

National Park Service, Alaska Region
Natural Resources Survey and
Inventory Report AR- 74/01

SB
482
.A511
no. 74/01



WINTER MOOSE CENSUS
MOUNT MCKINLEY NATIONAL PARK, 1974

National Park Service
Anchorage, Alaska

ARLIS

Alaska Resources
Library & Information Services
Anchorage, Alaska

NUMBERS, COMPOSITION AND DISTRIBUTION OF MOOSE MOUNT MCKINLEY PARK, ALASKA

INTRODUCTION

An aerial moose survey was conducted in Mt. McKinley National Park in 1974. The objective of the survey was to determine the numbers, distribution and composition of moose. Observers were Will Troyer, Steve Buskirk and Pat O'Connor, of the National Park Service. All observers had some previous experience in aerial moose count, but both pilots were inexperienced in flying moose surveys.

METHODS

Aerial surveys were conducted from a Piper Supercub (PA-18) with 150 HP engine and a Super Cruiser (PA-12) with a 135 HP engine. Usually the planes were flown at half flaps and reduced airspeeds which resulted in ground speeds of about 70 MPH. The flight elevation varied with the terrain and wind condition but was usually from 200 to 400 feet above the ground.

A total area census method was used in an attempt to count all moose. The park was divided into twenty counting units which included all available moose habitat within the park (Figure 1). Usually the foothill drainages were followed into the mountain to elevations where moose habitat was no longer present.

The units were separated by distinct topographical features, such as rivers, mountain ranges or roads. Attempts were made to count all animals within each unit by flying a series of parallel courses separated by varying distances, depending on density of cover. In dense timber often a series of concentric overlapping surveys were flown to obtain views at various angles. Along the steeper drainages, flights were flown at different elevations to cover the habitat from river bottom to the higher alpine vegetation. In such situations both the pilot and observer did all viewing from one side of the plane. In open flat terrain both the pilot and observer scanned opposite sides of the flight pattern.

The surveys were flown on October 31, November 1, 2, 4, 6, 8, 19 and 20. Weather conditions prevented any flying between November 8 and 19.

RESULTS AND DISCUSSION

A total of 624 moose were tabulated during the surveys. The composition and number by unit are shown in Table 1. The largest concentration was found in Units 14 and 15 and the south side of 13 in the Riley and Savage River drainages, and in Unit 20 on the south side of the park in the Windy

ARLIS

Alaska Resources
Library & Information Services
Anchorage Alaska

3 3755 000 47314 0

Creek drainage. Moderate numbers were also found in the foothills of Unit 1 near the Herron Glacier and in portions of Unit 11; however, most of the park contains scattered populations that cannot be considered dense in comparison to populations in many other parts of Alaska.

Of the total population, 93 or 14.9 percent were calves; 192 or 30.7 percent were bulls and cows constituted 54.4 percent of the population. Ratio wise this amounted to 27.5 calves per 100 cows and 56.6 bulls per 100 cows. Nearly all bulls seen were large (162 out of 192) and only 5.7 percent of the bulls were classified as yearlings. The fairly low calf ratio, extremely low percentage of yearling bulls and large number of old bulls indicate a fairly stable population which is what one would expect in an unhunted population such as the Mount McKinley herd.

The true productivity of the herd is not known however since calf mortality prior to the survey remains unknown. Moose reportedly serve as the primary prey species for the Savage River wolf packs and no doubt some calves were taken between the calving period in late May and early June and the time of the census. Light density moose population was confined to willow habitat along river bottoms and mountain foothills. The vast dense spruce forests at the northwestern end of the park in Units 1, 2, 3, 4, and 5 were largely unused by moose. Units 9 and 18 contained no moose primarily because there was little or no suitable moose habitat. The north side of Unit 13 contained no moose and only one was seen in Unit 12.

One large white or albino bull was observed in Unit 8 near Boundary Creek. This animal appeared white except for a few scattered brown hairs. The antlers were also exceedingly white. The animal was only observed from the air and it is not known whether it contained all of the features of an albino animal or not.

The total surveying time was forty hours and fifty minutes but the total flying hours expanded, which included flights to and from the counting units were 67 hours. At \$40.00 per hour the aerial survey cost \$2,680.00.

RECOMMENDATIONS

Because of the sparse moose population in most of the park, it is recommended that in the future a total moose count be conducted every three years and that annual trend counts be established in the following two locations. The first area would contain Units 14, 15, 16 and the south side of Unit 13, which includes the Riley, Savage and Sanctuary drainages. This year 259 moose or about 40 percent of the park population was found in this area.

The other annual counting area would include Units 6, 7 and 8 in the Stoney, Moose Creek, McKinley and Clearwater drainages. Only 66 moose were tabulated in this area but for some reason Unit 6 contained the highest calf-cow ratio (Table 1). In addition a number of albino moose have been reported in this

region in the past number of years and monitoring this population on an annual basis may provide additional information on this unique population.

These trend counts would require approximately 27 to 30 hours of flying annually at a total cost of around \$1,500.

OTHER WILDLIFE OBSERVATIONS

WOLVES

Two packs of wolves were sighted during the survey. Four black and two grays were feeding on a moose carcass in the headwater of Jenny Creek on October 31, 1974. On November 3, 1974 eight grays and three blacks were observed moving single file over a rise in the headwaters of Moose Creek. This pack was in the middle of several hundred caribou. On November 12, I saw an old caribou kill surrounded by many wolf tracks between the McKinley and Clearwater Rivers.

CARIBOU

On an October 21 reconnaissance flight with Ranger Bruce Wadlington numerous bands of caribou were observed in the foothills between Foraker River and Slippery Creek. A few were also observed just outside the west boundary. Tracks indicated bands had been moving from the west boundary toward the McKinley River. On November 4, bands of caribou were scattered from the McKinley River, around the headwaters of Moose Creek and down Stoney Creek. On November 5, 1974, 456 caribou were counted between the headwaters of Moose Creek and Boundary Creek. Tracks indicated a few bands had already moved down Stoney Creek.

Submitted by: Will Troyer
Biologist, National Park Service
December 20, 1974

TABLE I. COMPOSITION OF THE MOOSE POPULATION IN
MT. MCKINLEY PARK BY COUNTING UNITS - 1974

AREA	COUNT TIME	Y	M	BULLS L	TOTAL BULLS	SINGLE COW	COW-1 CALF	COW-2 CALVES	TOTAL CALVES	TOTAL COWS	TOTAL ADULTS	TOTAL MOOSE
1	2:35	2	4	20	26	9	5		5	14	40	45
2	:55			13	13	4	1		1	5	18	19
3	:50			6	6	2	1		1	3	9	10
4	1:50	1	2	3	3		1		1	1	4	5
5	2:00			8	8	3	3		3	6	14	17
6	3:55			8	8	5	8	3	14	16	24	38
7	1:00			6	6	2	1	1	3	4	10	13
8	2:30	2	1	5	8	3	2		2	5	13	15
9	:15											0
10	3:45		3	8	11	15	3		3	18	29	32
11	4:55	1		7	8	28	3	1	5	32	40	45
12	:55			1	1				0	0	1	1
13	2:45		2	9	11	22	6		6	28	39	45
14	4:10		1	18	19	56	11	1	13	68	87	100
15	2:15	4	2	24	30	45	5	1	7	51	81	88
16	2:20			7	7	9	5		5	14	21	26
17	1:40	1	2	4	7	7	1		1	8	15	16
18	:10											0
19	:55			10	10	12	3	1	5	16	26	31
20	1:10	1	3	6	10	33	16	1	18	50	60	78
TOTALS	40:50	11	19	162	192	207	56	9	93	339	531	624