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WESTERN ARCTIC CARIBOU HERD

STRATEGIC MANAGEMENT PLAN

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Alaska Department of Fish and Game

Approved by the Board of Game
April 1984

I. STRATEGIC PLAN - WESTERN ARCTIC CARIBOU HERD

A. LOCATION

Game Management Units 21(D), 22(A), 22(B), 23, 24, and 26(A).

B. OBJECTIVES

The objectives of this plan are: 1) to protect and maintain the Western Arctic Caribou Herd (WAH) and other components of the natural ecosystem upon which caribou depend; 2) to provide opportunity for subsistence and recreational hunting on a sustained yield basis; 3) to provide opportunity for viewing and scientific study of caribou; and 4) to perpetuate associated wild carnivore populations.

C. MANAGEMENT GUIDELINES

1. Maintain a post-calving population of at least 200,000 caribou.

The highest priority in WAH management is to prevent the herd from declining to low numbers. When survey data and other biological evidence indicate a substantial reduction in the population, harvests should be reduced to help reverse a decline and regain a post-calving herd of at least 200,000 animals. Reduction of the harvest should not be undertaken until a census reveals fewer than 170,000 animals or

unless indices such as recruitment rates, estimates of natural mortality, and harvests clearly indicate a downward trend. Harvests will be allocated on the basis of the state subsistence priority law; the primary role of the Division of Game will be to indicate to the Board harvest levels consistent with sustained yield management of the herd. Department predator control programs may also be considered where no conflict with federal policy exists. No such programs are now under consideration.

The WAH may increase beyond 200,000 animals during particularly favorable periods when the number of young caribou recruited into the herd considerably exceeds losses due to hunting and natural causes. During such periods seasons and bag limits will be liberalized if restrictive regulations are in effect. Additional uses of caribou (e.g. for animal food, bait, or for commercial purchase and sale) will be discouraged.

If the herd grows beyond 200,000 the probability of conflict with reindeer husbandry and other land uses will increase. Changes in herd distribution resulting from high densities may reduce the availability of caribou to some villages and increase the availability of caribou to others. However, because no evidence indicates that mainland caribou are ever limited by food shortages, preventing herd growth beyond 200,000 caribou should be a low priority.

2. Minimize conflict between caribou management goals and the reindeer industry.

The reindeer industry has always been troubled by the loss of deer to migratory caribou. The decline of reindeer herds in the 1930's and 1940's was caused by a combination of factors, including reindeer joining moving caribou herds. Caribou have been largely absent from the Seward Peninsula during the 20th century. However, during its recent growth phase, the WAH has occupied the eastern Peninsula in increasing numbers and has expanded westward. In the winters of 1981-82 and 1982-83, 5,000 to 10,000 caribou inhabited the area south of Candle. In the winter of 1983-84 as many as 20,000 caribou inhabited the eastern Seward Peninsula from the Koyuk River to Candle and as far west as the Unit 22(D) boundary. This has caused increasing concern among reindeer herd owners. Because reindeer and caribou have identical habitat requirements, the occupation of reindeer ranges by caribou, together with the tendency of reindeer to join moving caribou bands, will probably lead to increasing conflict. The WAH is the most important terrestrial wildlife resource in northwestern Alaska, and any major threat to the security of the herd will compromise the objectives of this plan. For these reasons the Department will:

(1) recommend against issuing additional reindeer permits on ranges currently occupied by caribou or with a high probability of being occupied by caribou in the future (specifically, the area east of the West Fork of the Buckland River and east of the East Fork of the Koyuk River);

(2) conduct periodic reconnaissance flights on the Seward Peninsula during winter to determine the proximity of caribou to reindeer herds and inform herd owners of impending conflict; generally discourage expansion of reindeer herds already occurring on caribou range until suitable methods are developed to reduce interaction between caribou and reindeer;

(3) not oppose expansion of the reindeer industry when it minimally impacts caribou or other wildlife resources;

(4) continue to gather basic biological information on caribou and reindeer habitat requirements to achieve the objectives of this plan and to apply this information when compromise and mitigation are necessary; and

(5) develop an issue paper to more specifically address problems which arise from reindeer/wildlife interactions.

3. Monitor the size and composition of the population and use this information to predict population trends.

The decline of the WAH in the early 1970's was partially due to inadequate population monitoring. In the future the highest survey-inventory priority will be conducting a biennial photocensus to determine the size of the herd. Composition counts during spring and

fall will be made periodically to determine the sex and age structure of the herd. Calving ground surveys will be conducted annually to identify any unusual circumstances attendant to calving. Data will be incorporated into a basic simulation model designed to predict population changes. This information will provide an additional tool for evaluating and recommending harvest quotas and predation levels consistent with these management objectives.

4. Develop an information and education program to improve harvest reporting and public understanding of management goals.

Major tasks facing the Department are to improve local understanding of WAH dynamics, the regulatory process, and harvest reporting. The reported harvest from the WAH has always been a small fraction of the actual harvest, and the failure of rural residents to report their take is in part due to a lack of understanding of hunting regulations and reasons for the reporting requirement. An ongoing public information program using both the media and personal communication should be undertaken in northwestern Alaska with the general goal of increasing public awareness of the value of and need to conserve caribou, and with the specific goal of increasing the accuracy of WAH harvest estimates. The Department will continue to evaluate harvest reporting systems in an effort to simplify and streamline reporting requirements. Several different methods of assessing harvest levels, such as statistical surveys and voluntary reporting, will be considered and discussed with user groups.

Wasteful hunting practices were evident during the decline of the WAH in the mid 1970's and have been less apparent since 1977. However, wasteful practices are still occasionally observed, and efforts should be continued to inform people about the necessity of wisely using this valuable resource. The success of these efforts will, to a large extent, depend upon the Department's ability to develop and improve communications with rural residents and leaders in northern and western Alaska.

5. Encourage public involvement in the regulatory process and in the formulation of management guidelines.

The Department will continue to encourage local advisory committees and the regional councils to participate directly in the formulation and review of regulatory proposals, the development of harvest reporting systems, the formulation of general management goals, and future revisions of this plan. In addition, the Department should involve the public directly through village meetings and individual contacts with community representatives. In this context, efforts will be made to improve public understanding of the goals of this management plan. It is particularly important to develop a liaison with the public during this period of caribou abundance so that user groups, the Department, and the Board of Game can effectively work together to initiate corrective action during periods of caribou decline. Dialog between the Department and user groups should focus on the problem of allocation to assist the Board in developing a general strategy for restricting

harvests in times of shortage with minimal disruption of traditional use patterns.

6. Advocate measures to minimize the impact of industrial development on caribou habitat and movement patterns.

Habitat loss and alteration due to industrial development and other land uses are major concerns with respect to conservation of the WAH. Northwestern Alaska is entering a period of unprecedented industrial growth. The highly migratory WAH may be particularly vulnerable to loss of migration routes and key calving and wintering areas through oil and mineral development. Associated with such developments are transportation corridors that may present barriers to migrating caribou and create increased hunter access to the herd. These corridors and the access they create may present a greater threat to the well-being of the WAH than do the development sites themselves. The Department will work with landowners and managers to advocate low-impact alternatives to exploration and development when such alternatives can be identified.

The Department will participate in and encourage other agencies to undertake habitat assessment programs designed to identify key caribou use areas and to quantify habitat availability and quality. It will continue to explore new technologies in habitat inventory and habitat selection research. The Department will continue to use radiotelemetry to document movement patterns and to identify areas heavily used by caribou.

APPENDIX A. BACKGROUND INFORMATION

Population Estimates

The Western Arctic Caribou Herd (WAH) is currently the largest caribou herd in the state, and ranks as one of Alaska's major terrestrial resources. It is of considerable value to subsistence hunters, recreational hunters, and nonconsumptive users alike. Caribou are typified by large-scale population fluctuations and the WAH is no exception. Between 1970 and 1982 the WAH underwent a rapid decline and subsequent increase in numbers. Results from the 1982 caribou photocensus and 1982 and 1983 composition surveys indicate that recovery is continuing and that the herd may soon be as large as it was in 1970 before the decline.

Although precise estimates of the number of caribou in northwestern Alaska were not available prior to the 1950's, trends can be ascertained from historical records. Caribou were abundant in the mid-19th century but declined to low numbers by the early 1900's. Caribou numbers increased during the 1920's and 1930's in northwestern Alaska. Whether this increase was due to herd productivity or to immigration from other herds is not known. By the late 1940's the WAH probably numbered over 250,000 animals. P. Lent intensively studied the WAH from 1959 to 1962 and estimated July 1961 post-calving aggregations to contain about 150,000 animals. He estimated the total population to be 175,000-200,000. R. Skoog used harvest data to estimate the population at 300,000 in 1964. J. Hemming counted 179,843 caribou on photographs

of post-calving aggregations in 1970, and estimated the population to contain 242,000 animals at that time. The Department conducted aerial photocensuses in 1975, 1976, 1978, 1980, and 1982. In 1975 J. Davis and P. Valkenburg estimated the herd to contain 67,000-121,000 animals, but thought that 103,000 was the most probable number. They reported a minimum estimate of 67,000 in 1976, but subsequently revised it to 75,000. Results of the 1978 and 1980 photocensuses were 106,635 and 138,000 animals respectively. These values indicate that the population grew at an average annual rate of at least 14% from 1976 to 1980. The 1982 photocensus accounted for 171,699 animals, indicating a growth rate of 11% from 1980 to 1982. Although the rate of increase from 1980 to 1982 appears to be lower than that during the previous 4 years, population estimation techniques are probably not precise enough to detect small changes. The decline from 14% to 11% may merely be an artifact of the census process.

Regulations

From 1952 to 1959, seasons and bag limits were established by territorial regulations. Seasons ranged from August 20 to December 31 in most years, with no closed season in 1957. Bag limits were 3-5 caribou of either sex in some years, with no limit in 1956-57.

Under state management there were no closed seasons and no bag limits from 1959 to 1975. In 1975 the upper drainage of the Anaktuvuk River was closed to caribou hunting from August 10 to September 15 at the request of Anaktuvuk Pass residents. No closed seasons or bag limits

were imposed on the remainder of the WAH range. In spring 1976, the Board of Game set the 1976-77 season at July 15 - December 20 and January 6 - May 31 (except for the Anaktuvuk Pass area which opened September 16). The bag limit was 15 caribou, with a daily limit of 5, and no more than 2 could be transported south of the Yukon River.

The season was closed by emergency order on August 13, 1976. At an emergency meeting held in Fairbanks on September 20 of that year, the Board set the season for Units 23, 24, 26A, and 26B at September 25 - March 31. Caribou were to be taken by permit and a quota of 3,000 bulls was established. Permits were allocated to 16 villages in the western Arctic, and were issued, in part, on the basis of need. At the same meeting, the Board adopted a resolution establishing a management goal of 100,000 breeding-age caribou and a bull:cow ratio of 30:100. On April 6, 1977 the Alaska Superior Court overturned the Board's regulation of the previous September (On September 8, 1978 the Alaska Supreme Court overturned the lower court's injunction.).

At its spring 1977 meeting, the Board closed the range of the WAH to caribou hunting. On August 18, 1977 the Board adopted an emergency regulation setting the season at September 1 - October 5 and March 15 - April 15 with a one-bull limit by permit. This time permits were available in the villages to anyone desiring to hunt caribou. The season was to be closed by emergency order if the harvest exceeded 3,000 bulls. Because the reported harvest did not exceed the quota, the season was not closed.

In spring 1978, the Board set the 1978-79 season at August 10 - October 15 and February 15 - April 15 with a 2-bull bag limit. One bull could be taken in the fall, or both in the spring if a hunter took none in the fall. Permits were available through local license vendors and at interior or arctic department offices. The season was to be closed by emergency order if the harvest exceeded 5,000 bulls. Because the reported harvest did not exceed the quota, the season remained open until April 15.

In 1979-80 the seasons and permit system of the previous year were retained, as was the 5,000 bull quota. However, the bag limit was increased to 3 bulls, with no more than 1 to be taken during the fall hunt.

In 1980-81 the season remained essentially the same. However, a harvest ticket replaced the permit, no harvest ticket was required in Unit 26A, and the quota was eliminated. The bag limit remained at 3 bulls.

The 1981-82 season was set at July 1 - April 15. The bag limit was increased to 4 caribou, females to be taken only from September 15 to April 15. The harvest ticket was retained and no more than 2 caribou were to be transported from the units involved. On May 6, 1982 the Department issued an emergency order to open the season in Unit 23 from May 6 to May 15 at the request of local residents. Because the northward migration was delayed in 1982, this provided residents of the Kobuk River with an opportunity to legally harvest some animals not normally available after the close of the regular season.

At its spring 1982 meeting, the Board adopted a regulation setting the season at July 1 - April 30, and providing for the harvest of 5 either-sex caribou on a harvest report, and for additional caribou by registration permit in increments of 5, i.e. an unlimited bag.

Harvests

WAH management efforts have been chronically plagued by the absence of reliable harvest data. The acquisition of better harvest information is a high management priority, and the accuracy of the harvest estimates presented below is inadequate for rational management.

A number of independent estimates based on reported kill in villages, hunter interviews, and personal observations are available for the period 1953-1972. These estimates range from 15,000 in 1953 to 29,000 in 1965, and average 24,000. These estimates are probably conservative and do not account for wounding loss and waste.

Estimates for 1972-82 (Table 1) are taken from Game Division data files and range from 1,687 in 1976-77 to more than 25,000 in the early 1970's. In 1975-76 the Department undertook an intensive effort to quantify the harvest and hired village data collectors in Anaktuvuk Pass, Point Hope, Kivalina, Noatak, Selawik, Noorvik, Kiana, Shungnak and Ambler. Game Division staff obtained estimates from Wainwright, Point Lay, Barrow, Nuiqsut, Meade River, Bettles, Kobuk, Allakaket-Alatna, Hughes, and Huslia by direct observation, and interviews and discussions with local village councils. This system functioned reasonably well until January,

at which time local cooperation was impaired by widespread concern over impending emergency harvest reductions. For the remainder of the year only rough estimates provided by department staff were available. Efforts through January revealed a harvest of about 15,000 animals; efforts for the remainder of the year increased the total to 21,900. This value does not include crippling loss from January through May, or any summer harvest.

The harvest apparently declined greatly in 1976-77 when the bull quota and permit system were established. Compliance with the reporting requirement has been very poor in recent years and certainly does not reflect the actual harvest. It is unclear whether the increased reporting rate from 1980-81 to 1982-83 is the result of better compliance, increased hunting efforts, growth of the WAH, or a combination of these. However, casual observations made by department personnel suggest that the harvest is increasing. The low rate of registration permit issuance and return in 1982-83 suggests that the current harvest report/registration permit system should be simplified.

Table 1. Estimated harvest from the Western Arctic Caribou Herd, 1972-83.

Regulatory year	Source A	Source B
1972-73	-	25,000+(6)
1973-74	-	25,000+(6)
1974-75	-	25,000+(6)
1975-76	21,900(1)	21,900(7)
1976-77	1,100(2)	1,687(7)
1977-78	672(2)	-
1978-79	1,166(2)	3,635(5)
1979-80	852(2)	3,000(6)
1980-81	530(3)	3,000(6)
1981-82	906(3)	7,000(4)
1982-83	1,509(2,3)	7,000+

(1) village survey

(2) permit report

(3) harvest ticket report

(4) S&I and research report

(5) area biologist

(6) S&I report

(7) research report

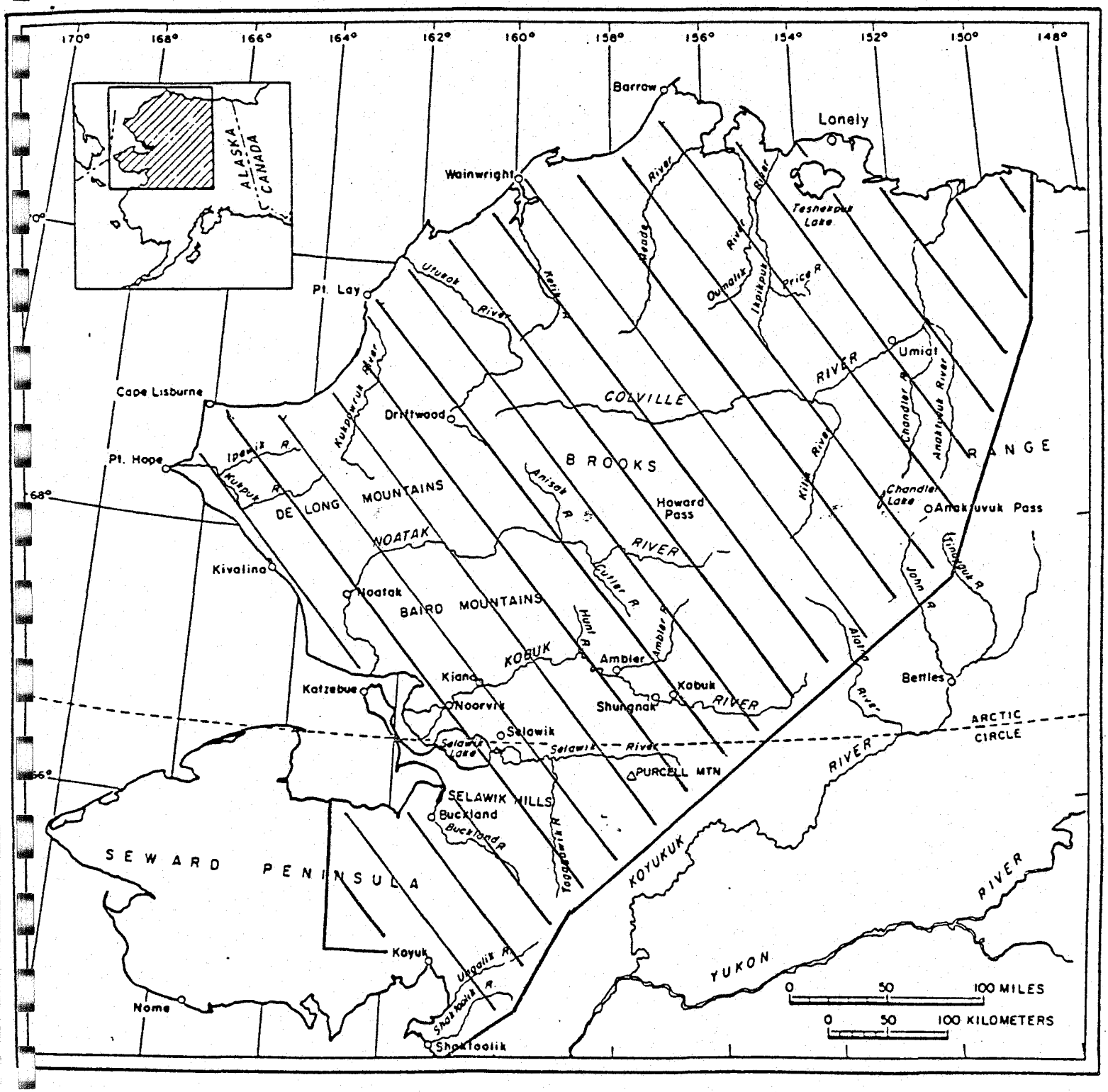

Figure 1. Range of the Western Arctic Caribou Herd as determined by radio telemetry, 1983.