

STATUS OF THE FORTY MILE CARIBOU HERD



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As far back as 13,000 years ago, when Man probably first set foot in Alaska, caribou herds were fluctuating in numbers. Little has changed and caribou herds during recent times have or are undergoing dramatic changes in population sizes. The Fortymile herd is no exception. Oldtimers have seen the herd become one of Alaska's largest and then decline to a mere remnant of its former size. This report will briefly summarize the past and present status of the Fortymile herd and speculate on its future.

Distribution and Abundance

During the early 1900's the Fortymile caribou herd was probably increasing in size, reaching its peak numbers in the 1920's. Some say the herd reached one-half million animals or more but, whatever the size, it must have been an awesome sight. These caribou occupied a much larger range than they do today, utilizing country north of the Yukon River, migrating near Nenana, Fairbanks and Circle, and wintering as far east as Dawson and Whitehorse and south as the Alaska Range and Nelchina Basin (Fig. 1). Southward movements of the Fortymile herd during its peak years may have contributed substantially to numbers in the Delta, Nelchina, Mentasta and Chisana herds.

This great herd began to decline in the 1930's and its numbers may have reached a low of only 10,000 animals during the early 1940's (Fig. 2). It then increased to approximately 50,000 caribou by the early 1950's, but again began declining in numbers. By 1969 the Fortymile herd likely numbered not over 20,000 animals. A photocensus of the herd in 1973 provided a minimum estimate of 5,300 animals during October and it probably contains even fewer caribou today (1975).

.....The decline of this great herd began in the thirties.....

The present range of the Fortymile herd is small compared to that of former years (Fig. 1). No longer does the herd make its annual trek to the White Mountains

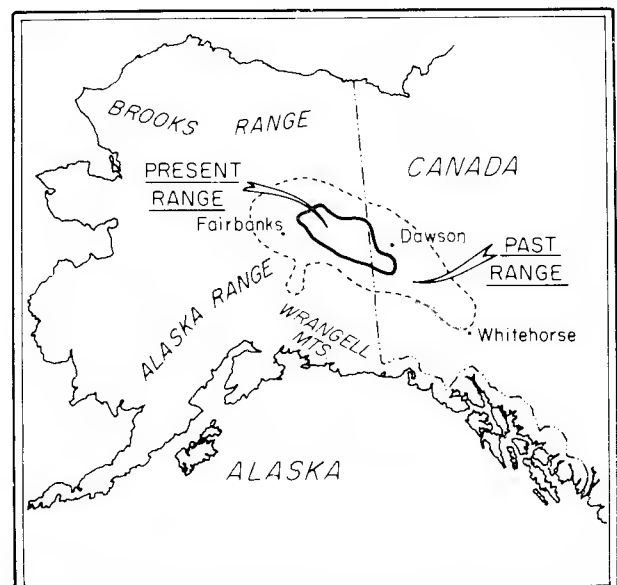


Fig. 1. Past and Present Distribution of the Fortymile Caribou Herd

calving grounds, but instead calving occurs south of the Steese Highway along the headwaters of the Chena and Charley Rivers and Birch Creek. Roving in the Tanana Hills between the Steese and Taylor Highways, the caribou spend their summer in the high country. In the past, fall migrations took these caribou east across the Taylor Highway on into Canada, but during 1973 and 1974 most wintered in Alaska near their summer range east of the Taylor Highway.

Why Did the Herd Decline?

Causes of the major decline during the 1930's are only speculative. The initial reason for the population decline may have been diminished range quality, resulting from the tremendous grazing pressure applied by the large numbers of caribou, and possibly the destruction of range by frequent wildfires.

Large numbers of caribou are known to have left the Fortymile herd in 1957 and 1964, joining the Porcupine herd wintering nearby in Yukon Territory. Quite likely other major emigrations have occurred unrecorded, contributing to further decline of the Fortymile herd but bolstering numbers in other herds. As noted earlier, such movements may have been responsible for establishing small herds on the north side of the Alaska Range and may have swelled numbers in the Nelchina herd during the 1920's.

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It is unlikely that hunting could have initiated the decline beginning in the 1930's. Nonetheless, subsistence hunting by miners and natives may have accelerated the decline once it had begun. More recently, recreational hunters along the Steese and Taylor Highways have killed large numbers of caribou, significantly reducing the size of the herd. During 1970, 1971 and 1972 an estimated 1,390, 2,360 and 1,330 caribou, respectively, were taken from this herd in Alaska. With knowledge gained in studies during 1973 and 1974 it became apparent that the herd could not

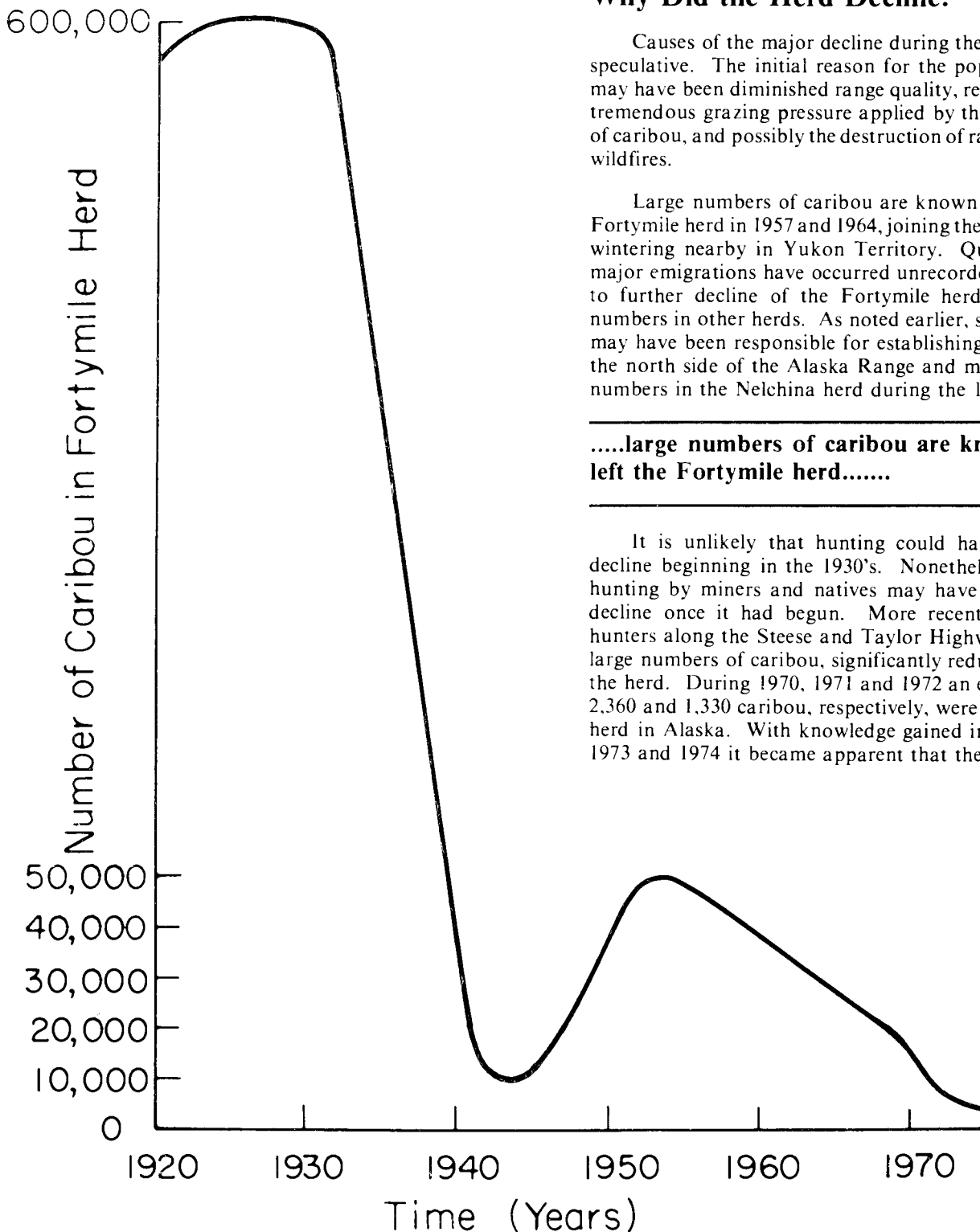


Fig. 2. Estimated Numbers of Caribou in the Fortymile Herd

sustain such a high level of harvest and since 1973 the legal harvest has been reduced to less than 100 animals per year.

.....could hunting have caused the decline?.....

In 1973 the Department decided to impose a very restrictive season and bag limit with the hope of allowing the population to increase in numbers. The rate of decline was slowed by this action but not stopped. Hence, even with almost complete cessation of hunting the herd has not increased.

In a stable population the number of calves surviving to become yearlings is approximately equal to adult mortality. Total annual production of yearlings in the Fortymile herd is approximately 275 with a population of about 5,500 caribou. Mortality of adults in this herd is likely to be greater than yearling recruitment; thus the herd still may be slowly declining. For the Fortymile herd to increase in size either the recruitment level will have to increase or adult mortality decrease. Since the restrictive season and bag limit went into effect in 1973 adult mortality has decreased to about the lowest level we can expect without action to reduce natural mortality factors. Therefore, if the herd is to increase, calf survival must improve.

TABLE 1.

Date	Calves/100 Cows	Yearlings/100 Cows	Percent Mortality from 4-6 June Counts
4-6 June	55	—	—
15 June	39	—	29
28-30 June	30	—	45
9-21 September	18	8	67

Table 1. Average Calf Survival in the Fortymile Caribou Herd During 1973 and 1974

Why is the Herd Not Increasing?

For a herd to increase, young must be produced and survive to a reproductive age at a greater rate than adults are dying. Herein lies the problem. Caribou of the Fortymile herd produced sufficient numbers of calves during the past three years, but most of them died before they reached 16 months of age. Calf counts made shortly after calving in early June 1973 and 1974 indicated about 55 calves per 100 adult cows were produced and survived to 1.5 weeks of age. Successive composition counts during the summer indicated a progressive decline in the proportion of calves (Table 1). By fall only an average of 18 calves per 100 adult cows had survived; 67 percent of the calves that were alive in early June had died by fall. The low proportion of yearlings, as shown in Table 1, indicates that presently only about 50 percent of the calves alive in the fall survive to the following fall (16 months of age). Therefore, of every 100 calves alive at the age of 1.5 weeks, only 15 survive to become yearlings.

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Why Don't Calves Survive?

Factors affecting calf survival in the Fortymile herd are not well understood, but are likely associated with one or more of the following: weather, nutrition, disease and predation. As a result of recent preliminary studies, game biologists speculate that weather and nutrition are not major factors responsible for low calf survival. They believe predation is presently the single most important cause of the calf mortality, and it precludes the growth of the herd. Grizzly bears and wolves are abundant within the range of the Fortymile herd and both are considered major predators of caribou. Presently the importance of disease as a mortality factor on calves of the Fortymile herd is unknown.

The Future

The immediate outlook for the Fortymile herd is not bright. However, keep your fingers crossed, for if the Porcupine herd some day repays its debt the Fortymile herd could be many thousands of caribou richer. In fact, during the winters of 1973-74 and 1974-75, 10 to 20 thousand caribou from the Porcupine herd wintered near the Alaska-Yukon border and had they decided to go east, rather than north in the spring, the Fortymile herd could have grown substantially.



Without an infusion from another herd or a reduction in calf mortality the herd will not increase in the near future and will most likely decline slowly. Until there is a significant increase in the numbers of caribou, seasons and bag limits will remain very restrictive.

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