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SNOWMOBILE CONFLICT WITH THE TELKWA CARIBOU HERD

A Fish and Wildlife Branch Position

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INTRODUCTION

When white men first appeared in the Bulkley Valley area of northcentral British Columbia, mountain caribou (Rangifer tarandus) ranged in numbers over and between most (probably all) nearby uplands. Indeed, numbers apparently persisted well after settlement and there are reports of substantial migrations of caribou across the Bulkley Valley between the Telkwa Mountains and the Babine Mountains in the first decade of this century. Increasing human population and attendant development took its toll, however, as major transportation corridors (e.g. CNR, Highway 16) cut across migration routes, agricultural clearing changed local habitats and resource extractive industries provided access for hunters. Although shed antlers may still be found in all major ranges in the area, the present distribution of these animals is limited to a small population in the Telkwa Mountains near Smithers, apparently scattered small bands in mountains north of Tahtsa Lake, and a declining population in Tweedsmuir Park. The Telkwa band is the only herd relatively easily accessible by B.C. residents and other travelling along Highway 16, and has considerable potential as a non-hunted recreational resource for the Bulkley Valley. The 1981-1986 Skeena Regional Wildlife Management Plan (in prep.) places a high priority on development of this herd.

THE TELKWA MOUNTAIN CARIBOU: RECENT HISTORY AND STATUS

The Telkwa Mountain caribou have been the subject of considerable concern since the 1940's. Overhunting had been documented in the 1940's (L. Cox, personal communication) and when in 1949 a survey could find no caribou the hunting season was closed. A survey in 1956 established the herd of over 100 animals and the season was re-opened. Fish and Wildlife surveys in the 1960's recorded the highest count of 271 animals in 1965, then during the last half of the 1960's apparently largely as a result of easy access hunting from both helicopters and snowmobiles, numbers dropped to above 40 and have remained at about that level to the present time. Hunting was prohibited in 1971 and the hunting of caribou was closed in the Telkwa Mountains in the 1973-74 season. Since 1975 flights have been conducted each year to monitor the caribou population (Table 1). These flights also served to establish seasonal areas of use and showed conclusively that this herd makes use solely of wind-blown north facing slopes during the winter months, aggregating there in late fall and moving into the timber only in early spring when crusting snow conditions permit ease of travel. At other times during the winter, movement off these wind swept plateaus is prevented by excessive snow depths. A study during the winter 1976-77 season using a radio tagged caribou in the Telkwa Mountains verified this winter use of these plateaus and movement into

timber during the early spring, and it was concluded (Hodson, 1977) that these plateaus form a very limited habitat for these caribou during the critical winter months.

THE CONFLICT

During the past five years a conflict has arisen between the use of snowmobiles and protection of these critical areas for caribou. This conflict was first recognized in 1975 during what came to be known as the "Smithers Snowmobile Study." A consultant hired by the B.C. Fish and Wildlife Branch made specific studies for four alpine areas of interest to local snowmobilers (Hunter Basin, McDonnell Ridge, Astlais Mountain (Big Onion) area, and Dome Mountain). This study found that three of the areas had minimal wildlife use during the snowmobile season and recommended that these areas be formally designated as snowmobile areas. The fourth area, an area known as Hunter Basin in the Telkwa Mountains, where there was easy access for snowmobiles had a sizeable herd of caribou observed in the vicinity. Because these animals are dependant on the windblown ridges here where they could paw through the shallow snow to the vegetation beneath it was felt that the chances for survival of individuals of this herd through winter could be significantly reduced if they were harassed or even disturbed by snowmobilers, and it was therefore recommended that snowmobiles should be restricted from the Hunter

Basin area and, by inference, from the areas frequented by the Telkwa caribou herd. During a subsequent meeting Snowmobile Association Members agreed informally to the restriction suggested. However, this did not significantly reduce snowmobile use in the area. Unfortunately, as many snowmobile owners in the area are independent (i.e. do not belong to the Snowmobile Association), they made no agreement and, indeed, could legally snowmobile anywhere except on highways and railroad grades. Snowmobile tracks were observed on every winter visit to or over the Telkwa Mountains, both in the immediate Hunter Basin area and in other areas frequented by the caribou. Whether caribou were actually affected by snowmobile activity in the areas was speculative until March 1977. On the 12th of that month, David Bustard, former Regional Habitat Protection Biologist with the Branch, entered that area on skis and made the following observations:

"Two groups of four skidoosers from Houston spent March 12 skidoosing on the slopes of Silver Mountain and over to the "Humps". All of the caribou observed were visibly disturbed by this activity and moved out of the area. For example, the ten feeding near the Camel Humps had moved several miles when last observed as a result of skidoosing activity. None of the skidoosers realized they had caused any disturbance. In fact, the last group of four skidoosers didn't even see the caribou. However, I watched the caribou running over the mountain as skidoos approached within $\frac{1}{4}$ to $\frac{1}{2}$ miles of them. This suggests they may have had previous experience with them. (my underline) I would suggest that skidoosing should be prohibited beyond Hunter Basin itself. There is definitely a conflict as soon as skidoos get up onto the ridge." (From Bustard, 1977):

A few days later, Keith Hodson, an employee of the Fish and Wildlife Branch, on his way up from Hunter Basin to look for the caribou after a verbal report from Bustard, was involved in the following incident (From Hodson, 1977):

"As we reached a point above Hunter Basin on the way to the Camel Humps a party of snowmobilers caught up with us and after a short discussion continued on. A short while later they returned to inform us they had found the herd of caribou on Glacis Lake and then gave us a ride back to the point of observation. The caribou were obviously agitated by the activity above them and as the snowmobilers left the caribou walked single file to the head of the Glacis Basin and went over the ridge and down into Sunset Basin."

In assessing these two observations, Hodson (1977) noted that they

"clearly show that snowmobiles have a disturbing effect on caribou on their wintering grounds, and suggest that snowmobiles were the cause of the fragmentation of the groups of caribou wintering in the vicinity of the "Camel Humps." (a physiographic feature in the area.)"

He pointed out that the evidence for this was somewhat circumstantial, but was further supported by that fact that in other areas and in past years, caribou not exposed to snowmobile activity had remained in essentially stable groups through the winter. To quote Hodson (op.cit.) further,

"This Camel Humps groups was fragmented very early in the winter coinciding with the beginning of use of the area by snowmobilers."

On January 18, 1980, 41 caribou were observed during a routine caribou monitoring flight, 36 in a loose aggregation on the

plateau used the previous year (plateau at the headwaters of Houston, Tommy and Emerson Creeks, plus the unnamed creek immediately south of Emerson Creek) plus five on a small plateau used consistently located at the westernmost edge of the Telkwa Range-Houston Range. The former plateau, which was being used by 88% of the Telkwa herds, is accessible by snowmobile via an old mining trail and is the only other easy access to the Telkwa Mountain Range besides the Hunter Basin trail referred to earlier. An observation from helicopter en route to another area on January 22 recorded three snowmobilers at the treeline on the trail to the caribou wintering area, but snow conditions at that time prevented access to alpine area. Two weeks later snowmobiles had reached the alpine and on March 31 tracks of snowmobiles were evident throughout, and no caribou were found on the plateaus.

A thorough search through the Telkwa Mountains located 29 caribou in groups of one to eleven animals at widely separated localities. This was only the second observation in five years that a wintering herd of caribou was fragmented in this manner and, once again, it coincided with the use of the area by snowmobilers.

While the evidence of early 1980 is not described as conclusive, there is no indication that snowmobiles use is tolerated

by caribou, and the above limited evidence suggests strongly that snowmobiles are in fact avoided by the animals. This reactive movement is in itself suggestive of actual harmful effects.

The conceivably harmful effects of snowmobile use on caribou may be considered in three categories:

- 1) Those eliciting changes in habitat use and/or social interactions (Behavioural effects).
- 2) Those leading to changes in physical condition (physiological).
- 3) Those leading directly to injury or death.

As indicated above, apparent behavioral effects have already been documented in the Telkwa herd. The animals have observably been forced from preferred areas to those less preferred, and biological principles assume that the former are preferred because they confer benefits to survival. Repeated denial of the animals to critical feeding or shelter areas can be assumed to be disastrous, given the already low rate of increase in herd size (6 animals in ten years). Effects of the herd fragmentation are unknown; presumably there are advantages to grouping, since the animals tend to do so when undisturbed.

The physiological effects are more difficult to detect in the field, but they may take several forms. Calef et al. (1976)

studied effects of aircraft disturbance on caribou and noted that:

"Low level flight or "buzzing" (which most closely approximates close approach on a snowmobile - my note) elicits panic responses from caribou, which may then injure themselves by stumbling or colliding with one another. Cows just before parturition, and young calves, are particularly susceptible to such injury. Sustained running results in an unusual depletion of energy reserves which could be particularly harmful during periods of stress such as late winter or when the caribou are being harassed by insects. Running during cold weather promotes pulmonary disorders in reindeer (Zhigunov 1968), and therefore presumably in caribou. These are the obvious and immediately injurious consequences to caribou of their making sustained escape responses."

Geist (1971) has also cited several examples of deleterious metabolic and hormonal effects on ungulates exposed to disturbance. It is important to emphasize here that winter is a period of negative energy balance. The animals are losing weight and declining in condition as a natural consequence of

- 1) low quality (dormant) forage, which often is obtainable only with a considerably expenditure of energy (pawing through snow)
- 2) greater difficulty of moving through snow, and
- 3) the need to generate extra body heat in cold weather conditions.

Therefore, any outside influence which increases energy expenditure at this time of year must be considered detrimental.

The third category of effects, those resulting in direct injury or death, occurs primarily through possibly deliberate chases and/or prolonged harrassment of individuals in order

to observe the animals more closely. We have no evidence that this has occurred in the Telkwa Mountains in recent years, although the escape response (large "flushing distance") noted by Bustard and Hodson, 1977, suggests that the caribou involved had had bad experiences with snowmobiles. The important thing to note is that the attitude of the snowmobiler does not prevent damage. Indeed, as Bustard observed, one group of caribou was put to flight (and was therefore exposed to potential physiological and behavioral damage) by snowmobilers which never even became aware of their presence.

CONCLUSION

Mountain caribou have been much reduced and their range of distribution severely curtailed over former times, most probably a result of the advent of civilization. The Telkwa Mountain caribou are one remnant band that has been reduced in the past and then responded to restrictive measures (closing of hunting season) by very slowly beginning to recover in numbers. Because of their close proximity to urban areas, the values from a scientific and particularly from a non-consumptive human interest exceed that of any other caribou population in northern B.C. The numbers of these caribou are small enough that any unavoidable mortality or stress could put the whole population in jeopardy and all measures to protect this herd must be taken. Certainly controlling human access by snowmobile as outlined earlier will be a major protection tool.

RECOMMENDATION:

On the strength of arguments present above, the Wildlife Management program strongly recommends that snowmobiles* be banned from the area of the Telkwa Mountains (in red on the attached map - Figure 1) from the dates 1, November through 30, April each year.

Such a restriction would create limited hardship for snowmobile enthusiasts in Houston, but they have remaining crown land (including two designated alpine snowmobile areas) and much private land on which to engage in their recreation. It could have a significant effect on the survival of a small, remnant band of caribou which has high scientific and human interest value.

*This refers to recreational uses of snowmobiles. Essential uses such as for maintenance of traplines, mining exploration and other activities associated with human livelihoods should be permissible by permit, as in the case of the Babine Mountains (IMU) ATV closure area.

TABLE 1. Yearly Counts of Mountain Caribou in the Telkwa Mountains.

Year	Male	Female	Young	Unclassified	Total
1964-65				180	180
1965-66				271	271
1966-67				166	166
1967-68				2	2
1968-69				34	34
1975-76					38
1976-77	6	15	7	10	38
1977-78	4	28	10		42
1978-79	6	17	10	10	43
1979-80	3	8	8	22	41
1980-81					51