PRELIMINARY RECONNAISSANCE TO EVALUATE POTENTIAL WOLVERINE STUDY AREAS ON THE CENTRAL ARCTIC BARRENS APRIL 1991.

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ABSTRACT

We surveyed two areas of the Central Arctic mainland as potential study areas for wolverine research. Both areas appeared to have wolverines present. The track density in the Napaktolik Lake area was marginally higher than that south of Dismal Lakes. The presence of wolverine and the lower hunting and travel pressure in the eastern area makes it a preferred location.

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INTRODUCTION

Although not a major income earner in comparison to other fur bears in Northwest Territories (NWT), such as martin, wolves and polar bears, the wolverine is a desirable and sought after animal. A large number of wolverine pelts taken each year never reach the fur market but are sold for parka accessories. Harvest studies in the Central Arctic indicate that the total harvest based on fur records alone underestimates the actual harvest by 50 percent or more (Gunn 1987).

Many of the wolverines harvested by hunters are taken opportunistically while involved in other activities on the land. When travelling by snowmachine, if a fresh track is encounter it is followed and the wolverine shot. Even those individuals who specifically hunt wolverine as part of their livelihood take most of their animals by shooting rather than in traps. In a sample of 284 carcasses collected in the central arctic 78% were shot, 15% were trapped and 7% had no kill method reported (Gunn and Lee 1993). Being a relatively slow animal, the wolverine on the barren lands may be particularly vulnerable to snowmachine hunting.

Few wolverine studies have been carried out in North America partly because of the cost of studying an animal distributed in low numbers over large areas of poorly accessible terrain. Major undertakings in Alaska (Magoun 1985) and in the Yukon (Banci

1987) still leave much to learn about the biology and ecology of the animal especially on the barrens. This is particularly true for the NWT which is one of the major contributors to the annual national harvest (Dauphine 1989). Lack of knowledge of this furbearer hampers justification and management of its harvest. Because of this, and a recent increased interest in the wolverine by the World Wildlife Fund (Hummel 1990), work was begun to locate a potential study area and initiate a proposal for exploring the ecology of the wolverine on the barren lands. The desirable criteria for a study area were: relative abundance of wolverine, a location above the tree line, light to moderate human disturbance, and a days snowmachine travel from Coppermine.

The objective was to familiarise myself with possible study areas, logistics, and field signs of wolverine so that a feasible proposal could be drafted. In two potential study areas, we wanted to determine the presence of wolverine, the relative density, and the degree of human activity. This paper reports on this initial phase.

METHODS

Two possible locations were identified by the Regional Biologist in Coppermine. One of these areas was located, approximately 80 miles southwest of Coppermine, south of Dismal

Lake and east of Great Bear. The other was approximately 100 miles south east of Coppermine in the immediate vicinity of Napaktolik Lake (Takyiak Lake) (fig.1).

We travelled the 2 areas by snowmachine and kept notes on wolverine and wolf tracks, terrain type, tree cover and presence or absence of caribou. Any carcasses, caches, and dens, located were examined. Wolverine scats encountered were examined in the field. Maximum length and width of wolverine tracks were recorded where snow conditions were suitable.

A track encounter rate per kilometer was calculated for each area. Only relatively recent tracks that were sharp prints, and had not been drifted were used. Each set of tracks was investigated in the immediate vicinity of the encounter point and the direction was noted. It was not possible when more than one set of tracks were encountered within a kilometer or so, to be certain the tracks were made by different wolverines.

RESULTS AND DISCUSSION

We surveyed the western area between April 23 and 26. We travelled south to Kamut Lake, just into the trees, then west past Lady Nye Lake and hence north east to Dismal Lakes (Fig 1). We travelled 225 km and encountered 14 sets of wolverine tracks and 6 sets of wolf tracks. Numerous fox tracks were also encountered. We saw 2 groups of caribou and scattered tracks.

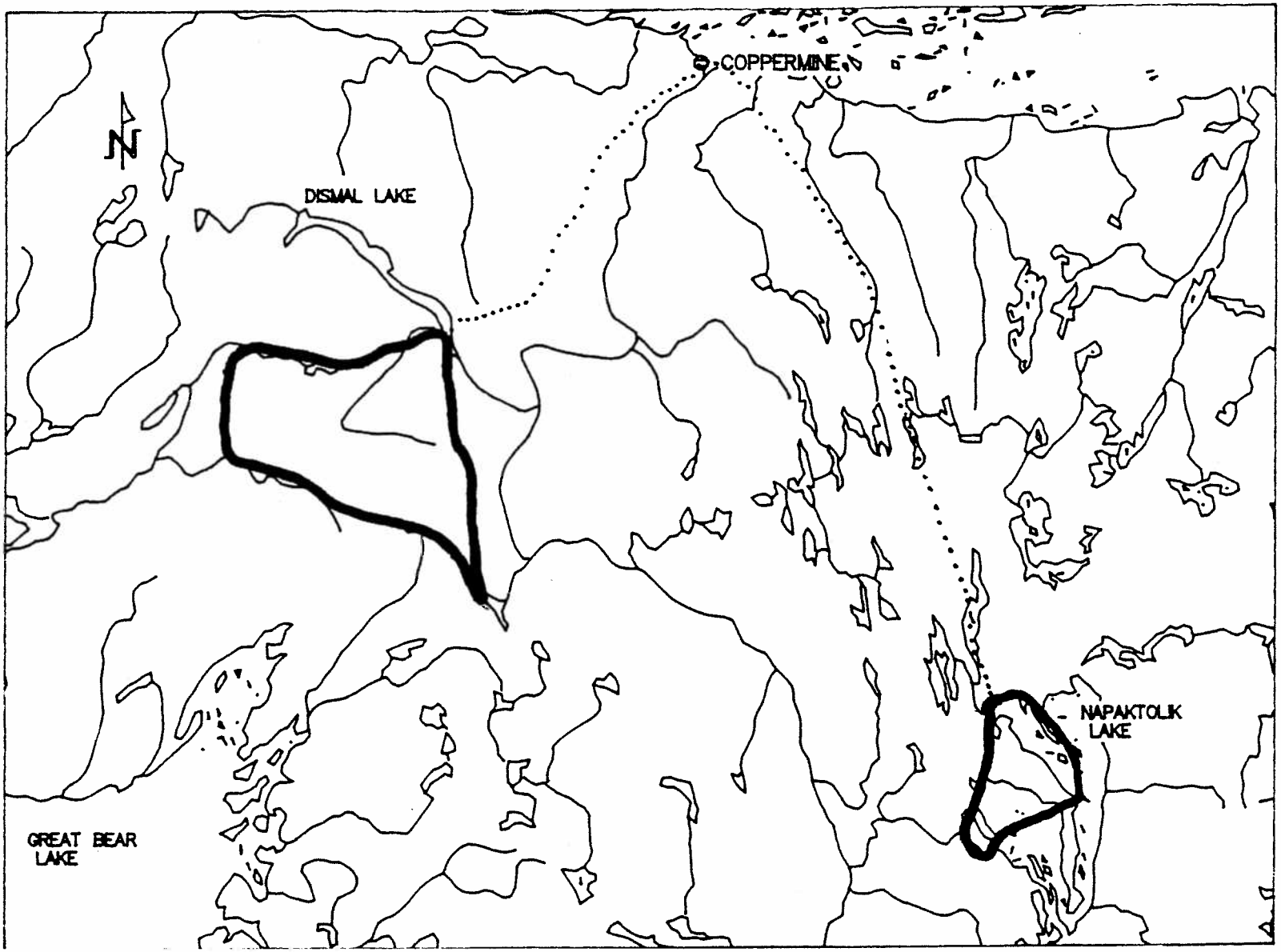

Figure 1. Areas surveyed as potential wolverine study areas.
Broken line is trail from Coppermine, thick solid line is survey route

On April 23rd and 24th, snow conditions were excellent for tracking: a light dusting of soft snow on a hard base. The last snow in Coppermine occurred several days earlier. A weather system moved through the area in the morning of April 25, with snow and some ground drifting. Although the weather cleared by noon, few tracks were encountered that day.

We located 1 wolf killed caribou about 25km south of the east end of Dismal Lakes. Two wolverines, one large track and one smaller one, were spending time in the area of the kill (within about 2 km) and had been feeding on it. The animals did not originally arrive at the carcass together but subsequently travelled together. There were frequent instances where the tracks showed they had been wrestling or tumbling together. Frequent urination markings were evident on rocks and snow lumps. One animal spent a short time (the snow was soft and not iced or packed) in a shallow snow hole about 2 meters deep and 30 to 100 cm below the surface. Caribou hairs were visible near the opening. There was no sign of any scent marking near the hole. Allen reported he frequently sees similar holes where a wolverine has gone to eat a piece of food it has carried away from a carcass. Food scraps are often evident there. Perhaps this practice offers the wolverine some protection from disturbances from ravens, wolves and hunters.

Kamut lake is within the trees and the snow in this area is

substantially different from the barrens. While the lakes are wind packed like the barrens, the snow among the trees is very soft and deep, making travelling extremely difficult for wolverines and snowmachines. Although we encountered 3 wolverine tracks near and around Kamut Lake, following them into the trees would have been difficult. I would expect the strategies of wolverines frequenting the wind-packed barrens would be different from those spending most of their time within the trees.

We encountered several older snowmachine tracks south of Dismal Lake, and more recent tracks to the west. Wolverine track encounter rate for the western area was 1 track/16km.

We surveyed the eastern area around Napaktolik Lake from May 1 to 3. We travelled south east from Coppermine to Napaktolik Lake and set up a base camp at the northeast end of the lake (Akamak..narrow place where people gather). We completed a large circle bisecting the lake as far south as the Fairy Lake River which flows out of Napaktolik Lake about midway down the west side. Weather was warm with some snow melt on exposed rock during the afternoons. It was clear and calm all three days. Last snowfall and wind in Coppermine was April 28th.

We travelled 130 km and encountered 13 sets of wolverine tracks for a track encounter rate of 1 track/10 km. We crossed 3 sets of wolf tracks. No caribou were seen although we crossed a

few old tracks. We did not encounter any caribou carcasses. We did not see any snowmachine tracks south of camp. Two otters were fishing quite successfully in the headwaters of the Fairy Lake River which remains open all year. One wolverine came into camp while we were away and consumed some caribou meat we had left out side the tent.

We followed several wolverine tracks a short distance. One of these led to a knoll where the wolverine had spent some time in a shallow depression overlooking the valley. Tracks leading away were fresh. We were able to follow those tracks and shortly catch up to the animal. It was a small wolverine that Allan believed was a young male. Allan easily held it at bay on a flat open area until I caught up. Darting the animal in this situation would appear to have been easy and effective.

This animal had been digging at several locations over the distance we tracked it. At some digs there was evidence of crushed caribou bone with the marrow recently removed and at others just crushed bone. There were several digs where there was no evidence of what had prompted the excavation. On several other tracks we followed, there was also evidence of digging into the snow and in some cases the earth.

Wolverine were present in both areas. Although the trip was admittedly cursory and the track count was not rigorous, the

eastern area had a higher track density that the west. Being further from Coppermine, Napaktolik Lake is not frequented as much by hunters as the Dismal Lakes area. Recent wolverine harvest collections (Gunn and Lee, 1993) show less than 9% of the wolverines taken by Coppermine hunters as coming from Napaktolik. Both areas we travelled are tundra except for the southern portion of the Dismal Lakes area which is on or near the tree line. The greatest density of wolverine tracks we encountered in the western area was in this southeastern portion.

Considering the relatively low hunting pressure and the higher, or at least comparable track density, the eastern Napaktolik Lake region would be preferred over the western area. Mineral developments in this area are likely over the next decade, and base line data on wolverine populations would aid in mitigation of development.

We examined 5 wolverine scats, all of which contained mostly caribou hair and chips of bone. We measured several sets of wolverine tracks (Table 1). Sexual dimorphism is known for wolverines and it would be expected that males would have larger feet than females. Although several of the tracks measured were visibly smaller than others, not knowing the sex and age of the animals, the size of the track is of little utility.

Table 1.Measurements in centimeters of wolverine tracks in snow.

	WIDTH				LENGTH			
	Right Front	Left Front	Right Rear	Left Rear	Right Front	Left Front	Right Rear	Left Rear
	11.5	11.5	10.5	10.0	23.0	19.0	18.0	19.5
	12	11	12	11.5	14.5	12.5	14.5	14.5
	10.5	7.5	11	8.5	16	14.5	11.5	9.5
	12.5	12	13	15	18	17.5	17	16.5
	13	12.5	12	12.5	16.5	17	17.5	17.5
	12	12.5	12	11.5	16.5	17.5	15.5	14
	11.5	12	11.5	11	17	16.5	15	16
	9.5	10.5	9.5	11	14.5	14.5	14.5	15
	11	10.5	11.5	11.5	14.5	14	14.5	12
	11.5	12	12	12	19	17	16.5	14.5
	11	11.5	11.5	11	15.5	16	15	15
X	11.5	11.2	11.6	11.6	16.2	15.7	15.2	14.5

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