84% of the reported harvest along the highway was taken south of the Ogilvie River.

The overall harvest was slightly skewed towards bulls which comprised 54% of the total harvest (Table 2). Cows and calves made up 43% and 3% of the harvest respectively. As in 1988/89, however, there were distinct differences in the proportions of bulls, cows and calves harvested by the various user groups. Non-Indian residents, Old Crow Indians and non-resident sport hunters all showed a strong preference for bulls, while Fort McPherson Indians selected for cows and calves. Possible reasons for these apparent differences in preference between user groups were discussed by Ward et al. (1989).

POSSIBLE SOURCE OF UNREPORTED HARVEST

Possible sources of bias in the harvest data are similar to that reported in 1989. Again, the significance of these sources of bias is unknown but most sources probably act to under-estimate the real harvest.

Two additional sources of bias were not discussed in the 1989 report. First, some active hunters may have been missed in the Indian harvest survey program. This was the case for the Old Crow harvest survey during the spring of 1990 when only about 72% of active hunters were interviewed. A second source of bias not previously discussed is the possible failure of resident non-Indian hunters to report their harvest through either the hunter questionnaire or at the Dempster check station.

Harvest along the Dempster by Indians from Mayo is unknown because this band did not take part in the Indian harvest survey program. Mayo is within easy travelling distance of the Dempster and Indians from this community likely take some caribou.

Another source of unreported harvest data or inaccurate reporting may arise when hunters forget, or deliberately misrepresent (Strategic response bias, Jingfors 1986), their harvest.

The harvest from the Porcupine Caribou Herd by Fort McPherson residents was monitored by the N.W.T. Department of Renewable

Resources. The Fort McPherson harvest survey program did not start until October, 1988, and caribou shot before this were unrecorded. Some of the caribou harvested by Aklavik residents were taken in Yukon. This harvest was reported as part of the IFA harvest study (M. Fabijan, in prep.) and results of this study are currently not available to YTG.

The harvest check station at the southern end of the Dempster Highway was in operation during the peak of caribou abundance and hunter activity along the highway. In 1988, the check station was opened from October 20 to December 4. The bulk of the harvest along the Dempster likely occurred during this period. Caribou harvested before and after the check station was in operation were not recorded. During the period when the check station was in operation, it was operated on average 8 hours per day during periods when most traffic occurred. Hunters passing outside of these hours were likely missed although several left notes on the door of the station reporting their harvest. However, it is thought (D. MacAuley pers. comm.) that relatively few hunters were missed as a result of this.

Additionally, no check station was operated at the Yukon - N.W.T border during the fall of 1988. Caribou taken in Yukon by hunters from communities in the Mackenzie Delta and vicinity, other than Fort McPherson, are not reported.

LITERATURE CITED

Jingfors, K. 1986. Inuit harvesting levels of caribou in the Kitikmeot Region, Northwest Territories, Canada, 1982-1984. Rangerifer, Special Issue. No. 1:167-172.

Quock, R and K. Jingfors. 1988. Yukon Indian harvest survey progress report. Government of Yukon, Dept. of Renewable Resources annual report. 35 pp.

Smits, C., R. Ward, P. Fraser, and I. Liepins. 1990. Body condition of the Porcupine Caribou Herd. 1989/1990 progress report. Yukon Dept. of Renewable Resources annual progress report, Fish and Wildlife Branch, Whitehorse. 44 pp.

Ward, R., C. Smits, R. Quock. 1989. Porcupine Caribou herd harvest in the Yukon, June 1988 - May 1990. Yukon Dept. of Renewable Resources annual progress report, Fish and Wildlife Branch, Whitehorse. 16 pp.

Table 1. Distribution of reported harvest of Porcupine Caribou by community and month, June 1989 to May, 1990.

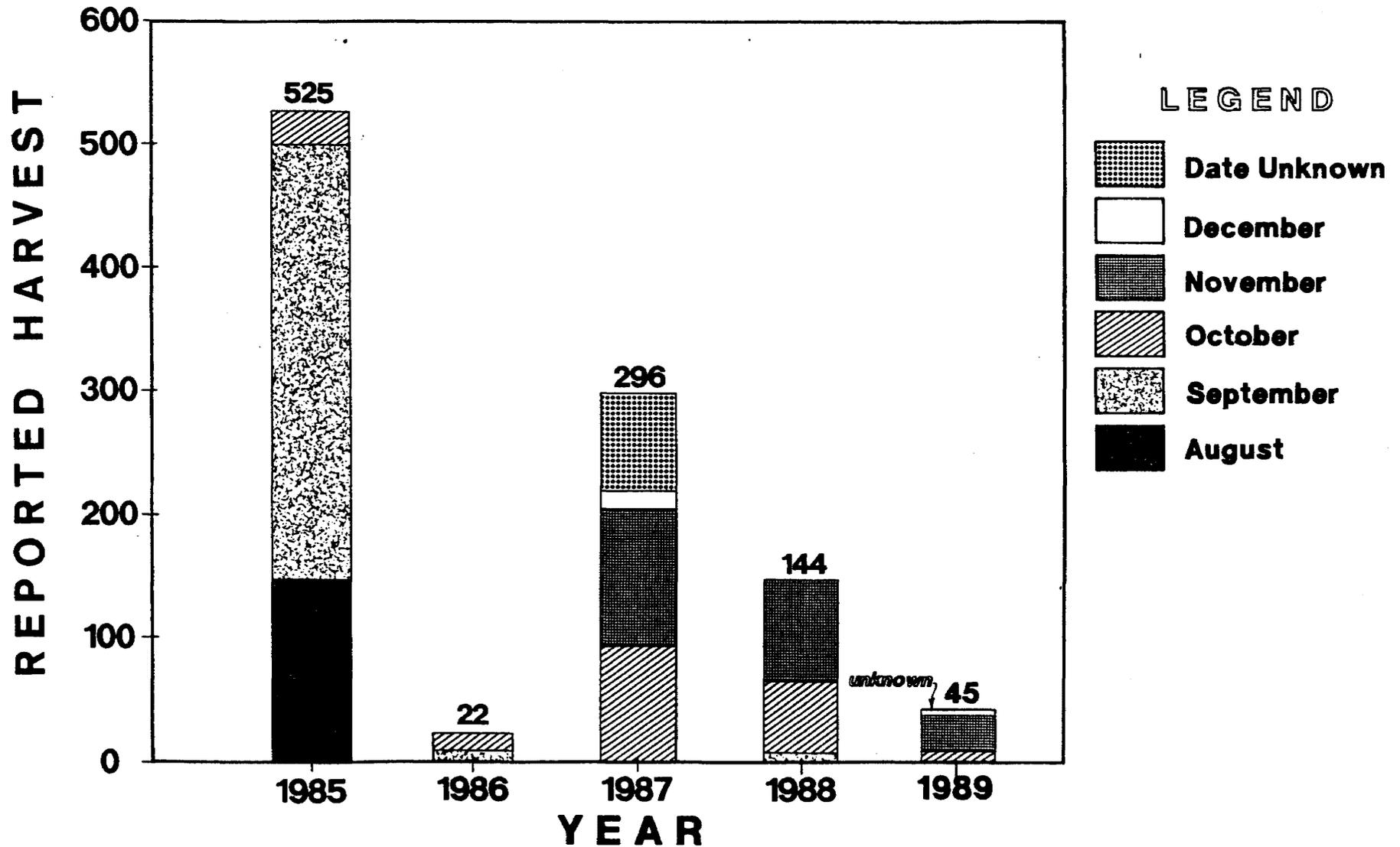
COMMUNITY	1989							1990					DATE UNKNOWN	TOTAL
	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MARCH	APRIL	MAY		
INDIAN														
Old Crow	46	30	124	166	29	6	0	1	17	26	29	58		532
Dawson City					6	2	1							9
Carcross				1						NO DATA				1
Whitehorse						3								3
Fort McPherson					14	130	82	22	11	163				422
													Total	967
NON-INDIAN														
Dawson City					1	4	1						2	8
Pelly						2								2
Faro					13	9	3							25
Haines Junction						3								3
Whitehorse				1	11	16	2							30
Carmacks				2	4	1								7
Watson Lake				3										
Old Crow				2										
Eagle Plains					1									
Unknown													7	7
													Total	88
NON-RESIDENT SPORT HUNTERS														
			2	4	10	2							Total	18
YTG BIO. SAMPLES														
Old Crow				29										29
Dempster						23				30				53
													Total	82
												GRAND TOTAL	1,155	

Table 2. Age and sex structure of the harvest of Porcupine Caribou in Yukon, June 1, 1989 to May 31, 1990 by user group. Percent of total harvest in parenthesis.

USER GROUP	BULLS	COWS	CALVES	TOTAL
INDIAN				
Old Crow	458 (86)	74 (14)	0	532 (46)
Dawson City	5 (56)	4 (44)	0	9 (<1)
Carcross	1 (100)	0	0	1 (<1)
Whitehorse	0	3 (100)	0	3 (<1)
Fort McPherson	52 (12)	340 (81)	30 (7)	422 (37)
TOTAL	516 (53)	421 (44)	30 (3)	967 (84)
NON-INDIAN				
Resident	66 (75)	21 (23)	1 (<1)	88 ¹ (8)
NON-RESIDENT				
Sport Hunters	17 (94)	1 (6)	0	18 (2)
YTG BIOLOGICAL SAMPLES	25 (30)	57 (70)	0	82 (7)
TOTAL	624 (54)	500 (43)	31 (3)	1,155

1 Seven may have been from Hart River herd.

Figure 1. Porcupine Caribou Harvest Reported at the Dempster Highway Check Station, 1985 to 1989.



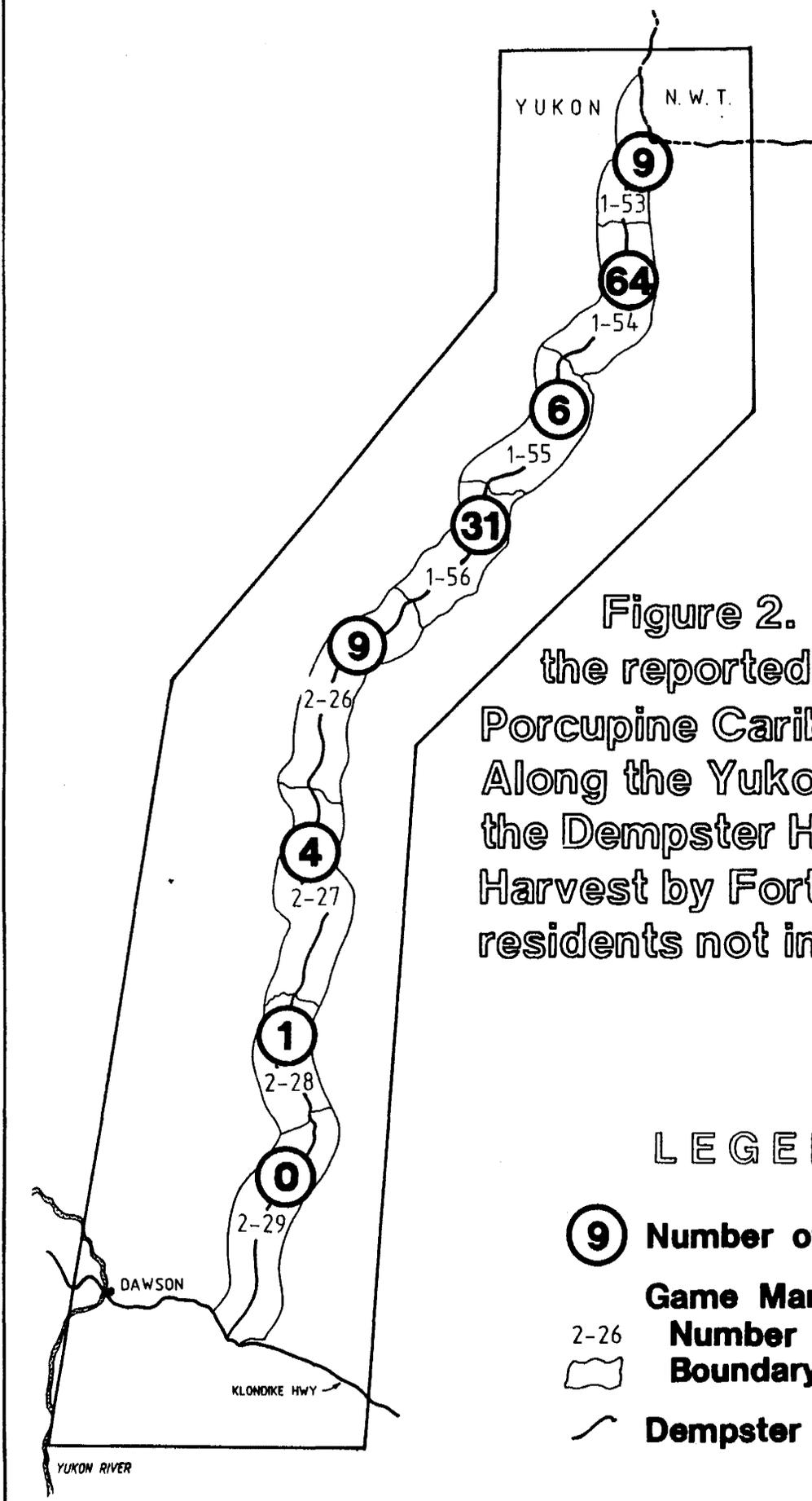
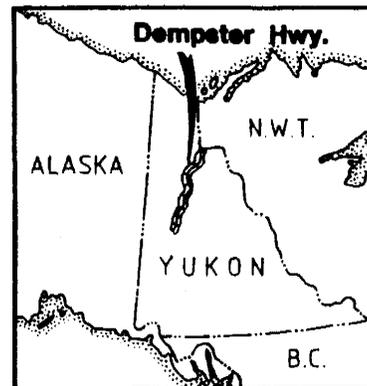


Figure 2. Distribution of the reported 1989/90 Porcupine Caribou Harvest Along the Yukon Portion of the Dempster Highway. Harvest by Fort McPherson residents not included.

LEGEND

- ⑨ Number of Caribou
- Game Management Subzone Number
- 2-26 Boundary
- ~ Dempster Highway

