Winter Elk Survey, 2003

Ma Maw Wechehetowin
Working Together/Helping Each Other

A report on the Partnership Elk Survey conducted by:

Prince Albert Model Forest
Prince Albert National Park
Saskatchewan Environment
Montreal Lake Cree Nation

Prepared by Nelson Ackerman
October 29, 2003

Introduction

In January 2003, Montreal Lake Cree Nation (MLCN) and Saskatchewan Environment (East Boreal EcoRegion and Fish & Wildlife Branch) submitted a proposal to Prince Albert Model Forest (PAMF) for assistance in conducting an aerial elk survey. The purpose of this survey was to collect information on elk numbers, distribution and population composition within the Wapus Lake Elk re-establishment area. This data combined with ground observations and consultation with licensed hunters and First Nations will be used to determine future elk management for the area.

Following initial discussions, Prince Albert National Park became a partner for this survey. Their contributions included; providing a base of operations for the helicopter survey, funding for the actual elk survey (which included PANP), technical expertise regarding the Park area surveyed, as well as fuel for the helicopters.

The Prince Albert Model Forest provided the funding for the helicopter flying outside the PANP. The PAMF coordinated media coverage with local television and newspaper and prepared a write-up for the PAMF *Forest Times* publication.

Methodology

Meetings were held by Saskatchewan Environment (SE) and Prince Albert National Park to coordinate the planning of the survey. The area to be surveyed was determined by the Wapus Lake re-establishment area and the Park boundaries. The southwest ¼ of the Park was omitted from the survey because the Park had recently surveyed that area and was not interested in acquiring further species information. (See attached maps 1,2&3)

In order to cover the entire survey area with the available budget, the transects were spaced 2.5km.apart. All elk observed on the flight lines were sexed and aged to determine herd structure. Other species were observed and recorded opportunistically, such as moose, woodland caribou, wolves and bison.

To cover the safety concerns of conducting the survey, two helicopters, a Bell 206 and a Eurocopter A-Star, were used. Flight Watch was operated from the PANP Warden Office to monitor the movement and progress of the helicopters throughout the survey.

<u>Logistics</u>

- Total time to develop and conduct the survey was 60 Person days.
- The total linear distance of the transects was 1560km.
- Total helicopter time to complete the survey was 33.1 hours.

Survey Personnel

Crew A
Nelson Ackerman – SE East Boreal EcoRegion
Ed Kowal – SE East Boreal EcoRegion
Elaine Sluchinski – SE Fish & Wildlife – Prince Albert
Bob Derksen – Pilot, Transwest Air

Crew B
Peter Ashcroft – SE Fish & Wildlife – Regina
Bob Skaftfeld – SE Fish & Wildlife – Regina
Lorne Sullivan – SE Parkland EcoRegion
Dave Knihniski – SE East Boreal EcoRegion
Twain Anderson – Pilot, North Central Helicopters

Survey Coordinator
Ed Beveridge – SE Fish & Wildlife – Prince Albert

Flight Watch
Kelly Sawchuk – SE Weyakwin Fire Base
Terry Barlow – SE Weyakwin Fire Base

Saskatchewan Environment's in-kind contributions towards planning and implementing this survey were 59 Person days. Montreal Lake Cree Nation's in-kind contribution was 10 Person days.

Results

Table 1 (page 5) provides a summary of the elk data collected and the population breakdown of males : females : juveniles.

Table 2 provides a summary of all species observed during the survey.

Table 2. Summary of all species observed

Sector	Elk	Moose	Caribou	Wolves	Bison
A	86	25	0	6	0
B	0	27	9	0	0
C	0	6	0	3	0
D	192	140	0	0	0
E	0	16	0	0	0
F	0	29	0	3	33
Total	278	243	9	12	33

Discussion and Conclusions

All elk observed were in the two southern sectors, A and D. Proximity to the forest/farmland interface and the presence of hardwood dominated forest cover, influenced the numbers and distribution of elk in the surveyed area. Hardwood dominated tree stands and open areas offered greater observability to locate elk. Much of the northern portion of the survey area is dominated by softwoods, which reduced the surveyors' ability to spot elk from the aircraft. There were no elk observed in Sectors B,C,E and F because of the heavy tree cover and spacing distance between flight lines, although elk tracks were noted.

The bull to cow ratio of 19.5 bulls : 100 cows is considered a conservative estimate of the actual proportion of bulls in the population since bulls are in much smaller groups in the winter than cows and more difficult to find. The juvenile to cow ratio, 45 juveniles : 100 cows, indicates good productivity and is comparable to other surveys that have been done in the province. Overall, the population structure observed suggests a healthy and growing population.

In conclusion, the survey methodology has provided good data to estimate the structure and productivity of the area's elk population, but did not provide information required for a precise population estimate. Because of the wide spacing of flight lines and the heavy tree cover in some areas, the numbers of elk observed should be considered a very conservative estimate of the population.

Future surveys should investigate and consider methods that may improve their use for population estimates, such as narrower distances between transect lines, a more focused survey area, and appropriate modifications to the survey methodology.

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Table 1. Summary of elk observations.

ELK SURVEY

WMZ: PAMF_PANP
03-Feb-03

Estimated Total Population	ERR	+/-	ERR	Plus or Minus %
Lower / Upper Limits	ERR	to	ERR	ERR
Density	ERR /sq.km.		ERR /sq.mi.	

Sex & Age Ratios

	Males	Females	Juveniles	Total
Sample (classified)	33	169	76	278
M/F/J Ratio	19.5	100	45.0	
Lower	15.4	100	39.2	
Upper	23.7	100	50.7	
Percent	11.9%	60.8%	27.3%	-
90 % C.L. (plus or minus)	2.5%	3.8%	3.5%	-
Population Split	ERR	ERR	ERR	ERR

SAMPLE & SU DATA

SAMPLE DATA

BULLS

Antlerless	0	0.0%
Yearling	23	69.7%
Medium	3	9.1%
Large	7	21.2%

COWS & CALVES

Singles	169	100.0%	Twinning
w/ 1 Calf	0	0.0%	Rate
w/ Twins	0	0.0%	0.0%
Lone Calves	76		

Classified:	Bulls 33		Cows 169		Calves 76
Unclassified: 0			Total Elk:		278

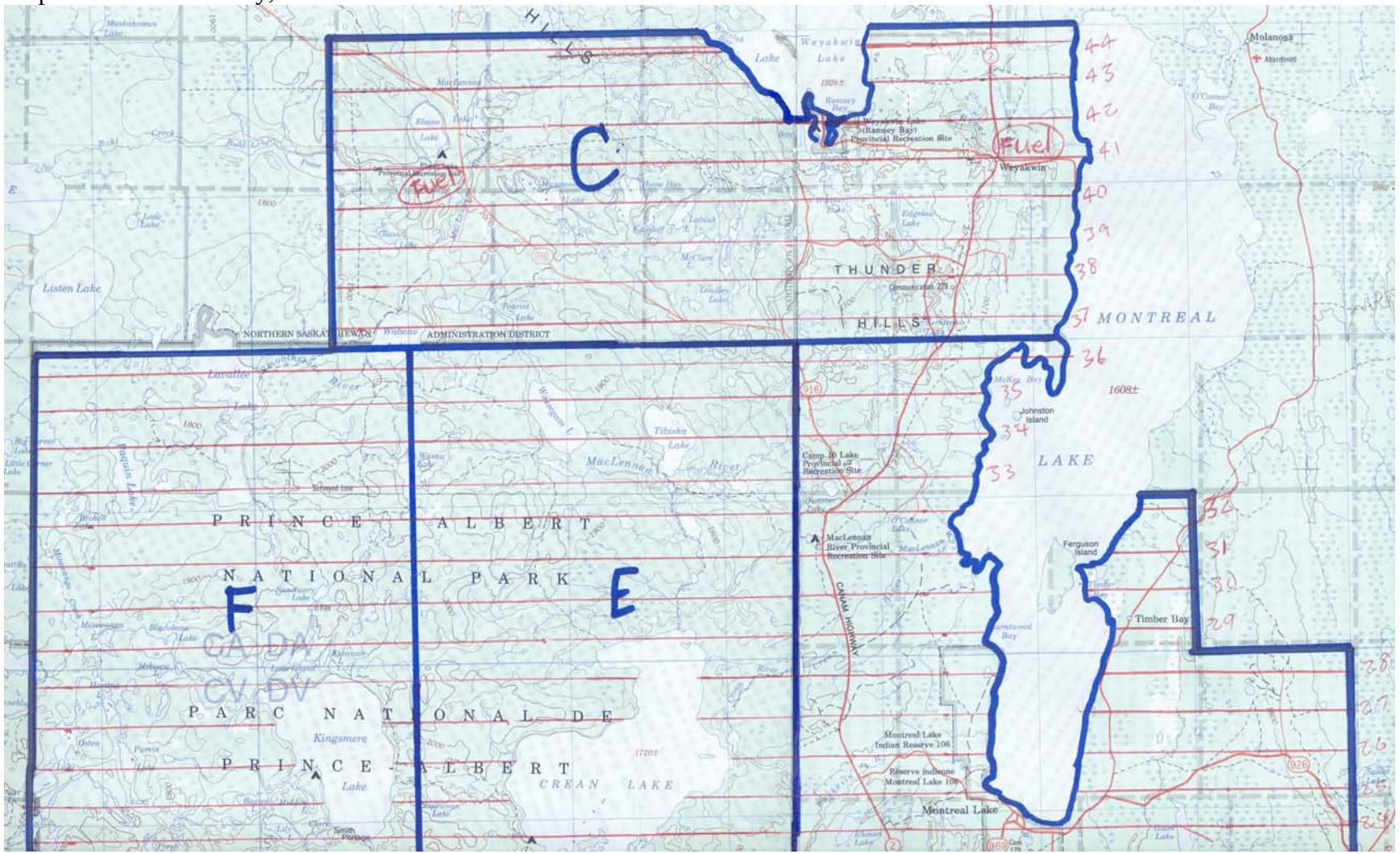
SU DATA

Stratum	n SU's	Sq.Km.	n Flown	Density
L	0.0	0.0	31	ERR
M	0.0	0.0	0	0.00
H	0.0	0.0	0	0.00
4	0.0	0.0	0	0.00
5	0.0	0.0	0	0.00
Totals	0.0	0.0	31	ERR

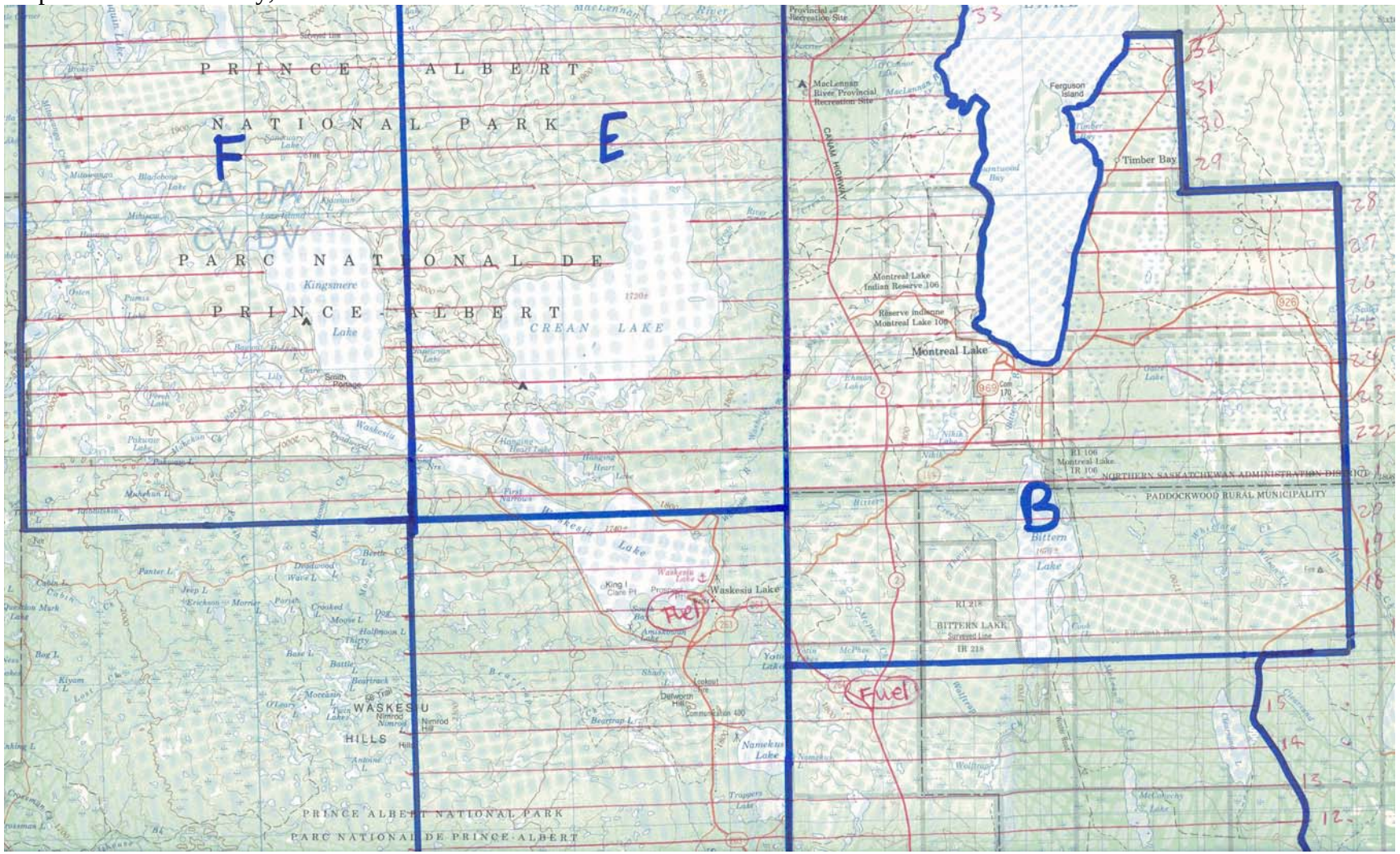
For Value of t, use 2.0 for 95% C.L., 1.6 for 90% & 1.3 for 80%.

t Value	1.6
% C.L.	90

Map 1. Winter elk survey, 2003.



Map 2. Winter elk survey, 2003.



Map 3. Winter elk survey, 2003.