BISON CONTROL AREA PROGRAM
ANNUAL REPORT OF SURVEY ACTIVITIES
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ABSTRACT

Bovine tuberculosis *(Mycobacterium bovis)* and brucellosis *(Brucella abortus)* 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 2002-2003 surveillance season, we used either a Cessna 172 or 210, depending on aircraft availability, to fly 11 shoreline patrols along the northern boundary of the BCA on a weekly basis from 9 January 2002 to 15 April 2003. We contracted a Cessna 185 based in Fort Providence to conduct an additional patrol on 25 April 2003. We flew a total of 27.7 hours during shoreline patrols. We used a Cessna 337 to fly two monthly semi-comprehensive aerial surveys of BCA Zone I in January and March 2003 (11.0 and 11.3 hours respectively). From 1 - 6 April 2003 we used a Cessna 185 to perform the annual comprehensive survey of BCA Zones I and II. We flew a total of 39.8 hours to complete this survey. In total, we flew 86.8 hours to systematically survey the BCA during the 2002 - 2003 surveillance season. On 23 January 2003 during a shoreline patrol, four bison were spotted halfway across the Mackenzie River near the ice crossing. A shoreline patrol aircraft attempted to haze these animals toward the north shore and we later confirmed that the four bison did in fact travel back to the north shore (E. Landry pers. comm.). We observed a total of 1537 bison throughout our surveillance activities but they were all outside the northern boundary of the Bison Control Area and within the southern extent of the range of the Mackenzie bison herd. We did not receive any public reports of confirmed bison sightings in the BCA. Throughout the surveillance season we observed 75 moose, 18 caribou, and 5 wolves.

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INTRODUCTION

Free-ranging bison in and around Wood Buffalo National Park (WBNP) and the Slave River Lowlands (SRL) are infected with bovine tuberculosis and brucellosis (Tessaro *et al.* 1990, Joly and Messier 2001) (Figure 1). These diseases are the result of a misguided decision that saw 6,673 diseased plains bison from Wainwright, AB introduced into WBNP between 1925 and 1928 (Fuller 2002). Risk of infection to healthy bison has been a chronic management problem ever since. Recent results from Joly and Messier (2001) showed that bison within WBNP have a disease prevalence rate of 30.9% seropositive for brucellosis and 49% positive for tuberculosis. These results further support that the risk of infection poses a threat to the disease-free status of the Mackenzie wood bison herd (Tessaro *et al.* 1993, APFRAN 1998), 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.* 2001b).

In March 1996, because of ongoing concerns of the commercial bison industry, the Canadian Bison Association requested the Canadian Food Inspection Agency to conduct a formal risk assessment. The objective was to determine the risk of infection with tuberculosis and/or brucellosis from bison in WBNP and surrounding area during a 12 month period, for each of three “at risk” groups: commercial cattle, commercial captive bison and disease-free, free-ranging bison. In January 1999, the Animal, Plant and Food Health Risk

Assessment Network (APFRAN 1999) published a risk assessment and concluded that disease-free, free-ranging bison had the highest probability of becoming infected with bovine brucellosis and/or tuberculosis.

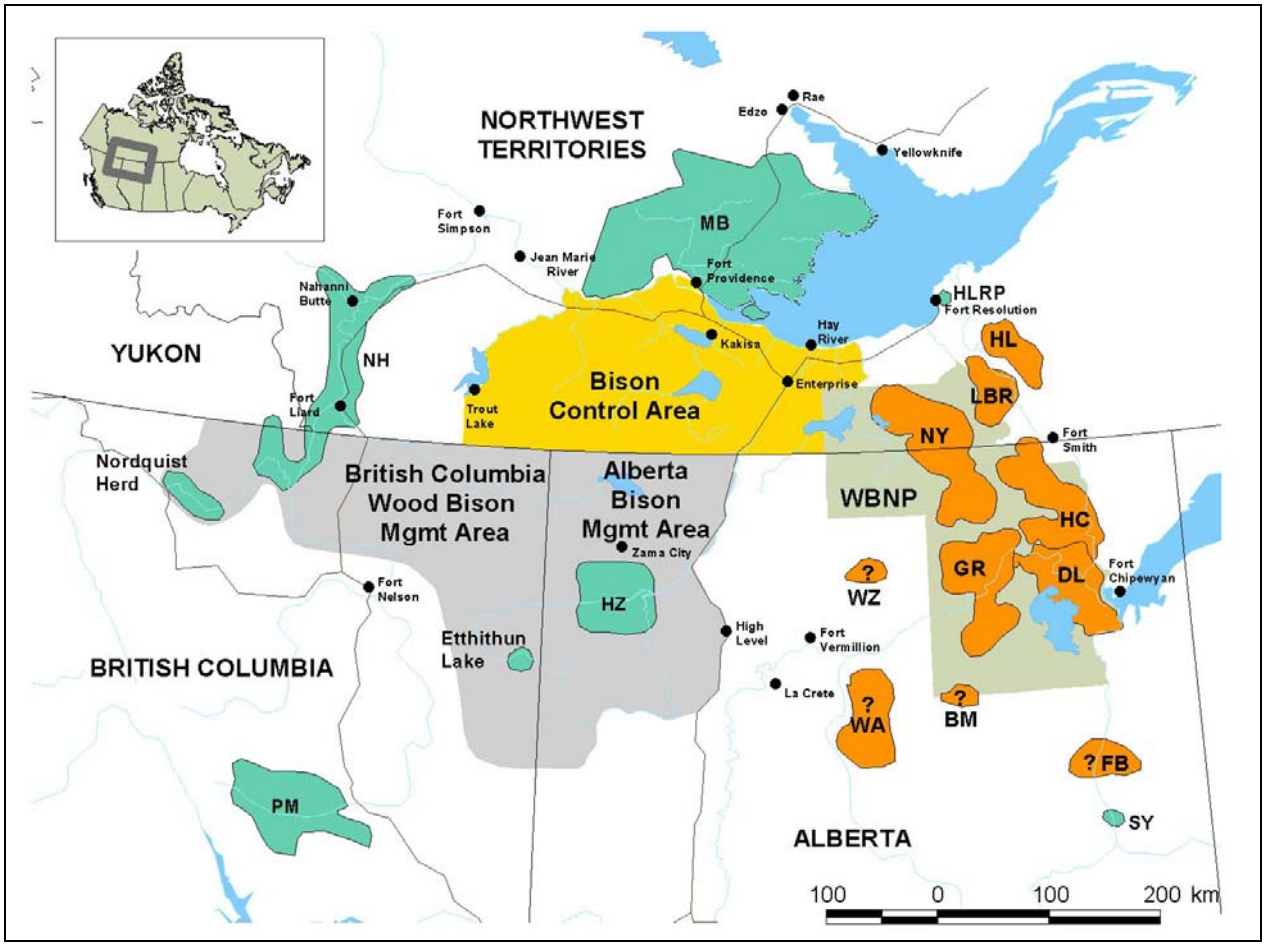

Figure 1. Distribution of bison herds in Northern Canada.

Note: Bison herds considered to be infected with bovine tuberculosis and brucellosis are Shown in light grey; HL = Hook Lake, LBR = Little Buffalo River, NY = Nyarling, HC=Hay Camp, GR=Garden River, DL=Peace-Athabasca Delta, FB=Fire Bag, WZ=Wentzel, WA=Wabasca, BM=Birch Mountain. Bison herds considered to be disease-free are shown in dark grey; MB = Mackenzie, NH = Nahanni, PM= Pink Mountain, HZ = Hay Zama, SY = Syncrude/Fort McKay. The delineation of home ranges originated from various research (Reynolds & Hawley 1987, Joly & Messier 2001, [Harper et.al 2000 Wood Buffalo National Park, Resources, Wildlife and Economic Development, British Columbia Ministry of Environment, and Alberta Environment.)

The Bison Control Area Program

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 Area Program (BCAP) has been jointly funded by the Government of the Northwest Territories (Department of Resources, Wildlife & Economic Development) and the Government of Canada (Parks Canada). Cost of surveying the BCA is jointly funded under a Memorandum of Understanding between the two agencies. In this report, we summarize the results of the Bison Control Area Program for the 2002/2003 surveillance season (i.e. December 2002 – April 2003).

Figure 2. The Northwest Territories Bison Control Area and three surveillance zones.

Goal and Objectives

The specific goal of the Bison Control Area Program in the Northwest Territories is to reduce the risk of infection of the Mackenzie and Nahanni herds with tuberculosis and brucellosis. Our overall approach to achieve the goal of the BCA program is to conduct systematic aerial surveys with an extensive public communication program.

The objectives of the Bison Control Program are to:

- detect and remove any bison in the BCA, and to prevent establishment of bison herds or individuals in this area[1];
- continue surveillance of the Bison Control Area; and
- increase public awareness of the Bison Control Program

[1] Wood bison (*Bison 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 NWT residents may shoot any bison sighted in the BCA.

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, Boulanger *et al.* 1998) to assure repeatability and comparability of wildlife sightings.

The Bison Control Area is stratified into three discrete zones (Figure 2). Survey effort (i.e., use of aircraft hours), and frequency of monitoring is allocated according to the likelihood of bison moving into an area. Consequently, this survey design requires frequent (*i.e.,* weekly) surveys of the shoreline areas (BCA Zone I) that are adjacent to the range of the Mackenzie bison herd. Less frequent surveys (i.e., monthly semi-comprehensive and annual comprehensive) are used to survey larger areas (BCA Zones I and II) in the BCA.

As part of this survey design, we flew three different types of aerial surveys to systematically survey the BCA throughout the surveillance season. The first type of survey was a weekly shoreline patrol of the high-risk area (Zone 1). We continued to fly a standard shoreline patrol route (Figure 3) as recommended by Tanguay *et al.* after the 1999-2000 season. (Tanguay, *et al*. in prep). As a result of departing from Fort Smith each week, we were able to take advantage of ferry time and fly the south shoreline of Great Slave Lake for additional coverage beginning at Hay River[2]. This survey was conducted at approximately seven-

[2] Shoreline patrols were chartered out of Fort Smith during the 2002/2003 surveillance season due to the unavailability of appropriate aircraft in either Fort Providence or Hay River. The additional coverage of the south shore of Great Slave Lake beginning at Hay River - to the standardized patrol route typically took 15 minutes to fly. This time is added to total patrol hours in Table 1.

day intervals and had a planned flight time of approximately two - three hours per patrol.

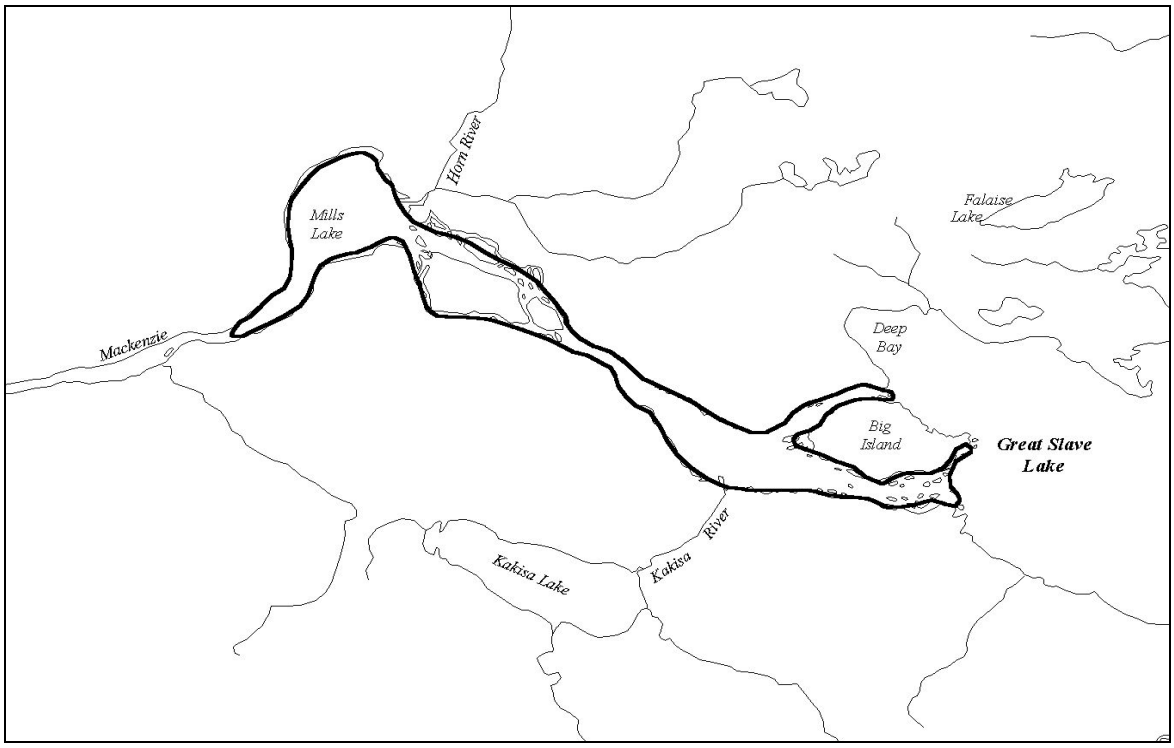

Figure 3. Standardized shoreline patrol route for the Bison Control Area.

The second type of survey was a monthly semi-comprehensive surveillance flight of Zone I, performed once in January and again in March. This survey covers a larger area and requires about 10-15 hours per survey to complete. The final type of survey was a one-time, annual comprehensive surveillance flight of Zones I and II. For this annual comprehensive survey performed in early April, we allocated approximately 45 hours of flight time. We did not conduct aerial surveys in Zone III of the BCA.

We adapted flight paths from previous surveys to plan our routing for aerial surveys in the 2002-2003 surveillance season. However, actual flight paths were flown in a flexible, meandering manner to allow for variations in terrain and habitat, and to follow animal tracks as and when required. This allowed us to survey the area with greatest possible coverage given available flying hours. Shoreline patrols were flown in either a Cessna 172 or Cessna 210, depending on aircraft availability. The January and March semi-comprehensive flights were performed with a Cessna 337; a Cessna 185 was contracted to perform the April comprehensive survey. All shoreline patrols, except for the final flight conducted on 25 April 2003, were conducted by the Bison Control Area Technician and pilot. Resource officers Evelyn Krutko and Edward Landry of Fort Providence accompanied the pilot on the final patrol. The survey crew for the monthly surveillance flights of Zone I and the annual comprehensive survey of Zones I and II consisted of a pilot, the BCA Technician and two community observers. The technician sat in the front seat while the observers occupied the left and right rear seats of the aircraft. Survey aircraft were flown at approximately 250 to 300 metres above ground level at a speed of 140 - 160 km/hr.

Wildlife observations during weekly shoreline patrols were recorded with a hand-held Garmin GPS and then downloaded into the Ozzie Explorer Mapping program (Des Newman, version: 3.90.2) where the data could eventually be exported into ArcView 3.2a Geographic Information System (Environmental Systems Research Institute, 1998). All observations of large mammals (*i.e.,* caribou, moose, and wolves) during the monthly semi-comprehensive and annual

comprehensive flights were recorded using ASPEN Global Positioning System Field Software (Trimble Survey and Mapping Products, 1998). The data collected using this method were also prepared and exported into ArcView 3.2a.

RESULTS AND DISCUSSION

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 (Appendix A).

Shoreline Patrols and Surveillance Surveys

Due to mild weather conditions, and as a result of late river freeze-up, we initiated weekly shoreline patrols on 9 January 2003 and continued until 25 April 2003 (Figures 4.1 – 4.11, Appendix A). Total flight time for the 11 shoreline patrols was 27.7 hours (Table 1) with a mean duration of 2.5 (± 0.3 S.E) hours.

We conducted two monthly surveillance flights of BCA Zone I in January and March 2003 respectively (Figures 5.1- 5.2, Appendix A). Total time spent on monthly semi-comprehensive surveillance flights was 22.3 hours (11.0 hrs in January and 11.3 hrs in March). The annual comprehensive surveillance flight of BCA Zones I and II was conducted from 1-6 April, 2003 (Figure 6.1) and required 39.8 hours to complete (Table 2). In total we spent 89.8 hours surveying the BCA in the 2002-2003 surveillance season (Appendix B).

Wildlife Observations

Although bison have been observed in the BCA in the past, we did not observe any bison, nor did we receive any reports of bison sightings in the BCA during the 2002-2003 surveillance season. However, on January 23, 2003 we spotted four bison near the ice crossing on the Mackenzie River. This observation was made during a shoreline patrol (Fig 4.3, Appendix C). These

bison were approximately halfway across the river when we attempted to haze them back to the north shoreline with a Cessna 210. Later that same day a Renewable Resource Officer (RRO) visited the site by snowmobile and confirmed that the tracks of the four bison did in fact lead back to the North shore of the Mackenzie River (E. Landry pers comm.)[3] Although these bison did not enter the BCA, the sighting of bison attempting to cross the river is important. If these bison were not hazed back, they would have possibly ended up in the BCA. Thus, this occurrence provides strong rationale for the importance of shoreline patrols.

We did not observe any attempts by bison (*i.e.* fresh 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 4.1 – 4.11, Figures 5.1, 5.2 and Figure 6.1).

[3] Personal communication with Edward Landry, RRO Fort Providence. 24 January 2003

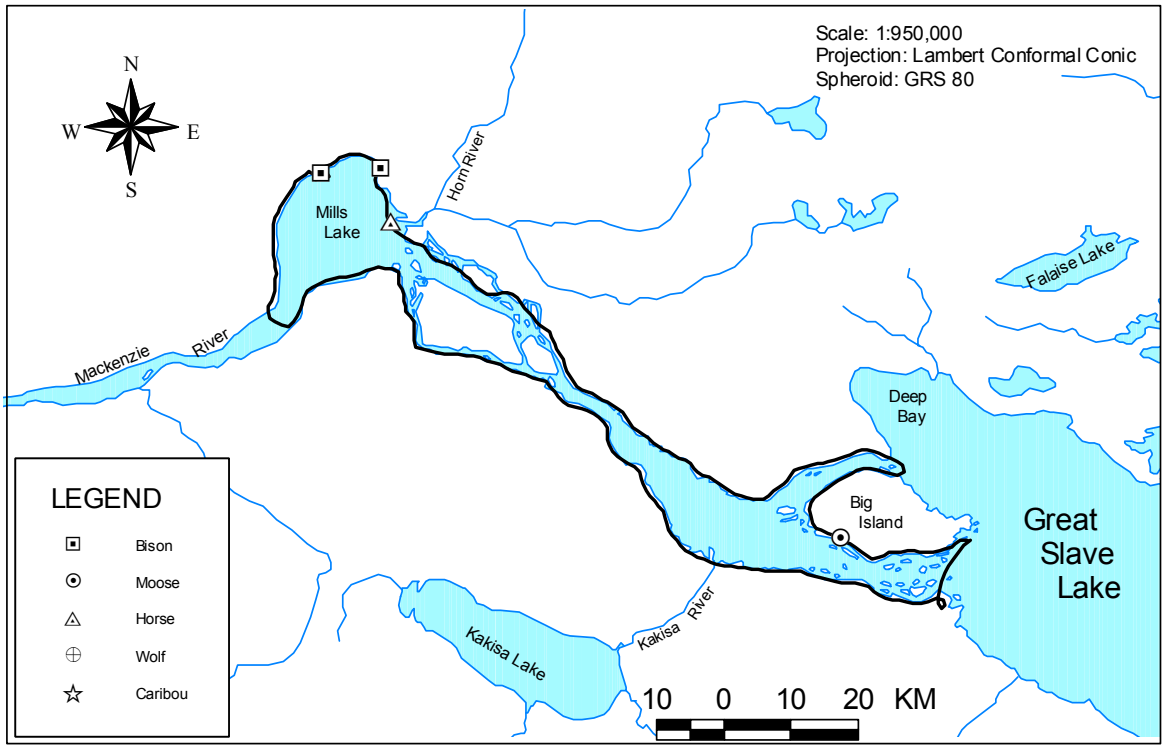

Figure 4.1. Shoreline patrol flown on 9 January, 2003. 2.3 total hours flown on survey.

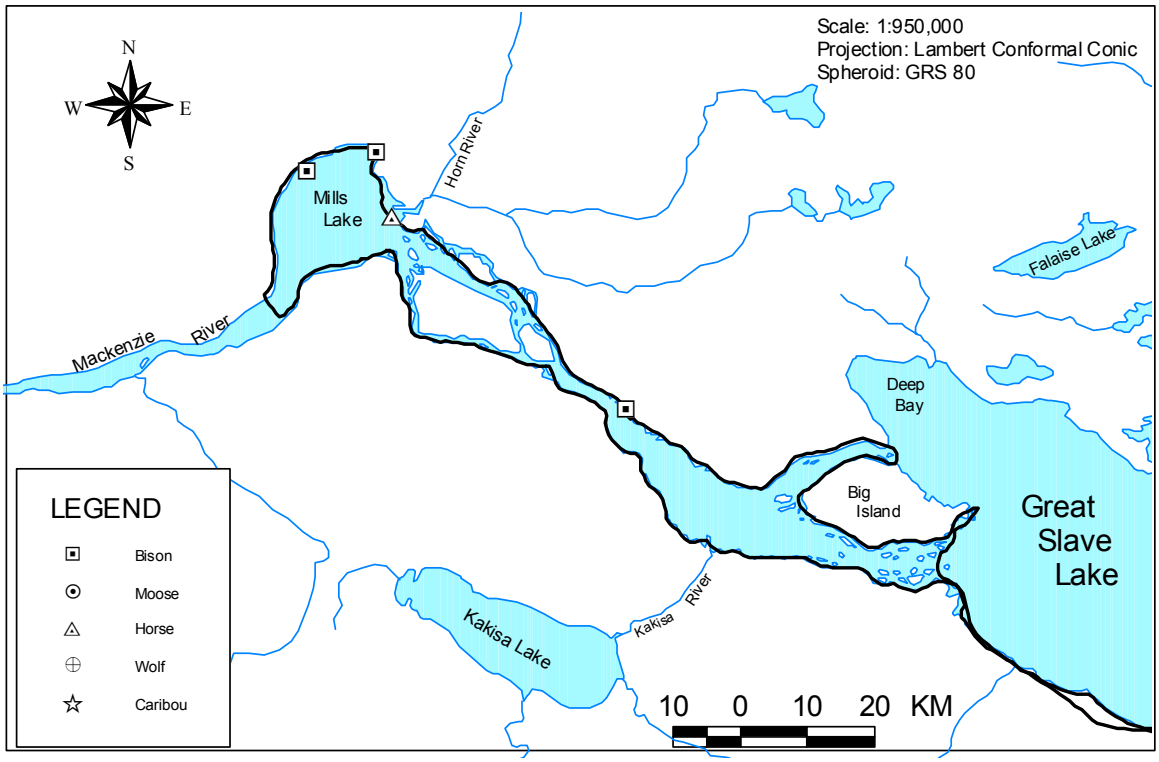

Figure 4.2. Shoreline patrol flown on 15 January, 2003. 2.8 total hours flown on survey.

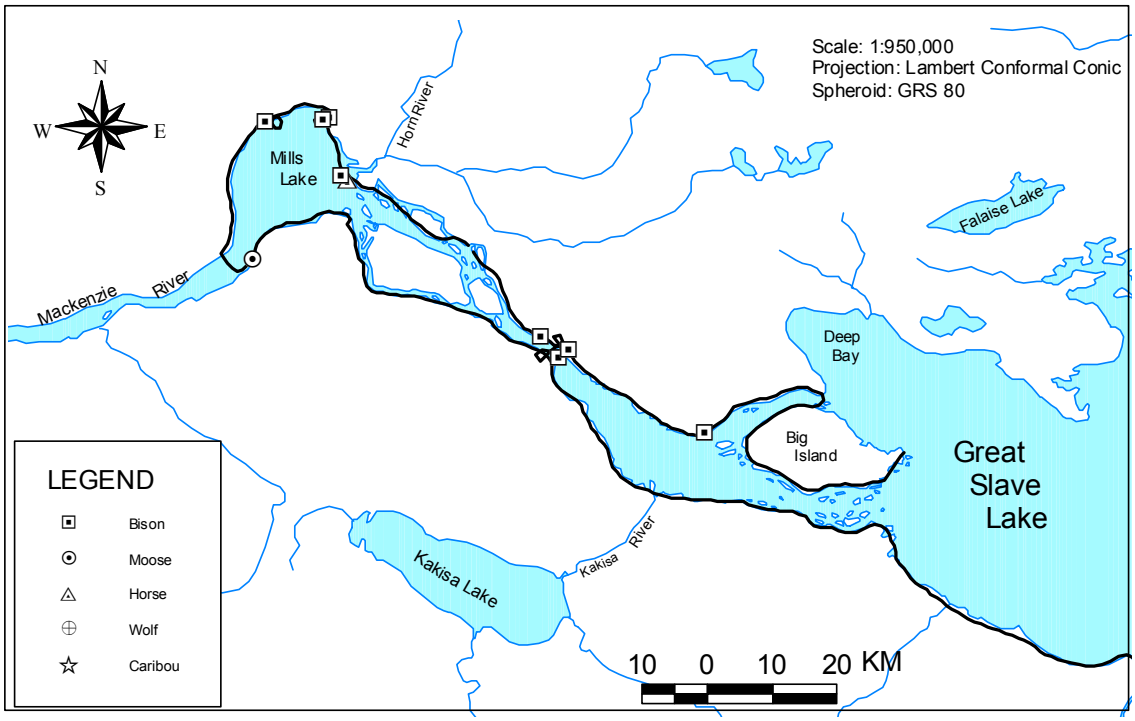

Figure 4.3. Shoreline patrol flown on 23 January, 2003. 2.5 total hours flown on survey.

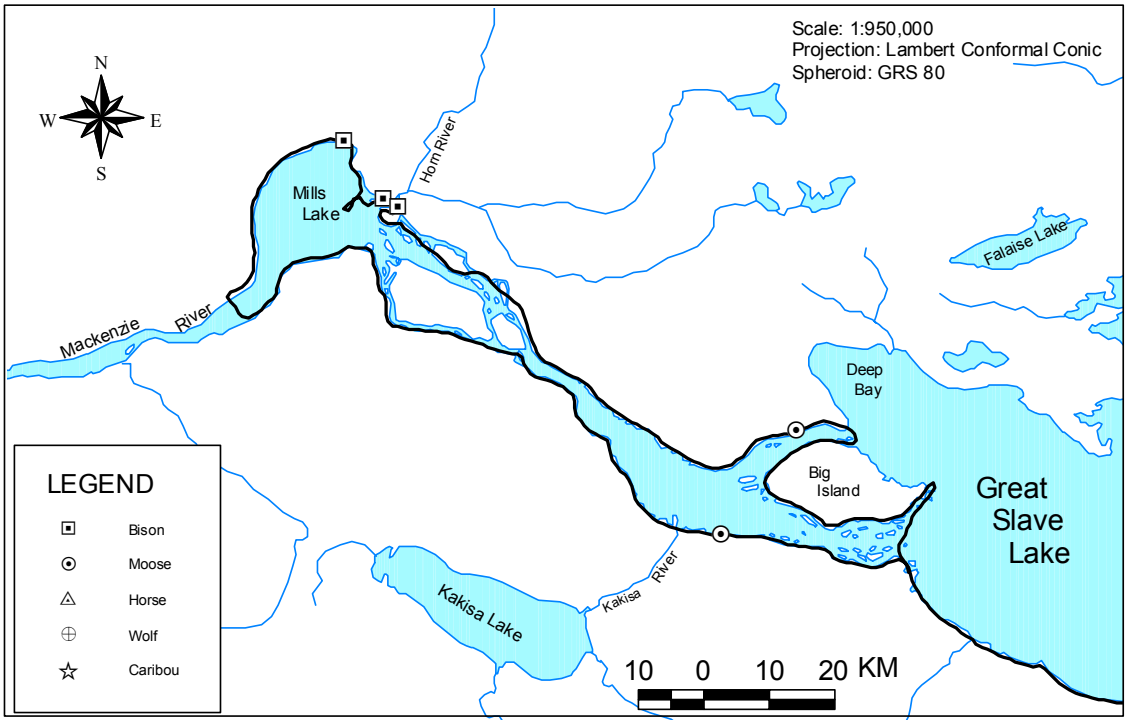

Figure 4.4. Shoreline patrol flown on 5 February, 2003. 2.5 total hours flown on survey.

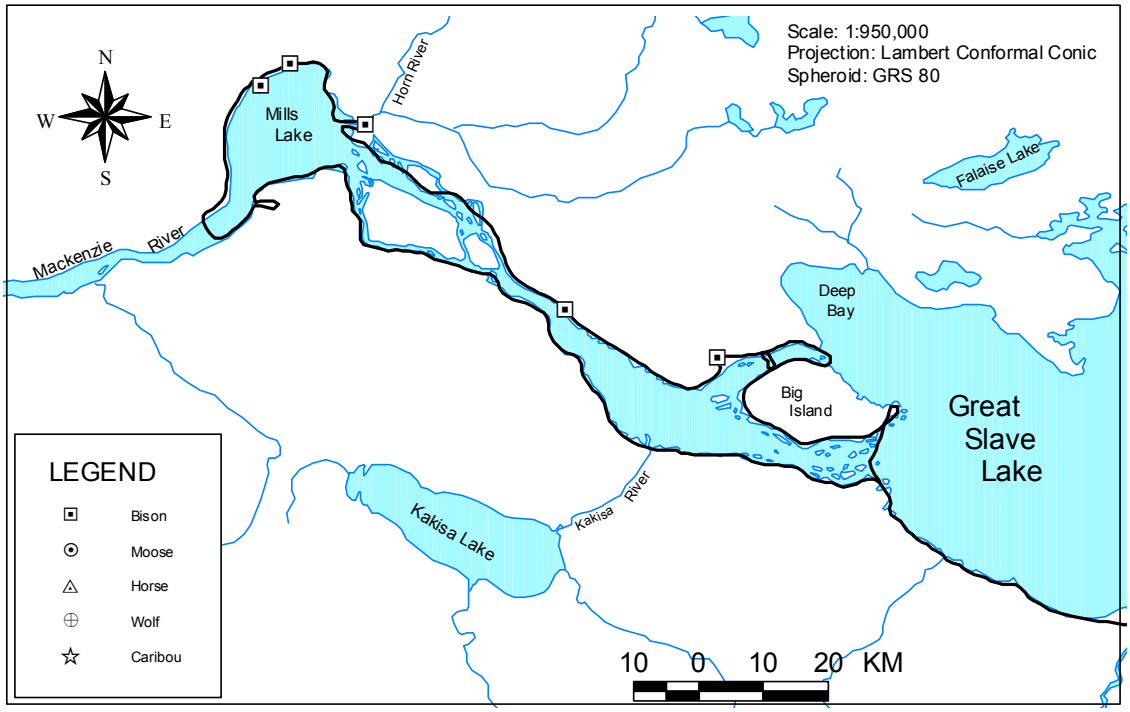

Figure 4.5. Shoreline patrol flown on 12 February, 2003. 2.6 total hours flown on survey.

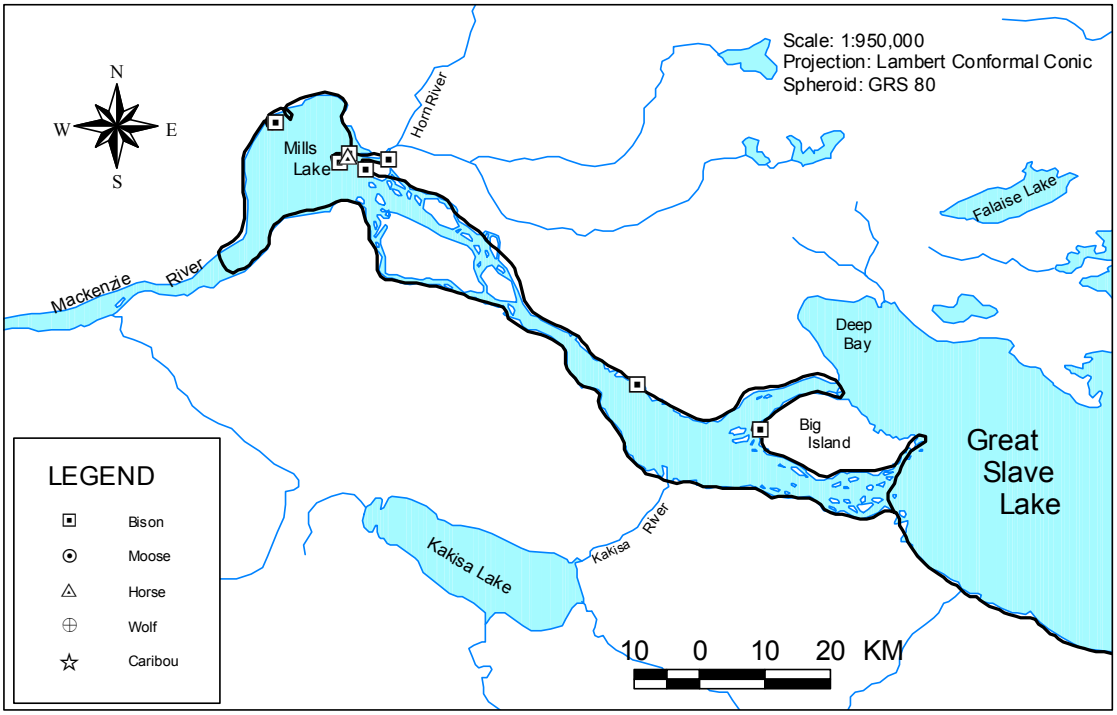

Figure 4.6. Shoreline patrol flown on 18 February, 2003. 2.5 total hours flown on survey.

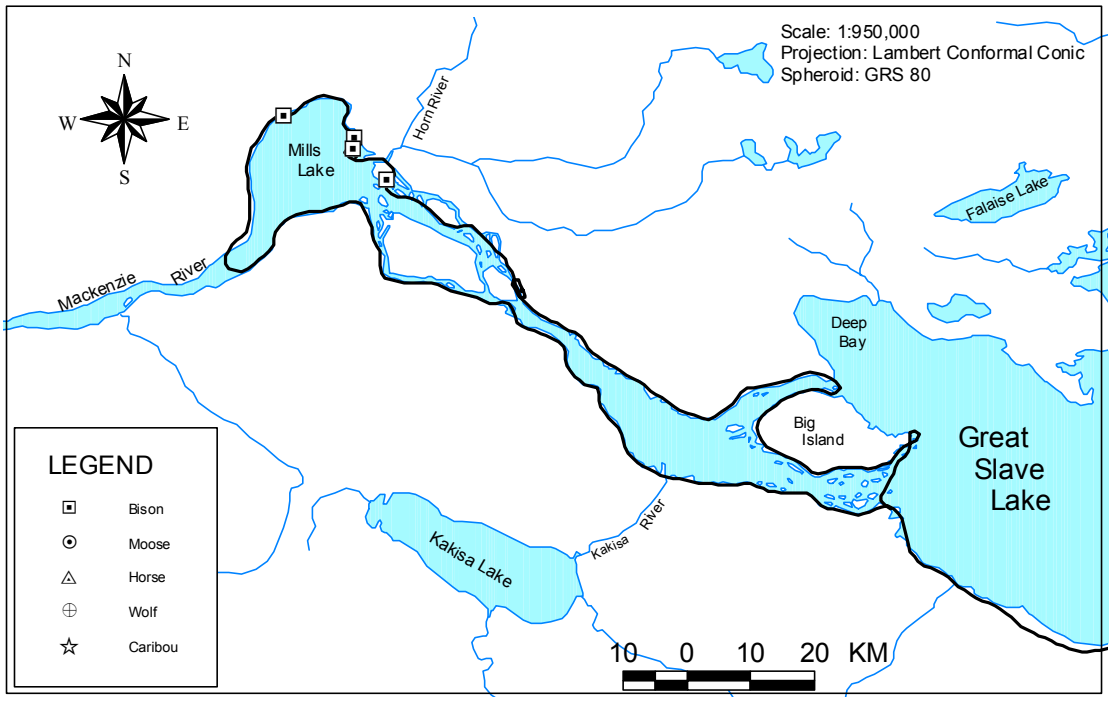

Figure 4.7. Shoreline patrol flown on 12 March, 2003. 2.6 total hours flown on survey.

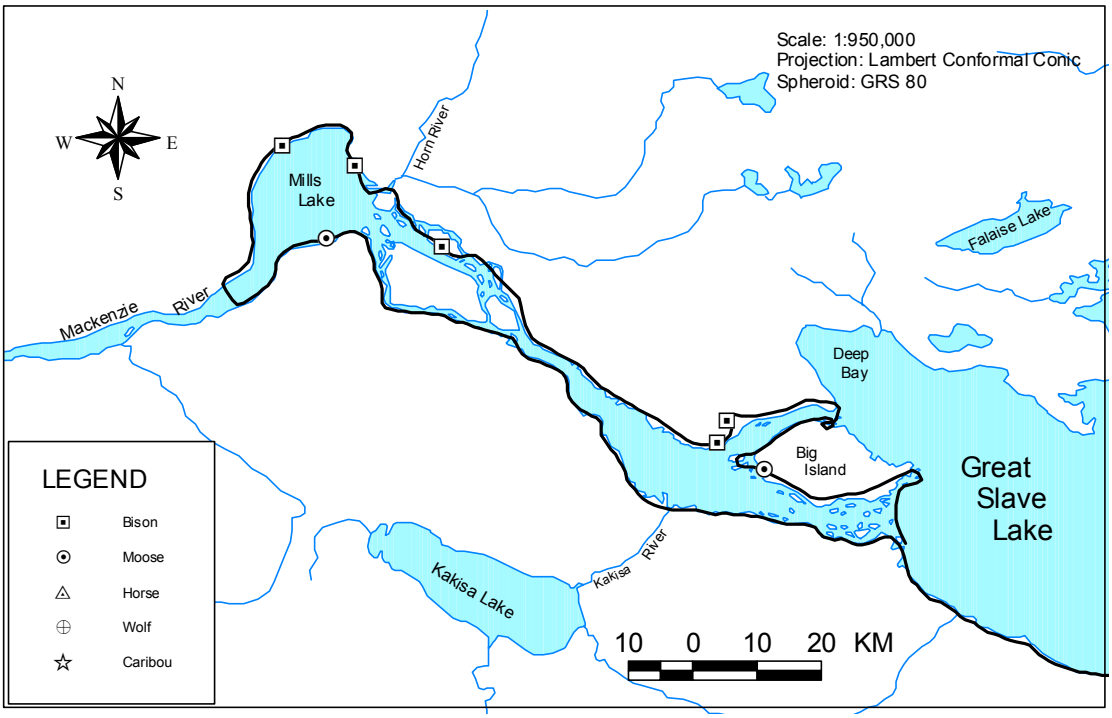

Figure 4.8. Shoreline patrol flown on 19 March, 2003. 2.3 total hours flown on survey.

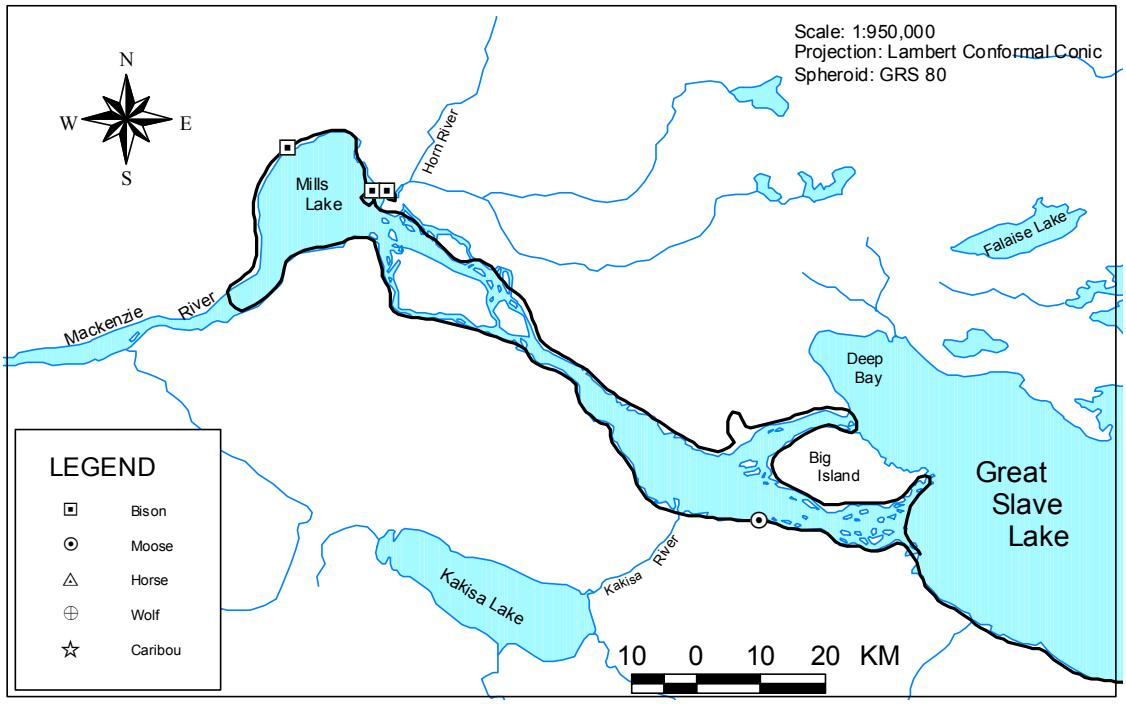

Figure 4.9. Shoreline patrol flown on 26 March, 2003. 2.5 total hours flown on survey.

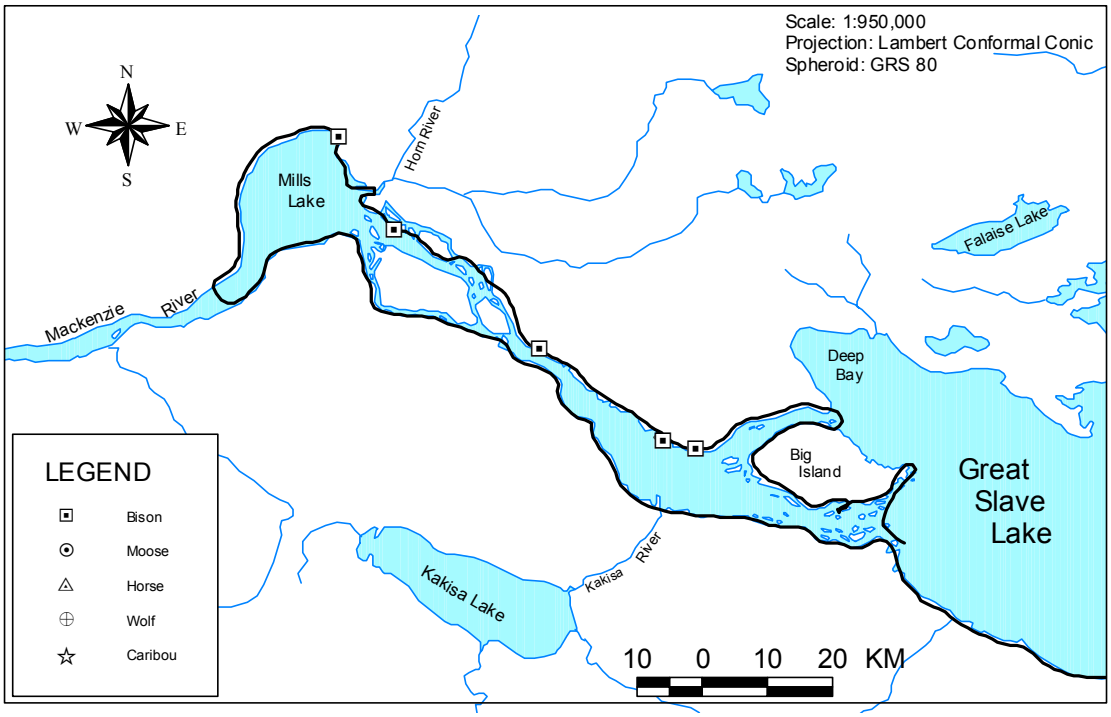

Figure 4.10. Shoreline patrol flown on 15 April, 2003. 2.6 total hours flown on survey.

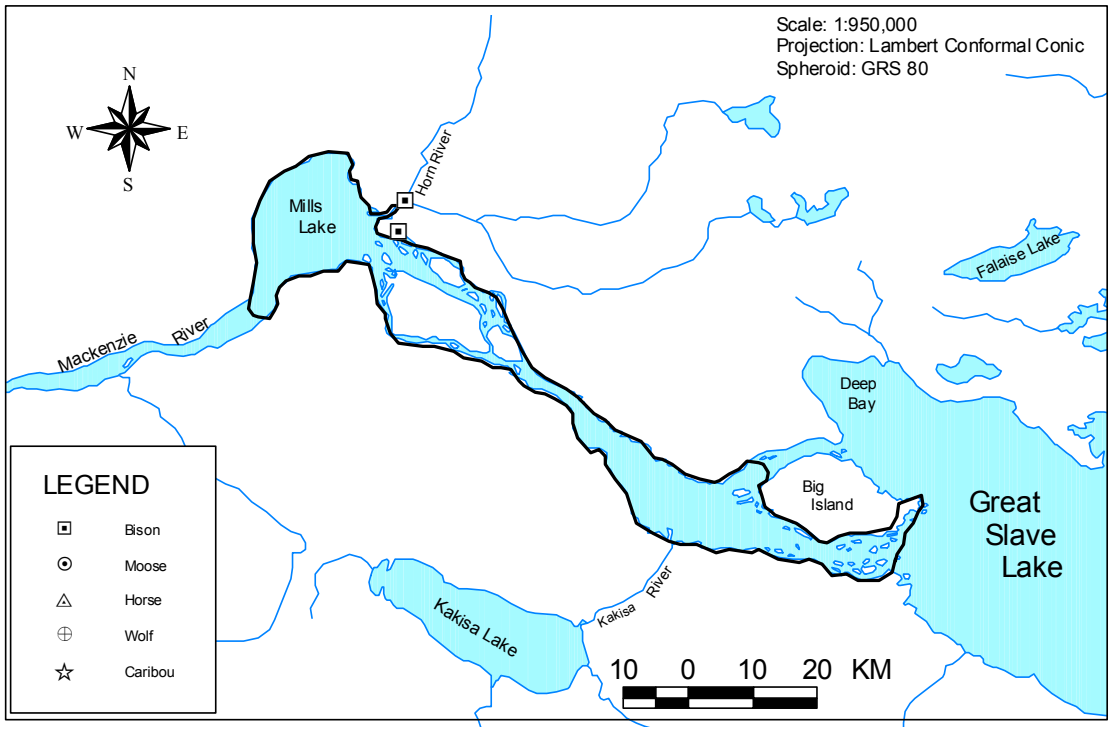

Figure 4.11. Shoreline patrol flown on 25 April, 2003. 2.5 total hours flown on survey.

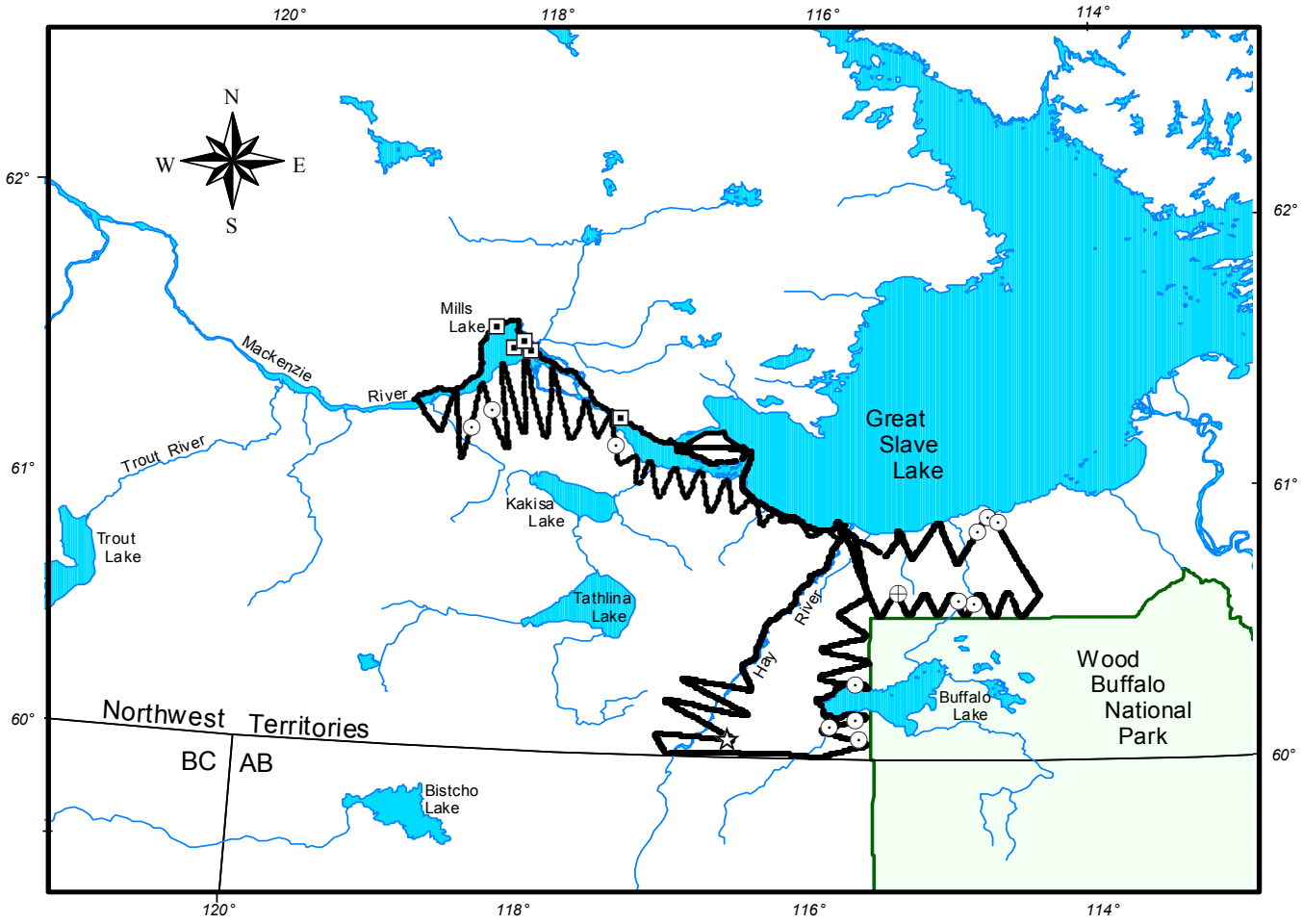

Figure 5.1

Flightline of survey aircraft and large animals observed during the January Semi-Comprehensive survey of the Bison Control Area, Zone 1. 30-31 January, 2003

Legend

- Bison
- Moose
- Caribou
- Wolves

Map Scale: 1: 2,500,000
Projection: Lambert Conformal Conic
Spheroid: GRS 80

20 0 20 40 60 Kilometers

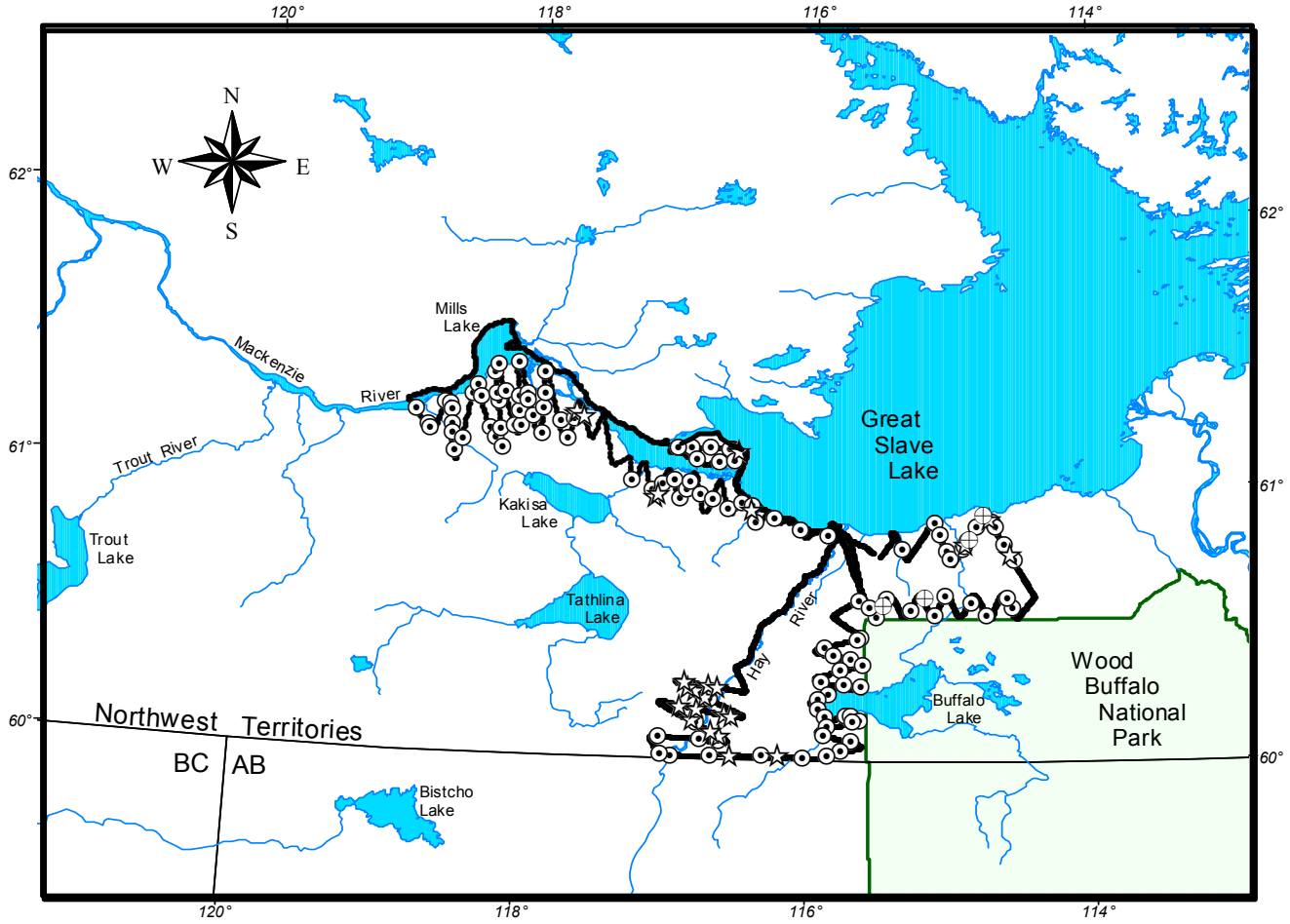

Figure 5.1a

Flightline of survey aircraft and large animal tracks observed during the January Semi-Comprehensive survey of the Bison Control Area, Zone 1. 30-31 January, 2003

Legend

- Moose tracks
- Caribou tracks
- Wolf tracks

Map Scale: 1 : 2,500,000
Projection: Lambert Conformal Conic
Spheroid: GRS 80

20 0 20 40 60 Kilometers

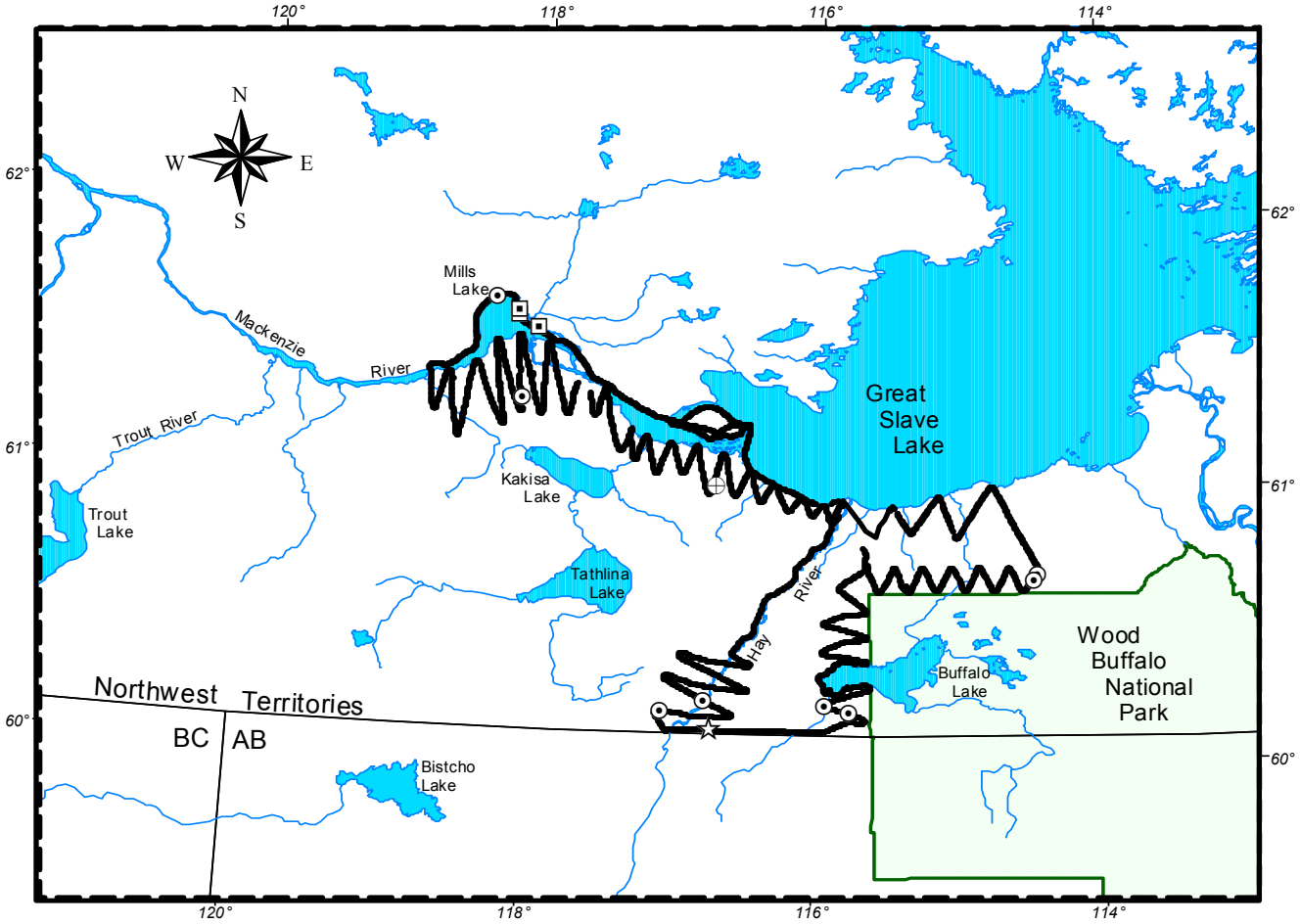

Figure 5.2

Flightline of survey aircraft and large animals observed during the March Semi-Comprehensive survey of the Bison Control Area, Zone 1. 4-6 March , 2003

Legend

- Bison
- Moose
- Caribou
- Wolves

Map Scale: 1: 2,500,000
Projection: Lambert Conformal Conic
Spheroid: GRS 80

20 0 20 40 60 Kilometers

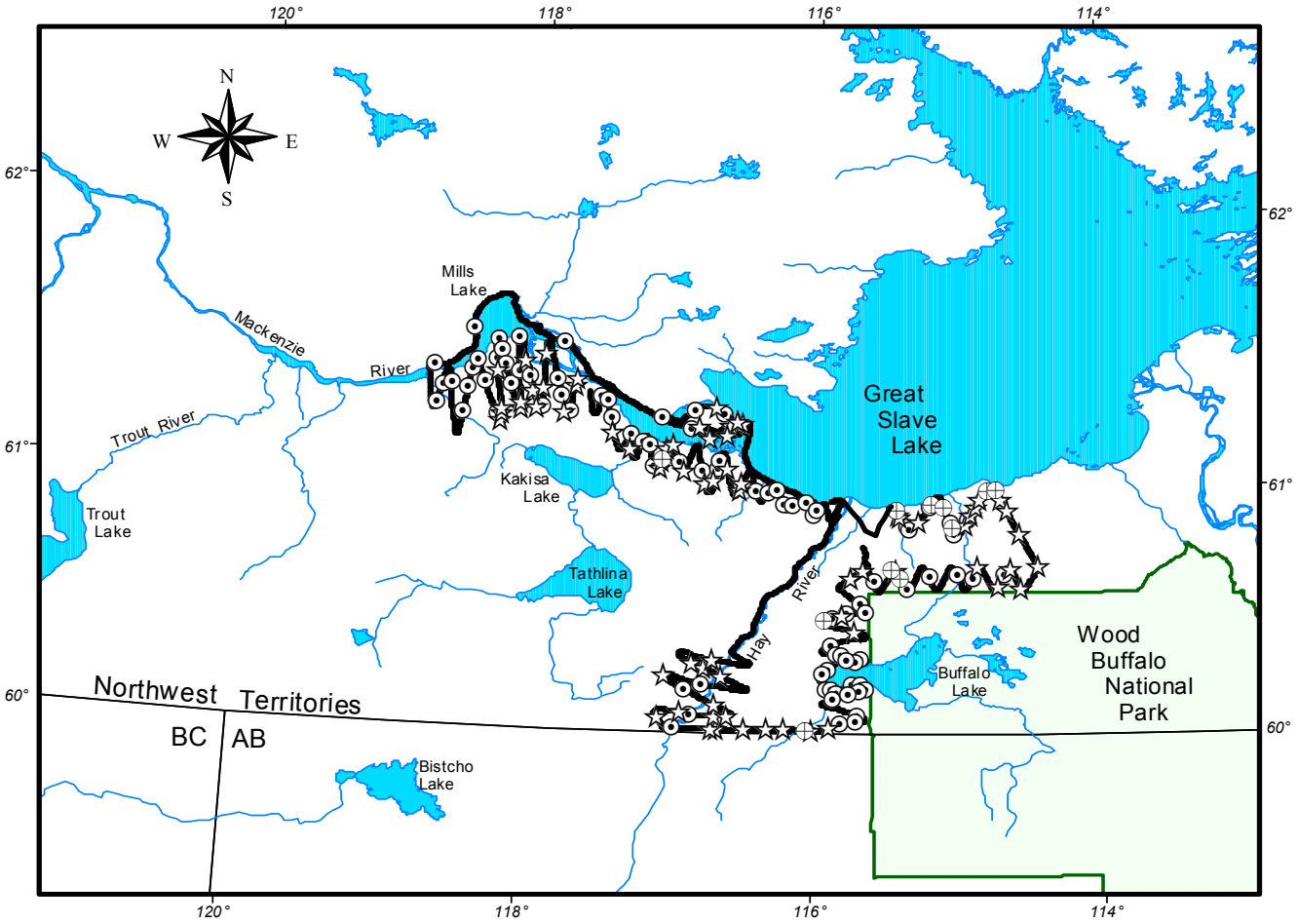

Figure 5.2a

Flightline of survey aircraft and large animal tracks observed during the March Semi-Comprehensive survey of the Bison Control Area, Zone 1. 4-6 March, 2003

Legend

- Moose tracks
- Caribou tracks
- Wolf tracks

Map Scale: 1 : 2,500,000
Projection: Lambert Conformal Conic
Spheroid: GRS 80

20 0 20 40 60 Kilometers

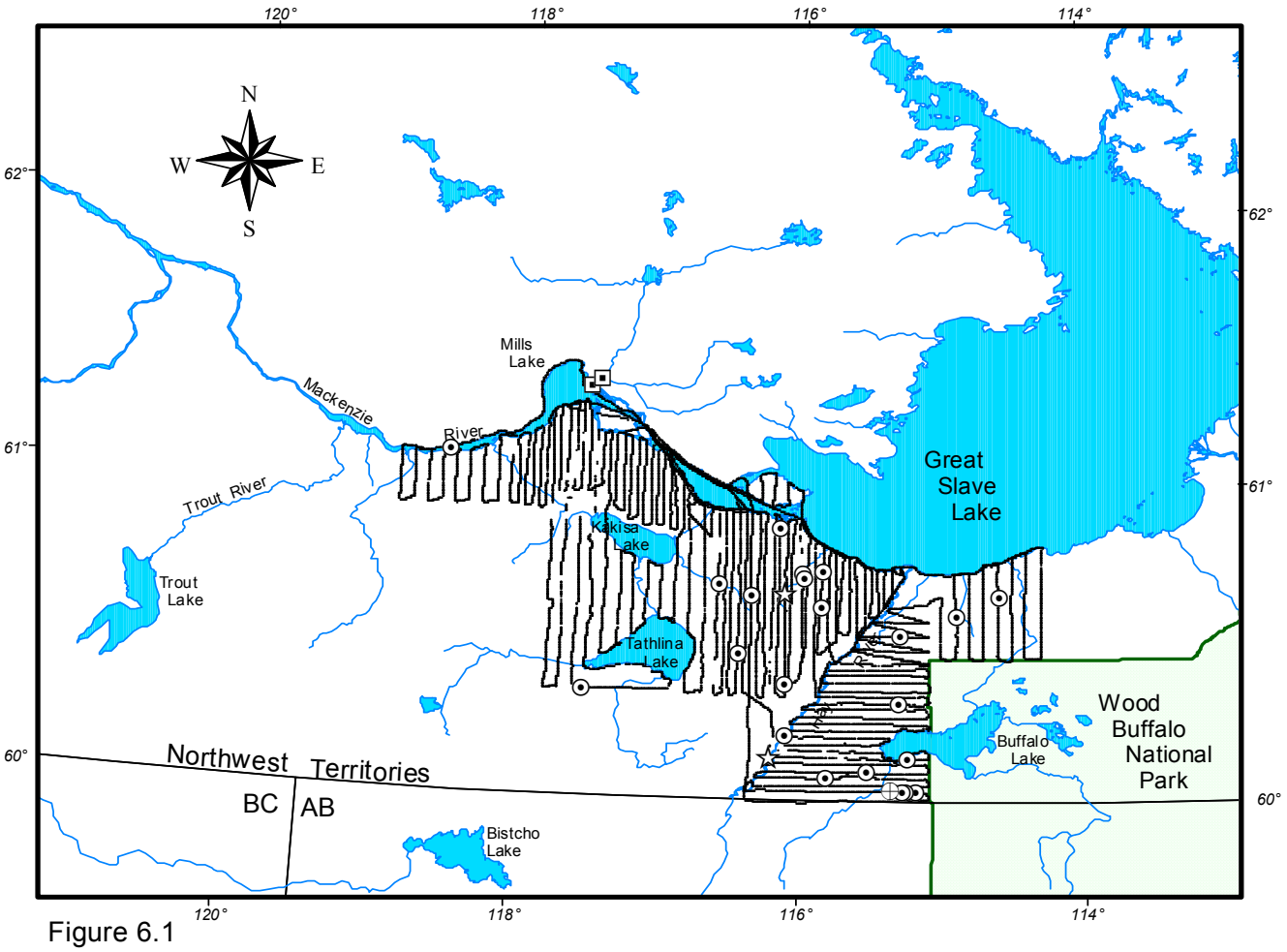

Figure 6.1

Flightline of survey aircraft and large animals observed during the Comprehensive survey of the Bison Control Area, Zones I & II. 1-6 April, 2003.

Legend

- Bison
- Moose
- Caribou
- Wolves

Map Scale: 1: 2,500,000
Projection: Lambert Conformal Conic
Spheroid: GRS 80

20 0 20 40 60 Kilometers

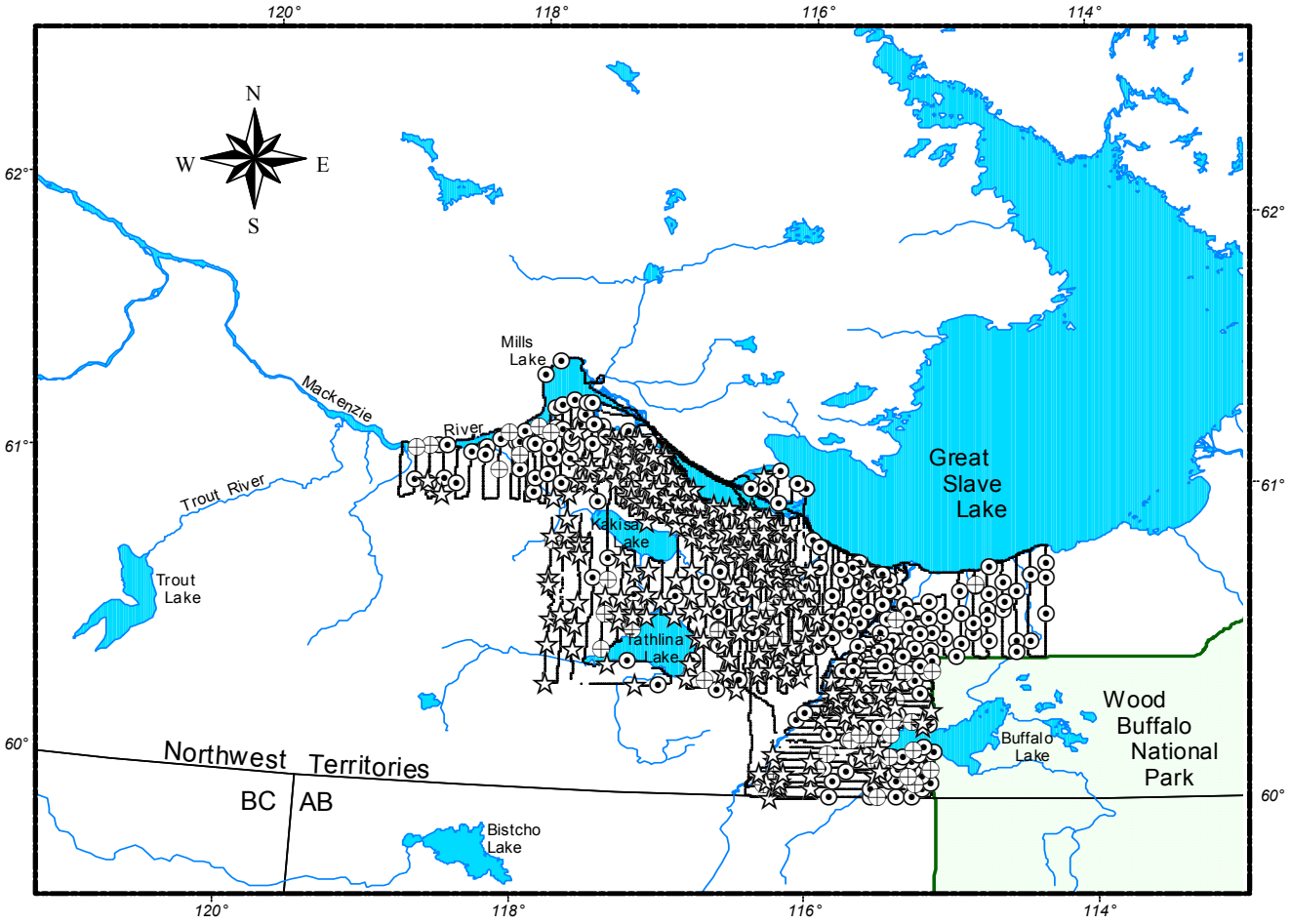

Figure 6.1a

Flightline of survey aircraft and large animal tracks observed during the Comprehensive survey of the Bison Control Area, Zones I & II. 1-6 April, 2003.

Legend

- Moose tracks
- Caribou tracks
- Wolf tracks

Map Scale: 1: 2,500,000
Projection: Lambert Conformal Conic
Spheroid: GRS 80

20 0 20 40 60 Kilometers

Table 1. Summary of shoreline patrols in the Bison Control Area from January to April 2003.

Date	Ferry Hrs	Survey Hrs	Date	Ferry Hrs	Survey Hrs
09 Jan. 2003	2.0	2.3	12 Mar. 2003	2.8	2.6
15 Jan. 2003	3.0	2.8	19 Mar. 2003	2.1	2.3
23 Jan. 2003	2.1	2.5	26 Mar. 2003	2.2	2.5
05 Feb. 2003	2.5	2.5	15 Apr. 2003	3.0	2.6
12 Feb. 2003	2.2	2.6	25 Apr. 2003	0.0	2.8
18 Feb. 2003	2.2	2.5			
			Total ferry hours: 24.1		Total survey hours: 27.7

Table 2. Summary of surveillance flights in the Bison Control Area during January, March and April 2003.

Date	BCA Zone	Hours flown
30-31 Jan. 2003	I (Semi)	11.0
4-6 Mar. 2003	I (Semi)	11.3
1-6 Apr. 2003	I & II (Comp)	39.8
	Total hours:	62.1

Table 3. Recorded sightings of large mammals observed during all surveillance flights in the Bison Control Area, January - April 2003.

Species	Shoreline patrols (n = 14)	Surveillance flights: Semi-Comprehensive (n = 2)	Surveillance flights: Comprehensive (n = 1)	Totals
Bison	1191	341	5	1537
Caribou	0	10	8	18
Moose	11	31	33	75
Wolf	0	4	1	5

The cumulative totals of large mammals observed during shoreline patrols and surveillance flights were 1,537 bison, 18 caribou, 75 moose, and 5 wolves (Table 3).

Communications

A draft Bison Control Area website was created by Daniel Potvin during the 2000/2001 surveillance season (Potvin *et al* "in prep"). This website was created as a means of informing the public of the BCA on a year-round basis. An effort to complete and update this website was made during the 2002/2003 surveillance season. We asked Doug Hartt and his staff from the Yellowknife RWED offices to assist us in making the necessary adjustments to finalize the site. When complete, the site will be located at: http://www.nwtwildlife.rwed.gov.nt.ca/NWTwildlife/bison/bison.htm

A radio announcement was aired periodically on the Canadian Broadcasting Corporation (CBC) to inform residents, as well as tourists visiting the Territories, 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 C). This radio message was also aired as an "Anik-info" spot on CBC-North television.

A half page color advertisement was included in the 2003 Explorers Guide as well as in UP HERE magazine (Appendix D). This advertisement was designed to reach a wider audience. It was designed to inform the public about the Bison Control Program and its goals, and to solicit public participation.

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 2002/2003 season. Nevertheless, the occurrence of four bison crossing the river provides strong rationale for the continuation of shoreline surveys. These weekly patrols enable us to confirm that bison are not present in the BCA. Absence of bison in the BCA should not be presumed.

2. Because this season's shoreline patrols were flown out of Fort Smith, we were able to survey the shoreline between Hay River and the South Channel of the Mackenzie River. Although this may not be logistically feasible to implement every surveillance season, it is an area that should be patrolled on an occasional basis as bison have been observed in and removed from the area in the past the area (Figure 4. in Gates *et al* 1992). In addition, Gates & Wierchowski (2003) suggest that this area has a high likelihood of being used as a travel corridor for bison through the BCA.

3. Publicity on the BCA Program should be expanded further next season. A well-advised public is more likely to report sightings of bison. In addition to the media spots in place, next season we suggest that meetings be held with communities in and around the BCA and information on the Bison Control Program be published in the major newspapers of the Northwest Territories.

4. Once the Website is set up and functioning it must be updated regularly when changes or data within the program occur. We recommend semi – annually.

ACKNOWLEDGMENTS

The BCA program for 2002 – 2003 surveillance year was funded jointly by RWED South Slave Region and Parks Canada, WBNP.

Several individuals played an important role in conducting the Bison Control Area Program during the 2002-2003 surveillance season. Department of Resources, Wildlife and Economic Development personnel Gladys Schaeffer and Melissa Johns in Fort Smith handled administrative aspects such as staffing and pay records. Regional Biologist, Deborah Johnson, assisted with January's semi-comprehensive survey of the BCA. Renewable Resource Officer Evelyn Krutko and trainee Edward Landry from Fort Providence assisted with logistics and shared their concerns and advice for on-going success of the Bison Control Program. We thank the community participants who assisted with the surveillance flights; they are Sam Elleze and Lester Antoine of Fort Providence; and from Hay River, Leon Thomas, Jim Thomas and Joe Cayen. Thanks also goes to aircraft pilots Chris Williams from Big River Air, Darcy King from Landa Aviation, and Ted Malewski of Air Providence for their input and expertise during surveillance flights. Wendy Bidwell and Lynda Yonge assisted with final editing and manuscript preparation.

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APPENDIX A: Summary of weather conditions during shoreline patrols and surveillance flights throughout the Bison Control Area Program surveillance season 2002-2003

Summary of weather data during shoreline patrols - BCA 2002/03 surveillance season.

Date	Patrol #	Zone	Temp	Winds	Sky	Light	Intensity	Snow Cover
9-Jan-03	1	I	-25 C	10 kts - W	Scattered	Bright	Medium	Low veg Showing
15-Jan-03	2	I	-29 C	Calm	Clear	Flat	Low	Low veg Showing
23-Jan-03	3	I	-41 C	Calm	Clear	Bright	Medium	Low veg Showing
5-Feb-03	4	I	-14 C	10 Kts - W	Scattered	Bright	High	Low veg Showing
12-Feb-03	5	I	-25 C	Calm	Scattered	Flat	Medium	Low veg Showing
18-Feb-03	6	I	-20 C	15 Kts - NW	Clear	Bright	High	Low veg Showing
12-Mar-03	7	I	-27 C	5 Kts - W	Clear	Bright	High	Complete
19-Mar-03	8	I	2 C	5 Kts - SW	Clear	Bright	High	Complete
26-Mar-03	9	I	-4 C	10 Kts - SE	Scattered	Bright	Medium	Complete
15-Apr-03	10	I	-2 C	15 Kts - SE	Broken	Bright	Medium	Complete
25-Apr-03	11	I	3 C	Calm	Scattered	Flat	Medium	Ground Showing

Summary of weather data during surveillance surveys - BCA 2002/03 surveillance season.

Date	Survey	Zone	Temp	Winds	Sky	Light	Intensity	Snow Cover
30-Jan-03	Jan-Semi	I	-24 C	5 Kts - NW	Clear	Bright	Medium	Low veg showing
31-Jan-03	Jan-Semi	I	-30 C	10 Kts - NE	Scattered	Bright	Medium	Low veg showing
4-Mar-03	Mar-Semi	I	-27 C	10 Kts - SE	Scattered	Bright	Medium	Low veg showing
5-Mar-03	Mar-Semi	I	-24 C	15 Kts - W	Overcast	Flat	Medium	Complete
6-Mar-03	Mar-Semi	I	-28 C	15 Kts - N	Overcast	Flat	Medium	Complete
1-Apr-03	Apr-Comp	I&II	-20 C	5 Kts - N	Broken	Bright	Medium	Complete
2-Apr-03	Apr-Comp	I&II	-18 C	10 Kts - N	Scattered	Bright	Medium	Complete
3-Apr-03	Apr-Comp	I&II	-9 C	10 Kts - N	Overcast	Flat	Medium	Low veg showing
4-Apr-03	Apr-Comp	I&II	-7 C	10 Kts - E	Broken	Bright	Medium	Complete
5-Apr-03	Apr-Comp	I&II	-5 C	5 Kts - E	Scattered	Bright	Medium	Complete
6-Apr-03	Apr-Comp	I&II	-5 C	Calm	Clear	Bright	High	Complete

APPENDIX B: Summary of surveillance activities and removals of bison from the Northwest Territories Bison Control Area program (1988/89 – 2002/03).

Year	Aerial surveillance				Snow-mobile Ground Patrols	Bison Removals
	Shoreline Patrols	Semi-Comprehensive Surveys	Comprehensive Surveys	Total Hours		
1988 / 89	1					
1989 / 90	2					
1990 / 91	2					
1991 / 92		7				
1992 / 93			3			9[a]
1993 / 94	14[b]		1		23	
1994 / 95	10 (26)[c]	6 (94)	1 (34)	153	33	2[d]
1995 / 96	11 (35)	3 (48)	1 (41)	123		3[e]
1996 / 97	21 (62)	3 (45)	1 (46)	153		
1997 / 98	14 (43)	3 (46)	1 (48)	137		
1998 / 99	14 (43)	2 (30)	1 (45)	117		
1999 / 00	14 (42)	2 (28)	1 (46)	115		
2000 / 01	13 (40)	2 (30)	1 (50)	120		
2001 / 02	14 (42)	2 (29)	1 (42)	113		
2002 / 03	11 (28)	2 (22)	1 (40)	90		

[a] 17 May 1992: 7 bulls and 1 bull shot near Point de Roche
31 May 1992: 1 bull shot near Point de Roche (no lymph nodes collected)
Serological testing for Brucella was negative for all 9 bulls, no lesions consistent with tuberculosis observed on gross pathology and histopathology.

[b] Four patrols covered the Hay River area and extended inland to the northwest Park boundary.

[c] Numbers in brackets represent survey hours (rounded off to the nearest hour).

[d] 8 March 1995, 1 cow shot by hunter along south shore of Mackenzie River. Wolves had likely wounded cow. Blood serum and retropharyngeal lymph nodes collected.
13 October 1994, prior to the surveillance season beginning, 1 bison shot by hunter near the
eastern boundary of the BCA. Blood and tissue samples collected but no evidence of brucellosis or tuberculosis.

[e] 19 March 1996: 3 cows killed by hunter on south shore of Mackenzie River. Blood serum (n=2) and retropharyngeal lymph nodes (n=3) collected. No serological reactors to Brucella, and lymphatic tissue normal on gross examination.

APPENDIX C: Summary of bison hazing occurrences along the Mackenzie River during the Northwest Territories Bison Control Area program (1988/89 –2002/03).

	Bison Hazing Occurrences [a]				
Year	Date	Group Size	Composition	General Location	Initial Sighting
1988 / 89	-	-	-	-	-
1989 / 90	-	-	-	-	-
1990 / 91	-	-	-	-	-
1991 / 92	-	-	-	-	-
1992 / 93	-	-	-	-	-
1993 / 94	19 Jan '94	10	Mixed (cow/calf)	Ferry Crossing	Public sighting
	19 Jan '94	3	Bulls	South of Big Island	Same day surveillance
1994 / 95	-	-	-	-	-
1995 / 96	25 Jan '96	10	Mixed (cow/calf)	West of Ferry Crossing	Public sighting
1996 / 97	-	-	-	-	-
1997 / 98	-	-	-	-	-
1998 / 99	-	-	-	-	-
1999 / 00	-	-	-	-	-
2000 / 01	-	-	-	-	-
2001 / 02	01 Feb '02	12	Mixed?	On Ice Road	Public sighting
2002 / 03	23 Jan '03	4	Adults	West of Ice Road	BCA shoreline patrol

[a] All hazing occurrences were performed by personnel in aircraft or on snowmobile and resulted in successfully moving the bison back on the north shore of the Mackenzie River.

APPENDIX D: Anik-Info announcement aired from November 6, 2002 to June 01, 2003.

Visual:

Script:

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 and between Trout River in the west and Buffalo River in the east.

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.

Resident hunters may shoot bison in this area at any time.

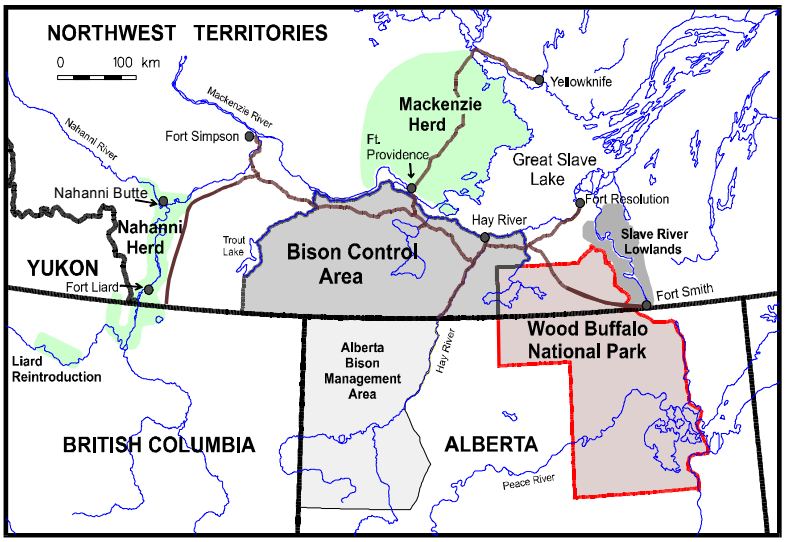
Hunters are required to report kills as soon as possible.

Public participation is an important part of the bison control program.
Please report all sightings.

APPENDIX E: Half page color article published in the 2003 Explorer's Guide & UP HERE magazine.

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 program is jointly funded by the Department of Canadian Heritage and the Government of the Northwest Territories.



All bison in the BCA are presumed to be diseased and must be removed and tested.

In the Northwest Territories, two herds have been re-established and are disease-free. The Mackenzie herd numbers approximately 2000 animals, and represent the largest herd of healthy wood bison in Canada and a cornerstone in the nation's wood bison recovery program. The Nahanni herd now numbers about 150 animals.

Please report any bison sightings in the BCA as soon as possible to the nearest Resources, Wildlife and Economic Development (RWED) office.

Under the Northwest Territories Wildlife regulations, a resident may at anytime, hunt bison within the BCA. A hunter who kills a bison in the BCA is required to report the incident as soon as practical.

If you would like more information regarding the Bison Control Program, please contact any RWED office.

PHONE : Hay River (867) 874-6702
Fort Smith (867) 872-6400
Fort Providence (867) 699-4271
Fort Simpson (867) 695-2231
Fort Liard (867) 770-4311