1974 '75 + 1976 Results Inside

MOOSE COUNTS - Old Crow 1974

D. Mossop

Moose were counted from a Bell 47G helicopter flown at an altitude of 50-75 feet, concurrent with waterfowl census on the Old Crow Flats. Transects were flown north south and south north across the flats corresponding to the map grid lines on the 1:250,000 topographic map sheets produced by the Department of Mines and Technical Surveys, Ottawa. These lines are approximately six miles apart.

Eight such transects were flown in each survey and the transit distance between the ends of consecutive lines was added to the total distance flown. All moose within 1/8 mile (estimated) on either side of the flight line were counted and classified: bull, cow, or calf.

This survey was done 3 times; once on July 19, once on August 15-18 and once on August 31-September 3. The first survey consisted of only four transects with a total distance of 172 miles. The other two covered all 8 transects and had a total distance of 347 miles.

The times and weather conditions of the three surveys were as follows:

Survey	Dates	Times Flown	Weather
1	July 10	1000 - 1600	Overcast, some rain
2	Aug 15	1430 - 1820	Clear
	Aug 18	1300 - 1820	Overcast, no rain
3	Aug 31	1210 - 1815	Clear, warm
	Sept 3	1300 - 1540	Clear, very windy

Number moose counted on transects, Old Crow Flats 1974

Date		Transect Number 1	2	3	4	5	6	7	8	Total moose seen	Square miles censused
July 10	Bulls	2	-	1	-	0	-	4	-	7	43.00
	Cows	0		0		1		2		3	
	Cvs.	0		0		0		1		1	
Aug 15-18	Bulls	0	3	0	3	1	0	3	1	11	86.75
	Cows	2	2	1	1	0	0	0	1	7	
	Cvs.	1	2	0	1	0	0	0		4	
Aug 31-Sept 3	Bulls	1	0	4	4	0	1	0	0	10	86.75
	Cows	1	0	1	1	1	0	0	0	3	
	Cvs.	0	0	2	1	1	0	0	0	4	

Twinning Rate:

Eight cows were seen with calves. Of these only one had twins (12.5%).

Number of Moose on Flats:

The number of moose on the flats was determined by extrapolating the census of the transect strips to the entire flats. The area of the flats is 1,610 square miles; the area censused (86.75 square miles) is 5.3% of the entire area. The density of moose was further adjusted to take into account the fact that 40% of the flats is covered by open water.

The total population was determined assuming that cows and calves were not seen as readily as bulls. It was assumed that at least as many cows as bulls occur on the flats. The production of calves was determined from the sample of cows seen and then adjusted to include the calculated total population of cows.

July 10: Bulls ..... 261.8 (Factor: 37.4)
Cows 112.2
Calves .... 43.0 > 38 : 100

Assuming 50:50 sex ratio, total adult population 524

Production of calves 16.1%
Adjusted total production of calves 84

Total moose on flats 608

Density: (a) entire flats .... 0.37 moose/ sq. mile
(b) land area ..... 0.63 moose/ sq. mile

Aug 15-18: Bulls ..... 202.4 (Factor: 18.4)
Cows 129.0
Calves .... 73.6 5 6 : 100

Assuming 50:50 sex ratio, total adult population 405

Production of calves 22.2%
Adjusted total production of calves 89

Total moose on flats 494

Density: (a) entire flats .... 0.30 moose/ sq. mile
(b) land area ..... 0.51 moose/ sq. mile

Aug 31-Sept 3	Bulls	184.0	(Factor: 18.4)
	Cows	55.0	
	Calves ...	75.0	> 136 :00

Assuming 50:50 sex ratio, total adult population 368

Production of calves ..... 40.5% **
Adjusted total production of calves 147

Total moose on flats 515

Density: (a) entire area ..... 0.32 moose/ sq. mile

(b) land area ..... 0.53 moose/ sq. mile

** Very few lone cows were seen during this survey. There is a possibility the rut which had begun by the date of this count may have interfered with the distribution of moose on the flats. The count of cows may thus have been biased.

MOOSE COUNTS, OLD CROW FLATS, 1975

D. Mossop

Moose were counted from a Hiller 12-E helicopter flown at an altitude of 50-75 feet concurrent with waterfowl census. The transects flown were the same as those described in the report of Old Crow Flats Moose counts in 1974 (report on file). The pilot was E. Sigurdson.

The survey was flown three times during the summer. The total length of the transects was 332 miles. (15 miles shorter than 1974). The times and weather conditions of the three surveys were as follows:

Survey	Dates	Times flown	Observers	Weather
1	June 12	09:30 - 17:32	D. Mossop	overcast-bright
	13	16:00 - 18:30	K. Sars	overcast, clearing
			G. Baird	wind nil.
2	Aug. 4	11:05 - 18:00	D. Mossop	bright, 75% overcast
			G. Baird	wind nil
3	Sept. 1	11:20 - 19:00	D. Mossop	overcast, clearing
			G. Baird	wind light.

Number of moose counted on transects, Old Crow Flats, 1975

Date		Transect number 1	2	3	4	5	6	7	8	Total moose	Square miles censused
June 12-13	Bulls	0	0	3	0	0	2	0	0	5	83.0
	Cows	3	2	3	1	0	2	1	0	12	
	Calves	3	2	1	1	0	0	1	0	8	
Aug. 4	Bulls	4	2	4	0	0	0	0	0	10	83.0
	Cows	5	2	1	2	0	0	0	0	10	
	Calves	6	1	0	1	0	0	0	0	8	
Sept. 1	Bulls	5	3	0	1	0	0	2	0	11	83.0
	Cows	4	1	3	6	0	1	0	2	18	
	Calves	5	0	2	3	0	0	0	1	11	

Cow-Calf Ratio: Twinning Rate.

Our work on the ground in the flats this summer allowed us to accumulate observations of moose in addition to those taken during air counts. Lumping all observations of cows throughout the summer yields the following data.

Cow-Calf ration and twinning rate, Old Crow Flats, 1975

	in transects		Ground Observations		Total Cows	Total Calves	Twins (sets)	Twinning Rate	Cow/ Calf Ratio
	Cows	Calves	Cows	Calves					
June	12	8	15	9	27	17	4	14.8%	100:63
July	--	--	3	3	3	3	1	33.3%	100:100
August	10	8	1	2	11	10	3	27.3%	100:91
September	18	11	4	5	22	16	5	22.7%	100:73
TOTAL ALL YEAR	40	27	23	19	63	46	13	20.6%	100:73

This year's twinning rate and cow/calf ratio are very high and indicate a very good year of calf production on the flats. The overall increment to the population is in the order of 36%.

Number of Moose on the Flats

The area censused (83 sq. miles) represents 5.2% of the entire flats. No adjustment was entered with this year's counts to account for different visibility of the sexes as bulls and cows were counted with almost equal frequency. The total number of moose was thus extrapolated directly.

Estimated moose population, Old Crow Flats, 1975

Count Period	Bulls	Cows	Calves	Total	Density whole flats (/sq.mi.)	Density land area
June	96	230	153	479	0.29	0.49
August	192	192	153	537	0.33	0.56
September	211	346	211	768	0.48	0.80

The measured build-up of moose numbers over the summer may be of interest in understanding the use of the flats by moose. The final understanding of these statistics will have to await a detailed study of moose movements and annual cycle of activity on the Old Crow Flats.

MOOSE COUNTS, OLD CROW FLATS - 1976

D. Mossop

Moose were counted from a Bell 47G helicopter flown on straight transects 50 - 75 feet above ground level across the Old Crow Flats. Similar transects as those described in 1974 (report on file) were used. The pilot was L. Osburn.

The survey was flown twice, once in late May, the other in early September. In addition, observations of moose taken incidental to other work on the Flats were recorded. This allowed accumulation of more data on calf crop and general movements which are here given.

Table 1. Number of Moose Counted on Transects, Old Crow Flats - 1976

Date		TRANSECT 1	2	3	4	5	6	7	8	Total Moose	Square Miles
May 30-31	Bulls	0	1	0	0	0	0	0	0	1	83.0
	Cows	1	1	3	0	0	1	9	0	15 } 18	
	Calves	0	1	0	0	0	0	1	0	2	16% calves
Sept. 6	Bulls	1	2	0	0	1	0	0	0	4	83.0
	Cows	4	3	3	1	1	1	4	0	17 } 26	
	Calves	0	1	2	1	0	0	1	0	5	

These counts show some differences from those of last year. The cow count is almost identical and varies little from count to count within any one year. For some reason, bulls were not counted with as great a frequency this year. It seems most logical to assign this to unknowns relative to distribution. The calf crop is also noticeably smaller than last year's.

Cow-Calf Ratio

Ground observations of cows are lumped with air counts for the purposes of the calculations.

Table 2. Cow-Calf Ratios, Old Crow Flats - 1976

	Transects (September)	Ground Counts (June - Sept.)	Totals	Rates
Cows	17	14	31	(cow-calf ratio)
Calves	5	5	10	100:32
Twins (sets)	nil	nil	nil	Twinning rate 0%

This indicates a significant decline in the production from this population in 1976. The calf crop, as measured, is about half that of 1975 and the twinning rate which in 1975 was 20% has dropped to zero.

The causes of this decline and its effects on the population are unknown. The overall increment to the population this year is in the order of 16% (down from 36% in 1975).