

National Park Service, Alaska Region
Natural Resources Survey and
Inventory Report AR- 81/05



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WINTER MOOSE CENSUS

DENALI NATIONAL PARK

National Park Service

Anchorage, Alaska

Submitted by:

Will Troyer
Management Biologist

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1981

INTRODUCTION

An aerial moose census was conducted in the eastern portion of Denali National Park in November 1981. All surveys were conducted from a Piper Super Cub PA-18, piloted by Will Troyer. Observers were Vic Van Ballenberge of the Institute of Northern Forestry and John Dalle Molle of the National Park Service. Both observers and the pilot had previous experience in conducting moose surveys in Alaska. This was my eighth consecutive year of flying the survey.

The census was conducted on November 18, 19, and 20, 1981. Clear weather and temperatures of around 0° Fahrenheit prevailed during the survey providing excellent visibility; however, snow conditions were very marginal with only a few inches remaining on the ground. In portions of the area a sprinkling of fresh snow partially covered the trees, but in other areas wind had already uncovered the vegetation. In addition, in certain areas we encountered wind turbulence, therefore, I would have to rate survey conditions as fairly poor.

We also observed several adult bulls with single antlers, indicating that antler shedding was already underway, thus our sex ratio may have been slightly biased toward cows.

The areas covered were counting units 12A, 13A, 14, 15 and 16 which included the Riley Creek, Hines Creek, Savage River and Sanctuary River Drainages. Usually the Teklanika Drainage is also included in this

census but the plane developed some mechanical problems and this drainage was not flown. The census area basically covers the home range of the Savage River wolf pack.

The objectives of the survey were to sample the population to determine, age composition, productivity and population trends.

RESULTS AND DISCUSSION

The eastern portion of the park censused includes the most concentrated moose population in the park and has been censused annually since 1974. During some years, however, due to unsatisfactory weather conditions, incomplete counts were obtained. This was particularly true in 1975, 1979 and 1980.

A total of 258 moose were tabulated and classified as shown in Table 1.

A total of 177 cows, 29 calves and 52 bulls were seen. The bull-cow ratio was 29.4 and the cow-calf ratio 16.4 calves per 100 cows as shown in Table 2. These ratios, however, may be a minimum because of the fact that some bulls may have already dropped their antlers thus inflating the percentage of animals tabulated as cows.

The percentage of calves surviving to the November count continues to be low having varied from a high of 27.9 calves per 100 cows in 1979 to 5.1 in 1980, both of which were incomplete counts. Because of the variation in counting conditions during the past years, however, it cannot be determined from the total count whether the population is in a decline or holding its own. My personal observation would indicate there has been little change; however the population should continue

to be monitored to determine the long-range trend, particularly when the calf ratio is continuously low.

Table 1

Composition of the Moose Population
in Denali National Park
by Counting Units - 1981

Area	Bulls		Total Bull	Single Cows	Cows with one Calf		Cows with two Calves		Total Calves	Total Cows	Total Adults	Total Moose
	Yng.	Adult										
12A*	0	2	2	8	0	0	0	0	0	8	10	10
13A	4	12	16	47	11	11	0	0	11	58	74	85
14	1	10	11	38	9	9	0	0	9	47	58	67
15	4	15	19	46	8	8	0	0	8	54	73	81
16	0	4	4	9	1	1	0	0	1	10	14	15
17	Not Censused											

*No. 13 - North of Park Road - Savage to Nenana River
 No. 14 - Riley Creek Drainage and Headwater Creek
 No. 15 - Savage Drainage
 No. 16 - Sanctuary Drainage
 No. 17 - Teklanika Drainage

Table 2

Moose Population Ratios in the Eastern Portion
of Denali National Park - Sanctuary, Savage and
Riley Creek Drainage - 1974 - 1981

Year	Small Bulls Per 100 Cows	Total Bulls Per 100 Cows	Calves Per 100 Cows	Percent Calves	Percent Bulls	Total Moose	Comments
1974	2.9	43.8	18.9	8.6	26.9	275	
1975	0.0	28.8	8.2	6.0	20.9	281	Poor weather
1976	4.8	30.7	14.3	9.8	21.2	415	Excellent conditions
1977	10.3	44.6	18.4	11.3	27.3	300	
1978	8.6	25.8	18.4	12.7	17.9	251	
1979	7.4	23.5	27.9	18.4	15.5	103	Survey not completed
1980	3.2	25.8	5.1	3.9	19.7	203	Survey not completed due to winds and poor snow
1981	5.0	29.4	16.4	11.2	20.2	258	Teklanika Drainage not surveyed