Summary of Hunting Activity in the Ross River Wildlife Management Area:
The North Canol Road and Air Charter Operations

Summary Report, Fall 1991

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D. Anderson, Conservation Officer, Watson Lake

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ABSTRACT

We operated a game check station at the Ross River ferry crossing during the licensed hunting season in 1991. Fish and game harvest from the North Canol Road and from the NWT side of Macmillan Pass was monitored by two locally hired technicians. A total of 121 parties (253 hunters) hunting on or adjacent to the North Canol Road during 1991 were interviewed at the station. Forty-two moose and 23 caribou were harvested for a party success rate of 33.1% for non-native resident hunters on the North Canol Road. Non-native residents harvested 75.0% of the total moose taken and 73.9% of the caribou taken during the licensed hunting season in 1991. Moose harvest was concentrated in the subzones adjacent to Sheldon and Dragon Lakes and the caribou were taken primarily from the Tay River and secondarily from the Redstone Caribou herds. More caribou were harvested early in the hunting season while most moose harvest occurred late in the season. There was some indication of localized hunter congestion of in the Sheldon/Dragon Lake area during mid to late September. Fly-in hunting activity and associated harvest was also monitored during 1991. Three air charter companies flew hunters into the Ross River Wildlife Management Area. One hundred three fly-in hunters in 33 parties (102 hunters) harvested 27 moose and 21 caribou with an overall party success rate of 78.8%. Non-native resident hunters in the Ross River area originated primarily from Whitehorse and Faro. Moose and caribou harvest was lower than recorded for 1990 and is discussed relative to historic harvest levels and current moose and caribou population levels.

key words: check station, North Canol, moose, caribou, hunting, Ross River

ACKNOWLEDGEMENTS

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INTRODUCTION

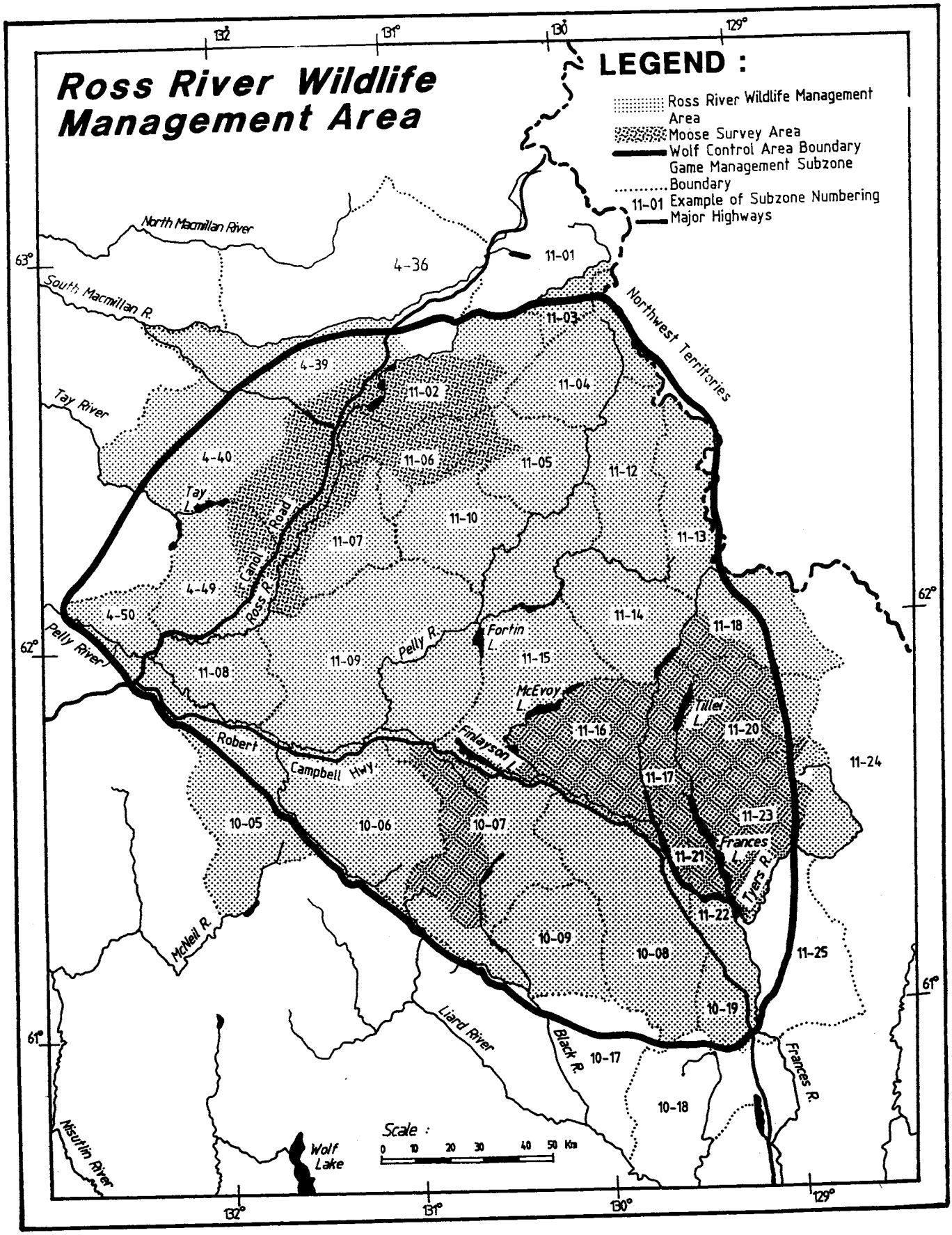
The Ross River Wildlife Management Area (RRWMA) encompasses a broad triangular area between the North Canol road, from Ross River to the Northwest Territories border, east along the Robert Campbell Highway to Frances Lake and south to the Pelly Mountains (Figure 1).

A 10 year period of intensive wildlife management that included 7 years of wolf control has produced significant increases in moose and caribou populations (Larsen and Ward 1992, in prep.). Ungulate populations are now being monitored to determine whether increased numbers are sustainable within their current range. Recovery of wolf populations in the RRWMA, given the increased prey base, is also being examined as they are an integral part of that ecosystem.

Ross River residents have noticed the recovery of game populations within this area and feel that current ungulate densities should be maintained. Increased human harvest pressure on both moose and caribou are a predictable response to increased population levels. Additional hunting pressure may result from reduced game populations and consequent harvest restrictions within the more populated Whitehorse area.

Local residents have recently noted increased traffic levels on the North Canol and South Canol Road. Much of this activity occurs during the fall licensed hunting season and is considered by Ross River residents, to be a local influx of hunters. As a result, the Department of Renewable Resources Field Services hunter check stop program has become increasingly important as a method of assessing hunting activity in the RRWMA. In 1990, this program was advanced to a full game check station at the Ross River ferry crossing, and was operated intermittently through the hunting season (Anderson 1991).

A number of questions surrounding hunting pressure and game harvested based on the 1990 data could not be assessed because of intermittant operation of the station. In 1991 we intensified the game check station


Ross River Wildlife Management Area
LEGEND :
Ross River Wildlife Management Area
Moose Survey Area
Wolf Control Area Boundary
Game Management Subzone Boundary
11-01 Example of Subzone Numbering
Major Highways
132°
131°
130°
129°
63°
62°
61°
North Macmillan River
South Macmillan R.
Tay River
Pelly River
Ross River
Canol Road
Pelly R.
Fortin L.
McEvoy L.
Tillei L.
Frances L.
Tyers R.
Robert Campbell Hwy.
Finlayson L.
McNeil R.
Liard River
Black R.
Frances R.
Nisutlin River
Wolf Lake
Northwest Territories
Scale :
0 10 20 30 40 50 Km
4-36
4-39
4-40
4-49
4-50
11-01
11-02
11-03
11-04
11-05
11-06
11-07
11-08
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10-19

program to cover all days of the hunting season while the ferry was operational. This included collection of additional information on hunter effort and demographics along with the harvest information for the North Canol area. The presence of the game check station was intended to aid positive interaction between the hunting public and the Department of Renewable Resources.

The practice of fly-in hunting to harvest wildlife in the RRWMA is well established. It has recently been questioned largely because of the lack of information available on this method. Particular concern has been expressed regarding the distribution and numbers of moose and caribou that are being removed. Local operators were approached prior to the 1991 hunting season with a request that they record hunting party, location, and kill information through the season and return it to the Yukon Department of Renewable Resources when the season was ended.

This report summarizes information we gathered on hunting activity from the North Canol road and from charter companies flying hunters into the RRWMA, during the fall 1991 licensed hunting season.

METHODS

Harvest information from 4 sources was examined in the 1991 hunting season. The North Canol road check station, the NWT game check station in Macmillan pass at mile 222 of the North Canol road and fly-in hunting through a voluntary questionnaire. Additional information for comparisons was obtained from the Department of Renewable Resources resident hunter questionnaire survey, manditory submissions of non-resident hunters and the Department of Highways ferry traffic records.

Two local technicians were hired to operate the station between 0800 and 1700 hrs from the beginnings of the hunting season (August 1) to the close of ferry traffic (October 14). Technicians were instructed to stop every vehicle returning from the North Canol and request information on their hunting activity. Additional information was requested from successful hunters including the location of their kill, the duration of their hunt

and, if available, the submission of an incisor tooth. Incisor teeth were collected to being monitoring the age structure of the harvest from this area. Small game and fishing information were solicited from each questioned hunter where appropriate (Appendix 1).

Verification of the Yukon native harvest in the NWT was available through export permits issued at Mile 222 of the North Canol Road. This station is operated by the NWT Department of Renewable Resources during times also covered by the Ross River check station. Export permit copies were obtained and screened for animals that were destined for the Yukon.

Charter operations of Kluane Airways, Action Aviation, Watson Lake Flying Service and Coyote Air were approached for harvest and hunter information. Specific details included party information, number of days party hunted, number of animals moved and a map location with subzone (GMS), for harvested game.

RESULTS

North Canol Road and Macmillan Pass

A total of 42 moose and 23 caribou were tallied at the North Canol check station (Table 1a). Native hunters harvested 25% of the moose and 44% of the caribou taken on the North Canol during this time. Yukon native hunters harvested an additional 3 moose and 16 caribou from the NWT side of Macmillan Pass during the operation of the NWT check station.

Over all users, moose harvest was concentrated in game management subzones (GMS) adjacent to Sheldon Lake and Dragon Lake (Figure 1). Sixty-four percent (27/42) of the North Canol moose harvest came from 4 GMS immediately adjacent to these lakes (4-39, 4-40, 11-02, 11-06). The remaining GMS along this route each received harvests up to 3 moose with no harvest recorded from GMS 4-50.

Caribou harvest was centred around Tay Lake and Macmillan Pass (Table 1a). A total of 20 caribou were harvested from the combined Redstone (GMS: 4-35, 11-01) and Tay herds (4-36, 4-39, 4-40, 4-49). Three additional

caribou harvested on the North Canol road were taken from GMS of the Finlayson Caribou herd. Of the 23 caribou harvested from the North Canol road, 7 were taken by native hunters and 5 of those were originated from the Redstone herd.

The harvest of moose and caribou varied over the hunting season (Figure 2). Most caribou were harvested before early September (63%) while a large proportion of moose were harvested following the second week of September (81%). Harvest of other game species was included for information and reference (Table 1a,1b).

Fly-in Access

Twenty-seven moose and 21 caribou were transported by local charter operators (Table 1b). The moose harvest was concentrated in GMS surrounding the Pelly/Fortin Lakes (11-11, 11-14, 11-15) and caribou harvest in the area of North/Grass/Wolverine Lakes (10-07).

Hunter demographics and success rates

Of 121 non-native parties and 253 non-native hunters were checked on the North Canol Road, 40 parties reported successful hunts for a total success rate of 33.1%. Seventeen native parties (43 hunters) reported to the station and 15 reported taking either a moose or caribou for a success rate of 88.2%. Of the air charter operations in the RRWMA, Kluane Airways transported 29 parties totalling 88 hunters during the hunting season for an overall party success rate of 75.8% The remaining operators carried too few hunters to provide meaningful analysis. However, in total, charter operators carried 33 parties and 102 hunters into the RRWMA for an overall fly-in success rate of 78.8%.

Based on check station interviews and air charter returns, hunter demographics reflected the population distribution in Yukon communities (Table 2a,2b). Harvest patterns for moose and caribou were similarly distributed (Table 3), with the exception of Faro hunters, who accounted

Table 1a: 1991 Harvest along the North Canol Road by species, subzone and user group.

Zone/subzone	Caribou			Moose			Other[1]
	Resident	Native	Total	Resident	Native	Total	
4-35	3	7	2	1	3		GB,W
4-36	1		1	3		3	
4-39	1		1	7		7	
4-40	6		6	6	5	11	
4-49		1	1	1	1	2	
11-01	2	2	4	1	1	2	
11-02	2		2	4	1	5	W
11-06				4		4	
11-07		1	1	1	1	2	BB
11-08				2	1	3	
Total	16	7	23	31	11	42	

[1] GB= Grizzly bear, BB= Black bear, W= wolf

Table 1b: 1991 Harvest by Fly in Hunters in the Ross River Wildlife Management Area by subzone and species.

Zone/subzone	Caribou	Moose	Other
10-06	2		
10-07	12	5	
10-08		2	
10-09	1	1	
11-01		1	
11-03		1	
11-10		5	
11-11		1	
11-14		3	GB
11-15		8	BB
11-16			
11-17	3		
11-20	3		
Total	21	27	

Table 2a: Summary of community of origin of hunters in the Ross River Wildlife Management area during the fall 1991 hunting season - North Canol road.

Community	Resident-Non Native			Resident Native		
	# Parties	# Hunters	%	# Parties	# Hunters	%
Whitehorse	68	144	56.9	4	10	23.2
Faro	46	92	36.5			
Ross River	4	7	2.8	12	30	69.8
Teslin	2	8	3.2			
Beaver Ck	1	2	0.8			
Pelly Crossing				1	3	7.0
Total	121	253	100.0	17	43	100.0

Table 2b: Summary of community of origin of hunters in the Ross River Wildlife Management area during the 1991 Fall hunting season - Fly-in hunting.

Community	Resident-Non Native		
	# Parties	# Hunters	%
Whitehorse	28	82	80.4
Faro	3	11	10.8
Watson Lake	1	5	4.9
Carmacks	1	4	3.9
Total	33	100	100.0

Table 3: Animal harvest by community during the 1991 hunting season.

Resident Caribou Harvest

Location	Community								
	Whse	Faro	Ross	Carc	Carm	Tesl	Wats	Other[1]	Total
North Canol	11	3				1		1	16
Air Charter	13	2		1			1	4	21
Total	24	5		1		1	1	5	37
% of Total	64.9	13.5		2.7		2.7	2.7	13.5	100

Resident Moose Harvest

North Canol	22	7	2						31
Air Charter	25	2			2				28
Total	45	9	2		2				59
% of Total	76.3	15.3	3.4		3.4				100

Native Caribou Harvest

North Canol	5		2						7
% of Total	71.4		28.6						100

Native Moose Harvest

North Canol	2		9						11
% of Total	18.2		81.8						100

[1] Other category is special guided non-resident canadians

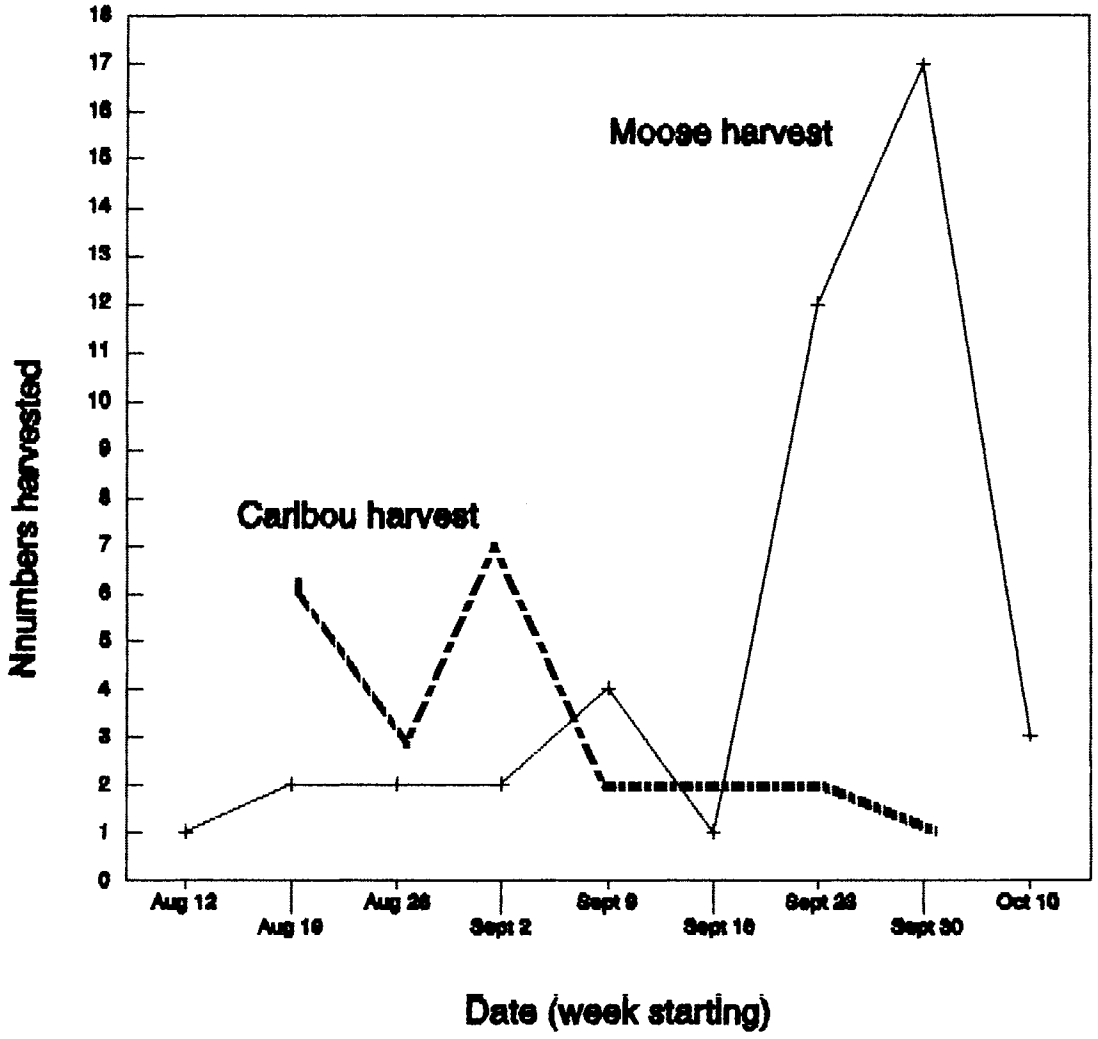

Figure 2: Moose and caribou harvest from the North Canol road.

for 31.8% of all hunting parties but harvested only 10% of the caribou and 13.8% of the moose taken by resident non-native hunters. The remaining communities accounted for 10% or less of the resident moose and caribou harvest. Five caribou (12.5%) and 1 moose were taken by non-resident Canadian (special guided) hunters based on compulsory returns and are included in this analysis.

DISCUSSION

North Canol Road

The resident harvest of 31 moose, determined from check station interviewsfor 1991, is within the range for the estimated non-native resident harvest of the previous eleven years (14-40), determined from resident hunter questionnaire surveys. The 1991 check station results demonstrated the most intensive period for moose harvest was in mid to late September. This was not associated with the large increases in September highway traffic that were observed in 1990 (unpubl. data. YTG highways). Local residents have reported hunter congestion on the North Canol during this period. The traffic information would support this contention for the 1990 season but not in 1991. Because check station attendants stopped only hunters, accurate compostion data on the North Canol traffic was not available. Additional data and modification of the check station interview form will be required to assess the relationship between traffic, hunter congestion, and harvest patterns on the North Canol.

Native moose and caribou harvest on the North Canol road is known to occur outside of our survey period because of traditional harvesting patterns. We therefore believe that the reported native harvest of 11 moose is an underestimate. Although the average moose harvest by Yukon native hunters on the North Canol between 1987 and 1989 was 21.3 per year (unpubl. data. 1991 YTG Native harvest program) this should be considered as minimum estimate (Ross River Dena Council, pers. comm.). The check station results demonstrate that native hunters use this road during the non-native resident hunting season and also that they are reasonably successful during that period.

The 1991 moose harvest was apparently within the sustainable limits for moose populations along the whole North Canol Road corridor. The total harvest from this area in 1991 was estimated to be 60 moose (31 resident non-native, 8 non-resident, 21 resident native). Resident native harvest was determined as the average of 3 years record for the North Canol area, while the actual resident and non-resident harvests for 1991 were used.

Habitable moose range was estimated at 11116 km^2 (85% of 13078 km^2) of the total area within the GMS immediately adjacent to the North Canol road (Jingfors 1988). Moose density along the North Canol and the North Ross River was estimated to be 320 moose/1000 km^2 in 1991 (Larsen and Ward 1992, in prep.) for a total range estimate of 3557 moose. A sustainable yield of 4% could be supported by the annual growth in this population. Therefore, in 1991, the actual moose harvest was 58% lower than the estimated allowable harvest of 142. This extrapolation is crude because it is derived from unverified estimates of habitable moose range but, for lack of a more empirical approach, it is our best evaluation at this time.

Although the North Canol moose harvest appears to be within sustainable limits, a harvest of 19 moose was documented from GMS 4-40. Using the above computations for this GMS alone, the calculated harvestable surplus was 22 moose. While the harvest does not appear to be heavy along the entire road corridor, the potential for over-harvest in GMS 4-40 should not be ignored.

The sex-ratio of moose harvested is skewed toward male animals primarily because of resident non-native and non-resident bull only restrictions. Resident native hunters currently tend to select bulls as well, partially because of changing attitudes and perceptions of the hunters and partially because of the increased susceptibility of male animals during the rut. There may also be some selection of bulls because of relatively higher fall fat levels in bulls relative to cows (R. Farnell, Pers. commun.). Only two female moose were checked through the station in 1991, and one in 1990 (Anderson 1991).

The resident harvest of 16 caribou on the North Canol in 1991 was slightly below the long term average for 1979 to 1989 (Mean=17.8, SE=2.2), based on the hunter questionnaire returns. Although 7 caribou from native hunters were checked at the station, additional native harvest takes place outside of the survey period. For example, in 1990, NWT export permits issued to Yukon resident natives accounted for 37 caribou. Only 13 of these were checked at the 1990 Ross River game check station because of the intermittent days of operation (Anderson 1991). Two were exported in July, prior to the licensed hunting season. During the same period in 1991 only 16 export permits were issued to Yukon native hunters from the NWT check station. All but 1 of these caribou were checked at the Ross River station.

Inclement weather conditions are suspected to have reduced the 1991 hunting effort on the North Canol and in Macmillan Pass from levels observed in 1990. A considerable increase in the hunting pressure on the South Canol Road was observed and suggests that hunters did not extend trips to the North Canol as frequently in 1991.

Fly-in Operations

There appears to be room for expansion of the fly-in charter type operation within the RRWMA. The total moose harvest for the fly-in charter operations was lower than was recorded for the North Canol road while the potentially accessible range was substantially larger. The area of the subzones adjacent to the North Canol road totalled 13,078 km^2 while charter aircraft could access a minimum of 18,995 km^2 with additional potential if any part of the North Canol corridor is also included.

We believe that the co-operation of the charter companies was essential in determining some of the harvest patterns in this area. Contact prior to start of the hunting season insured that operators were aware of the type of information requested and that records were updated regularly. Post season summaries from 1990 were clearly unsatisfactory. The kill was under-reported for at least 1 charter company where subsequent information was obtained on their activity during the season.

Success Rates

Although the charter operators had higher party success rates, the total fly-in moose harvest was slightly lower than the moose harvest reported from the North Canol. The higher resident caribou harvest by fly-in hunters is assumed to be related to preferential selection for caribou by fly-in hunters. Because party hunting often involves sharing kill(s) among hunters, party success is the most useful comparison between fly-in and drive-in hunting. Fly-in hunters were considerably more successful than the drive-in hunters.

Biological Submissions

Sample collection during hunting season has not traditionally occurred in the Yukon for either moose or caribou. In 1991, either tooth samples or incisor bars were requested and received from 19 moose and 10 caribou. Age analysis of caribou samples were not completed at the time of this writing. The mean age of 3.6 years for moose that were submitted to the check station and the relatively narrow dispersion about this mean supports the observed high levels of population growth over the previous five years (Larsen and Ward 1992, in prep).

CONCLUSIONS/RECOMMENDATIONS

We believe the check station was successful in 1991 during the first year of full hunting season coverage. The response of the hunting public and other users of the North Canol was generally favourable.

Harvest data was available shortly after the close of the check station. The data suggest that hunting effort, hunter traffic, and moose harvest occurred in mid to late September. The Dragon Lake and Sheldon Lake areas were heavily used by hunters on the North Canol Road. While localized harvesting pressure on favoured hunting locations is relatively high, the harvest over the entire North Canol was easily sustainable. Additional information on moose population trends and hunter demographics will be required to assess whether localized heavy moose harvest is sustained annually.

The station benefitted from locally hired technicians who recognized local traffic that was not generally associated with hunting (as high as 40%/day). These vehicles were not stopped, avoiding frustration of the Ross River residents. Technicians who operated the station suggested that the lack of meaningful work while waiting for hunter traffic was the major difficulty encountered. Additional work should be included for technicians at the station, should operations continue in the future.

The fly-in hunting accounts for the largest part of resident hunting activity in the Finlayson Lake portion of the RRWMA. There is potential for a reasonable increase in fly-in activity because most of the area is remote and infrequently visited. Hunter numbers at individual lakes are currently limited only through the judgement of individual air charter operators who tend to limit the number of parties taken to a particular site within the same year. However, 1 operator has requested a co-operative effort with the Department of Renewable Resources to establish preferred harvest levels at fly-in locations. While this idea may have merit for locations that could receive heavy use, it cannot be justified through the larger area where fly-in hunting traffic is generally light. Charter operators should be encouraged to identify and document areas where they feel traffic or harvest is high. In the short term, these areas should be examined on a case by case basis with charter operators.

Important gauges of hunting activity are the level of success and hunting effort. To ensure that future harvest monitoring is reliable and accurate it is critical to include unsuccessful hunters in interviews and questionnaires. This deficiency was identified in the questionnaires and surveys in 1991. It will be important to ensure that game check stations are well advertised to hunters and that contact with air charter operators occurs well in advance of the hunting season.

Only 43% of the potentially available tooth samples were submitted by hunters. Additional instruction to both hunters and the technicians at the station could likely result in considerable improvement. Hunters choosing not to remove the head from their kills, could be instructed in either

tooth or incisor bar extraction for submission to the check station or any Renewable Resources office. It is anticipated that as management activities intensify and knowledge of individual species and regional wildlife populations increase, biological submissions of this type will be requested more frequently.

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