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OCCURRENCE OF CENTRAL ARCTIC HERD CARIBOU IN THE ARCTIC NATIONAL WILDLIFE REFUGE DURING THE SPRING AND SUMMER

Raymond D. Cameron
Kenneth R. Whitten
Walt T. Smith

A Preliminary Report to the U.S. Fish and Wildlife Service,
Arctic National Wildlife Refuge

Alaska Department of Fish and Game
1300 College Road
Fairbanks, Alaska 99701

February 1985

Occurrence of Central Arctic herd caribou in the Arctic National Wildlife Refuge during spring and summer.

With the congressional mandate for a comprehensive inventory and assessment of wildlife resources within the coastal plain of the Arctic National Wildlife Refuge (ANWR), much attention has been focused on the Porcupine Caribou Herd (PH) because of its large size and international status. The majority of the calving grounds and summer range of the PH is on the eastern arctic coastal plain in Alaska and the Yukon Territory. Concerns have been expressed that future petroleum exploration and development in ANWR might have deterimental effects on this herd and/or its habitat. Hence, the need for comprehensive baseline information, both for planning and mitigation purposes, and is a basis for the future assessment of impacts.

It is becoming increasingly apparent that the summer range of the Central Arctic Herd (CAH) (Cameron and Whitten 1979) also includes a portion of the ANWR coastal plain. As early as 1972, Roseneau and Stern (1974) noted heavy trails transecting the Staines and Canning Rivers during the last half of July, and in early July 1973, Roseneau et al. (1974) observed a major eastward crossing of these rivers followed by a westward recrossing later in the month. Numerous other unpublished observations made during various censuses, surveys, and radio-tracking flights over the past decade also indicate that CAH caribou frequently occupy the Staines/Canning River area during June and July.

A principal objective of this study was to determine the timing and extent of range use within ANWR by CAH through long-term monitoring of radio-collared individuals. Data from previous years have not yet been fully analyzed, hover, and we offer the following summary of observations made in June and July 1984 as a brief illustration of the temporal patterns of CAH distribution relative to the westernmost portion of the Refuge.

Methods

During June, July, and early August 1984, 48 CAH caribou, radio-collared on winter range (see Whitten and Cameron 1983) between 1981 and 1984, were relocated periodically using conventional tracking techniques. Of these, 30 (19 adult females, 6 2-year olds, and 5 yearlings) were found east of the Sagavanirktok River on 1-9 June, and an additional 4 were located in the same area on 3 July. On 12 July and 31 July-1 August, 33 of 34 radio-collared caribou believed to be east of the Sagavanirktok River were relocated.

The coastal study area east of Prudhoe Bay was apportioned into three regions of approximately equal size: Region 1, Sagavanirktok River-Shaviovik River; Region 2, Shaviovik River-Staines/Canning River; Region 3, Staines/Canning River-Kakakturuk River. The common boundary of Regions 2 and 3 separates state land from ANWR. Numbers of radio-collared caribou observed within each of these three regions were tallied for each of the four relocation periods.

Results and Discussion

Changes in the distribution of radio-collared CAH caribou among the three coastal regions indicate relatively heavy use of the eastern two-thirds of the study area from late spring through midsummer, with considerable movement across the Staines/Canning River (Table 1). During the calving period in early June, 23 of 30 collared individuals were found in Regions 2 and 3,

including 15 of the 19 adults females. All 15 of these females were within 20km of the coast between approximately Bullen Point and the Staines/Canning Delta, corresponding to the eastern CAH calving concentration described previously by Whitten and Cameron (1985). By 3 July, little net change in the distribution of radio-collared caribou was evident, but relocations of 12 July indicate that a eastward movement had occurred. More than half of 33 caribou were found within ANWR; one yearling had moved westward out of area. By the end of July, however, five radio-collared caribou had recrossed the Staines/Canning River and a second yearling had moved across the Sagavanirktok River out of Region 1, implying a generally westward drift. Collectively, the distributional changes noted in July 1984 are consistent with the earlier, somewhat fragmentary observations of CAH movements in the Staines/Canning area (Roseneau and Stern 1974, Roseneau et al. 1974, Cameron and Whitten 1976).

Table 1. Changes in the distribution of radio-collared caribou among three regions of the central arctic coastal plain, Central Arctic herd, late spring-mid-summer 1984.

	Region[a]				Total
Date	1	2	3	West[b]	relocated
1-9 June	7	18	5	0	30
3 Jul	8	23	3	0	34
12 Jul	3	12	17	1	33
31 Jul-1 Aug	2	17	12	2	33

[a]Region 1 = Sagavanirktok River-Shaviovik River
Region 2 = Shaviovik River-Staines/Canning River
Region 3 = Staines/Canning River-Katakturuk River
[b]Those located west of the Sagavanirktok River.

These and other observations over the past decade suggest that such mid-summer movements occur annually. During routine radio-tracking flights in mid- and/or late July, it is not uncommon to observe aggregations of 2,000 caribou in the Staines/Canning Delta. On 19 July 1983, for example, a mixed group of ca. 3,000, including 12 radio-collared individuals, was sighted just east of the ANWR boundary (unpubl. data, ADF&G and ABR files); subsequent radio-relocations indicated that the majority of the caribou later moved westward across the Canning River and dispersed inland.

Access to the coastal plain portion of ANWR is apparently of some importance to the CAH, both as a calving area and as summer range, particularly during the insect season. Assuming that the 1984 distribution of radio-collared individuals was representative of caribou in the study area, and given that approximately half of the CAH was east of the Sagavanirktok River (based on observations made during the 1983 census: Smith, unpublished data), the limited results presented here demonstrate considerable use of the area in question. During calving (1-9 June), 3 of the 19 adult females relocated (16%) were within ANWR. In July 9%-52% of the radio-collared caribou were found in ANWR. The above calculations, although subject to considerable error, indicate that up to 25% of the entire CAH may occupy the extreme western portion of ANWR for a brief period each summer. If the CAH continues to grow, with an accompanying lateral expansion of summer range, this region may increase in relative importance, both spatially and temporally.

Acknowledgments

Funding for this study was provided by tne U.S. Fish and Wildlife Service (Arctic National Wildlife Refuge) and through Federal Aid in Wildlife Restoration Projects W-22-2 and W-23-1. We are grateful to J. R. Dau, C. Gurns, and C. C. Miller for skilled technical assistance.

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