A GROSS METHOD FOR ESTIMATING CURRENT SIZE AND STATUS OF CARIBOU HERDS

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The Alaska Department of Fish and Game presently is attempting to determine the distribution and status of the caribou populations in Alaska. Such an extensive project requires an inventory technique that utilizes a minimum of time and money, yet is accurate enough for management purposes. The method developed and herein reported was based upon knowledge available concerning various caribou behavioral and physical characteristics. This method is outlined briefly as follows.

First, an aerial reconnaissance in late May is made over the area to be examined to find and delineate the calving grounds. Normally each herd has a definite calving area to which most of the parturient cows return each spring. Next, the calving area is divided into segments based upon readily identifiable landmarks, such as drainages. Each segment is traversed as completely as possible by airplane to tally the adult caribou (older than calves). Of these at least 1,000 in each segment are segregated more completely to establish the proportion of parturient cows present. These cows are identified in late May by the presence of hard antlers or by the presence of a calf. At the same

time calves are tallied for productivity data, and the relative number of yearlings present is noted as an index to the previous year's calf crop. An exact count of yearlings is not possible because many do not return to the calving grounds. The adult counts are then expanded into an estimate of the total adults in each segment and on the whole calving area. The total number of parturient cows on the calving grounds, and therefore in the herd, is estimated based on the sample segregation counts. The remaining portion of the herd then can be estimated using the sex-ratio and fertility data available for that herd or from other herds, with certain necessary assumptions.

The survey as described would provide current information about the population status of a caribou herd relative to the following:

1) Total numbers.
2) Size of calf crop.
3) Approximate peak of calving.
4) Relative success of calving.
5) Relative size and survival of the previous year's calf crop.

To illustrate the application of the technique, the writer described its use on the caribou population of northeast Alaska in 1961.

The survey took place May 18 - June 6 over an area of some 75,000 square miles, utilizing four men and two airplanes. Total cost was about $2,500, excluding salaries and per diem. A total of 29,703 adults was tallied on the calving grounds, and the total estimate including those not tallied was 60,000. Segregation counts on 5,694 animals revealed that about 67 per cent, or 40,000, of the adults were parturient cows. Using various sex and age ratios, these figures were expanded to 57,000 cows, 43,000 bulls, and 17,000 yearlings, for a total herd estimate of 117,000 animals (excluding calves). The peak of calving occurred about May 28, and the total calf crop approximated 36,000.

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