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BISON CONTROL PROGRAM
ANNUAL REPORT OF
SURVEY ACTIVITIES
DECEMBER 1997 - APRIL 1998

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DEPARTMENT OF RESOURCES, WILDLIFE AND ECONOMIC DEVELOPMENT
GOVERNMENT OF THE NORTHWEST TERRITORIES
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ABSTRACT

Bovine tuberculosis *(Mycobacterium bovis)* and brucellosis *(Brucella abortis)* are present in bison herds in and around Wood Buffalo National Park, and the Slave River Lowlands. In 1987, the Bison Control Area (BCA), along with a surveillance program, was created to minimize the risk of disease transmission to the disease-free Mackenzie and Nahanni-Liard bison herds in the Northwest Territories. During the 1997- 1998 surveillance season, we used a Cessna 150 to fly 14 shoreline patrols along the northern boundary of the BCA on a weekly basis from 22 December 1997 to 17 April 1998. We used 43.2 hours for those shoreline patrols. We used a Cessna 185 to fly three monthly semi-comprehensive aerial surveys of BCA Zone I in January, February, and March 1998 (45.7 hours), and the annual comprehensive survey of BCA Zones I and II (48.0 hours) from 31 March 1998 to 5 April 1998. In total, we flew 136.9 hours to systematically survey the BCA during the 1997 - 1998 surveillance season; we did not observe any bison or bison sign, nor did we receive any public reports of confirmed bison sightings in the BCA.

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INTRODUCTION

Free-ranging bison in and around Wood Buffalo National Park (WBNP) and the Slave River Lowlands (SRL) are presently infected with bovine tuberculosis and brucellosis (Tessaro *et al.,* 1990). These diseased bison threaten the disease-free status of the Mackenzie wood bison herd (Tessaro *et al.,* 1993), the Hay-Zama herd located in northwest Alberta, and the presumed disease-free status of the Nahanni-Liard herd located near the Mackenzie Mountains (Gates *et al.,* 1992a) (Figure 1). The diseased bison also present an obstacle to the reestablishment of other healthy free-roaming herds in the region (Gates *et al.,* 1992b). 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.

Risk of infection to healthy bison is a chronic management problem (Wobeser 1992). The issue was reviewed by a Bison Disease Task Force in 1988, by a federal Environmental Assessment and Review Process (EARP 1990) and the Northern Buffalo Management Board in 1992 (Northern Buffalo Management Board 1992). In March 1996, the Canadian Bison Association requested a formal risk assessment to determine the risk of infection with tuberculosis and/or brucellosis to cattle, and disease-free captive and free-ranging bison. This risk assessment is presently being conducted by Animal and Plant Health Risk Assessment Network and the Canadian Food Inspection Agency.

In 1987, the Government of the Northwest Territories (GNWT) implemented a

program to reduce the risk of contact between infected and disease-free bison, (Gates and Gray 1992; Gates *et al.,* 1992b). The program entailed defining an area - the Bison Control Area (BCA) - from which bison are excluded through surveillance and active management. The BCA originally included lands south of the Mackenzie River, and north of the Mackenzie Highway between Mills Lake (near Fort Providence) and Hay River. In 1990, the BCA was expanded to encompass the area between the Alberta-NWT border and southern shoreline of the Mackenzie River; the western boundary was delineated by Trout River; the eastern boundary was outlined by the Buffalo River and western boundary of WBNP (Figure 2). Presently, the BCA encompasses 3 936 339 ha.

Since 1993, the Bison Control Program (BCP) has been jointly funded by the Government of the Northwest Territories (Department of Resources, Wildlife & Economic Development) and the Government of Canada (Department of Canadian Heritage). Participation of the Department of Canadian Heritage is within the context of its five year Bison Research and Containment Program (BRCP) initiated in 1995. Cost of surveying the BCA is jointly funded under a memorandum of understanding between the two agencies.

The objectives of the BCP are to detect and remove any bison in the BCA, and to prevent establishment of bison herds or individuals in this area[1]. These objectives

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[1] Wood bison (*Bos bison athabascae*) are considered a threatened subspecies of North American bison by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); they are listed on Appendix II by the Convention on International Trade in Endangered Species (CITES). But because of the disease risk, any bison found in the BCA are considered nuisance wildlife under Section 61 of the NWT Wildlife Regulations Act (Government of the Northwest Territories 1992). This regulation states that any bison sighted in the BCA may be shot by an eligible NWT big game hunter.

serve the goal of lowering the risk of contact between bison in non-infected and infected herds. In this report, we summarize results of the Bison Control Program for the 1997 to 1998 surveillance season (*i.e.*, December 1997 - April 1998).

GOAL and OBJECTIVES

The specific goal of the Bison Control Program in the Northwest Territories is to reduce the risk of infection of the Mackenzie and Nahanni-Liard herds with tuberculosis and brucellosis. Objectives of the program are threefold:

1) maintain the Bison Control Area free of bison and prevent the establishment of any herds within the boundaries;

2) continue surveillance of the Bison Control Area; and

3) increase public awareness of the Bison Control Program.

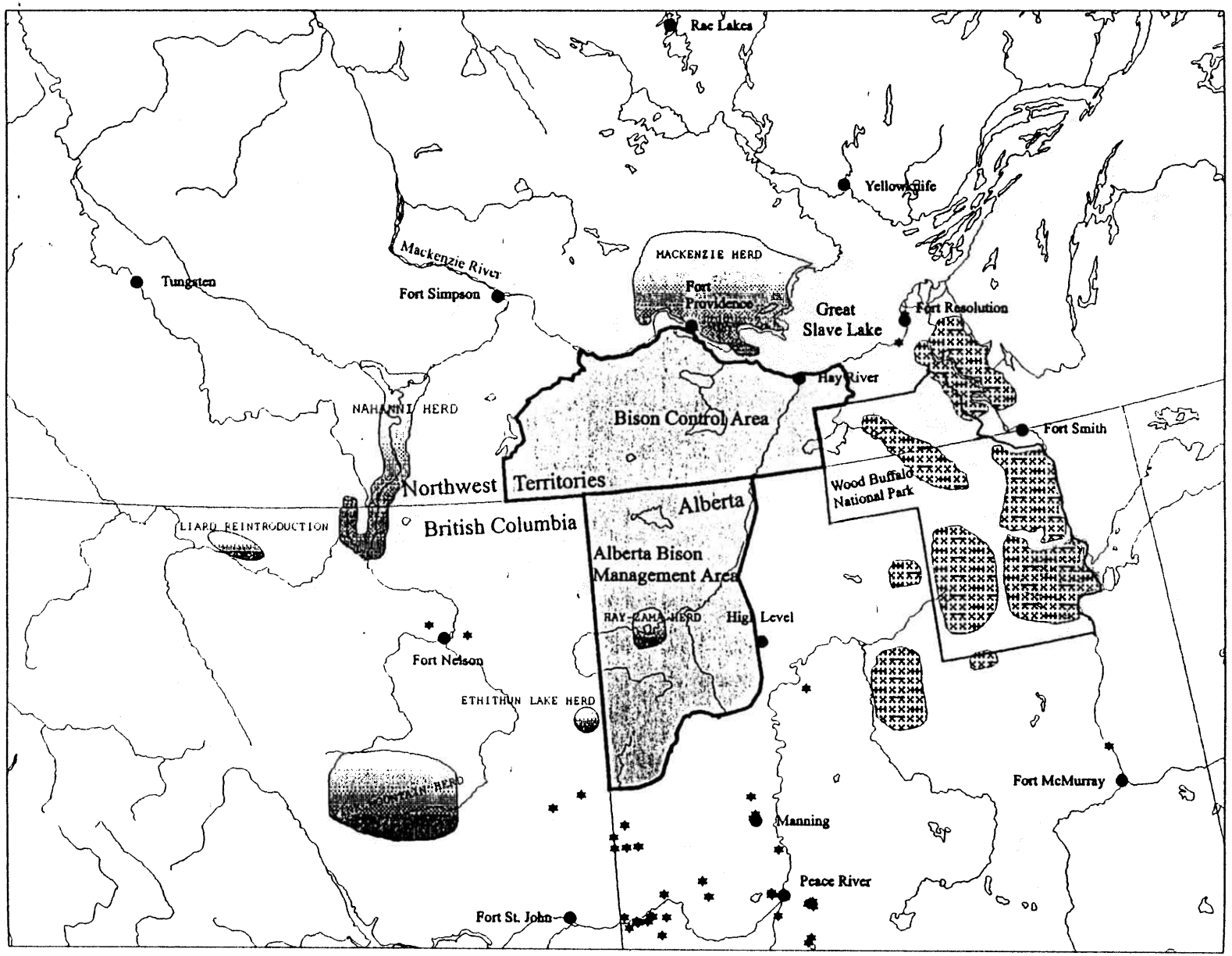

Figure 1. Location of healthy free-roaming (light shading) and captive (stars) bison herds, and free-roaming bison herds infected with brucellosis and tuberculosis (stipled dark shading)

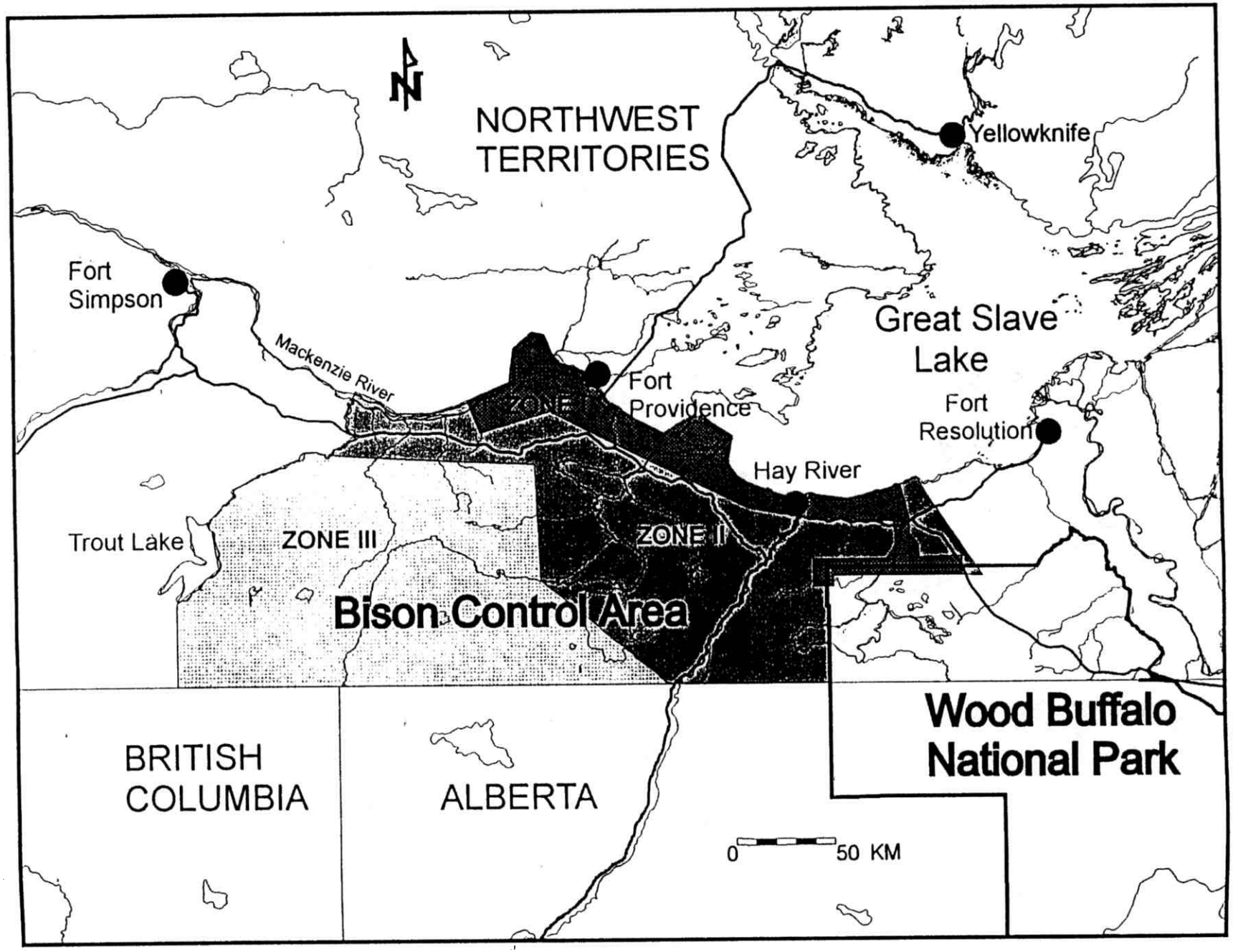

Figure 2. Location of the Bison Control Area and surveillance zones

METHODS

We adopted survey methodology used in previous years (Gates and Gray 1992, Gates *et al.*,1992, Williamson *et al.*, 1995, Antoniak and Gates 1996, Bohnet and Gates 1997) to assure repeatability and comparability of wildlife sightings. In order to systematically survey the BCA throughout the surveillance season, we flew three different types of aerial surveys. The first type of survey was a weekly shoreline patrol of the high-risk area between the Redknife River and Point Du Roche. This survey was conducted at approximately seven day intervals and had a planned flight time of approximately three hours per patrol. The second type of survey was a monthly surveillance flight of BCA Zone I. This survey covered a larger area and therefore took about 15 hours to complete. The final type of survey was a one-time, annual surveillance survey of BCA Zones I and II. For this annual survey, we allocated approximately 45 hours of flight time. We did not survey Zone III of the BCA.

We adapted flight paths from previous surveys to plan our routing for aerial surveys in the 1997-1998 surveillance season. However, actual flight paths were flown in a flexible, meandering manner to allow for variations in terrain, habitat, and occurrence of animal tracks. This allowed us to survey the area with greatest possible coverage given available flying hours.

Shoreline patrols were flown in a Cessna 150 and all other surveillance flights were conducted in a Cessna 185. The shoreline patrols were conducted by Renewable Resource Officers in Fort Providence, whereas the Bison Control Technician conducted the monthly surveillance flights of Zone I and the annual comprehensive survey of

Zones I and II with the assistance of community representatives. Survey aircraft were flown at approximately 250 to 300 metres above ground level at a speed of 140 - 160 km/hr.

Although we made every attempt to conduct aerial surveys during optimum snow and light conditions, some flights were conducted in less suitable conditions in order to maintain adequate and regular surveillance. All observations of large mammals including caribou, moose, and wolves were recorded with a Geographic Positioning System (GPS) and then downloaded to a computer database file.

RESULTS AND DISCUSSION

Shoreline Patrols and Surveillance Surveys

We initiated weekly shoreline patrols on 22 December 1997, and continued until 17 April 1998 (Figures 3.1 - 3.14). Total flight time for the 14 shoreline patrols was 43.2 hours (Table 1a) with a mean duration of 3.1 $\pm$ 0.6 hours (Standard Deviation) per flight.

We conducted three monthly surveillance flights of BCA Zone I in January, February, and March 1998 respectively (Figures 4.1- 4.3). Total time spent on monthly surveillance flights was 45.7 hours with a mean duration of 15.2 $\pm$ 0.7 hours per flight Table 1b). The annual surveillance flight of BCA Zones I and II was conducted from 28 March, to 6 April 1998 (Figure 5) and required 48.0 hours (Table 1b). In total we spent 136.9 hours surveying the BCA in the 1997-1998 surveillance season.

Wildlife Observations

Although bison have been observed in the BCA in the past (Figure 6), we did not observe any bison, nor did we receive any reports of bison sightings in the BCA during the 1997-1998 surveillance season. Also, we did not observe any attempts by bison (*i.e.,* tracks) to cross the Mackenzie River during surveillance flights. All bison observed during shoreline patrols or surveillance flights were located on the north side of the Mackenzie River in the Mackenzie Bison Sanctuary (MBS) (see Figures 3.1 - 3.14, Figures 4.1 - 4.3, and Figure 5).

Table 1a. Summary of shoreline patrols in the Bison Control Area from December 1997 to April 1998.

Date	Hours flown	Date	Hours flown
22 Dec. 1998	2.1	28 Feb. 1998	3.0
30 Dec. 1998	2.8	7 Mar. 1998	3.0
6 Jan. 1998	2.6	13 Mar. 1998	3.0
13 Jan. 1998	3.4	20 Mar. 1998	3.0
20 Jan. 1998	(Poor weather) 0.0	27 Mar. 1998	3.2
27 Jan 1998	(Logistical problems) 0.0	3 Apr. 1998	3.3
7 Feb. 1998	4.3	10 Apr. 1998	2.6
20 Feb. 1998	4.3	17 Apr. 1998	2.6

Total flight time for shoreline patrols: 43.2 hours

Table 1b. Summary of surveillance flights in the Bison Control Area during January, February, March, and April 1998.

Date	BCA Zone	Hours flown
19-22 Jan. 1998	I	15.1
19-11 Feb. 1998	I	14.6
6-7 Mar. 1998	I	16.0
31 Mar. - 5 Apr.	I and II	48.0

Total flight time for surveillance flights: 93.7 hours

The cumulative totals of large mammal observations made during patrols and surveillance flights were 663 bison, 30 caribou, 96 moose, and 2 wolves (Table 2).

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

Species	Shoreline patrol observations	Surveillance flight observations
Bison	519	144
Caribou	7	23
Moose	11	85
Wolf	0	2

There were three reports by the public of bison sightings (Figure 7, Table 3). One was that of bison observed on the ice of Great Slave Lake between Gypsum Point and Hardisty Island. We received this information in late January 1998 and conducted a 2.3 hour verification flight on 11 February 1998 (based out of Hay River, NT). We did not observe bison or fresh tracks near Hardisty Island during that survey. The second report was made by a biologist with the Alberta Natural Resources Service during a caribou calf survey in the Caribou Mountains. The third report was made by a local pilot who observed bison in the Slave River Lowlands.

Table 3. Reported sightings of bison during the 1997/1998 surveillance season.

Date	Contact	Details
31 Jan. 1998	Neil Robinson Department of Fisheries & Oceans, Yellowknife, NT.	Group of 8 bison sighted 1 mile offshore of Gypsum Point (northeast of Hardisty Island), during an ice patrol of Great Slave Lake. Approximate location: 61° 51'N; 114° 05'W
3 Mar. 1998	Kim Morton Alberta Env. Protection Natural Resources Service High Level, AB	Two sightings of bison (considered) to be part of the Wentzel herd. 4 bulls: 58° 56.3'N; 114° 29.5'W 15 bison (1 calf): 58° 52.9'N; 114° 22.9'W
14 Mar. 1998	Brian Herald Northwestern Air Lease Ltd. Fort Smith, NT.	15 to 20 bison in small prairie 60 miles north of Fort Smith on a 310 degree (magnetic) radius. Approximate location: 60° 46.'N; 112° 46'W

During the annual comprehensive flight, we identified and delineated areas with potential bison habitat (Figure 8). These areas were similar to those recorded during the previous season (Bohnet and Gates 1997). However, because we only identified potential bison habitat from aerial surveys in winter, further investigation is required during the growing season to better assess their suitability. These potential areas of habitat have particular relevance to the Bison Control Program because it may allow us to better predict where bison would most likely occur within the BCA. A habitat assessment of BCA Zones I, II, and III, and the border area of Wood Buffalo National Park would assist in evaluating potential dispersal routes.

Communications

We made a concerted effort to increase public awareness of the Bison Control Program by distributing information posters and pamphlets to communities and public outlets in and around the BCA. We used posters designed during the previous year to present the public with specific information on brucellosis and tuberculosis in bison (Appendix I).

A radio interview with the Regional Superintendent (RWED, South Slave Region), was aired on the morning of 11 February 1998 prior to the regional news on CBC. The interview presented the goals and objectives of the program followed by a question and answer segment along with a request for sighting report from the public. 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 (Appendix II). This radio message was also aired as an "Anik-info" spot on CBC-North television from the beginning of March 1998 until June 1998.

A pamphlet was also designed for distribution to harvester groups (Appendix III). This pamphlet outlines precautions to be taken when handling meat that is suspected to be infected with tuberculosis and/or brucellosis.

We placed an advertisement in "Up Here" magazine (Appendix IV) which was released at the beginning of March 1998. We anticipated that placement of this advertisement would result in reaching a wider audience.

Community Consultations and Concerns

An important part of the Bison Control Program is reporting of bison sightings by the general public. Therefore, it is essential that people from communities that are in and near the BCA, be well-informed about the program. Several attempts were made to organize meetings with the communities surrounding the BCA but due to conflicting schedules, only one was successful. A presentation was made by the Bison Control Technician at Fort Simpson to the Denendeh Resources Committee, on 23 February 1998. The meeting had representatives from the Liidli Kue First Nation, the Fort Simpson Metis Local 52 and Jean Marie River Dene Band. No sightings were reported during the meeting, but people showed interest by asking questions about the program as a whole.

The Sambaa K'e Dene Band in Trout Lake was contacted and interest was shown in having an information meeting in the community. The Bison Control Technician met with the band manager of the Kakisa Dene Band but a formal public meeting did not occur.

With the establishment of a captive bison herd at the Little Buffalo River near Fort Resolution in 1996 (*i.e.,* the Edjericon Ranch), local concern is that the BCA does not adequately protect those captive animals from exposure to infected bison in the Slave River Lowlands. Consequently, a request was recently made to extend the eastern boundary of the BCA to include part of the Slave River Lowlands. Although this action might also promote options to re-introduce disease-free bison in the Hook Lake range, the implications have yet to be discussed with all stakeholders.

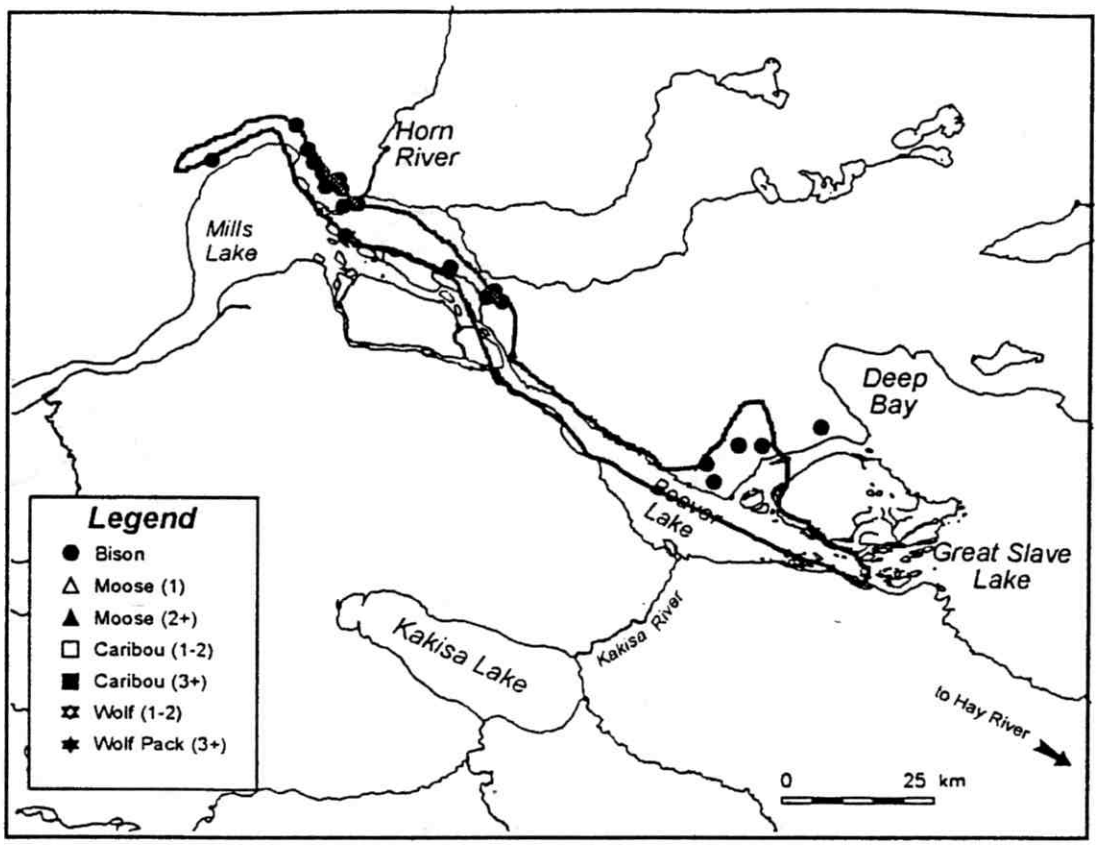

Figure 3.1. Shoreline patrol, 22 December 1997.

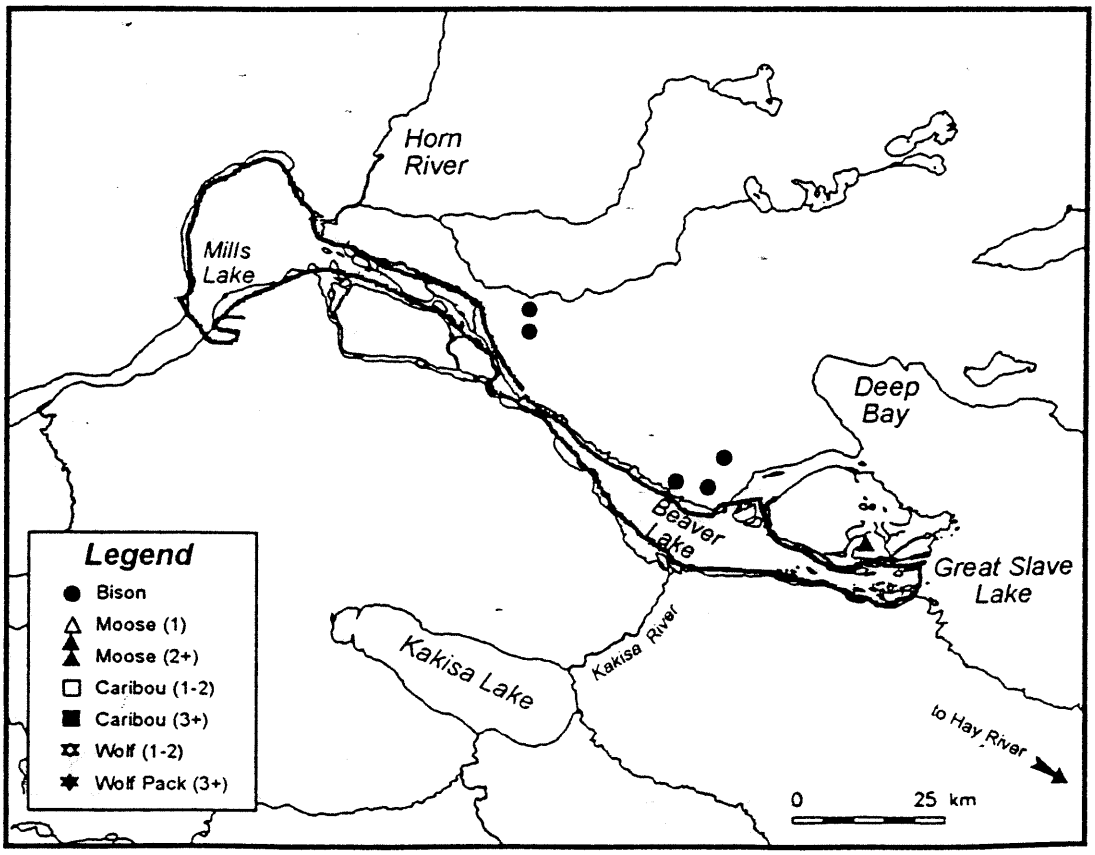

Figure 3.2. Shoreline patrol, 30 December 1997.

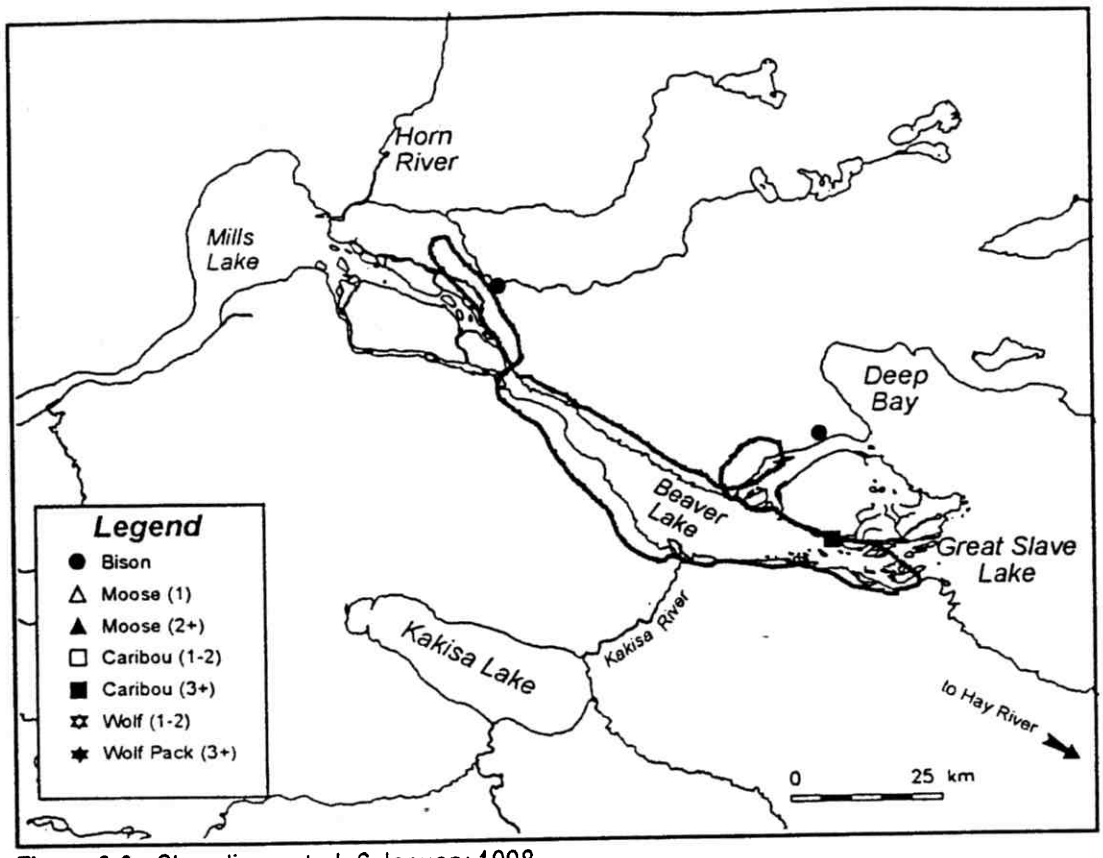

Figure 3.3. Shoreline patrol, 6 January 1998.

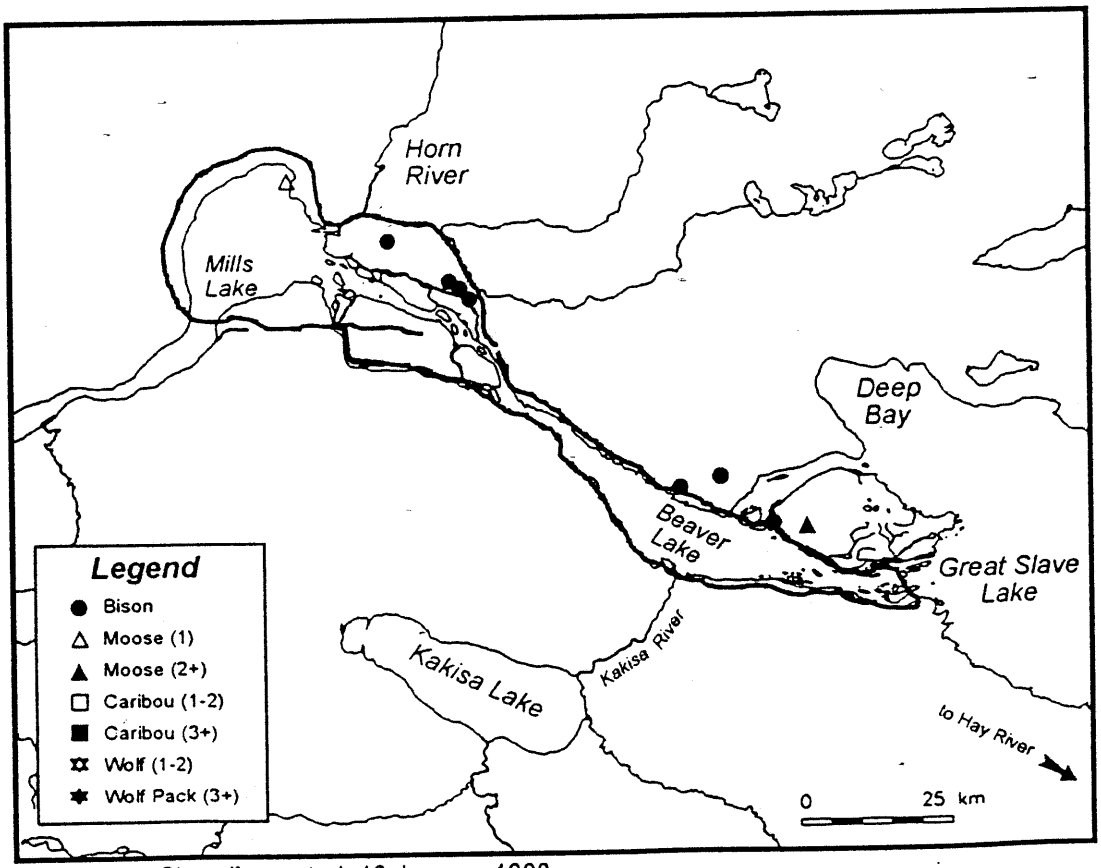

Figure 3.4. Shoreline patrol, 13 January 1998.

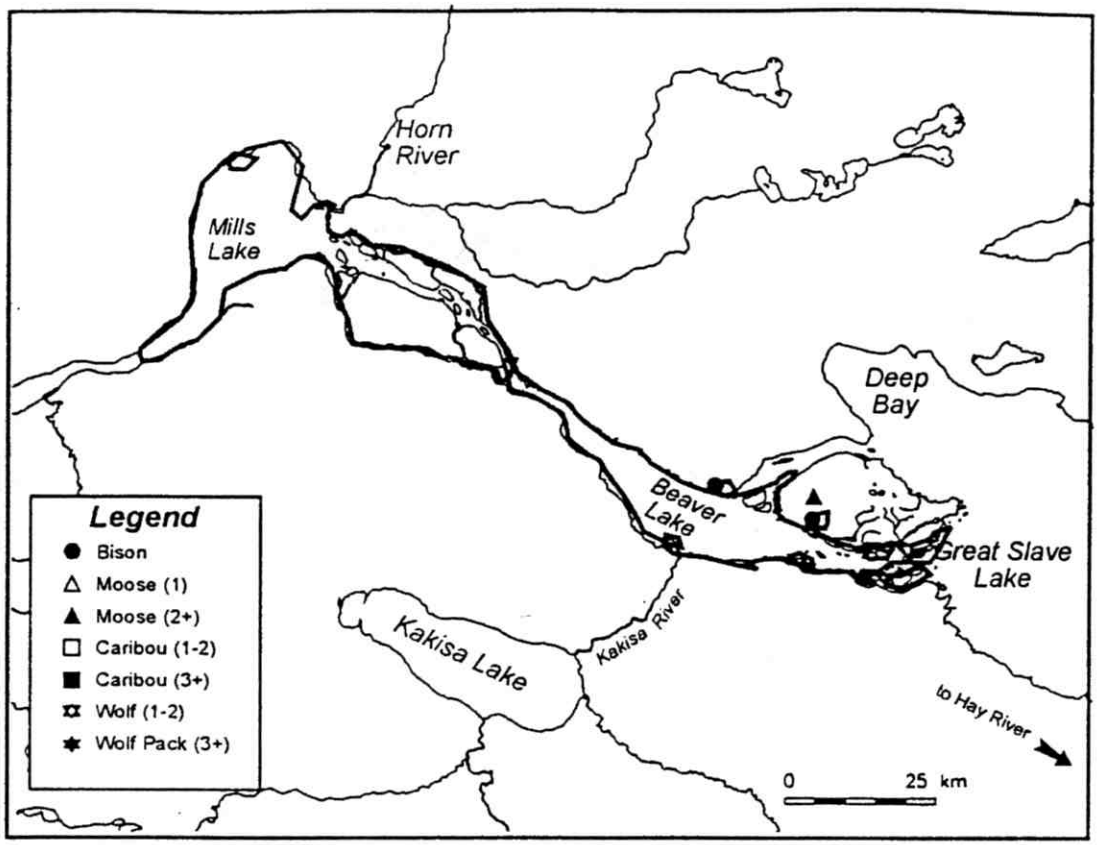

Figure 3.5, Shoreline patrol, 12 February 1998.

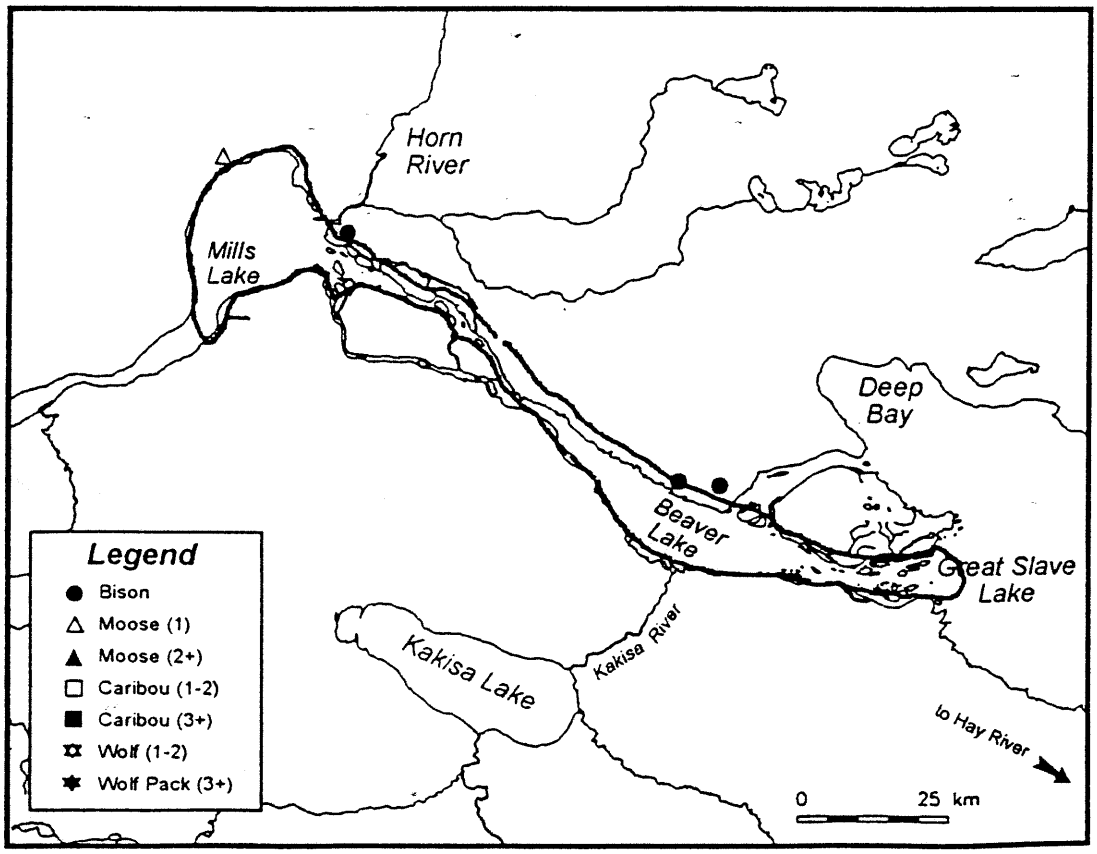

Figure 3.6, Shoreline patrol, 7 February 1998.

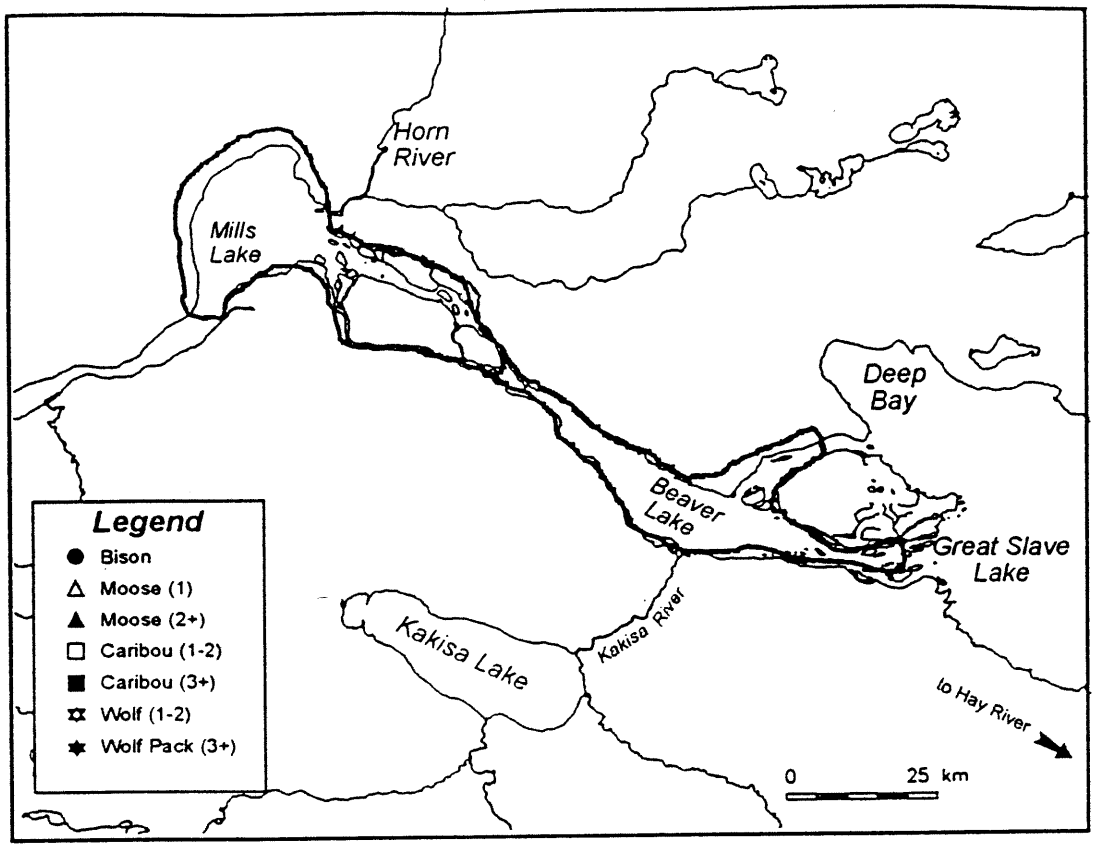

Figure 3.7. Shoreline patrol, February 28 1998.

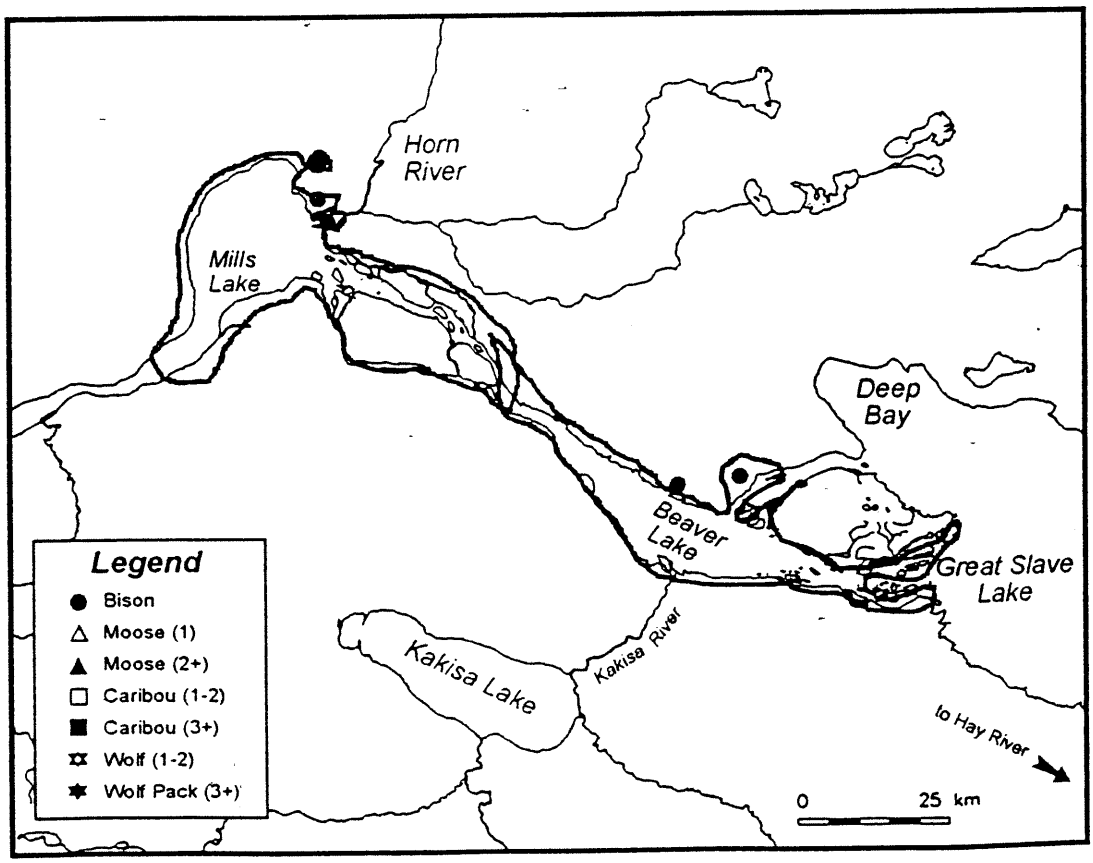

Figure 3.8. Shoreline patrol, 7 March 1998 .

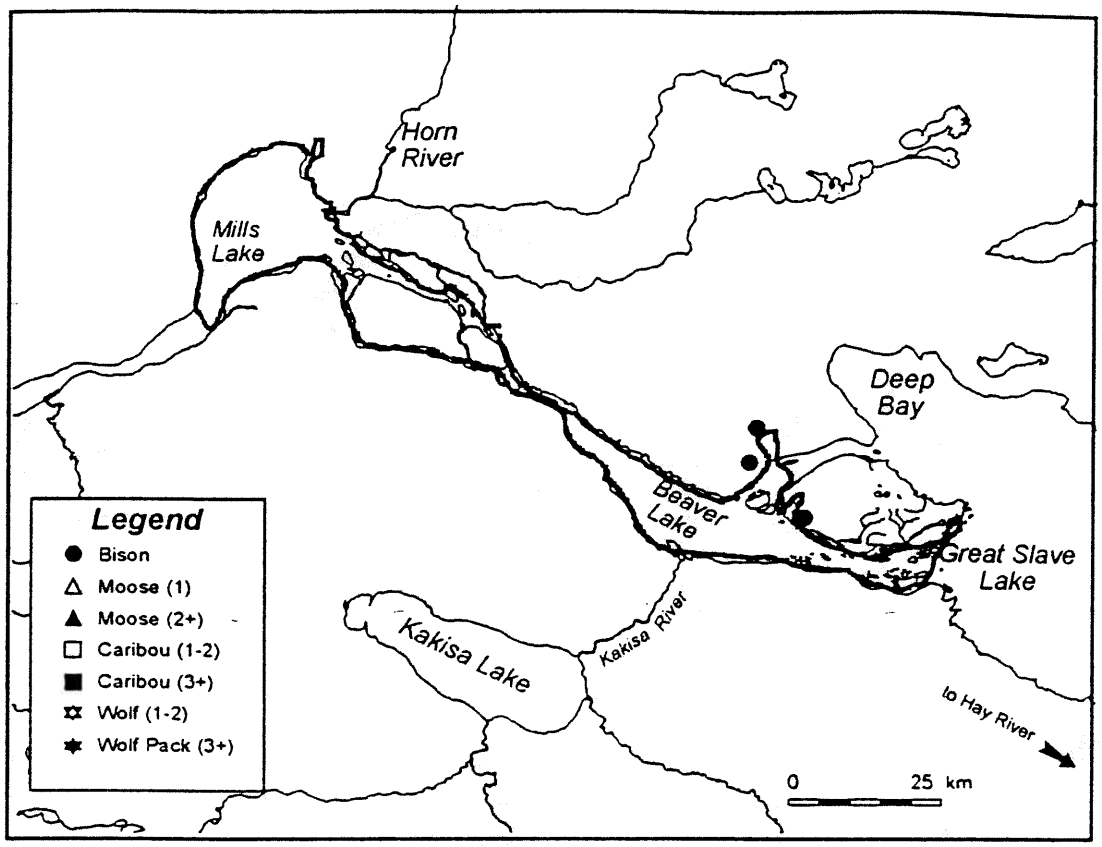

Figure 3.9. Shoreline patrol, 13 March 1998.

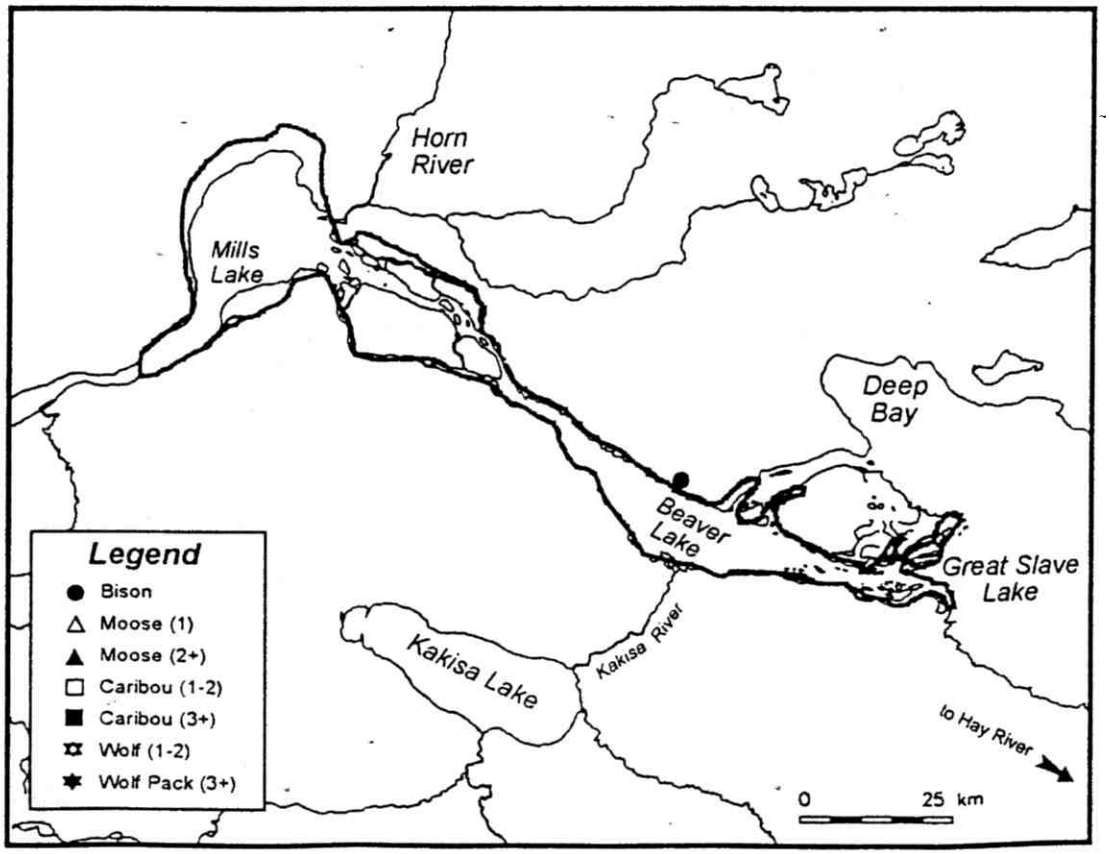

Figure 3.10. Shoreline patrol, 20 March 1998.

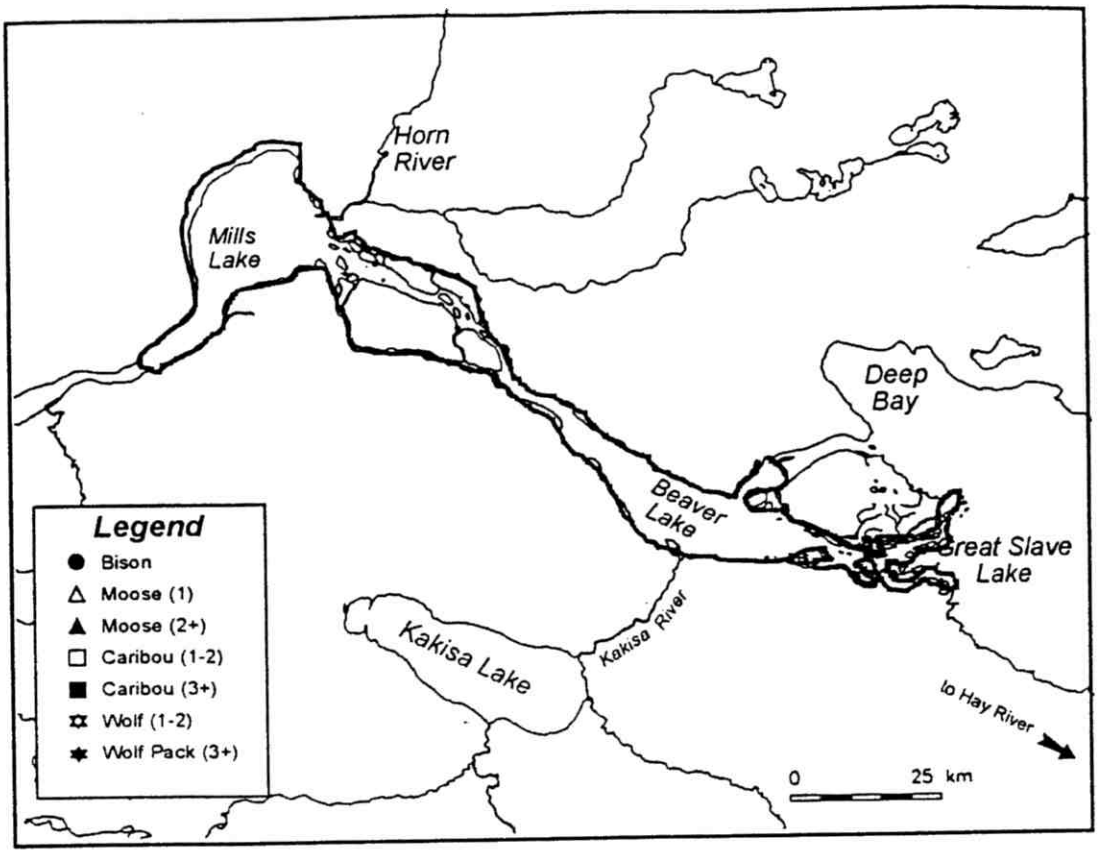

Figure 3.11. Shoreline patrol, 27 March 1998.

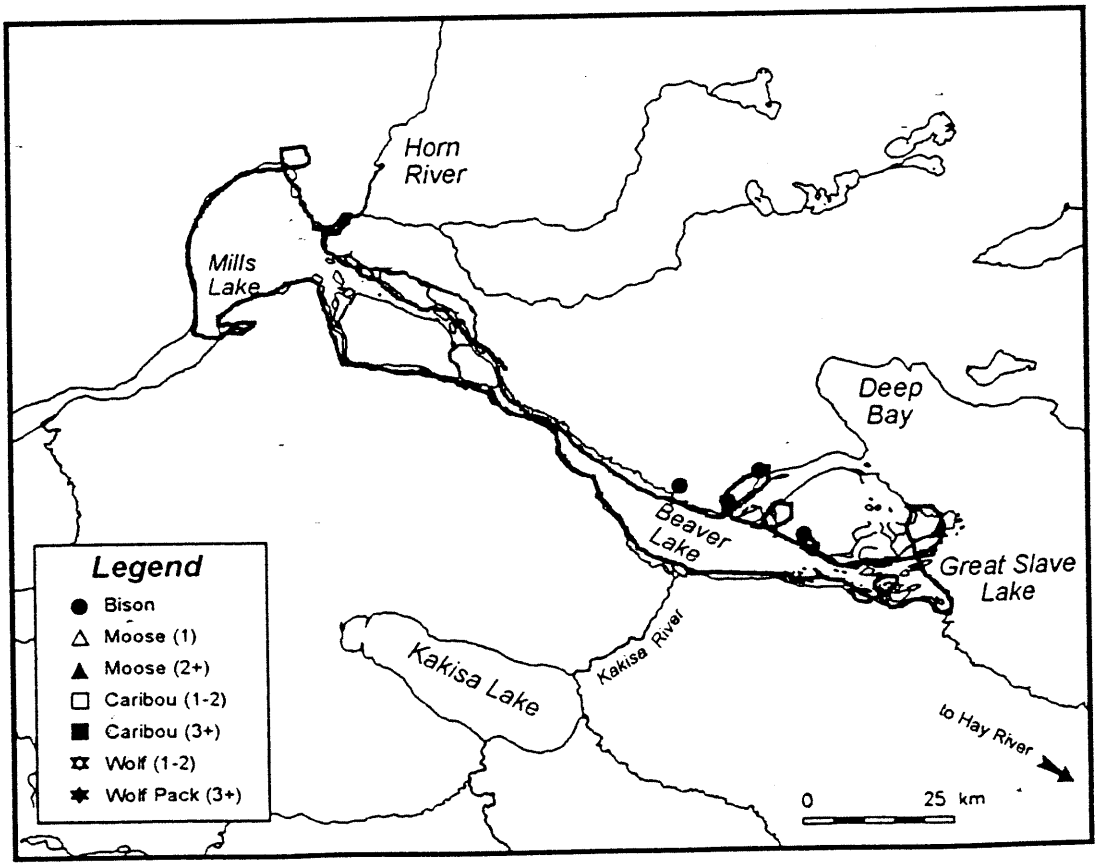

Figure 3.12. Shoreline patrol, 3 April 1998.

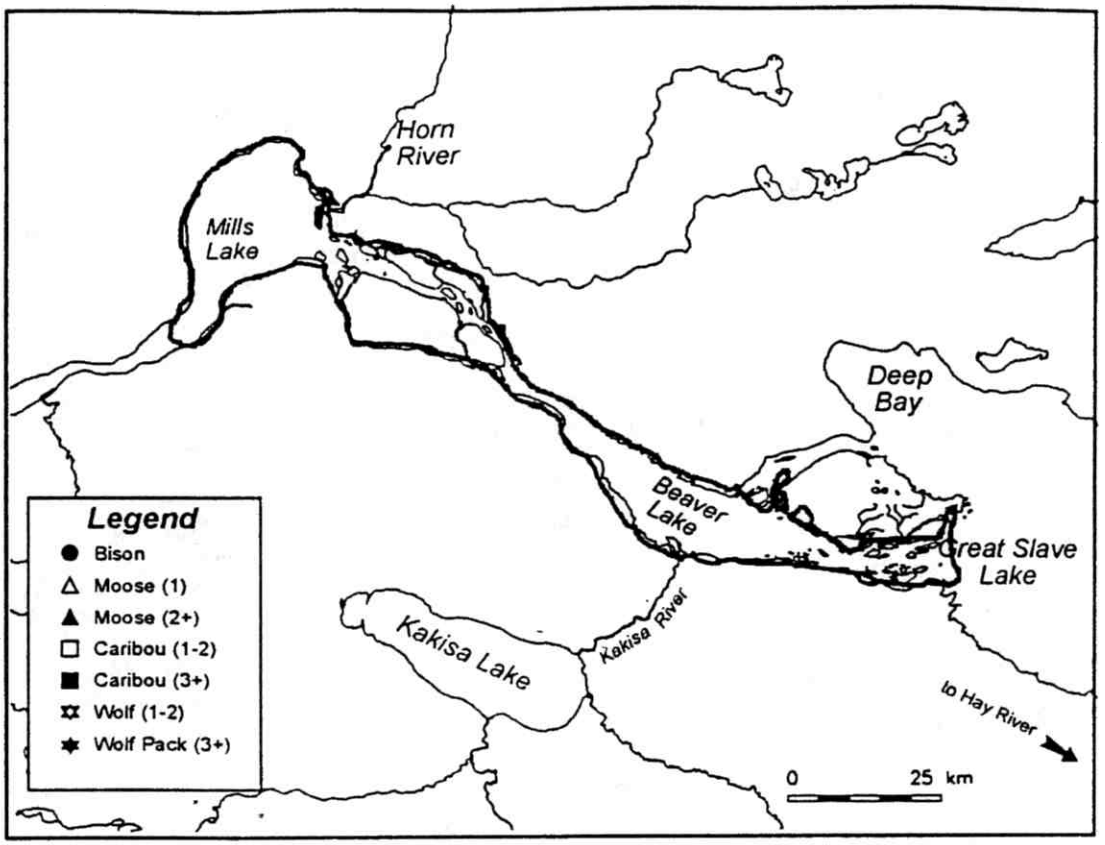

Figure 3.13. Shoreline patrol, 10 April 1998.

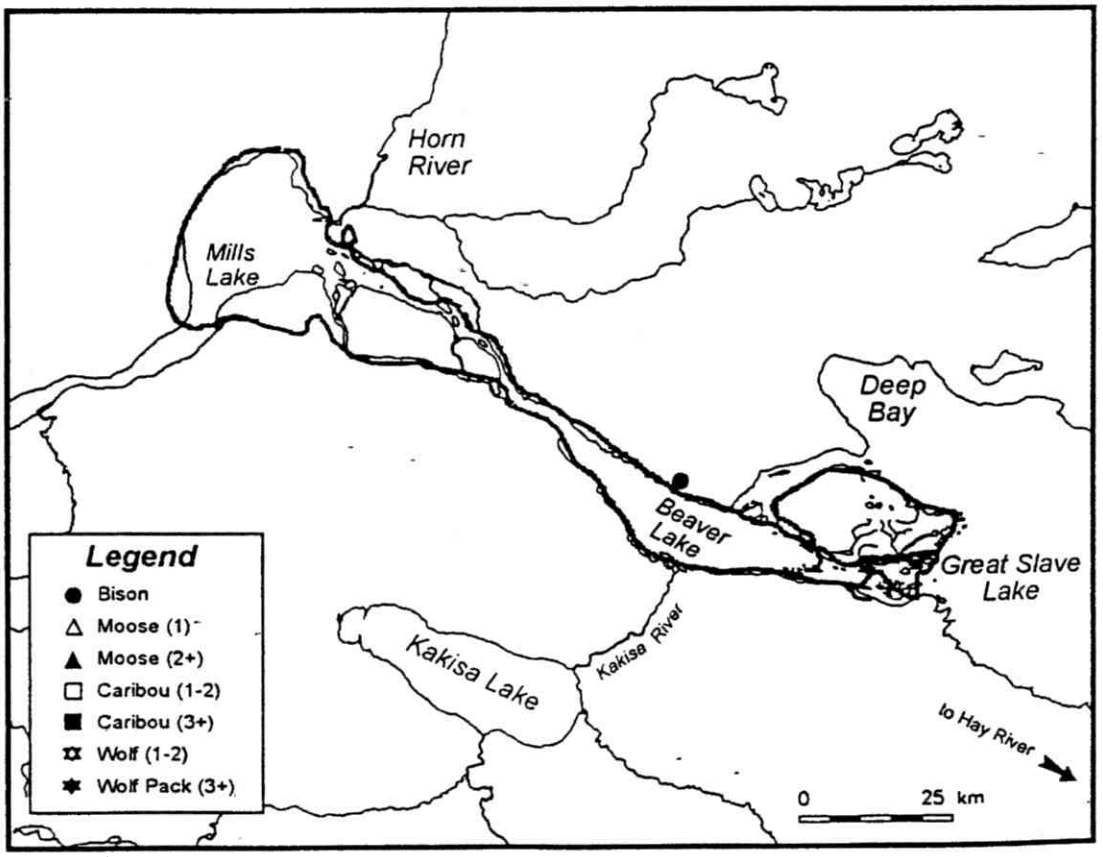

Figure 3.14. Shoreline patrol, 17 April 1998.

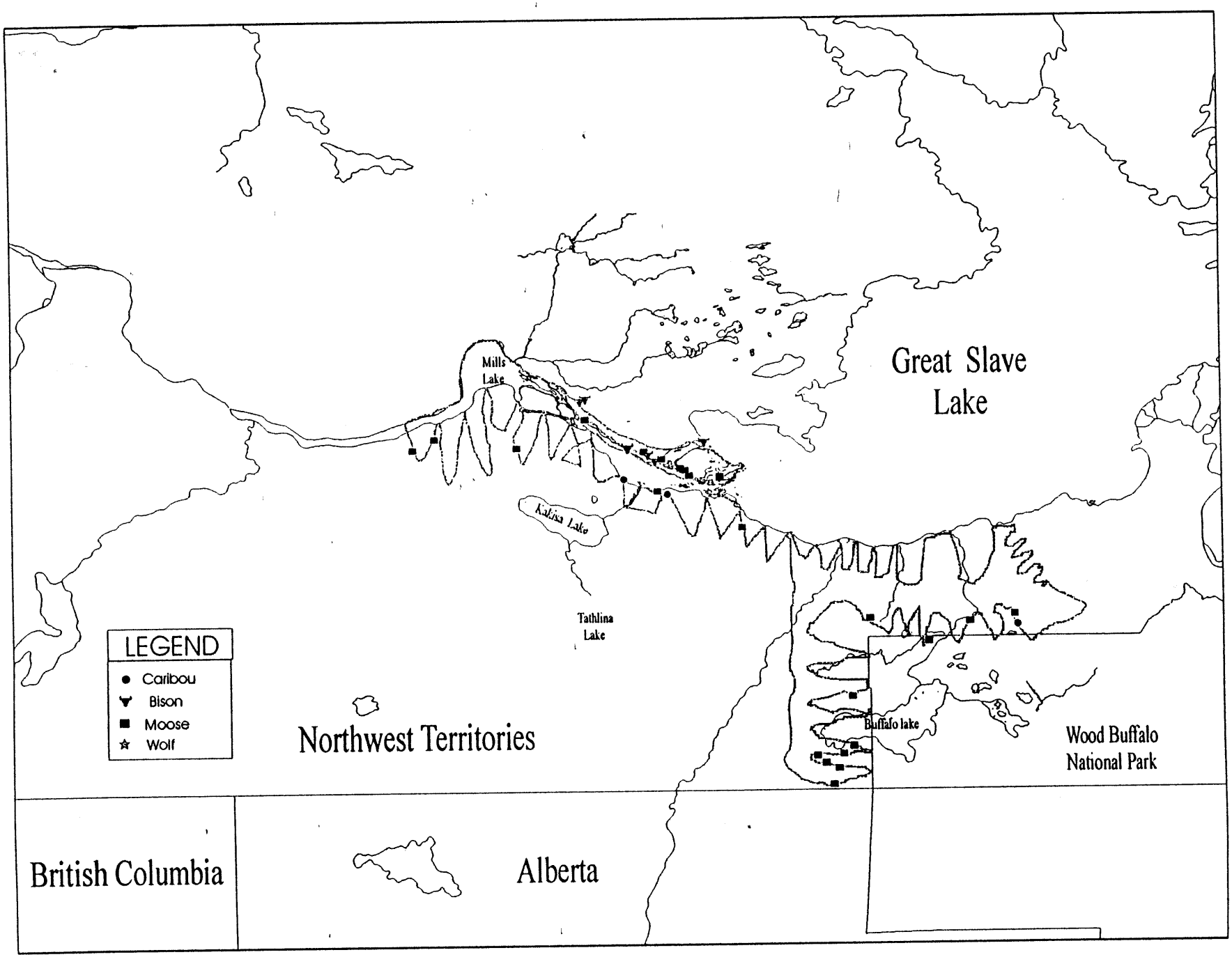

Figure 6.1. Monthly aerial survey of Zone I of the Bison Control Area, 19-22 January 1998

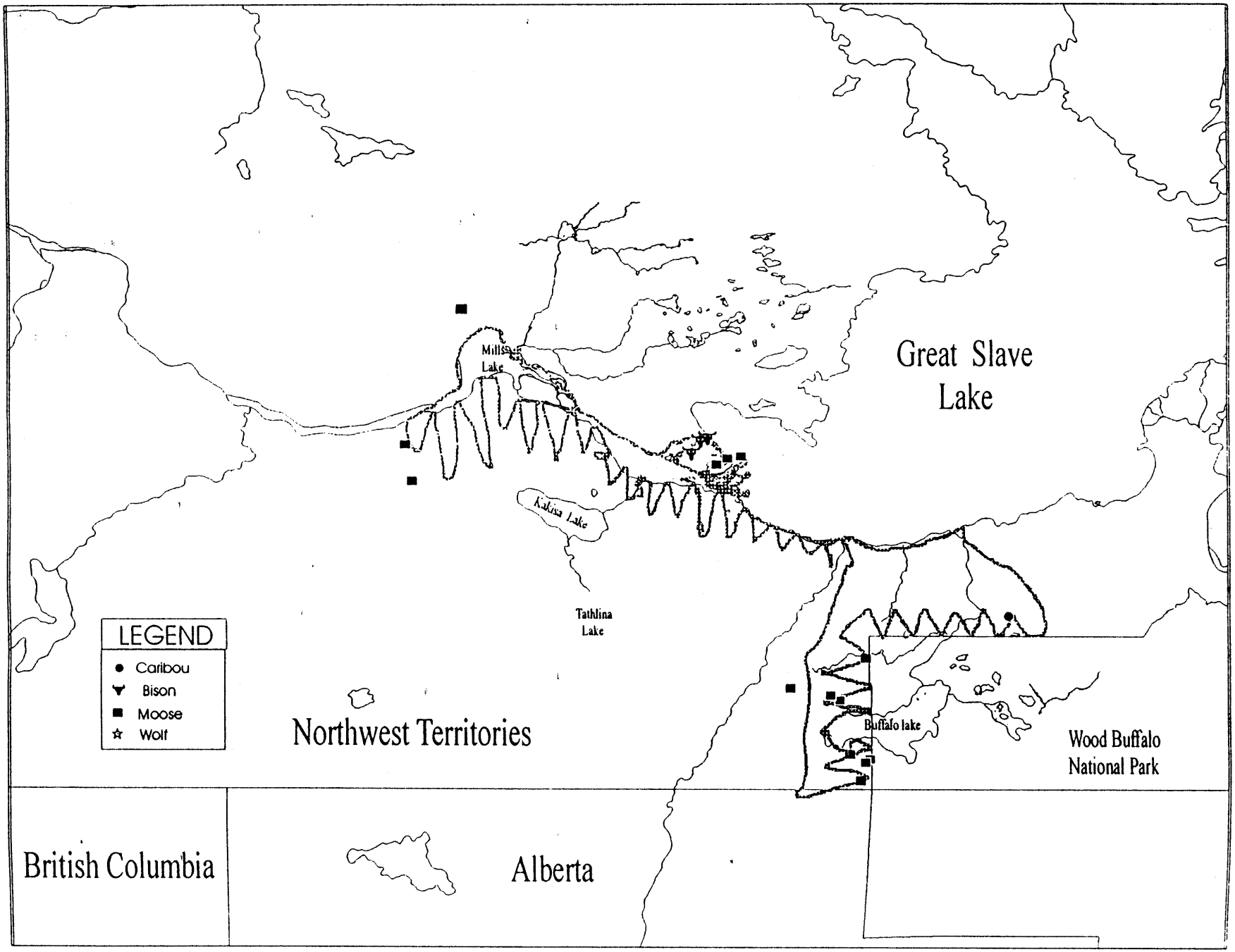

Figure 6.2. Monthly aerial survey of Zone I of the Bison Control Area, 9-10 February 1998

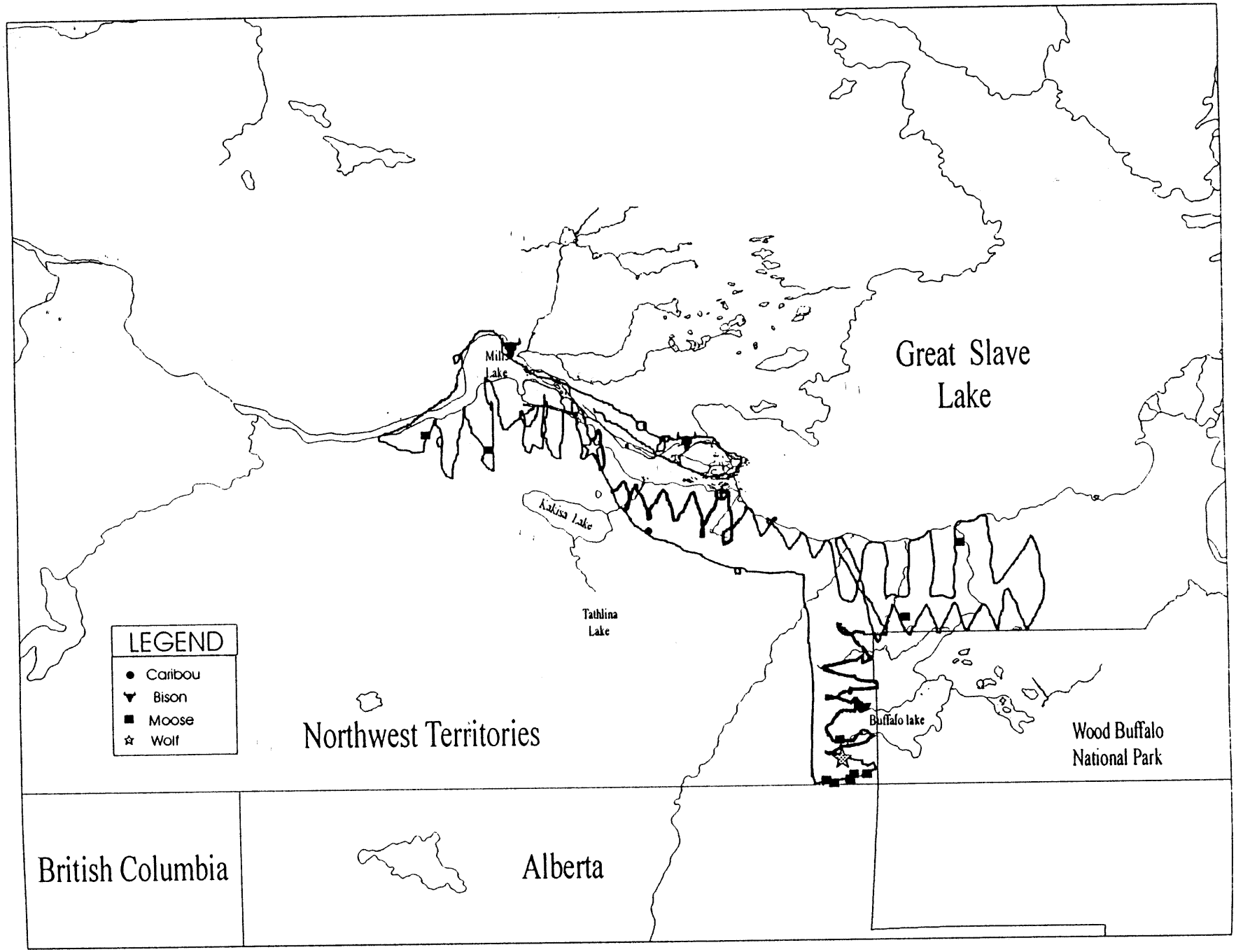

Figure6.3. Monthly aerial survey of Zone I of the Bison Control Area, 6-7 March 1998

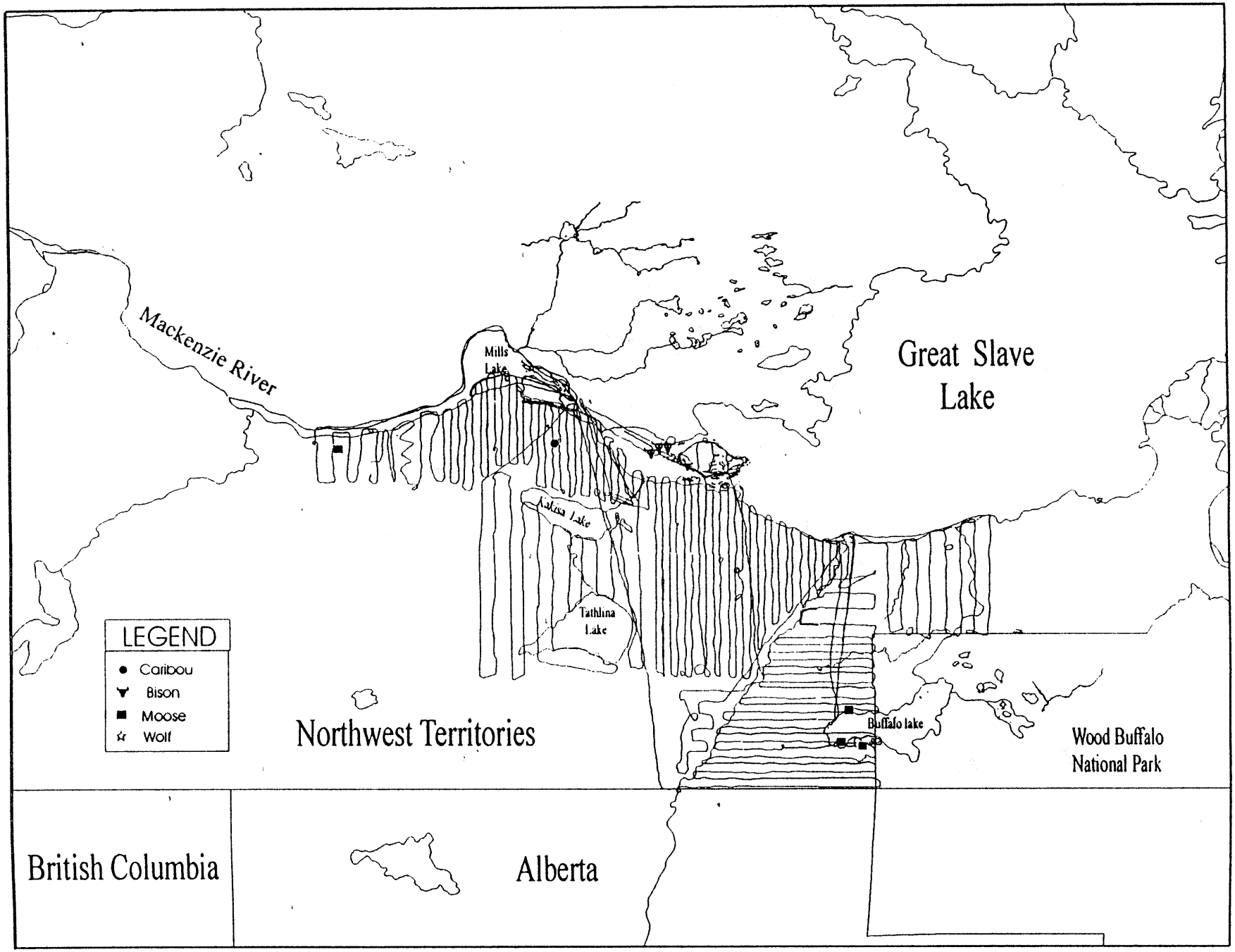

Figure 5. Annual aerial survey of Zone I and II of the Bison Control Area, 31 March - 5 April 1998

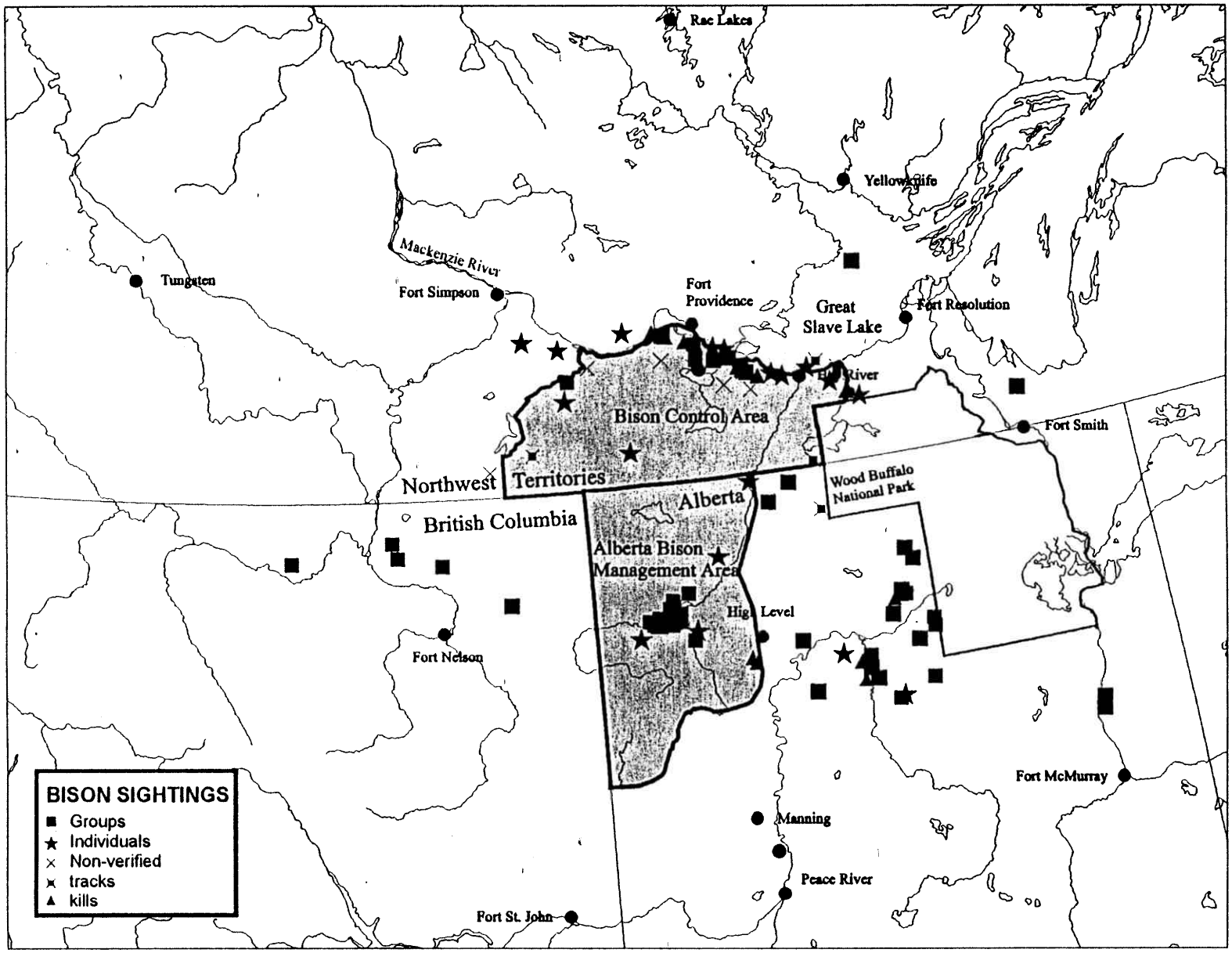

Figure 6. Distribution of bison sightings reported since 1976 in the region west of Wood Buffalo National Park and south of the Mackenzie River

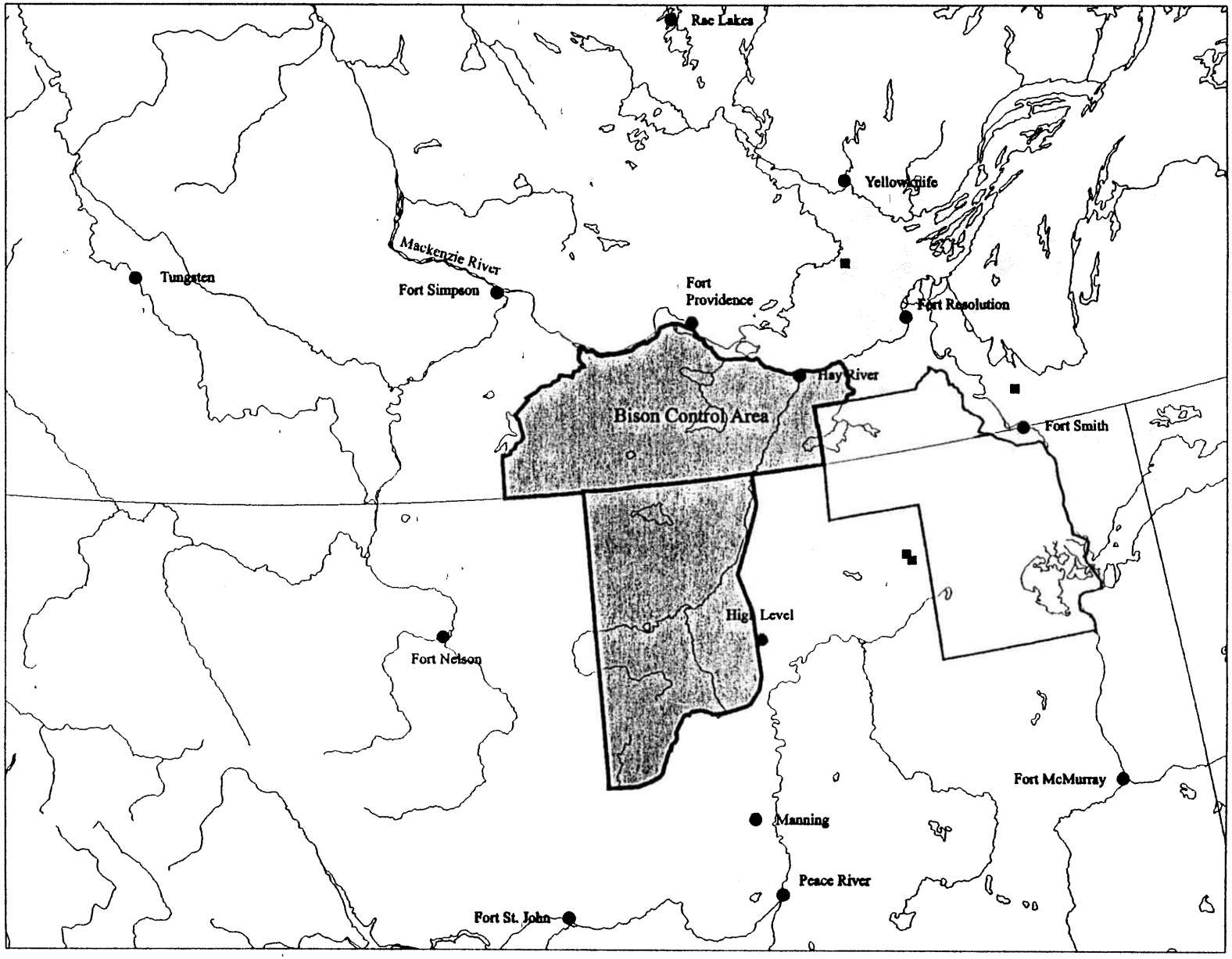

Figure 7. Location of reported bison sightings through public communications during the 1997-98 season

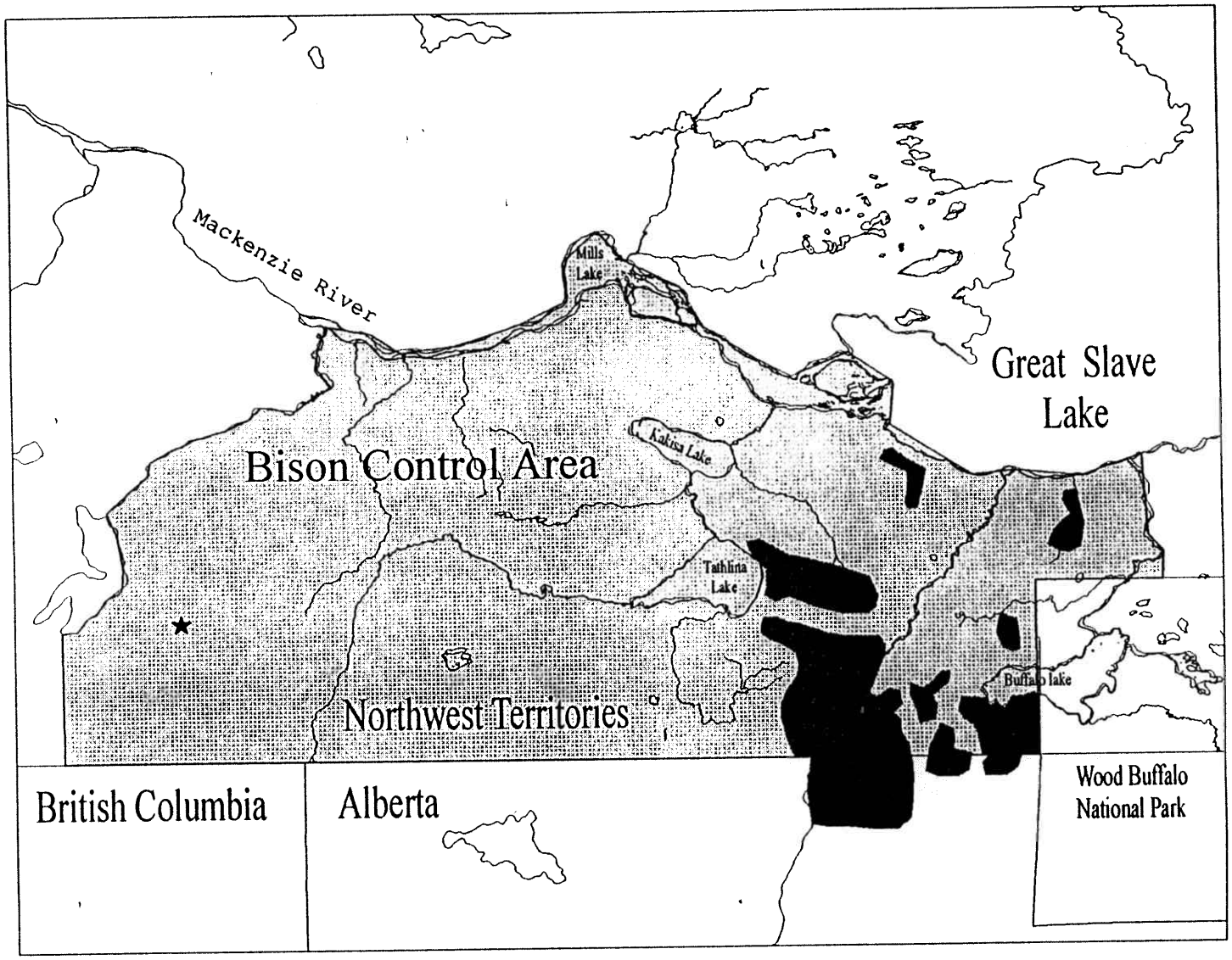

Figure 8. Possible bison habitat (dark grey areas) identified during aerial surveys in 1997-1998

RECOMMENDATIONS

1. Bison were not sighted in the BCA during either the weekly shoreline patrols, or the monthly and annual surveillance surveys conducted in the 1997/1998 season. Nevertheless, these surveys should continue so that we may confirm that bison are not present in the BCA. The absence of bison in the BCA should not be presumed.

2. As part of the annual survey of BCA Zones I and II, we also delineated habitat that may be suitable for bison. We suggest that a habitat survey of BCA Zone III be conducted to identify movement corridors and potential habitat for dispersing bison.

3. Publicity on the Bison Control Program was improved this season and should be expanded further next season. A well-advised public is more likely to report sightings of bison. For next season, we suggest:

a) meetings be held with communities in and around the BCA;

b) radio messages be aired at the beginning of the surveillance season; and

c) information on the BCP be aired to active resource users through a bush radio (this could be accomplished with assistance of Renewable Resource Officers in each community).

4. The Bison Control Technician should be trained in conducting post-mortem evaluations, including proper blood collection, tissue collection and recognizing gross pathology.

5. The signs currently used to inform the public about the Bison Control Area along the Mackenzie and the South Slave highway system are ineffective. They are difficult to see and contain little information. We suggest that new signs be designed of which there could be two types. The first type would indicate the boundaries of the BCA to highway travellers. The second type of sign would be more informative. These signs should display a map, specific information on the objectives of the program, and provide contact numbers in case a traveller sees bison in the BCA. These information signs should be located at strategic areas such as campgrounds and roadside pullouts.

ACKNOWLEDGMENTS

Several individuals were instrumental in the conduct of the Bison Control Program during the 1997-1998 season. 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. Renewable Resource Officers from Fort Providence (Evelyn Krutko, Rick Sanderson) and Hay River (Tom Chowns) assisted when possible with flights, logistics and shared their concerns and insightful advice for continued success of the Bison Control Program. We thank the community participants who assisted with the surveillance flights; they are Melanie Thom, Lawrence Thom, Walter Landry and Lester Antoine of Fort Providence, and Ernest and Joe Cayen of Hay River. Doug Williamson (Big River Air Ltd., Fort Smith, NT.) flew the Cessna 185, whereas Ted Malewski and Christian Moser (Air Providence Ltd, Fort Providence, NT.) alternately piloted the Cessna 150. Jane Chisolm (Department of Canadian Heritage, Fort Smith) and Linda Comerford (DRWED, Yellowknife) provided helpful comments and suggestions on various aspects of our communication efforts.

The Bison Control Program is funded jointly by the Government of the Northwest Territories (DRWED) and the Government of Canada (Department of Canadian Heritage). The Department of Canadian Heritage, Fort Smith, NT., kindly provided us with the use of their Global Positioning System (GPS).

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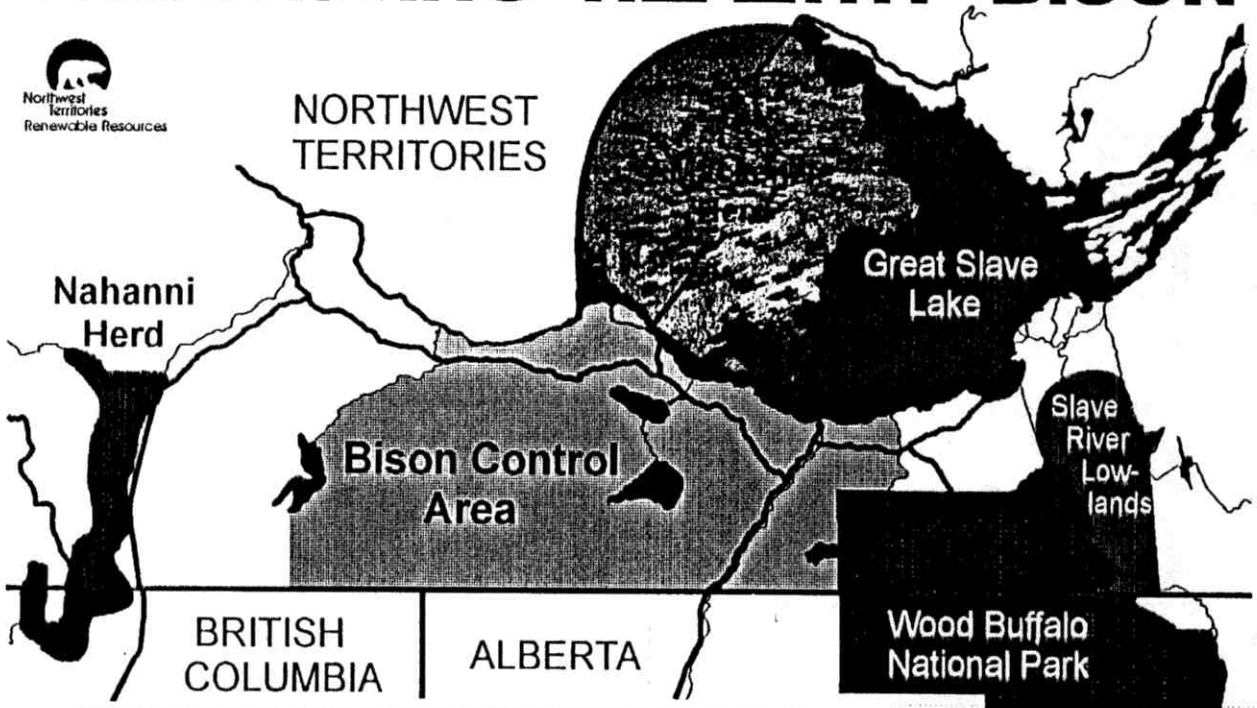
LIST OF DATABASES

Bisobs.dbf	This database includes a list of all bison observations since 1976 in the BCA and surrounding areas; it is 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.
Bisob98.dbf	This Paradox database file lists all wildlife sightings during the 1997-98 surveillance flights of the BCA; it is a located on the GIS/technician computer at the wildlife management building, Department of Resources, Wildlife and Economic Development, Hwy # 5, Fort Smith, Northwest Territories.

PROTECTING HEALTHY BISON

Northwest Territories Renewable Resources



HEALTHY HERDS

- benefit people through tourism, outfitting and healthy food;
- are more productive and stronger
- less meat is wasted

The Bison Control Area was established to reduce the risk of infection of the Mackenzie and Nahanni herds with tuberculosis and brucellosis, diseases carried by bison in Wood Buffalo National Park and the Slave River Lowlands.
NWT hunters may harvest bison in the Bison Control Area at any time, but are required to report kills to the nearest Renewable Resources office.

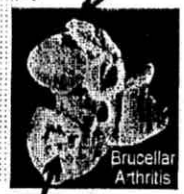
Frozen lakes and rivers allow bison to roam freely in search of winter forage.

Pus-filled lungs infected with tuberculosis.

Tubercles covering a rib cage.

Tonsils infected with tuberculosis.

Diaphragm and chest cavity covered with tubercles.



Abnormal bone growth.

Joints stiffen, making it difficult for a bison to walk.

Bone deteriorates and wears out.

If you see a bison in the Control Area, please note the location and report it to a Renewable Resources office as soon as possible. Phone 867-874-6702 in Hay River, or 867-699-3002 in Fort Providence.

APPENDIX I. Poster distributed to user groups and commercial operators.

Appendix II. Public Service Announcement aired on radio
Bison Control Program

Bison populations in Wood Buffalo National Park and the adjacent Slave River Lowlands are infected with tuberculosis and brucellosis.

A buffer zone has been created to prevent contact between these diseased bison and the healthy bison in the Mackenzie and Nahanni ranges to the north. The buffer zone lies south of the Mackenzie River to the Alberta border, between Trout River in the west and Buffalo River in the east.

The main roads affected include the Mackenzie Highway from Saamba Deh Falls to the Alberta border. It also includes highway 2 from Enterprise to Hay River, Highway 6 as far east as Buffalo River and Highway 5 to the Wood Buffalo National Park boundary.

All bison in the buffer zone are presumed to be disease carriers and must be removed for testing. Motorist and hunters are requested to report any sightings of bison in the buffer zone to the nearest Resources, Wildlife and Economic Development office.

Under the Northwest Territories Wildlife Regulations, resident hunters may shoot bison in this area at any time. Hunters are required to report any kills as soon as possible. Public participation is an important part of the Bison Control Program. Please report all sightings.

This message is brought to you by the Department of Wildlife, Resources and Economic Development and Heritage Canada.

TUBERCULOSIS AND BRUCELLOSIS IN BISON

SIGNS IN BISON

BRUCELLOSIS

External signs may be apparent, these could include swelling at the joints and swollen testes
Internal signs are the following:
- Pus infected joints
- Infected testes or uterus
- Swollen glands

TUBERCULOSIS

No external signs apparent. Internal signs could include the following: pus-filled lungs, tubercles in the lungs and diaphragm, "cheezy material in the glands".

REPORTING DISEASES

* Report and keep some of the diseased parts to give to the Renewable Resources Officer
* For more information contact your local Resources, Wildlife and Economic Development Office

BE CAREFUL!

* Do not cut into swellings
* Do not eat infected meat
* Do not spill fluids from the unborn calf on the meat

WHAT TO DO

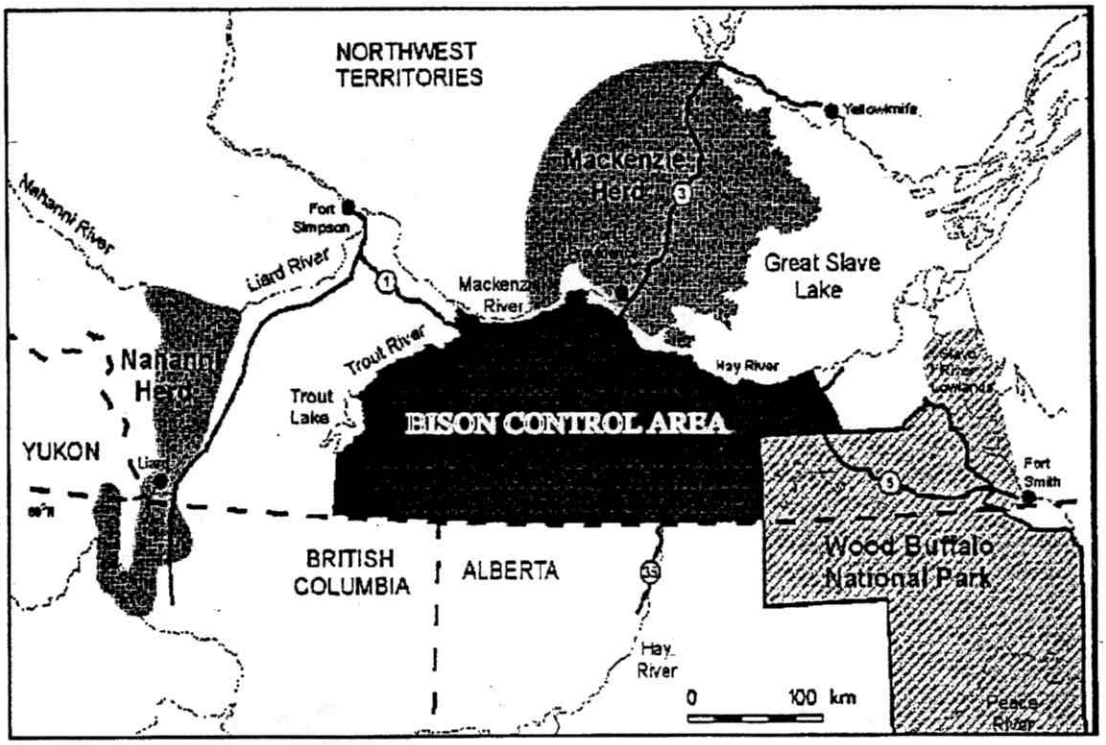
* Wear gloves
* Cut around diseased parts and put them in a plastic bag, keep frozen
* Wash hands
* Wash your knife with soap & water

People can contract tuberculosis or brucellosis from improper meat handling and from eating infected bison meat which is not fully cooked

APPENDIX III. Pamphlet distributed to resource user groups.

IF YOU SEE A BISON in the control area...

Bison populations in the Slave River Lowlands and the Wood Buffalo National Park area are infected with bovine tuberculosis and brucellosis. In 1987, the Bison Control Area (BCA) was created to prevent the spread of these diseases to the healthy Mackenzie and Nahanni herds.



The BCA (see map) acts as a buffer zone between the diseased and healthy populations. Bison are sporadically reported in the BCA, consequently, active management is necessary to curtail their movement in order to reduce the risk of disease transmission. All bison moving in the BCA are assumed to be disease-carriers and must be removed and tested. The success of this management effort is the result of active cooperation from the public and various agencies. Therefore, if you see a bison in this area, please report it as soon as possible to the nearest Resources, Wildlife and Economic Development office.

Under the Northwest Territories Wildlife Regulations, resident hunters may shoot bison in the Control Area at anytime. Hunters are required to report kills as soon as practical to the nearest Resources, Wildlife and Economic Development office.

The Governments of the Northwest Territories, Alberta, British Columbia and Canada have been working towards the recovery of healthy wood bison populations. In the Northwest Territories, two herds have been re-established and are disease free. The Mackenzie herd is estimated to number approximately 2000 animals. It is the largest contiguous free roaming herd of bison in Canada and a cornerstone in the nation's wood bison recovery program. The Nahanni herd numbers about 100 animals.

If you would like more information regarding the Bison Control Program, please contact any Resources, Wildlife and Economic Development office.

Appendix IV. Advertisement published in "UP HERE" magazine