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**BISON CONTROL PROGRAM
ANNUAL REPORT OF SURVEY
ACTIVITIES
DECEMBER 1996 – APRIL 1997**

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The Contents of this Paper are the Sole Responsibility
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INTRODUCTION

Brucellosis and tuberculosis infected bison range in Wood Buffalo National Park, northern Alberta and the Slave River Lowlands (Tessaro et al. 1990). These reservoirs of cattle diseases threaten the disease-free status of the Mackenzie wood bison herd (Tessaro et al. 1993), the presumed disease-free status of the Nahanni herd located near the Mackenzie Mountains (Gates et al. 1992a) and the Hay-Zama herd located in northeastern Alberta. The disease reservoirs also present an obstacle to reestablishing other healthy free-roaming herds in the region (Gates et al. 1992a). The commercial bison ranching industry is growing rapidly in the region and its disease-free status is also threatened by the continued existence of infected free-roaming herds.

The risk of infection of healthy bison herds is a chronic management problem (Wobeser, 1992). The issue was reviewed by a Bison Disease Task Force in 1988, a federal Environmental Assessment and Review Process (EARP, 1990) and the Northern Buffalo Management Board in 1992-93.

In 1987, the Government of the Northwest Territories implemented a program to reduce the risk of contact between infected and disease-free bison, (Gates and Gray, 1992; and Gates, et. al., 1992b). The program entailed defining an area from which bison are excluded through active management. The Bison Control Area (BCA) originally included lands south of the Mackenzie River, and north of the Mackenzie Highway between Mills Lake (near Fort Providence) and Hay River. The BCA was expanded in 1990 to encompass all lands north of the NWT border and south of the Mackenzie River, lying between the Trout River in the west and the Buffalo River and western boundary of WBNP

in the east, (Fig. 1). The BCA encompasses 3,936,339 ha. Bison in the BCA are designated as nuisance wildlife under section 61 of the NWT Wildlife Regulations Act (Government of the Northwest Territories 1992). This regulation stipulates that any bison sighted in the BCA may be shot by an eligible NWT hunter.

Since 1993 the bison control program has been jointly funded by the Department of Renewable Resources (now Resources, Wildlife & Economic Development) and Canadian Heritage. The cost of surveillance of part of the BCA (Zones I and II, Fig. 2) is jointly funded under an agreement between the two agencies. Canadian Heritage participation is within the context of its Bison Research and Containment Program.

The objectives of the Northwest Territories bison control program are to detect and remove any bison in the BCA, and to prevent the establishment of bison herds or individuals in this area. These objectives serve the goal of lowering the risk of contact between bison in non-infected and infected bison herds.

This report summarizes the results of the bison control program for the period December 1996 to April 1997.

GOAL and OBJECTIVES

The goal of the Bison Control Program is to reduce the risk of infection of the Mackenzie and Nahanni herds with tuberculosis and brucellosis.

Objectives

- To maintain the bison control area free of bison and prevent the establishment of any herds within the boundary.
- To continue surveillance of the bison control area.

- To increase public awareness of the bison control program.

METHODS

Aerial patrols were again used to monitor the bison control area (Table 1). Three monthly surveillance flights each consisting of approximately 15 hours of flight time, were conducted in December, January, and February (Figure 3). These flights consisted of comprehensive coverage of all areas defined as zone I. As in previous years the Mackenzie River shoreline between the Redknife river and Point Du Roche was considered to be a high risk area. Weekly shoreline patrols of this area were flown beginning December 4, 1996, and continued until April 15, 1997 (Figure 4). These patrols were postponed while the surveillance flights of zones I and II were being conducted. During March 17-27, 1997 a comprehensive surveillance flight of zones I and II of the bison control area was conducted (Figure 5). No flights were flown in zone III of the BCA.

The flight plans for these surveys were directly adapted from the surveys conducted during the 95-96 monitoring season. Actual flight paths were flown in a flexible, meandering manner to allow for variations in terrain, habitat, and density of animal tracks, yet covering the area with the greatest intensity possible for the number of flying hours available. Surveillance flights were flown at approximately 700 to 900 ft above ground level, at a speed of 85 -90 knots/hr. Attempts were made to conduct the flights during optimum snow and light conditions, however, some flights were conducted in less suitable conditions in order to maintain adequate surveillance.

All observations of large mammals were recorded, including caribou, moose, and wolves. The locations of these observations were recorded with a Geographic Positioning System and

then downloaded to a computer database file named bisob97.dbf.

Community observers were hired to participate in the aerial flights. Mark Sabourin, Edwin Sabourin, Susan Moser, and Fagan Furlong were the observers from Fort Providence. Jim Thomas and Ernest Moses were the observers from Hay River.

Table 1. Summary of surveillance flights in the Bison Control Area during December 1996 to April 1997.

Comprehensive surveillance in Zones I and II

<u>Zone</u>	<u>Date</u>	<u>Hours Flown</u>
1	December 17-20	15.8
1	January 21-24	14.8
1	February 22-25	14.4
1&2	March 18-27	46.4
	Sub-total	91.4

Shoreline Surveillance Flights

<u>Date</u>	<u>Hours</u>	<u>Date</u>	<u>Hours</u>
December 4	2.5	April 1	3.0
December 14	3.0	April 4	3.0
December 27	3.0	April 8	3.0
January 4	3.0	April 11	3.0
January 12	3.0	April 17	3.0
January 17	2.5	Sub-total	62.0
January 27	2.0		
January 31	2.6	Verification flights	
February 7	3.0	January 09	1.8
February 14	3.0	Sub-total	1.8
February 21	3.0		
February 28	3.5		
March 8	4.5	GRAND TOTAL	155.2 hrs
March 13	2.1		
March 16	4.0		
March 27	2.3		

RESULTS AND DISCUSSION

Surveys and Patrols

There were no bison found in the Bison Control Area during the 1996-97 surveillance season. Bison were found in large numbers along the north shore of the Mackenzie River (Figure 6). On 28 February 1997, seven bison moved from Big Island south to another island in the Mackenzie river. These bison returned to Big Island on their own and did not cross to the south shore. On 1 April 1997, a herd of approximately 40 animals moved to Willow point near Big Island. With the possibility that these animals may try to cross to the south side of the river, it was decided to increase the shoreline patrols to twice a week for the remaining two weeks of the program.

The cumulative totals of large mammal observations made during patrols and surveillance flights were 916 bison, 170 caribou, 192 moose, and 33 wolves (Table 2).

Table 2. Recorded sightings of large mammals observed during surveillance flights

Species	Shore patrol observations	Surveillance flight observations
Bison	698	218
Caribou	20	150
Moose	17	175
Wolf	21	11

During the March comprehensive flight, areas of possible bison habitat were identified and recorded (Figure 7). These areas are of particular interest to the bison control program. With the identification of bison habitat within the BCA it is possible to identify specific areas where bison would most like occur. These areas were observed during the winter months only. It would be beneficial to assess the suitability of plant communities for bison in these areas during summer

months. This information would be valuable in determining the likelihood of bison being attracted to these areas. Habitat evaluation should be done in zones I, II, III, and in the border area of Wood Buffalo National Park.

Communications

An effort was made to increase public awareness of the bison control program. Bison control program information posters and pamphlets were distributed to communities and public outlets in and around the BCA. Two new posters were designed to provide the public with more information on brucellosis and tuberculosis in bison. A radio announcement was aired periodically to inform the public about the bison control program and alert anyone travelling through the BCA to report bison sightings to the nearest Department of Resources, Wildlife and Economic Development office.

One report of bison sighted in the bison control area was received from RCMP constable Ron Valusiwick (Fort Simpson) on January 9, 1997. He reported seeing six bison along the road ten kilometres south of the Mackenzie river ferry crossing. A verification patrol was flown over the approximate area of the sighting and a ground patrol of the road confirmed that there was no bison. The original report was received as second hand information, therefore Mr. Valusiwick was contacted by the bison control Technician to confirm the bison sighting and location. The area where they were sighted was subsequently searched during other flights and did not reveal any signs of bison.

Public participation in reporting sightings is an important part of the bison control program, therefore it is essential that people in the communities in and near the BCA are well informed about the program. While conducting the surveys in Fort Providence and Hay River the

Technician was able to speak with various people throughout the community. The general impression was that the residents of these communities were aware that the BCA exists, but were unsure of what the reasoning was behind it.

Several attempts were made to meet with the local band in Fort Simpson, but due to scheduling conflicts and lack of interest, a formal meeting did not occur. The Technician was able to distribute posters and pamphlets at various outlets throughout town. Brief discussions with some of the local residents revealed some sightings of bison in the Fort Simpson area. Most were from people who had travelled to Nahanni Butte and spotted bison in or near that community. One person mentioned hearing of someone else seeing a bison on the highway near Trout River. All of these sightings were through second hand information and no known dates or locations of the sightings could be confirmed.

Contact was made with Chief Dennis Deneron of the Sambaa K'e Dene band in Trout Lake and was followed by a visit to the community by the Technician for a public meeting. A presentation was made describing the history and importance of the a bison control program. Maps and information were provided to them and a question and answer period followed. A considerable amount of interest was shown from the people who attended. The community was not aware of the bison control program or what was involved in such a program. Many questions were brought up and discussed, which resulted in the reporting of two sightings of bison and two reports of tracks (Figure 8). These were documented and recorded in the bison observation database called bisobs.dbf, and then added to the associated map (Figure 8). The results of this meeting were very positive and although time constraints prevented further visits to other communities, these should continue on a regular basis.

A request for information on the location of bison sightings in northern Alberta was made through contacting Dave Moyles, Alberta Fish and Wildlife. In British Columbia Contact was made with Helen Schwantje, of BC Wildlife for information on bison observations. These bison sightings were also added to the bison observations database called bisobs.dbf, and then added to the associated map (Figure 9).

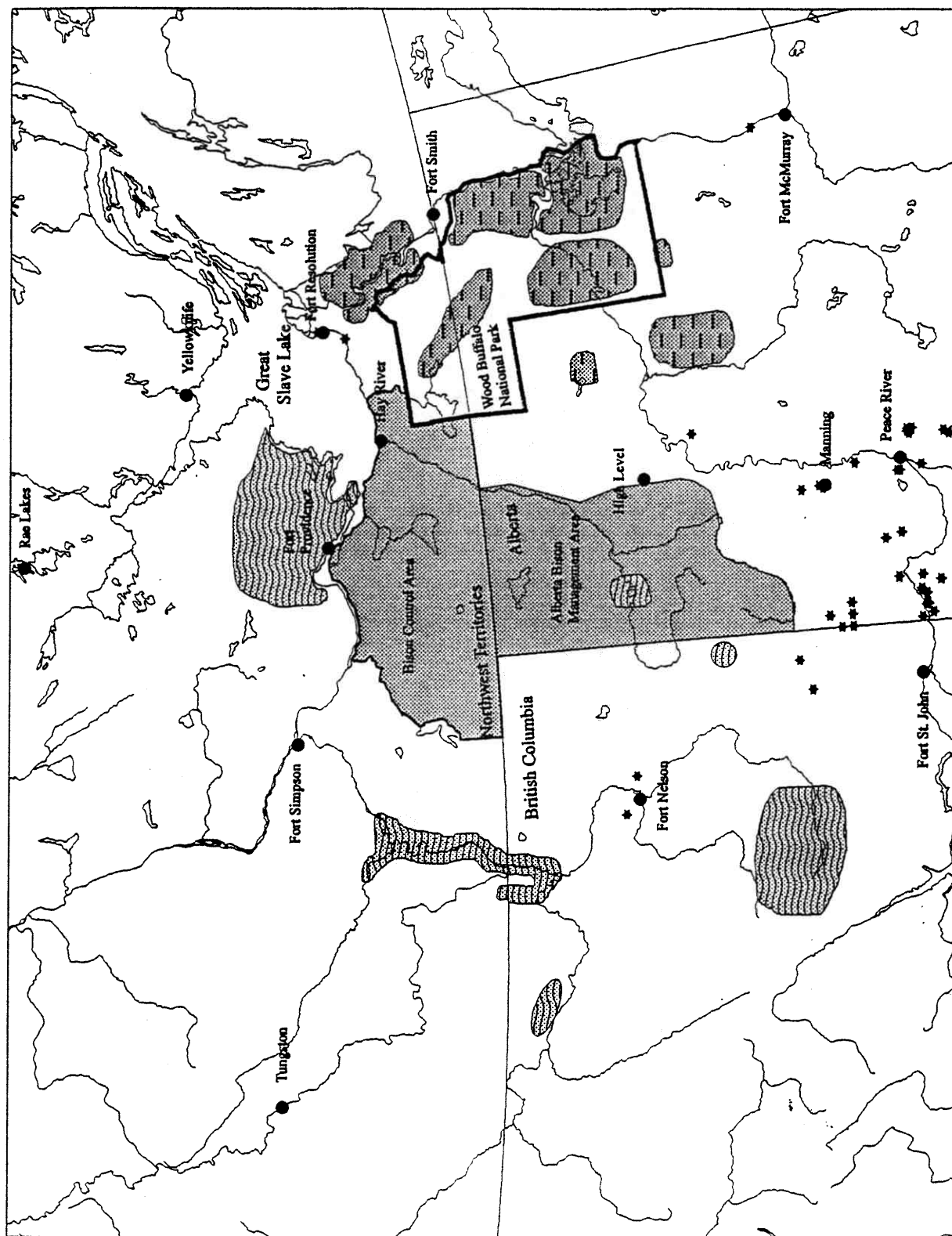


Figure 1. Location of healthy free-roaming(light shading) and captive(stars) bison herds, and free-roaming bison herds infected with brucellosis and tuberculosis(stippled dark shading)

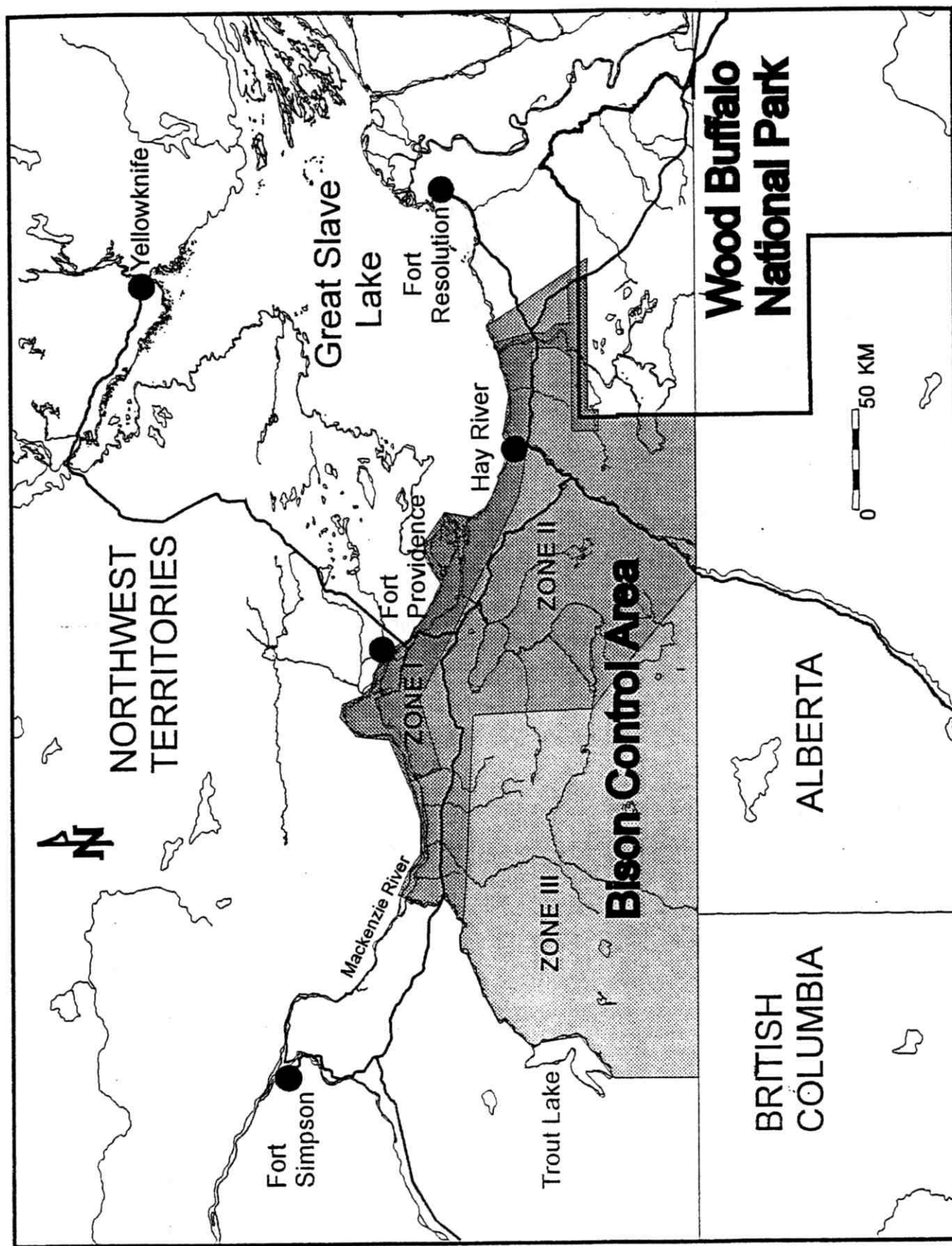


Figure 2. Location of the Bison Control Area and surveillance zones

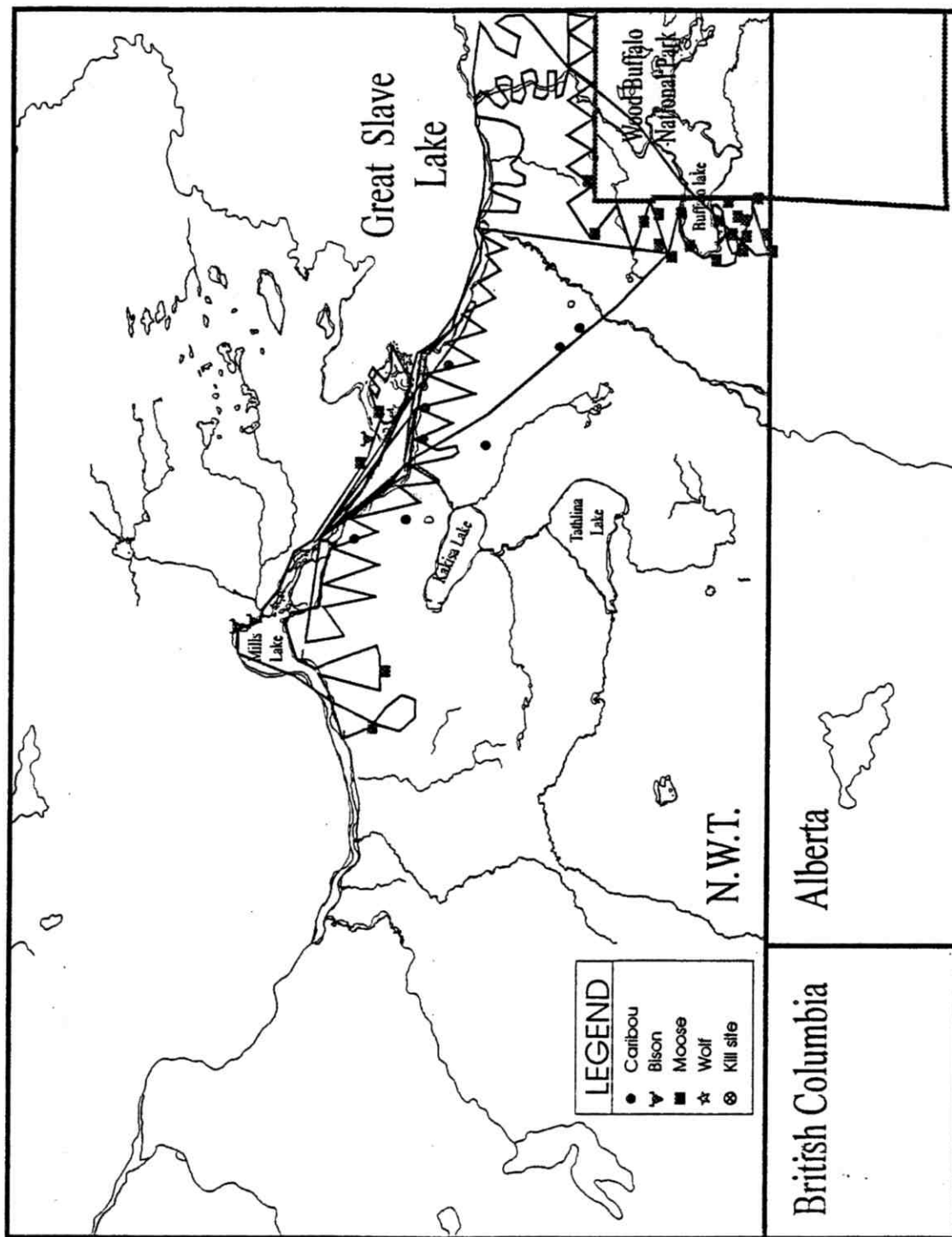


Figure 3.1. Surveillance of the Bison Control Area, December 17-20, 1996

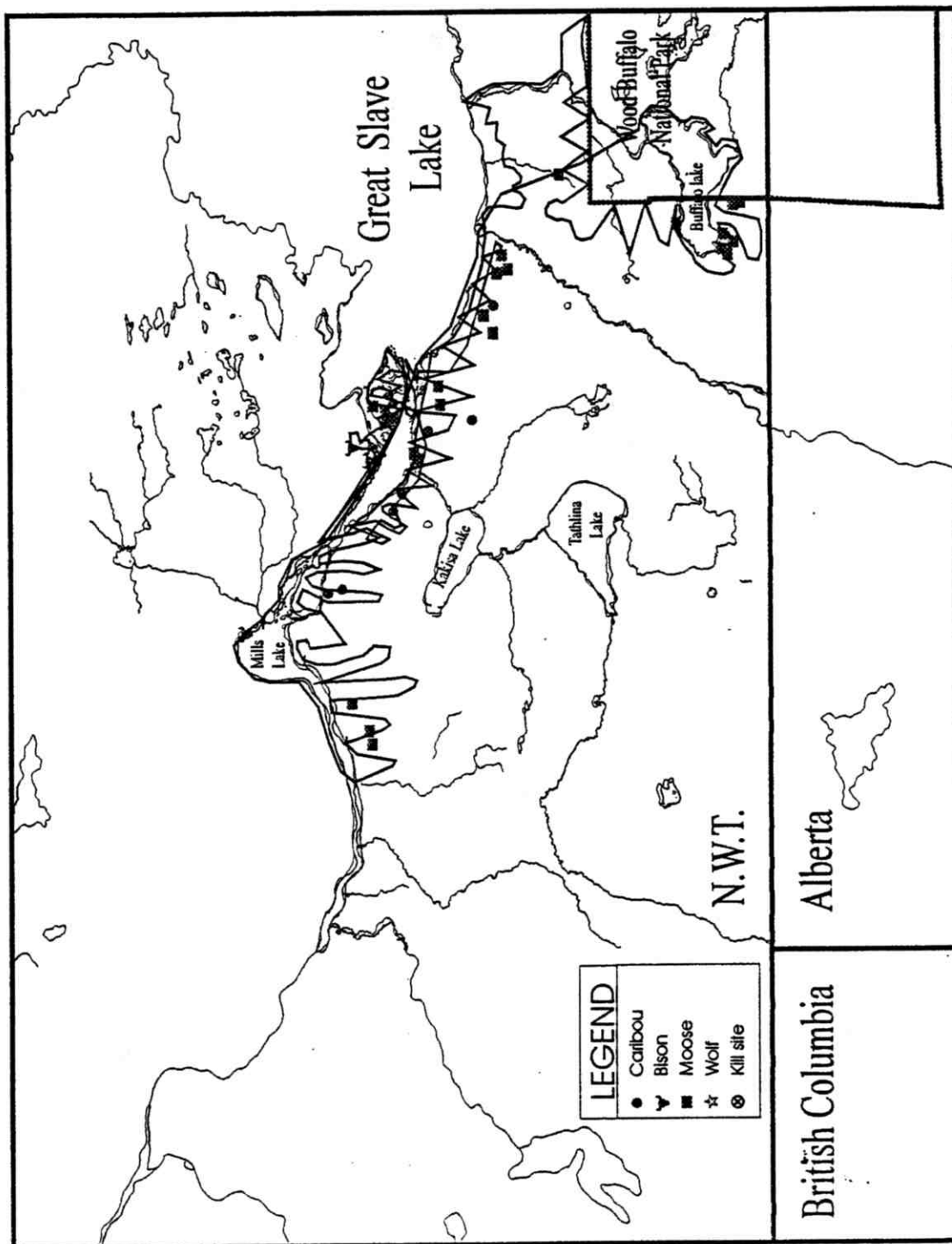


Figure 3.2. Surveillance of the Bison Control Area, January 21-24, 1997

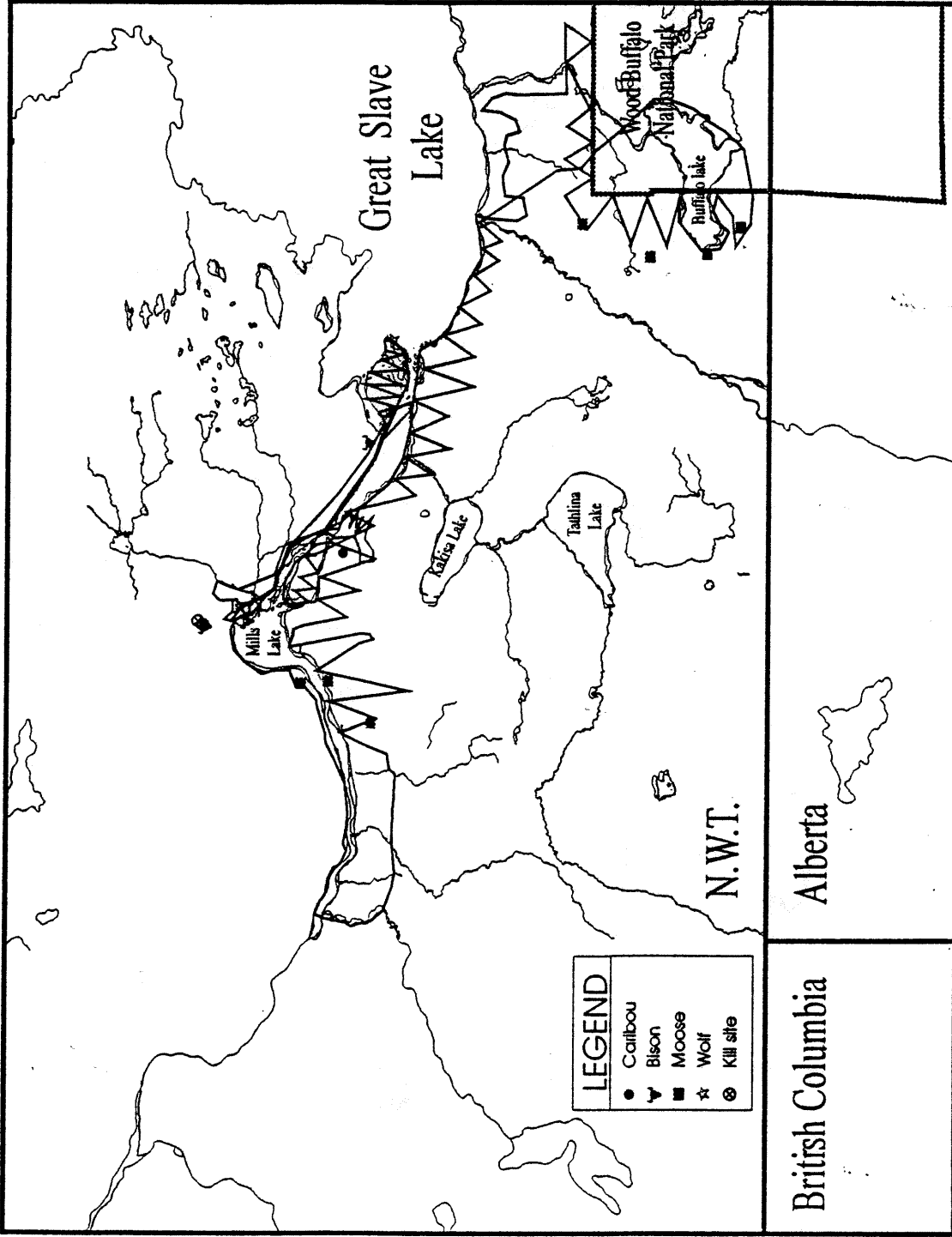


Figure 3.3. Surveillance of the Bison Control Area, February 22-25, 1997

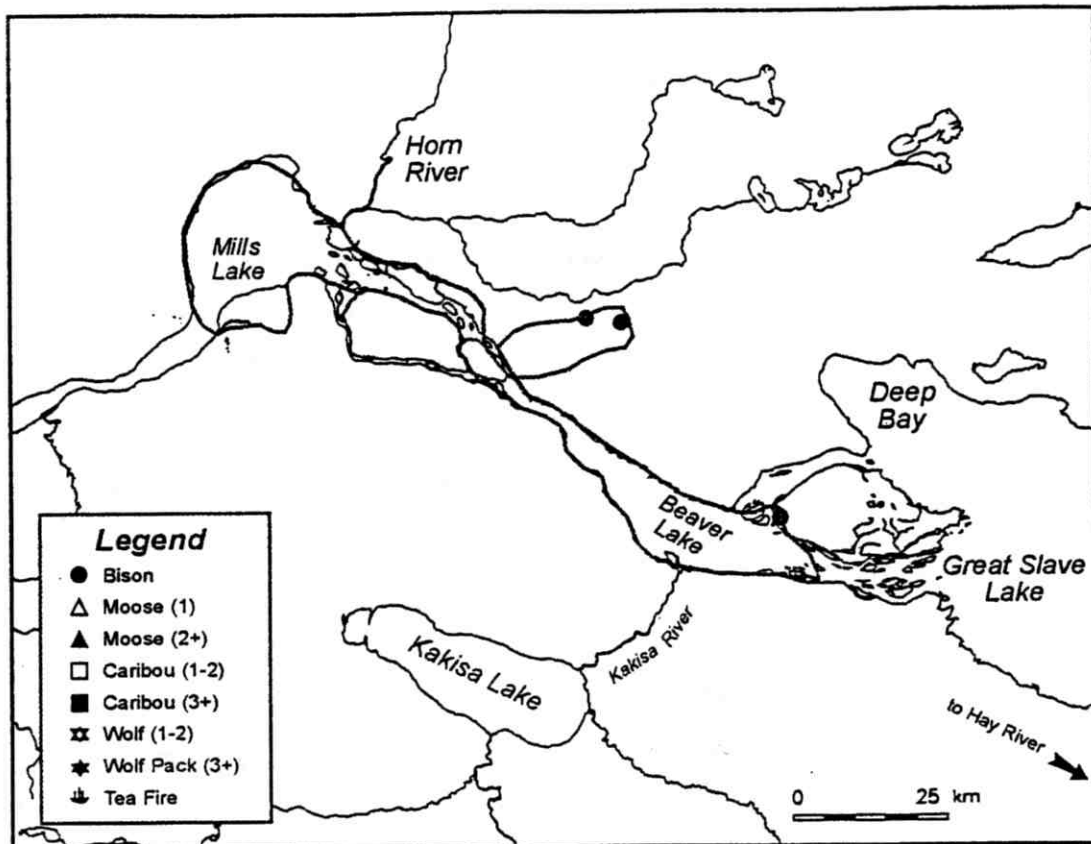


Figure 4.1. Dec 4 1996, shoreline patrol.

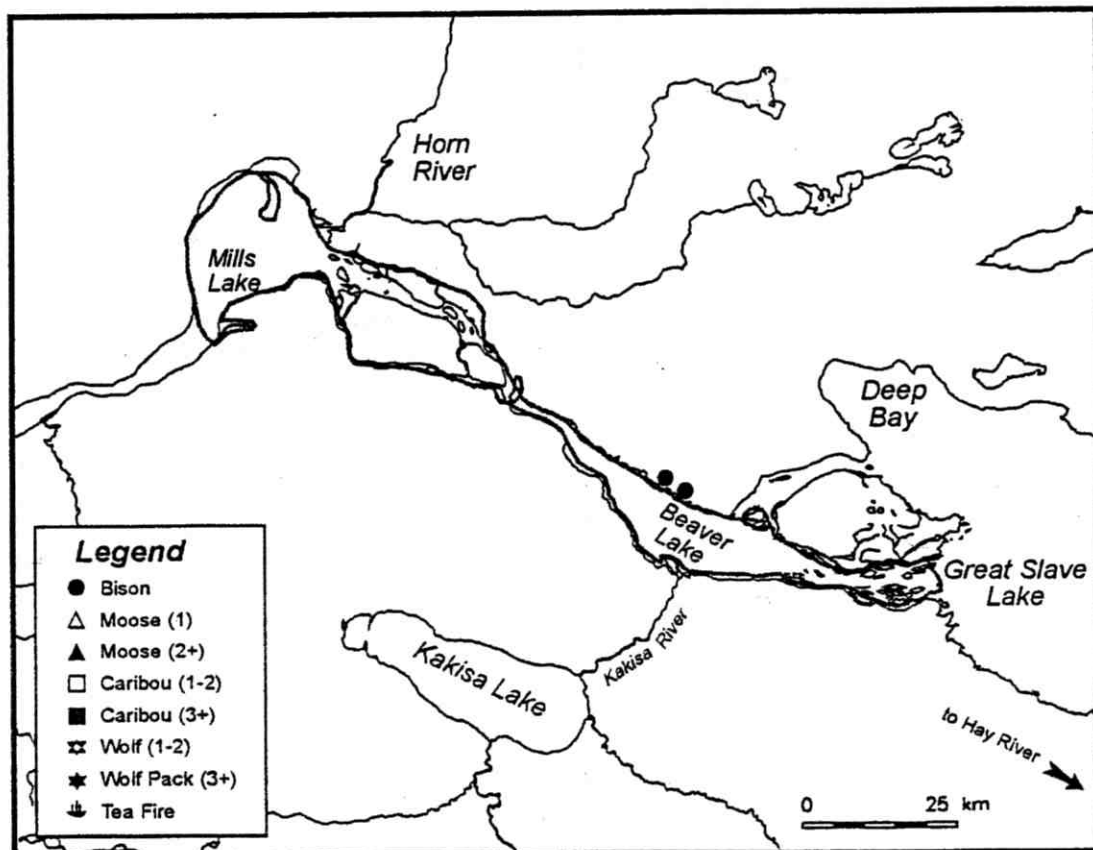


Figure 4.2. Dec 14 1996, shoreline patrol.

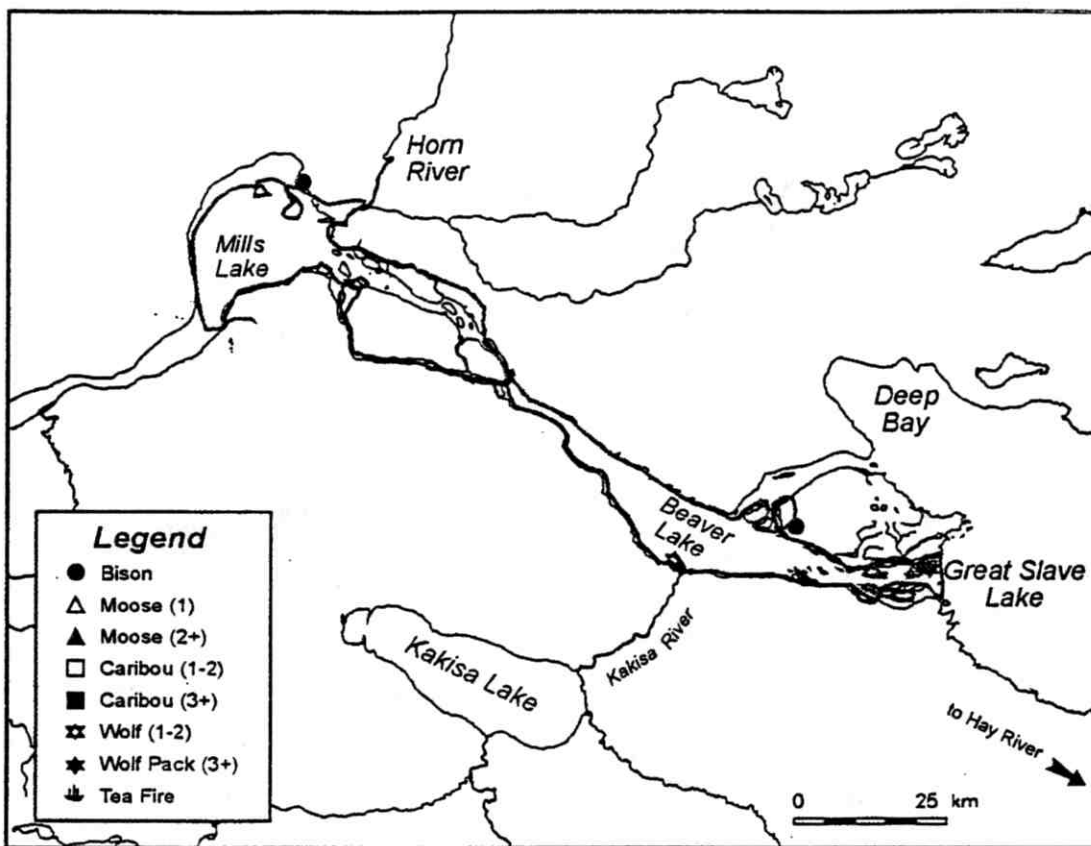


Figure 4.3. Dec 27 1996, shoreline patrol.

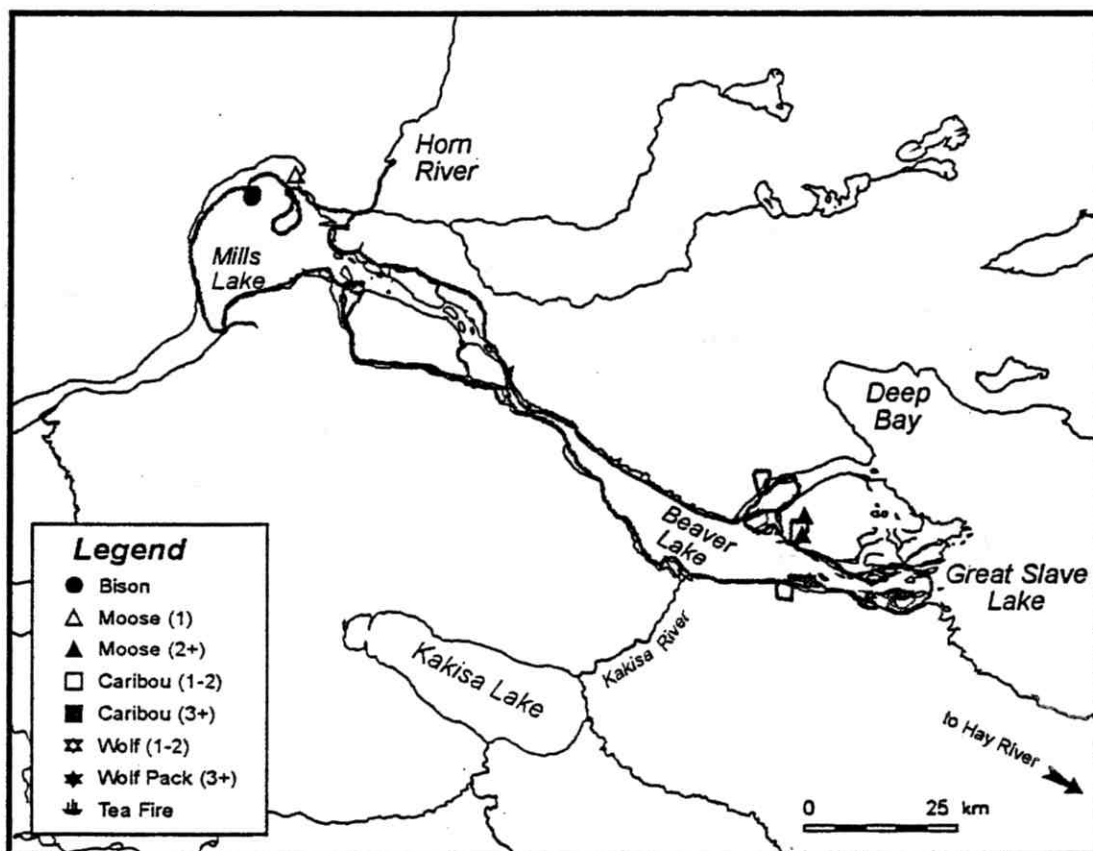


Figure 4.4. Jan 4 1997, shoreline patrol.

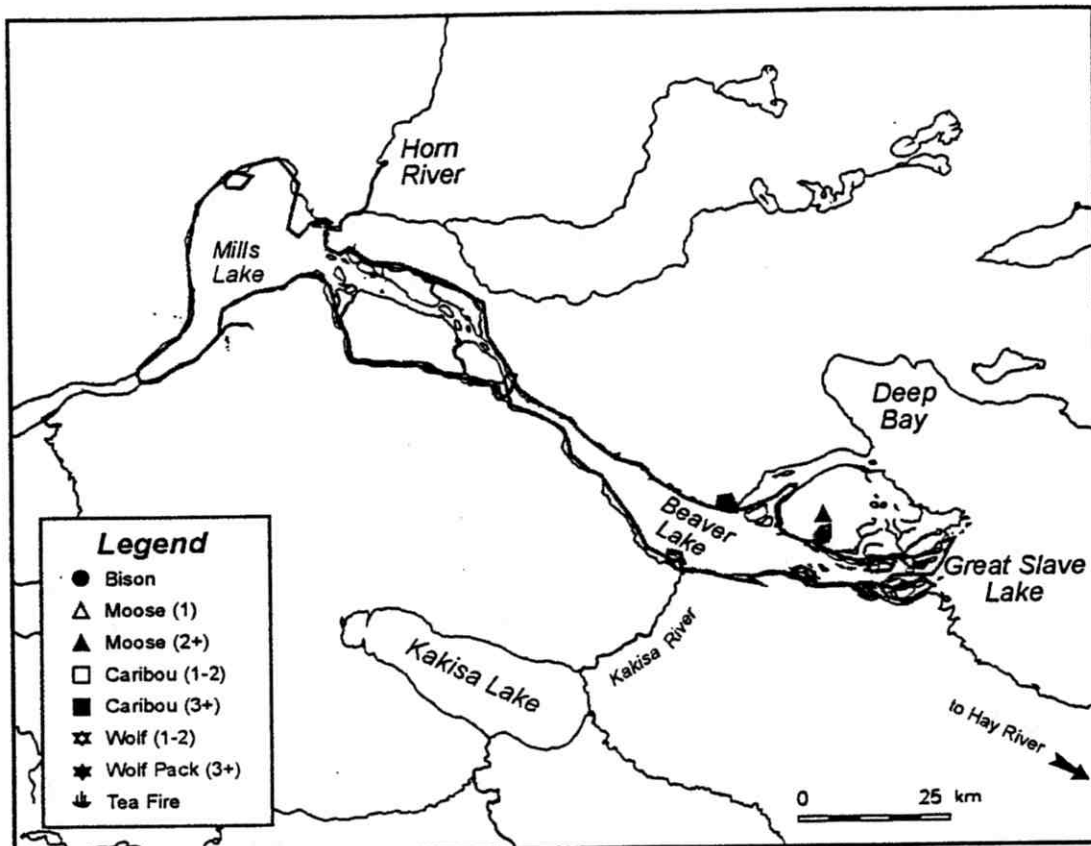


Figure 4.5. Jan 12 1997, shoreline patrol.

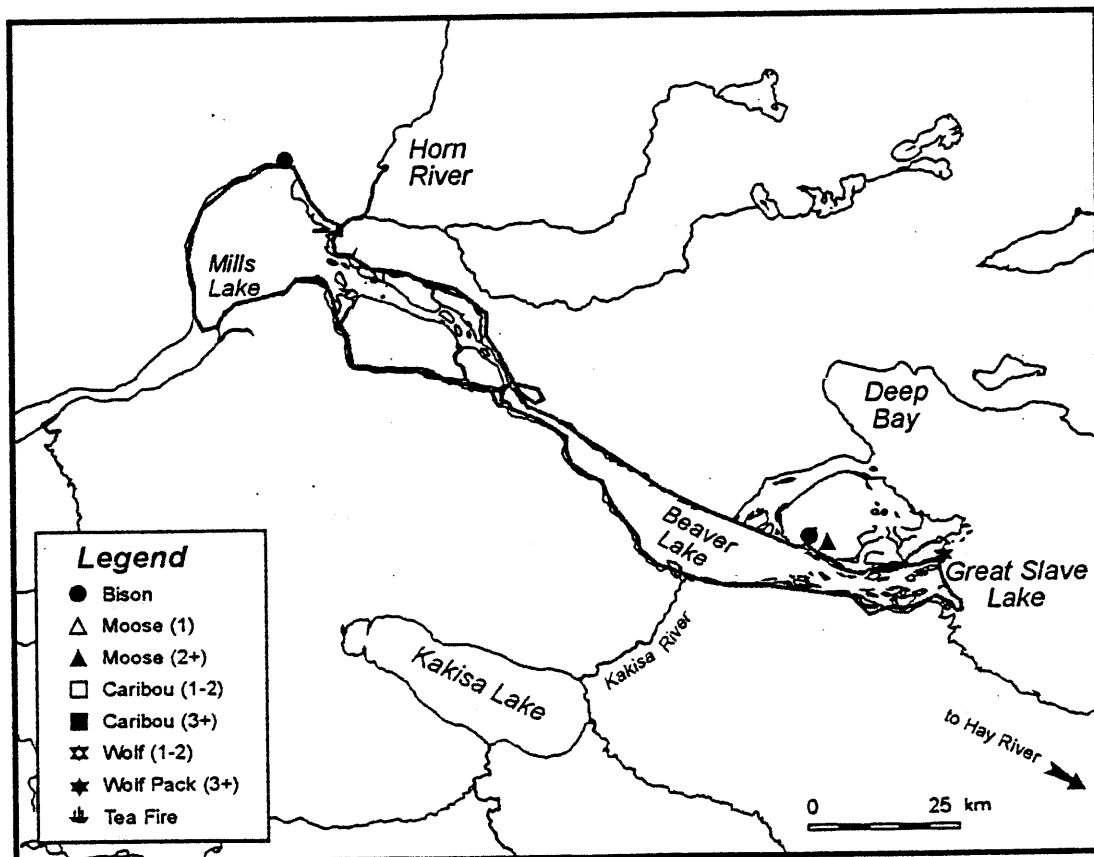


Figure 4.6. Jan 17 1997, shoreline patrol.

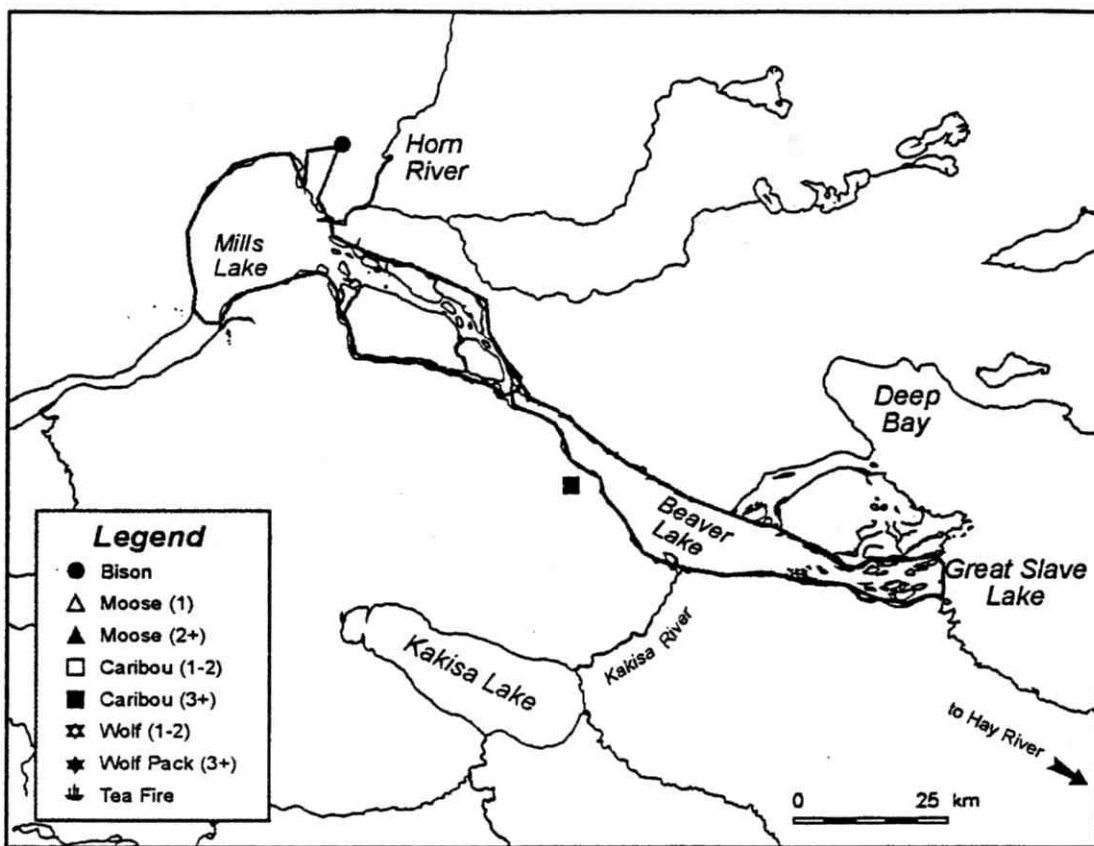


Figure 4.7. Jan 25 1997, shoreline patrol.

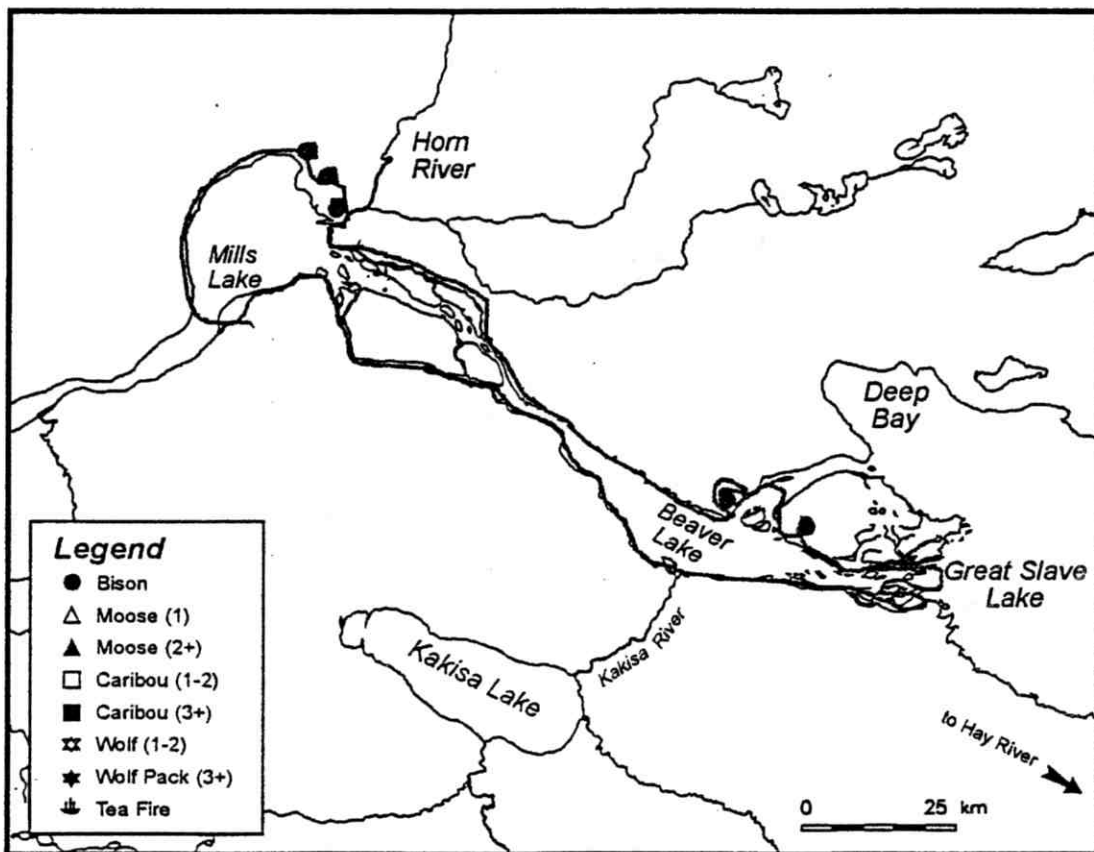


Figure 4.8. Jan 31 1997, shoreline patrol.

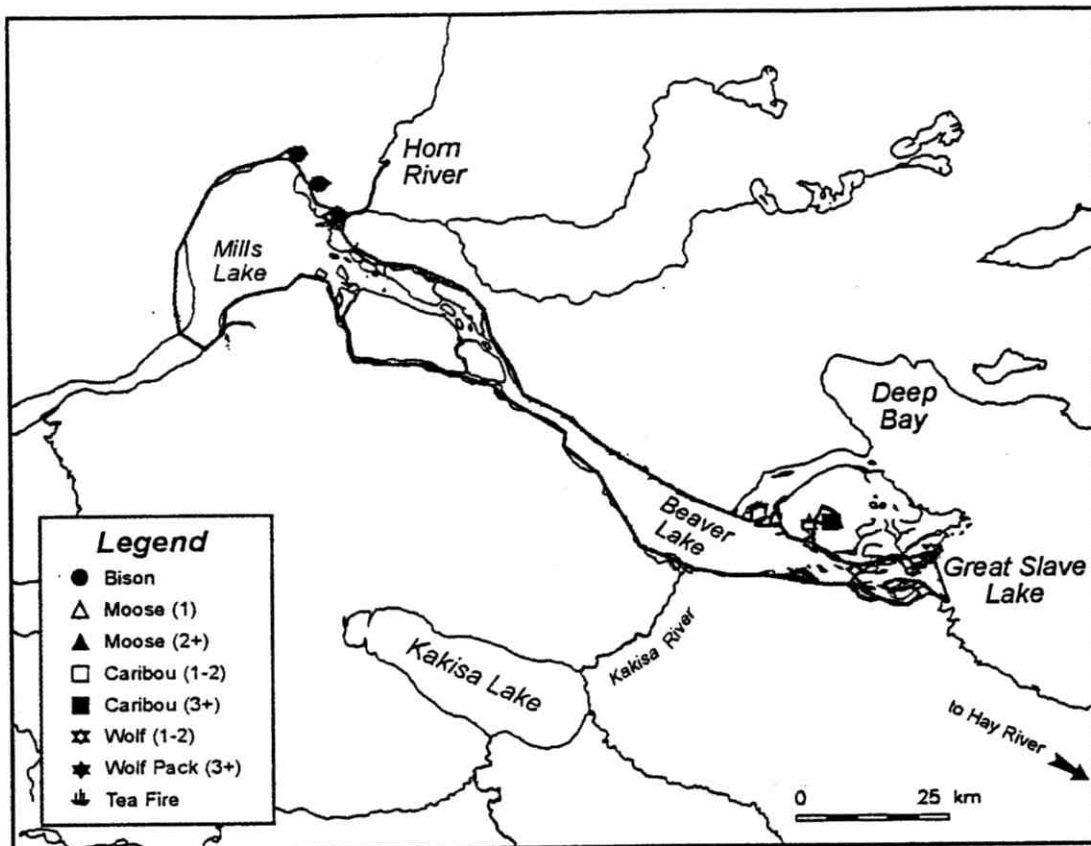


Figure 4.9. Feb 07 1997, shoreline patrol.

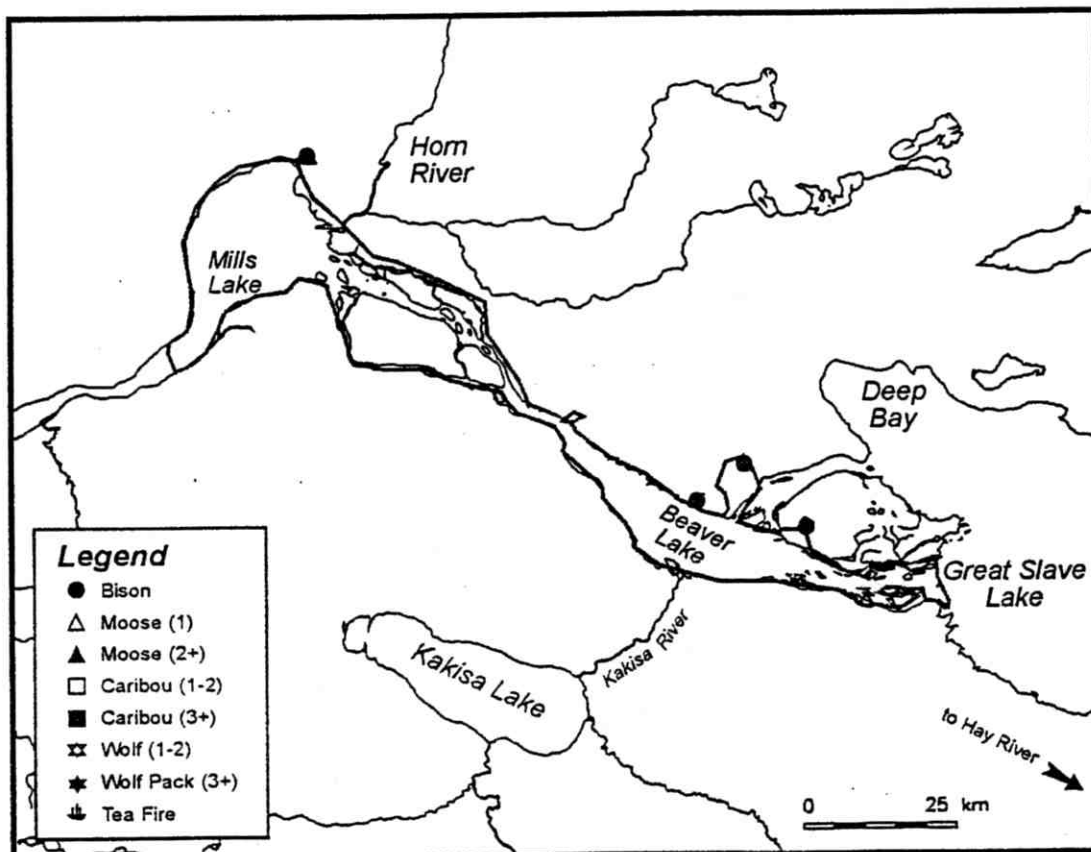


Figure 4.10. Feb 14 1997, shoreline patrol.

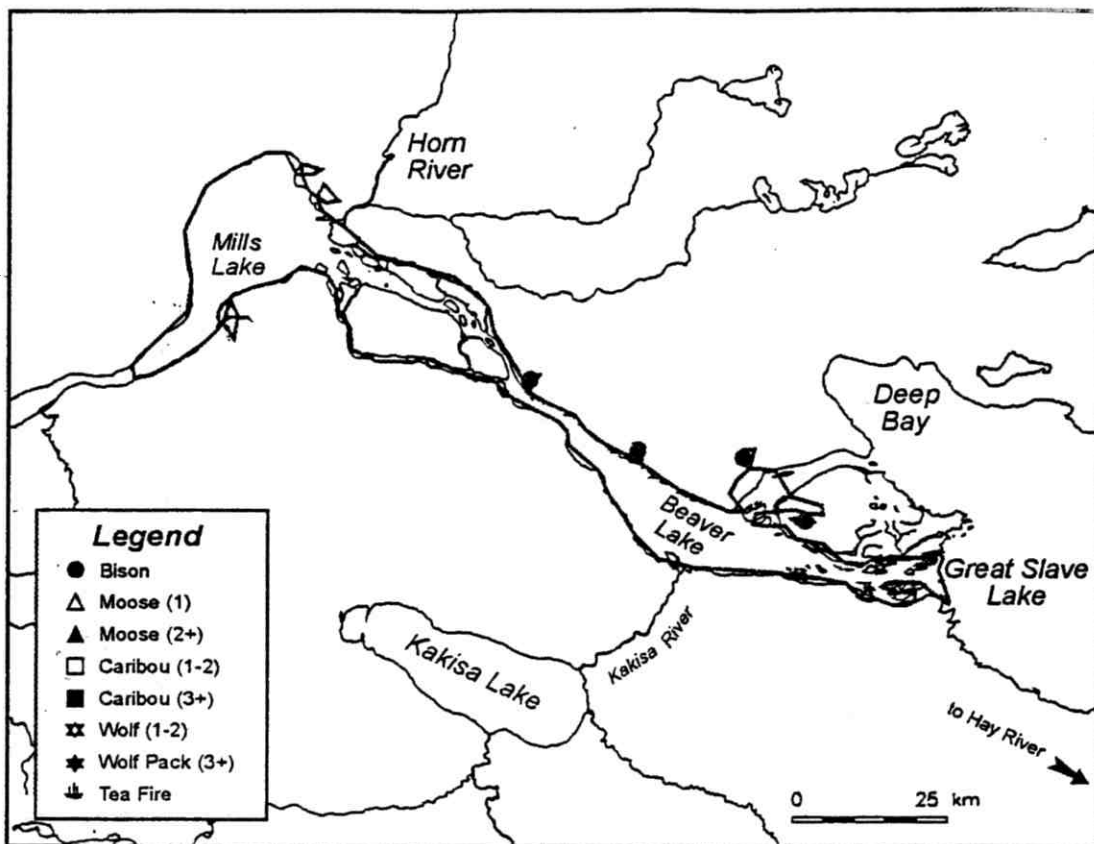


Figure 4.11. Feb 21 1997, shoreline patrol.

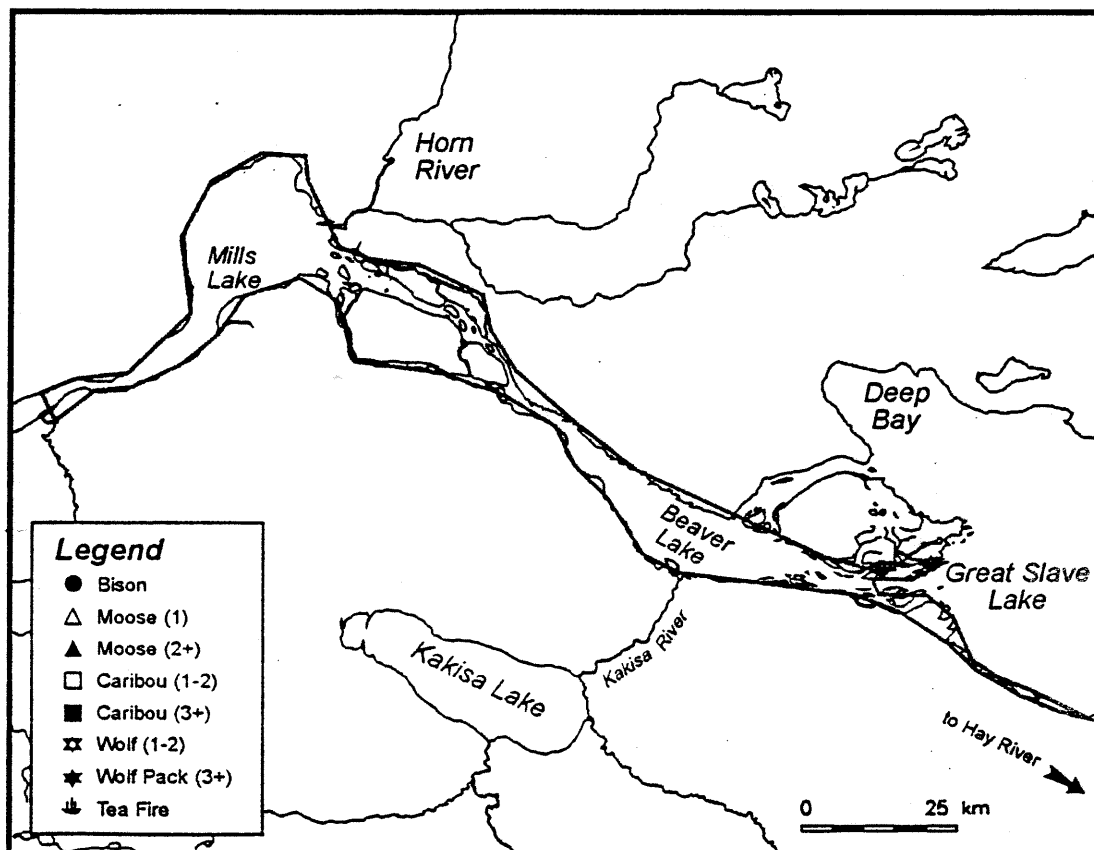


Figure 4.12. Feb 28 1997, shoreline patrol.

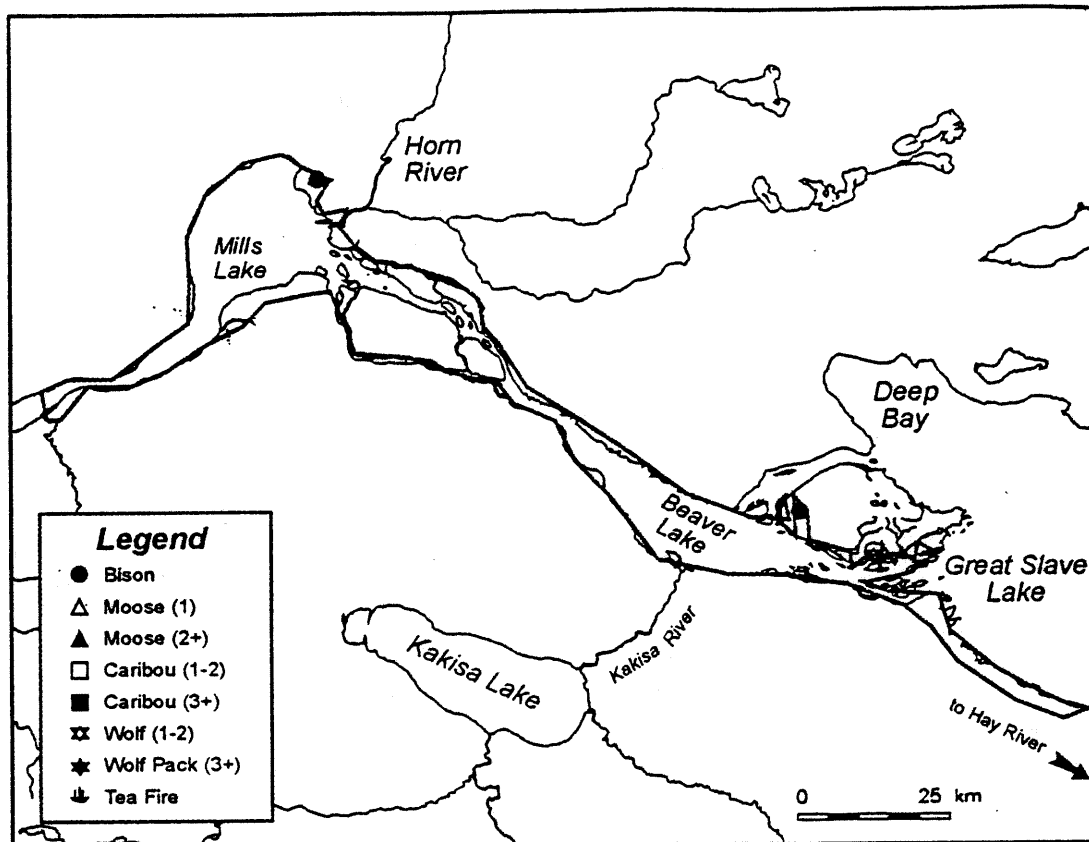


Figure 4.13. Mar 8 1997, shoreline patrol.

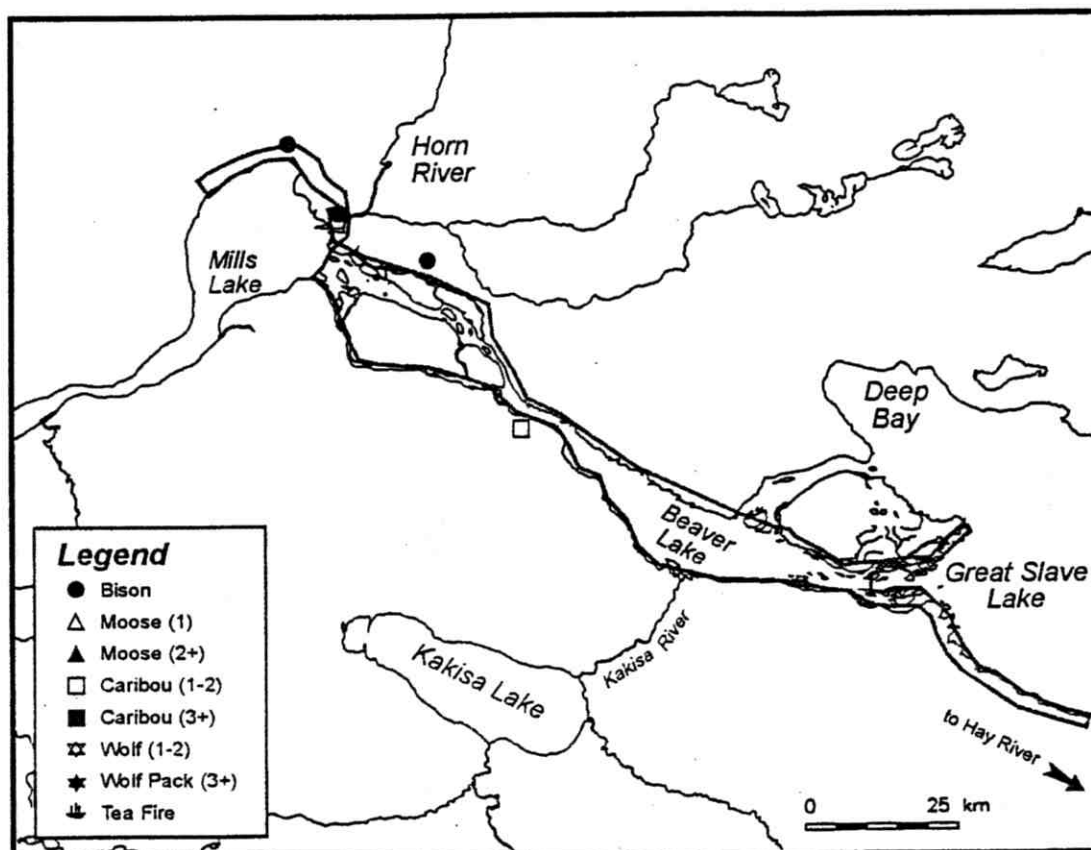


Figure 4.14. Mar 13 1997, shoreline patrol.

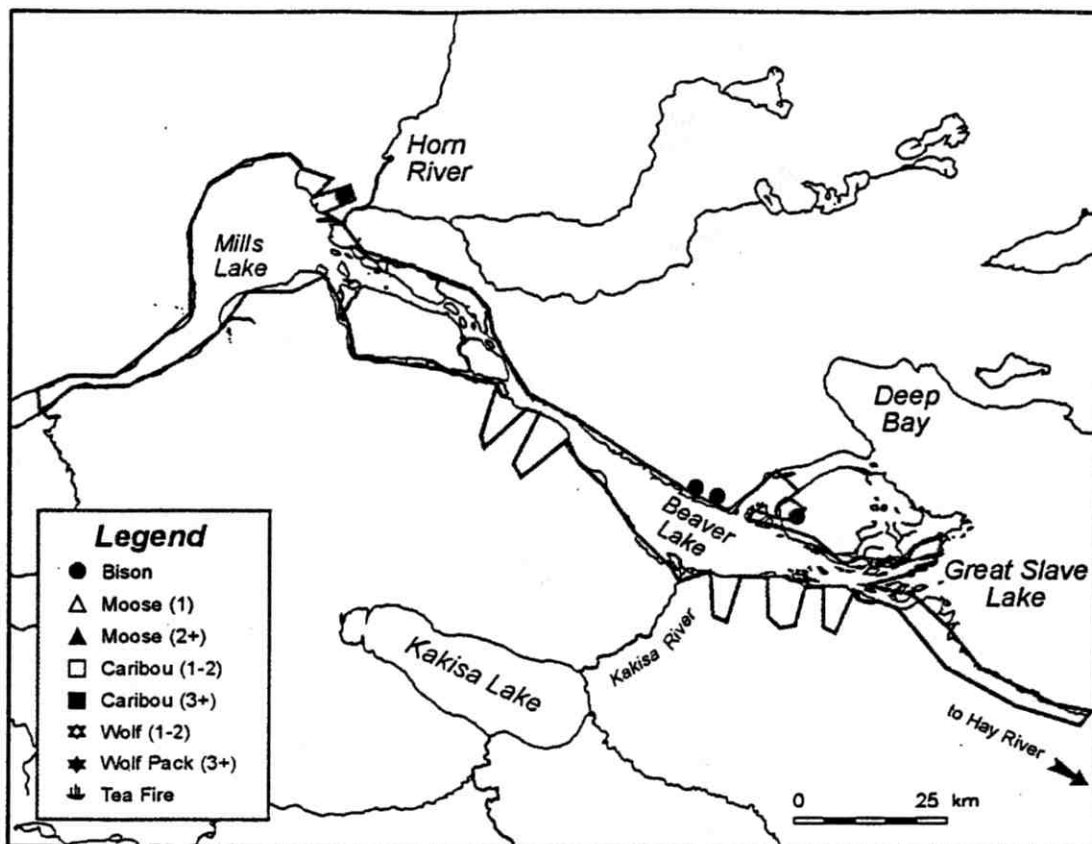


Figure 4.15. Mar 16 1997, shoreline patrol.

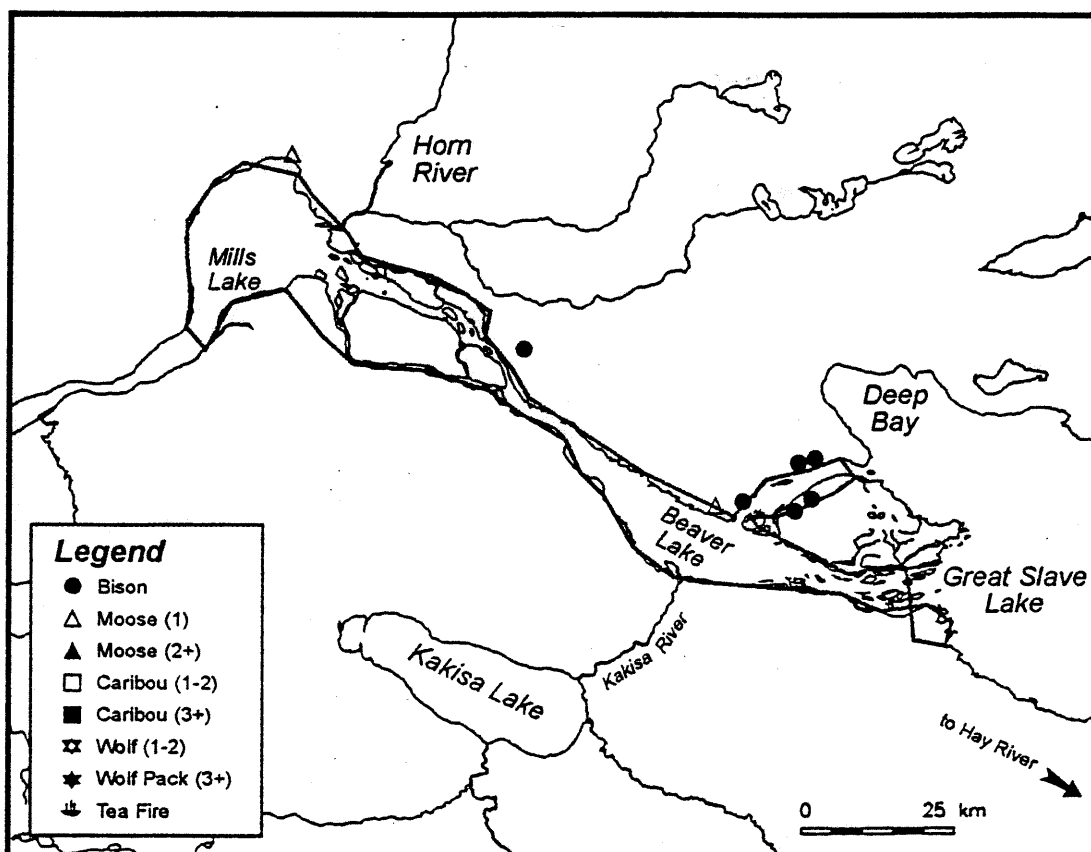


Figure 4.16. Mar 27 1997, shoreline patrol.

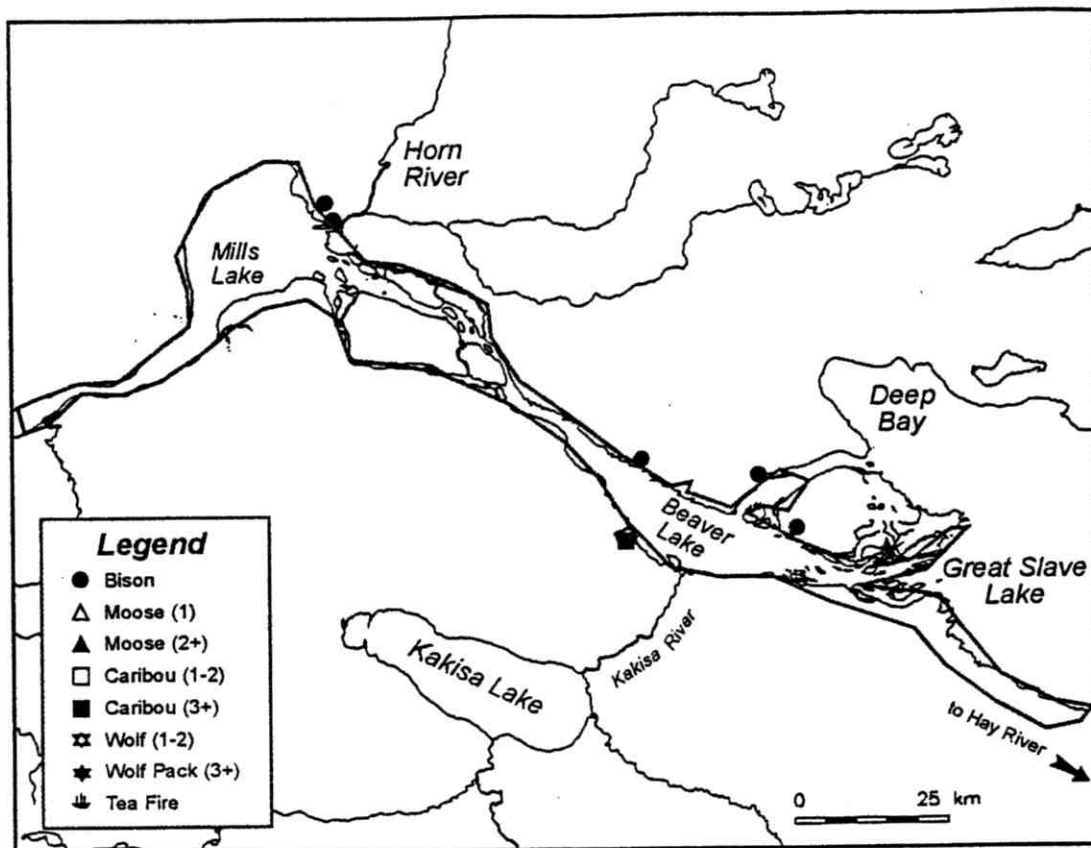


Figure 4.17. Apr 01 1997, shoreline patrol.

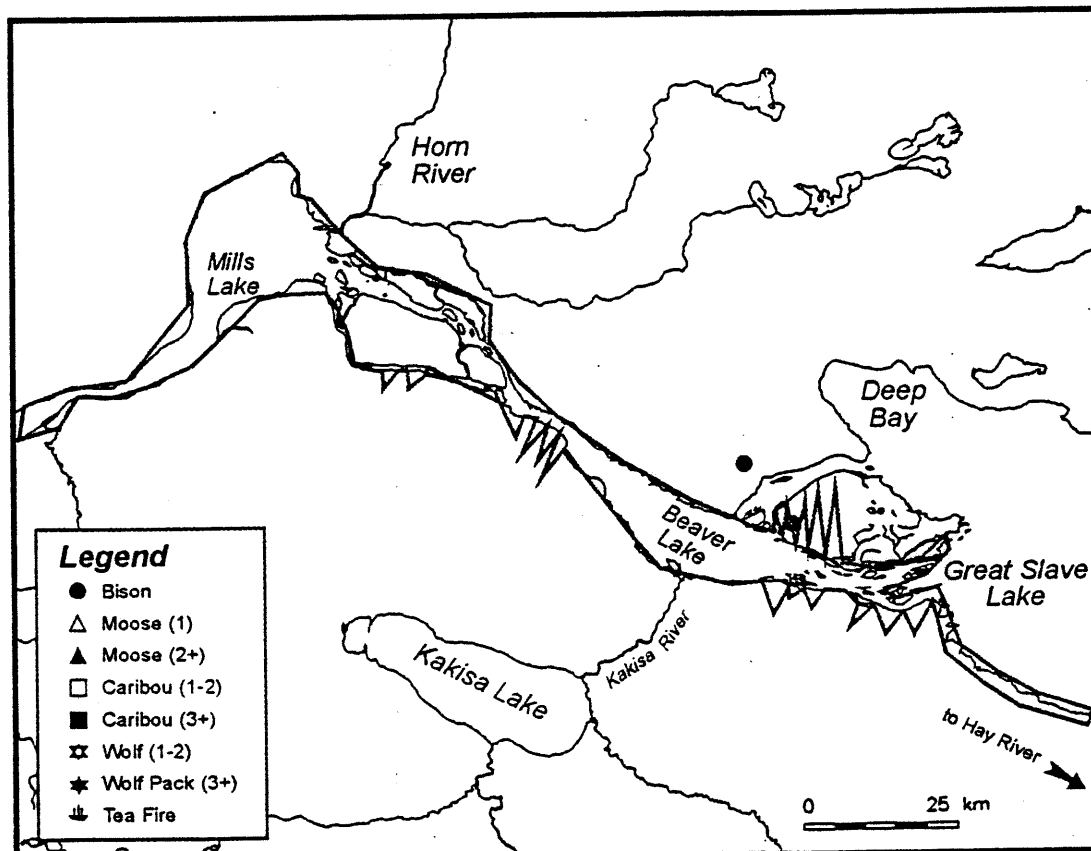


Figure 4.18. Apr 04 1997, shoreline patrol.

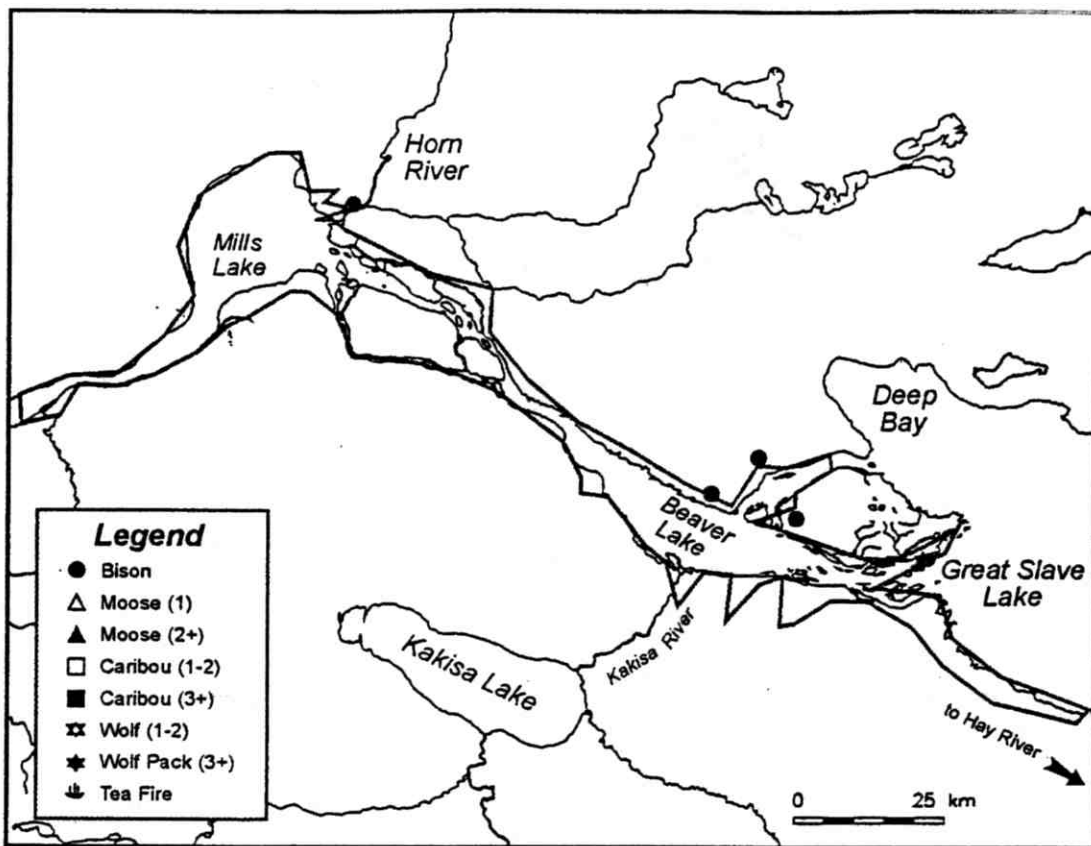


Figure 4.19. Apr 08 1997, shoreline patrol.

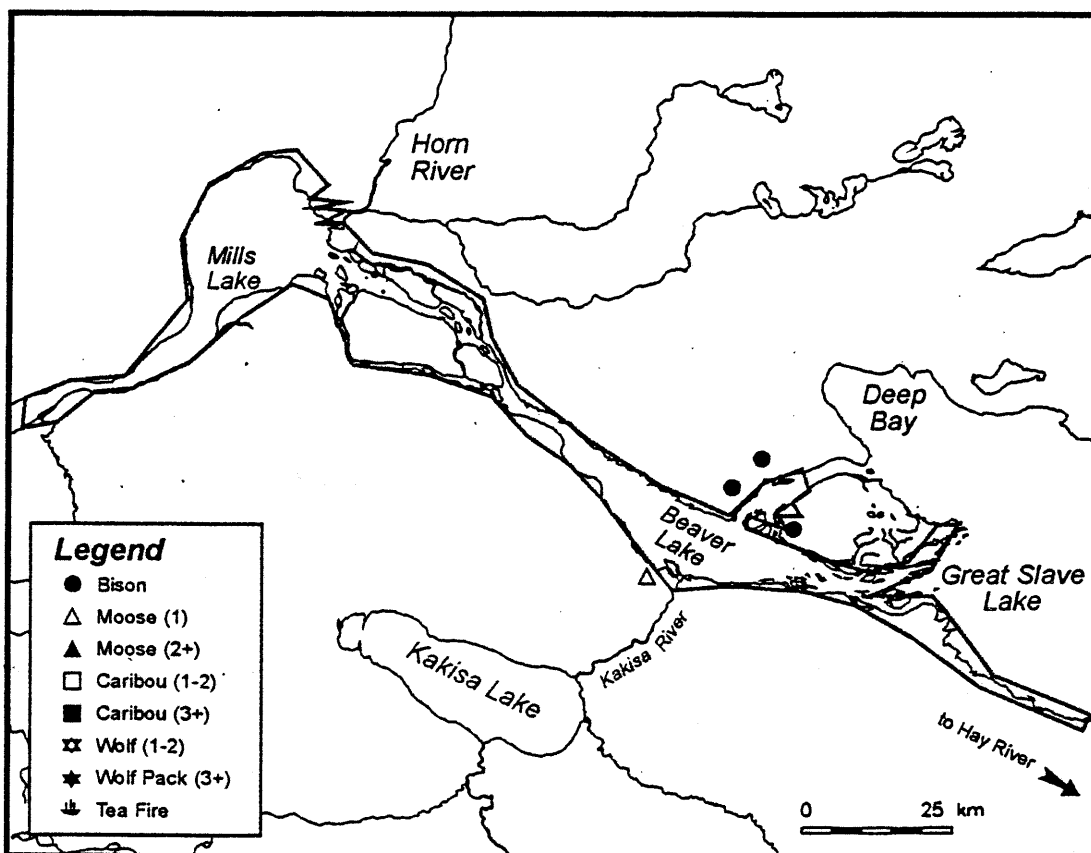


Figure 4.20. Apr 11 1997, shoreline patrol.

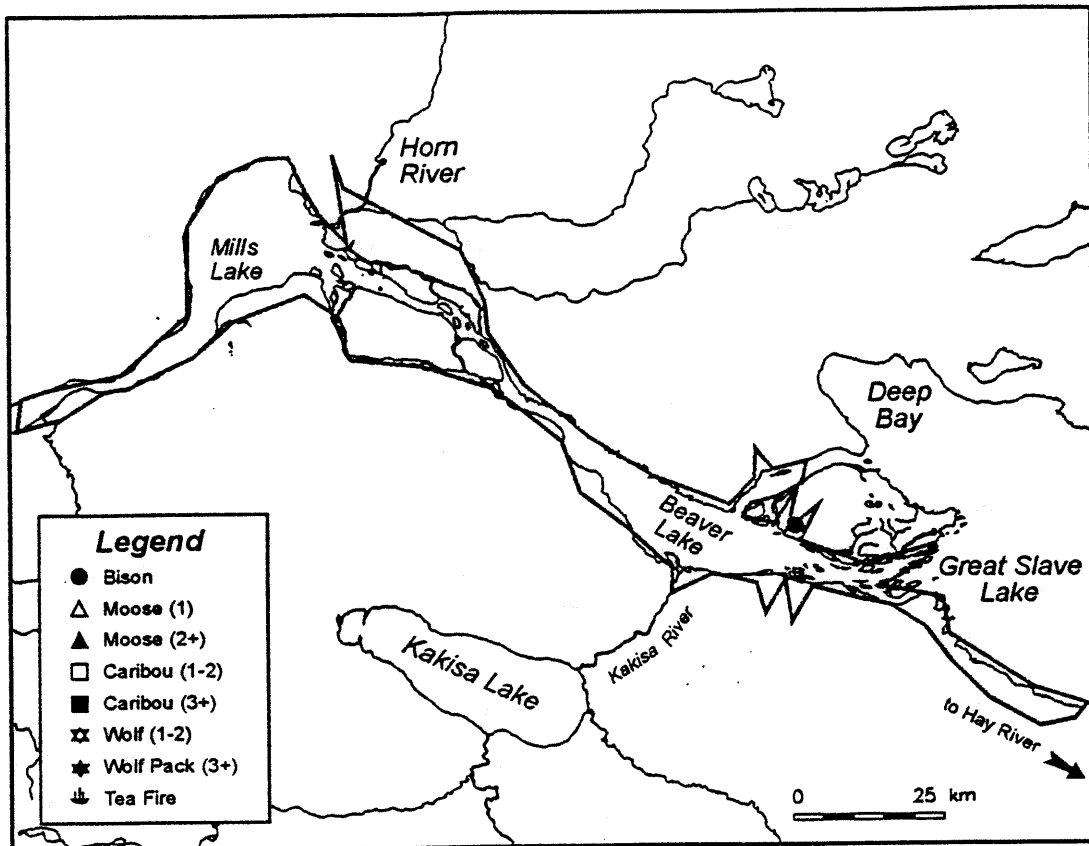


Figure 4.21. Apr 17 1997, shoreline patrol.

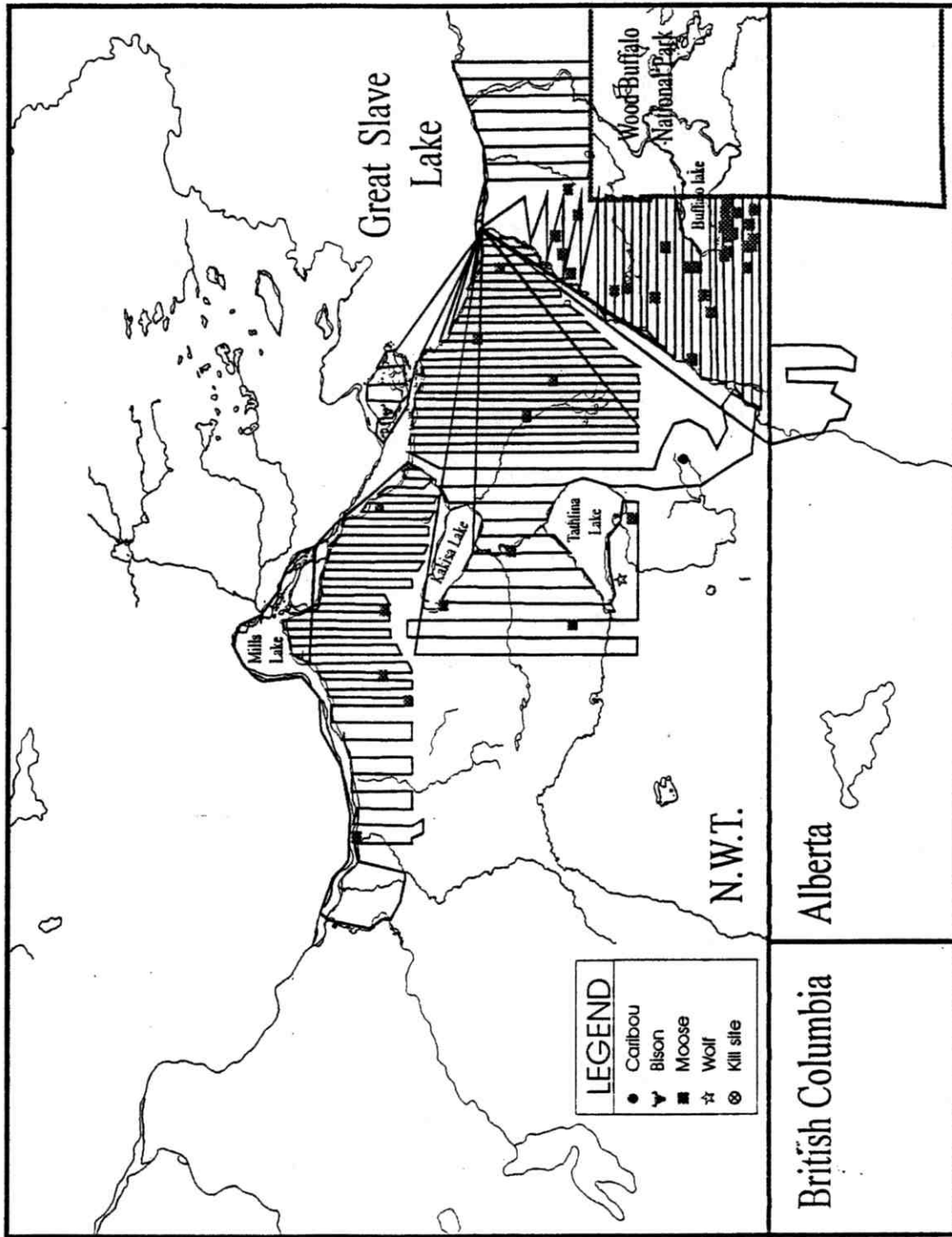


Figure 5. Comprehensive Survey of zones 1 & 2 of the bison control area, March 17-27, 1997

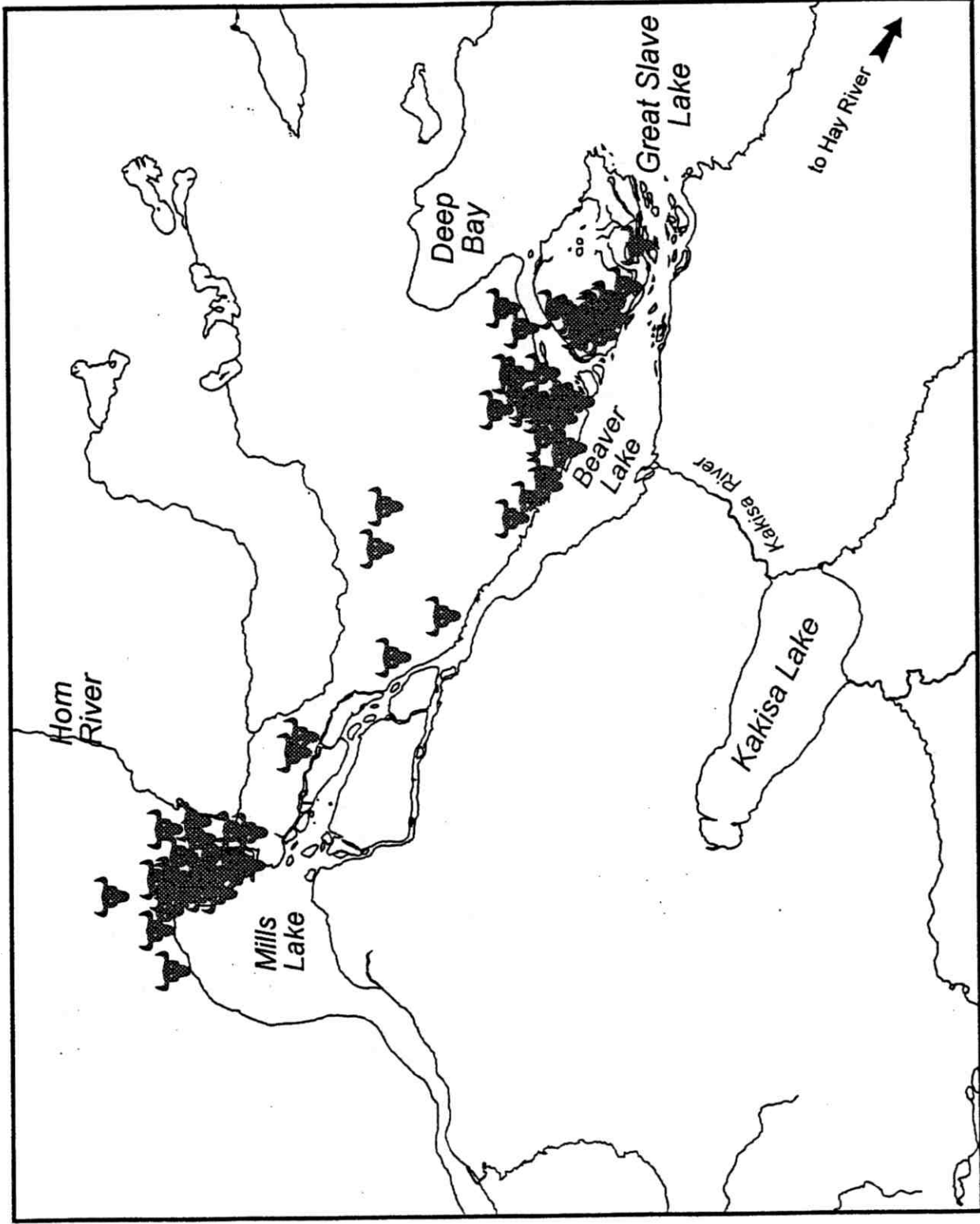


Figure 6. Observations of bison during all shoreline patrols and surveillance flights during the 1996-97 monitoring of the BCA

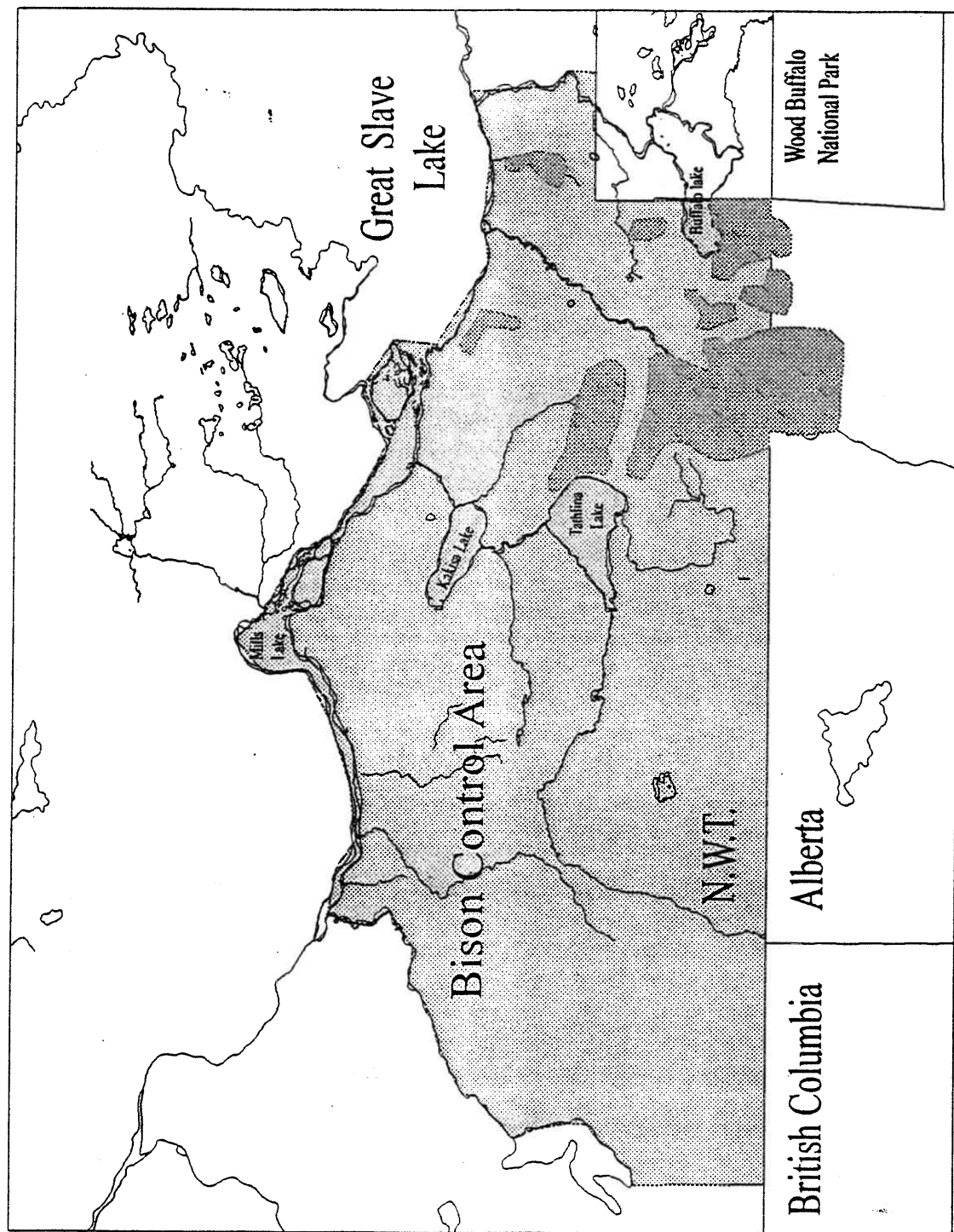


Figure 7. Areas of possible bison habitat observed during the March comprehensive survey of the bison control area.

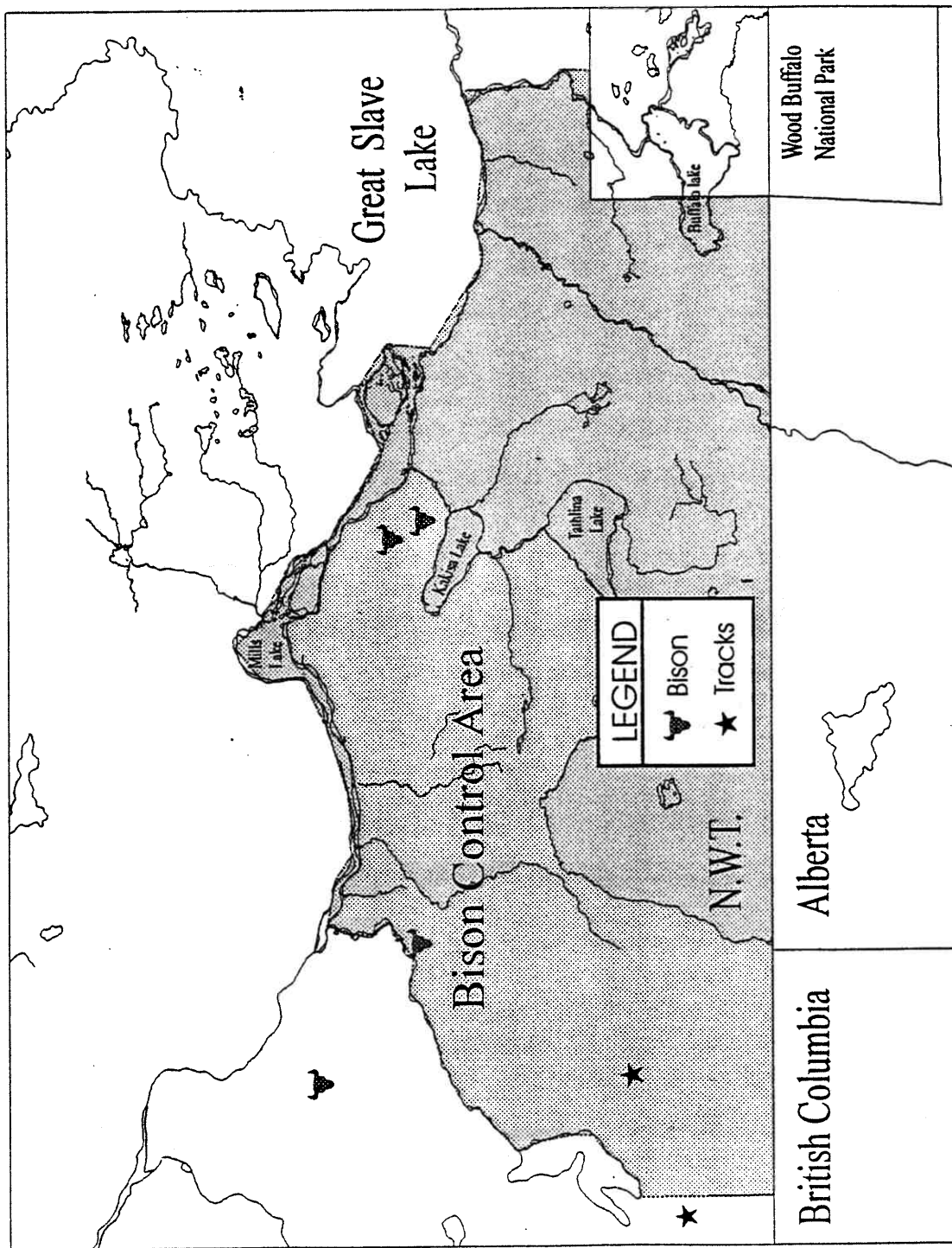


Figure 8. Reports of bison, received through communications with the public during 1997

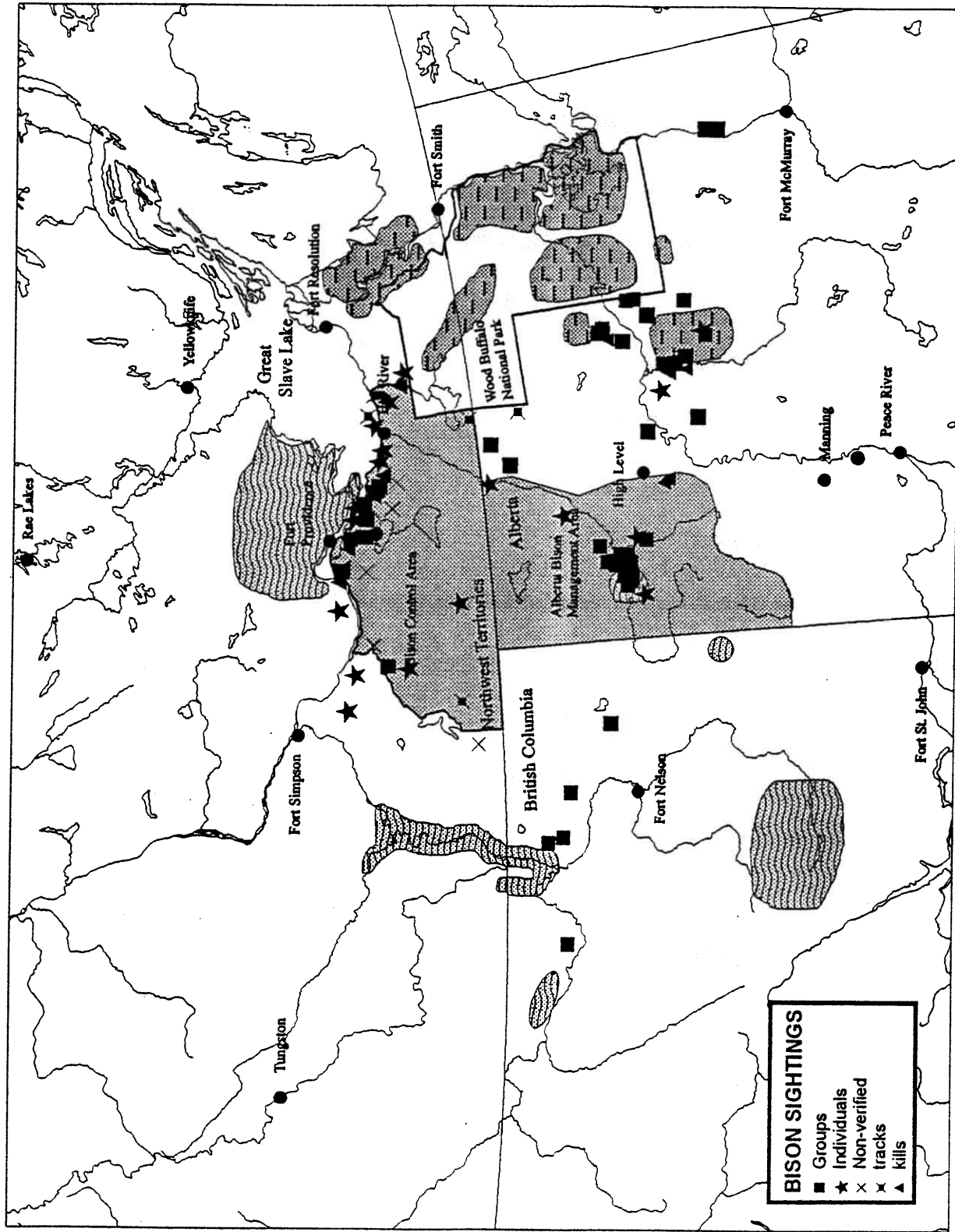


Figure 9. Distribution of bison sightings reported since 1976 in the region west of Wood Buffalo National Park and south of the Mackenzie River

RECOMMENDATIONS

1. Bison were not found in the BCA during the extensive survey conducted in March 1997. Nevertheless, surveys such as this should be conducted to confirm that bison are not present in the BCA. The absence of bison should not be assumed.
2. Publicity on the program was improved this season and should be expanded even further next season. A well advised public will be more likely to report sightings. Some suggestions for next season are:
 - increase direct contact with communities;
 - an up-dated TV advertisement;
 - newspaper articles and radio interviews.
3. The program Technician should be trained in applied anatomy and in conducting post-mortem evaluations, including proper blood collection, tissue collection and recognizing gross pathology. One such opportunity was capitalized upon this year.
4. The signs that are currently in place along the Mackenzie and south slave highway systems advertising a Bison Management Area are not effective. The white with blue and black signs that are there now are extremely difficult to see in the winter. These signs should be replaced by a new, totally revised edition, with visual maps and brief information. They should be highly visible.
5. An Aeronautical - portable GPS should be purchased for the bison control program. This is an essential piece of equipment which is used extensively in this program. Borrowing one is very inconvenient and can result in conflicts with other programs.

ACKNOWLEDGMENTS

Several individuals aided in the field work for the 1996-97 bison control program. Without their support and dedicated efforts the program would not have run so smoothly. Department of Resources, Wildlife and Economic Development staff in Hay River , Fort Providence and Fort Smith diligently handled administrative aspects such as staffing and pay records. Resource officers from Fort Providence (Evelyn Krutko, Rick Sanderson) and Hay River (Tom Chowns, Al Helmer) assisted when possible with flights, logistics and shared their concerns and advice for continued success of the bison control program. Gratitude is expressed to community participants who assisted with the surveillance flights. These individuals are Mark Sabourin, Edwin Sabourin, Susan Moser, and Fagan Furlong of Fort Providence and Ernest Moses, and Jim Thomas of Hay River.

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LIST OF DATABASES

- Bisobs.dbf** A list of all bison observations since 1976 in the BCA and surrounding areas. A Paradox database file, located on the GIS/Technician computer at the wildlife management building, Department of Resources, Wildlife and Economic Development, Hwy # 5, Fort Smith, Northwest Territories.
- Bisob97.dbf** A list of all wildlife sightings during 1996-97 surveillance flights of the bison control area. A Paradox database file, located on the GIS/technician computer at the wildlife management building, Department of Resources, Wildlife and Economic Development, Hwy # 5, Fort Smith, Northwest Territories.

