

STUDY AREA

GAME MANAGEMENT UNIT: 9C and 9E (24,000 mi²)

HERD: Northern Alaska Peninsula

GEOGRAPHICAL DESCRIPTION: Alaska Peninsula

BACKGROUND

The Northern Alaska Peninsula Caribou Herd (NAPCH) ranges from Port Moller northward to the Naknek River drainage. Historically, the size of this population has fluctuated widely; peaks occurred just prior to the turn of the century and again in the early 1940's, when the population was estimated at 20,000 caribou. The last population low occurred during the late 1940's (i.e., 2,000 caribou). Since that time the herd experienced steady growth until 1984, when the population apparently stabilized.

POPULATIONS OBJECTIVES

To maintain the population between 15,000-20,000 in midsummer and an October sex ratio of 40 bulls:100 cows.

METHODS

Radiotelementary-aided photocensus surveys were initiated in 1981; they are conducted in late June on the postcalving concentrations of the herd. Fall sex and age composition surveys are conducted in October during the rut. Using radiotelemetry techniques, general reconnaissance surveys are conducted throughout the year to monitor herd movement. Hunter success is monitored by harvest tickets and supplemented by hunter checks by Division staff in King Salmon.

RESULTS AND DISCUSSION

Population Status and Trend

The NAPCH has grown since the early 1950's. Photocensuses in 1984 and 1985 resulted in population counts of 19,000 caribou. In 1986 the census results were unreliable, because several radio-collared caribou could not be located and only slightly more than 15,000 caribou were found. In 1987 less than 16,000 caribou were counted, and it appeared the herd had declined. This year's count (i.e., 19,000) suggests the herd is fairly stable or within the range of the population objective.

Population Size:

Survey conditions in June 1988 were good, although clouds and winds near mountains prevented total coverage. Most of the radio-collared animals were located in large postcalving concentrations. The June 1988 photocensus accounted for 19,000 within the area normally covered. As in past years, this represents the minimum number; lack of sex and age composition classifications precluded extrapolation. During February 1988 a total of 163 caribou were captured and relocated to Subunit 17A; most of these were adult females.

Population Composition:

A sample of 1,536 caribou was classified in October 1987 as follows: 25% calves, calf:cow ratio of 52:100, bull:cow ratio of 54:100, and 13% medium to large bulls (Table 1). A sample of 1,154 caribou classified from the June 1988 photocensus showed 30% calves in the herd. Since 1983 the percentage of calves present during postcalving censuses of the NAPCH has ranged from 25% to 30%, while the Southern Peninsula Caribou Herd has had only 12% to 18% calves.

Distribution and Movements:

The primary calving ground for the NAPCH is in the Bering Sea flats between Cinder River and Port Moller. In recent years the postcalving migration north has started earlier; in 1988 a majority of the herd was north of the Egegik River by 1 August. Traditionally, this herd winters between the Egegik and Naknek Rivers; however, during the winters of 1986-87 and 1987-88 many caribou crossed the Naknek River and nearly intermingled with a portion of the Mulchatna herd that had ranged south of the Alagnak River.

Mortality

Season and Bag Limit 1987-1988:

The open season for all hunters in Subunits 9C and 9E is 10 August to 31 March. The bag limit for subsistence and resident hunters is 4 caribou; however, not more than two may be taken from 10-31 August and not more than one may be taken from 1 September to 31 October. The bag limit for nonresident hunters is 2 caribou; however, not more than one may be taken from 1 September to 31 October.

Human-induced Mortality:

In 1987-88 the reported harvest from the NPCH was 1,003 caribou (Table 2), including 841 males (84%) and 158 females (16%). As in past years, most local and some nonlocal hunters did not report their harvests. In an effort to estimate the percentage of the nonsubsistence harvest that went unreported

during the fall of 1987, a total of 106 successful hunters were checked as they departed King Salmon. Harvest ticket numbers, hunter residency, and harvests were discretely recorded so that later reporting would not be seriously biased. These hunters had taken a total of 116 caribou. After harvest reports were returned, a comparison was made between field interviews and the reported harvest. Of the 106 hunters interviewed, 65 submitted the required harvest report indicating a harvest of 70 caribou. Thus over 60% of the known harvest was reported through hunter reports. McNay (1988) used a similar procedure in Unit 20, estimating the reporting rate at 56%. Although this is a crude procedure for estimating unreported harvests, the results suggest that nonsubsistence harvests may be as much as 40% higher than reported. Applying a 40% correction factor to the 1,003 caribou reported, the total nonsubsistence harvest is estimated at 1400. Based on surveys of all villages in Subunits 9C and 9E (ADF&G files), the unreported subsistence harvest is estimated at 900-1,000 caribou. Combining the 2 estimates, the total harvest is estimated at 2,300-2,400 caribou.

Chronology. The majority of the harvest from the NAPCH occurred between 10 August and 31 October, which corresponds with the best weather conditions, best chance for success at taking a trophy bull, and relatively easy access by boat and aircraft from King Salmon and Naknek (Table 3). The reported caribou harvest on the Alaska Peninsula increased during odd-numbered years when October brown bear seasons occurred concurrently (Table 3). During the past 2 winters more caribou have crossed the Naknek River, where they became accessible to hunters using highway vehicles. This easy access, very low air fares from Anchorage in 1987, and a bag limit of 4 caribou attracted more hunting effort in November and December.

The subsistence harvest is primarily opportunistic, and the traditional hunting time for some of the villages in Subunit 9E is in March as the caribou migrate south. Because the spring migration was delayed in 1988, most caribou were north of the Ugashik River during March. Consequently, before the season closed there were not many caribou available to hunters from several villages in the southern portion of Subunit 9E.

Natural Mortality:

Although specific data on natural mortality is lacking, it is believed to be much lower than that for the Southern Alaska Peninsula Caribou Herd. Comparison of the percentage of calves observed during the postcalving census (30%) with the percentage classified in October (25%) suggests good calf survival. The 1987-88 winter was mild, and no evidence of winter mortality was noted.

Habitat Assessment

No quantitative data is available to assess range conditions; however, preliminary analysis of data (i.e., body weights, blood parameters, body size, calf production) from the transplanted caribou indicate that they are in relatively good condition. Nevertheless, the expansion of their winter range north of the Naknek River may be an indication that it is being heavily used.

Game Board Actions and Emergency Orders

Season dates for Subunits 9C and 9E have generally been the same during the last 5 years; the only significant changes in bag limits were for the 10-31 August portion of the season. To stop herd growth, the Board of Game increased the August bag limit to 4 caribou in 1984. Even though few hunters were aware of this liberal limit, the August harvest increased dramatically, and concern was expressed that if the limit remained that large during August an unacceptably high harvest would occur in subsequent years. Consequently, the Board reduced the August bag limit to 2 caribou for 1985, 1986, and 1987. Because of a photocensus indicating a decline in the herd and a record harvest during 1987-88, reductions in bag limits and an alignment of regulations with those for the Mulchatna herd were recommended and adopted for the 1988-89 season. Thus for Subunits 9A, 9B, 9C, 9E, 17B, and a portion of Subunit 17C, nonresidents may take only 1 caribou; only subsistence hunters may take 2 caribou during August; and the bag limit does not increase to 4 caribou until 1 December, 1 month later than in the past.

An Emergency Order was adopted by the Board to allow up to 40 bulls to be taken in Subunit 9E south of the Cinder and Aniakchak Rivers during 11 and 12 April. All hunting took place near Port Heiden, and approximately 25 hunters participated. The harvest during the 2 days was about 20 caribou.

CONCLUSIONS AND RECOMMENDATIONS

The Northern Alaska Peninsula Caribou Herd has remained at the upper end of the population objective, despite increasing harvests. Our concerns for a declining population in the NAPCH, which were based on the 1987 census, appear unfounded. To maintain this herd at or slightly below 20,000, it may be necessary to increase the harvest. With the Mulchatna herd still growing, I recommend the regulations for both herds be consistent. More specific recommendations for changes in regulations will be made for the 1989-90 season.

For several years we have suggested the need for either a range analysis or a comprehensive analysis of animal condition to determine if the population objectives for the herd are

appropriate. These analyses would also enable us to make some comparisons with the Southern Alaska Peninsula herd. Although funding and personnel limitations have prevented us from undertaking this project, it remains a high priority.

LITERATURE CITED

McNay, M. E. 1988. Unit 20A caribou survey-inventory progress report. Pages 44-50 in S. O. Morgan, ed. Annual report of survey-inventory activities. Part XI. Caribou. Vol. XVIII. Alaska Dep. Fish and Game. Fed. Aid in Wildl. Rest. Prog. Rep. Proj. W-22-6. Job. 3.0. Juneau. 73pp.

PREPARED BY:

SUBMITTED BY:

David A. Johnson
Game Biologist II

John N. Trent
Survey-Inventory Coordinator

Richard A. Sellers
Game Biologist III

Table 1. Northern Alaska Peninsula herd composition counts, total counts, and population estimates, 1983-87.

Date	Males: 100 females	Percentage med. or lg. males	Calf: 100 females	Calves in herd	Sample size	Total ^a count	Estimated pop.
6/83	--	--	--	29	--	18,000	19,000
10/83	39	12	27	16	1,410	--	--
6/84	--	--	--	25	1,047	19,000	20,000
10/84	39	11	39	22	1,087	--	20,000
7/85	--	--	--	27	2,186	18,978	20,000
6/86	--	--	--	28	2,451	15,274	15,300 ^b
10/86	51	23 ^c	34	18	2,540	--	--
7/87	--	--	--	30	653	15,629	17,000
10/87	54	13	52	25	1,536	--	--
6/88	--	--	--	30	1,154	19,000	20,000

^a Radiotelemetry, aerial photo-direct census.

^b Poor count conditions; could not estimate total population size.

^c Bull classification by John Payne; it may not reflect other counts.

Table 2. Northern Alaska Peninsula herd annual reported harvest and estimated harvest, 1983-87.

<u>Reported</u> Year	Male	<u>Unreported</u> Female	<u>Estimate</u> Total ^a	Grand Sport ^b	Subsistence ^c	Total
1983-84	493	128	639	256	900	1,795
1984-85	569	166	743	297	900	1,940
1985-86	612	133	751	300	900	1,951
1986-87	602	118	720	288	900	1,908
1987-88	841	158	1,003	400	900	2,303

^a Includes unknown sex.

^b Computed using the number .40 that represents the percentage of 106 sampled sport hunters who didn't return their harvest tickets during the 1987-88 hunting season and assumes the same for prior years.

^c Computed using the number 1 equalling 1 caribou per person which approximates results of subsistence use studies (J.M. Morris, unpubl. data); the subsistence harvest also assumes an unchanging population of subsistence users, availability, and need for caribou.

Table 3. Northern Alaska Peninsula reported harvest chronology by time period, 1983-87.

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Unk.	Total
1983-84 ^a	76 ^b	198	126	75	23	7	65	44	25	639
1984-85	167 ^c	296	111	102	13	2	25	26	1	743
1985-86 ^a	93 ^d	288	163	97	8	13	28	61	--	751
1986-87	186 ^d	257	96	74	37	10	19	38	--	720
1987-88 ^a	131 ^d	310	231	192	57	8	5	67	2	1,003

^a Concurrent brown bear season

^b One caribou August bag limit

^c Four caribou August bag limit

^d Two caribou August bag limit