

Body condition and pregnancy rates of the expanding Southampton Island caribou herd

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Abstract: Caribou (*R. t. groenlandicus*) were common on Southampton Island (N.W.T., Canada) until the early 1900's. However, caribou were rare by 1935 and the last individual died in 1953. In 1967, 48 caribou were introduced on Southampton Island. With the current growth of the herd the estimated carrying capacity of the island will be reached within five years if there is no significant increase in the hunting quota. Based on the demographic behavior of some *Rangifer* populations introduced on other islands a substantial depletion of winter food followed by a dramatic crash, can be considered a possibility for the Southampton Island herd. To document the increase of the herd and to better manage this resource, we are currently monitoring several biological indicators, including the physical condition of the caribou.

We assessed body condition, through fat reserves, and pregnancy rates of 74 females (5 calves, 11 months old; 15 yearlings, 23 months old, and 54 older animals, \geq 35 months old) collected in spring (May) 1988 (n=24), 1989 (n=22), and 1990 (n=28). Most females (68 of 69) were pregnant, including all 15 yearlings. Calves averaged 0.6 cm of backfat and had a mean Riney kidney fat index of 22. The corresponding values were respectively 2.0 cm and 75 for yearlings, and 2.2 cm and 92 for adults. Fatness was similar in 2 year old and older animals.

Age specific fat reserves and pregnancy rates obtained for females from Southampton Island are greater than ever previously recorded for caribou in late winter. Our data suggest that being pregnant as a yearling does not prevent reproduction as a 2 year old. Results support the view that fertility is related to a combination of factors. We suggest that fertility in female caribou is influenced by body weight and fatness. Age might also be a factor as the calves were not pregnant.

The current estimated number of caribou on Southampton Island (about 13 000) can provide an adequate yield for the local community. Animals are in excellent physical condition at the end of winter suggesting no over-exploitation of the habitat. Consequently, we suggest that the hunting quota should be increased to restrain the growth of the herd.

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