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Statement On Status and Trends
of Wolves and Caribou Within
the Range of the Western Arctic Caribou Herd

The Necessity For Continuation of a Wolf Reduction Program

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Affidavit of John J. Burns

1. Identification and Background

My name is John J. Burns. I reside in Fairbanks, Alaska and am employed by the State of Alaska, Department of Fish and Game. My present position is that of Acting Regional Supervisor, Division of Game, Region III (Interior-Arctic). I have acted in my present capacity since approximately 15 August 1976. My formal educational experience includes the requirements for B.S. and M.S. degrees and additional training toward a Ph.D. (presently in progress). I have resided in northern Alaska since 1960 and have worked with the Alaska Department of Fish and Game since 1962, primarily as a marine mammals biologist. Other responsibilities included work with large mammals of northwestern Alaska, including caribou, moose, wolves and bears. I was stationed in Nome from 1962 through 1969 and in Fairbanks from 1970 to the present. The majority of my work has been with wildlife resources of coastal areas from Kuskokwim Bay to Demarcation Point. I am an active member of numerous professional societies, advisory committees and conservation organizations.

In my present capacity as Acting Regional Supervisor I have followed and been directly involved in supervision of Department efforts to determine the status of caribou in the Western Arctic herd and subsequently to effect a halt to the recent precipitous decline in the size of this herd.

2. Status of the Western Arctic Caribou Herd

The results of studies pertinent to the Western Arctic caribou herd conducted by ADF&G personnel are matters of public record. Likewise, various documents prepared for the formulation of an action plan by the Department and for the information of the public, the Board of Game, and other governmental agencies are available to the public. For purposes of this affidavit I shall restrict comment to salient points of the issue at hand, as I perceive them.

As indicated by consistent and reproducible census techniques, size of the caribou herd has drastically declined since 1970. In 1970, the herd was estimated to consist of 242,000 caribou shortly after the June calving period. An intensive but somewhat less reliable census (due to unfavorable weather conditions) in 1975 indicated a population of about 100,000 caribou. Based upon the alarming results of the 1975 census an intensive effort was put forth in 1976 and it was estimated that the post-calving population included a total of 52,000 caribou. Census efforts were continued throughout the late summer and fall of 1976 to further validate these findings and to refine information about population parameters which are integral to a population estimate of this herd. It was determined that the proportion of males (older than calves) was slightly higher than previously determined and that the early fall population was between 57,000 and 63,000 animals. Considering various mortality factors affecting this herd it was estimated to contain 50,000 to 55,000 animals as of early February 1977.

Initial causes of the decline are unknown as, by necessity, caribou study efforts of ADF&G biologists were diverted to other herds and/or other situations (i.e. the Porcupine, Steese-Fortymile and Delta herds, and impact studies of the Trans Alaska Pipeline). However, current studies of population age structure may add considerable insight. Physical condition of caribou taken by local hunters in the past several years has been good and initial calf production has been excellent, indicating that quantity and quality of food has been adequate at least during the past several years. Adverse weather conditions during the critical period of calving have been documented as causes for severe losses of new born calves in other areas. This may have occurred in the western Arctic between 1971 and 1975.

In any case, the herd declined in the face of a rather consistent annual kill by local residents and increasing mortality due to predators - mainly wolves. A rapid increase in the wolf population resulted, in part, from a total ban on aerial wolf hunting, imposed by the State of Alaska in 1972. Between the spring of 1971 and the spring of 1973 density of wolves in the Anaktuvuk Pass area increased from 1 per 124 mi² to about 1 per 76 mi².

Local residents of the 30 communities within the range of the Western Arctic caribou herd took between 25,000 and 30,000 caribou per year. Wolves in this same area took between 10,000 and 15,000 per year between 1974 and 1976.

These two major sources of mortality, in combination with other natural factors, removed a greatly increased (and increasing) proportion of the declining herd, thereby rapidly intensifying the rate of decline.

Although caribou taken by hunters have been in good physical condition, survival of young to year one has been very poor. A major proportion of this first year mortality occurs between October and May when caribou are on their winter range, and is attributed to predation. Although predators take caribou from all cohorts of the herd, they take a high proportion of animals younger than age one. According to findings of ADF&G biologists, young of the year are taken by wolves in numbers two times greater than their actual representation in the population. Conversely, hunters usually select animals older than one year.

3. Measures to Stop the Decline and Increase Size of the Herd

In the fall of 1975 the Alaska Board of Game was informed of our findings and of problems associated with the 1975 census effort. Although it was not possible to precisely estimate size of the herd it was obvious that a significant change had occurred. Public meetings were held during the winter of 1975-76 at which the village residents of northwest Alaska were informed of the situation and appraised of the various steps which could be taken to reverse the trend in caribou numbers. Their views and suggestions were solicited. Within Region III our opinion was that based solely on biological considerations the caribou hunting season should be closed. Other considerations would, however, have to be taken into account.

At the April 1976 meeting of the Game Board, regulations for the regulatory year beginning July 1 were promulgated. These included season closures, bag limits, retrieval of harvested animals within 10 days, prohibition of purchase or sale of caribou meat within the Game Management Units affected and harvest reports for caribou transported south of the Yukon River. These directives of the Board were implemented by the Department.

When results of the June 1976 census were available, it was apparent that the decline in caribou numbers was indeed extreme. Once again public meetings were held (in Kotzebue, Barrow and Fairbanks) for purposes of informing the public and soliciting comment. A questionnaire concerning the situation was also widely distributed to people affected by the decline in caribou. Subsequent to these meetings the Department closed the caribou season throughout the area occupied by the Western Arctic herd. This total closure became effective on 14 August and remained in effect until the Board of Game met in special session to consider the matter. The Board met in Fairbanks on September 20 and 21, 1976.

It was the Department's view that, based solely on biological considerations, it would be most desirable if the total closure of the hunting season could be maintained. However, in view of all considerations and the expressed needs of village residents a complete closure was not possible. The Board of Game rejected a complete closure of caribou hunting on the basis that a dire need for caribou meat existed in several villages. Such need would have led to emergency taking and such taking would undoubtedly include cows as well as bulls. Thus, in an attempt to minimize the take of cows a restricted harvest of bulls was provided for. It was proposed to the Board that no females should be taken and that no more than 3,000 bulls be taken by hunters between October 1, 1976 and March 31, 1977. These and other proposals pertaining to caribou were adopted by the Board.

Bull caribou were to be taken only under terms of a valid permit and permits were to be issued on the basis of demonstrated need.

The Board was further informed by Department biologists that the Western Arctic caribou herd would continue to decline if more than 1,500 sexually mature females were removed from the population.

After considerable deliberation and recommendation from village residents and Native representatives, the Board directed the Department to design and institute a wolf reduction program in the range of the Western Arctic caribou herd. Emphasis was to be directed at those areas occupied by wintering caribou, primarily in Game Management Units 23 and 24. Up to 80 percent of the wolves were to be removed from caribou winter range in these units.

This directive was implemented and in effect until 15 February 1977, on which date I was instructed by the Director of the Division of Game, Robert A. Rausch, to cease all permitted aircraft hunting of wolves.

4. Status and Impact of Wolves on the Caribou

The number of wolves living within the range of the Western Arctic caribou herd is estimated to be 1306 individuals. Expressed as a number per unit of area, the density in GMU 26A is one wolf per 150 mi². In Game Management Units 23 and 24, density of wolves is considerably higher; 1 per 75 mi². Details of the impact of this number of wolves on various prey species in the area of interest are complex, and are available in Department reports.

A conservative estimate of the impact of this number of wolves on the Western Arctic caribou herd can be made, based on the following information.

Impact during the five month period on summer range:

1. All wolves in GMU 26A take caribou at some time during this period;
2. 50 percent of the diet of wolves in GMU 26A is caribou;
3. 10 percent of the wolves in GMU 23 and 24 take caribou during this period. 50 percent of their diet is caribou;
4. 320 wolves are in GMU 26A and 986 are in Units 23 and 24;
5. Caribou calves are taken at a rate approximately twice as high as their occurrence in the population;
6. Wolves obtain at least six pounds of meat per day;
7. The average consumable weight of calves for this 5 month summer period is 20 pounds and of adults is 120 pounds. The latter is based on a calculated average weight of 170 pounds for adult bulls and cows with about 30 percent wasted in consumption (includes rumen, some bone, hide, blood, etc.);
8. Bulls and cows are taken in proportion to their occurrence in the population.

Impact during the seven month period when caribou are on winter range:

1. Caribou constitute 50 percent of the diet of wolves in Units 26A, 23 and 24;
2. 320 wolves inhabit 26A and 986 wolves inhabit Units 23 and 24;
3. The proportion of calves killed is approximately double their occurrence in the population;
4. Wolves obtain at least six pounds of meat per day;
5. The average consumable weight of calves for the seven month winter period is 50 pounds and for adults 120 pounds;
6. Bulls and cows are taken in proportion to their occurrence in the population.

Based on the above information, impact of wolves on caribou of the Western Arctic is summarized in Table 1.

The estimates indicated in Table 1 are considered to be very conservative. No consideration has been given to surplus killing by wolves or the increased vulnerability of pregnant cows during the later stages of gestation.

5. Anticipated Impact of a Cessation of the Wolf Reduction Program

At the present time predation by wolves alone is sufficient to cause a continued rapid decline in the caribou population. As the caribou population continues to decline, wolves will prey increasingly upon other species including moose, sheep, beaver and other available food sources. These species are of increasing importance to human residents of the area in view of the caribou decline and stringent regulations limiting the human use of caribou.

When all prey species (caribou and alternate prey species) are significantly reduced, the wolf population itself will decline.

It should be pointed out that alternate prey species will continue to support a population of wolves which will prey on a very small population of caribou whenever and wherever they are available, thus continuing to suppress recovery.

Following the decline of wolves, the array of prey species will slowly begin to increase.

The effect of failure to reduce predation by wolves will significantly affect several species of large mammals, further reducing (and in some cases eliminating) the availability of food for humans; the continued reduction of prey populations will seriously protract the period required for recovery of those species.

Efforts to immediately reduce the number of wolves preying on the Western Arctic caribou herd are an absolute necessity in view of all considerations involved.

