A MILD WINTER AND WHITE-TAILED DEER IN SASKATCHEWAN

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As part of an ongoing investigation of winter mortality of wildlife in Saskatchewan, conducted jointly by the Wildlife Branch of the Department of Tourism and Renewable Resources and the Department of Veterinary Pathology of the Western College of Veterinary Medicine, winter mortality of white-tailed deer was again monitored in the very mild 1980-1981 winter. Subjectively, the 1980-1981 winter can be described as very mild with above average mean monthly temperatures, snowpack below average in most of agricultural Saskatchewan, a mild preceding autumn, and a shorter than average period of snow cover. White-tailed deer found dead by DTRR field staff during winter were examined to measure their physical condition and to determine the factors causing and/or contributing to their death.

A total of 61 white-tailed deer was submitted for necropsy, notably higher than the 35 deer submitted the previous winter, also judged to be mild, but still markedly less than the totals submitted in severe winters earlier in the study.[1] However, as in the mild 1979-1980 winter, most of the specimens (91%) died as a result of collisions with automobiles (89%) or trains (2%) (Table 1). Shooting, a bacterial infection, a trapper's snare, and predation by coyotes each accounted for one death. The deer was only maimed in the predator attack and was subsequently shot. One old female in poor bodily condition died after running into a fence and one deer died of shock following rupture of muscles in its hind limbs probably due to slipping on ice. As was found in the 1979-1980 winter, mortality

Deer. *Lorne Scott*

Table 1. CAUSE OF DEATH OF WHITE-TAILED DEER SPECIMENS OBTAINED DURING THE 1980-1981 WINTER.

Mortality Factor	*No. of Deer*
Automobile Collision	54
Train Collision	1
Predation	1
Bacterial Infection	1
Snare	1
Shock	1
Trauma	1
Shooting	1
Total	61

caused by predation and starvation in the very mild 1980-1981 winter was much less than would be expected in a more severe winter with deeper snow.[1]

Body condition estimates for each specimen, based on the amount of fat remaining in the carcass at the time of death, indicated the adult deer were in good body condition throughout the 1980-1981 winter. Most fawn deer were able to maintain good body condition even into April in comparison to the mild 1979-1980 winter when fawns were able to maintain good body condition only into March. In more severe winters, fawn body condition begins to deteriorate much earlier than this.

Gross examination of rumen contents to describe winter diets revealed that cereal grains were the principal food of almost two-thirds (63%) of the 1980-1981 deer with woody browse the principal food of the remainder of the deer. In contrast, deer diets in the 1979-1980 winter, characterized by somewhat greater snow pack than in 1980-1981, were largely woody browse whereas in more severe winters, cereal grains and tame forages were important deer foods.[1] These results suggest that when snow cover is minimal (1980-1981), deer use the highly nutritious cereal grains due to their increased relative availability but when snow covers these foods in a mild winter (1979-1980), deer eat woody browse to a large extent. During mild winters, deer are generally in good nutritional status and do not need to actively search for nutritious cereal grains for food. Woody browse diets are adequate. In severe winters, physiologically stressed deer may seek cereal grains and tame forages due to their higher nutritional value even though their relative availability is reduced by the snow cover.

TABLE 2. REPRODUCTIVE SUCCESS OF FEMALE WHITE-TAILED DEER IN THE 1980-1981 WINTER.

Age Category	*No.*	*No. Pregnant*	*No. With One Fetus*	*No. With Twins*	*Pregnant But No Fetus Count*	*No. With One Dead Fetus*
Fawn	9	2 (22%)	2	0	0	0
Yearling	6	6 (100%)	4	0	2	2
Adult	16	15 (93%)	4	9	2	1
Total	31	23 (74%)	10	9	4	3

Reproductive success of the does submitted (Table 2) was somewhat less than is expected for Saskatchewan whitetails. Although most females older than fawns were pregnant (21/22), the average number of viable fetuses per doe (1.35) is lower than has been observed in other years. The proportion of fawns pregnant (22%) approximates the rate observed during severe winters and is markedly lower than the 60% fawn pregnancy in 1979-1980.[1] The absence of twin fetuses carried by yearling females and triplets in adult females, and 3 instances of fetal mummification (one fetus in each of 2 yearlings and 1 adult) also point to less than average reproductive success. Although these data are limited, they may suggest reproductive success of the submitted females was lowered by some environmental factors. Possibly the drought experienced in Saskatchewan in 1980 resulted in whitetail females entering the breeding season in less than optimum condition, consequently decreasing reproductive success. Another explanation for this phenomenon may be that the specimens submitted represent less fit individuals in the population (more susceptible to all mortality factors, even automobile collisions) and are not capable of the reproductive success expected of Saskatchewan white-tailed deer. It may be that a combination of both these explanations is reponsible for the low reproductive success observed in the 1980-1981 sample.

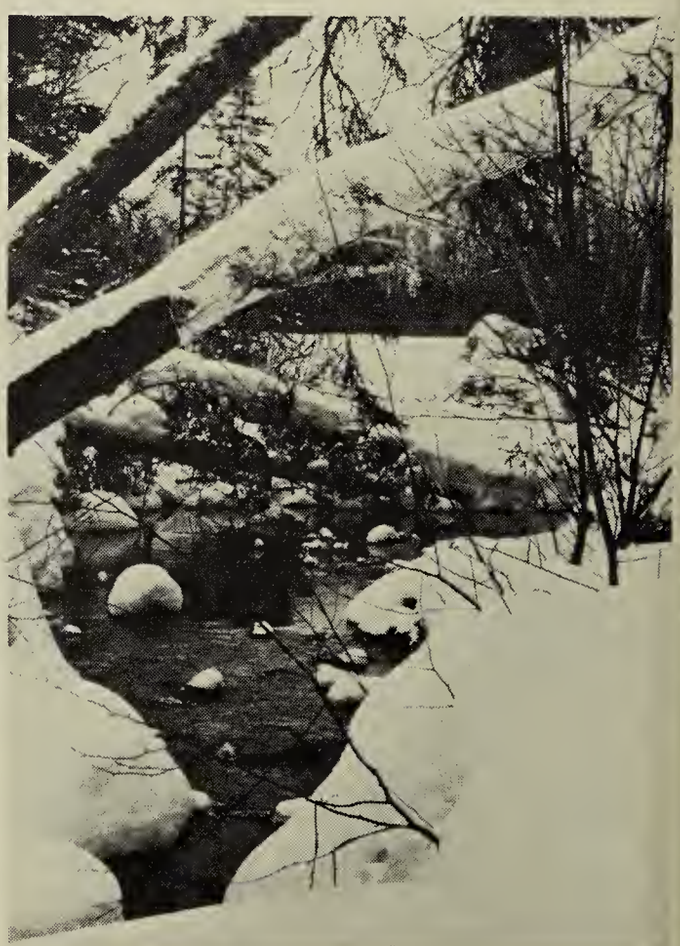
In summary, it appears the very mild 1980-1981 winter was an easy winter for white-tailed deer in Saskatchewan and the winter's limited snow cover enabled deer to take advantage of waste cereal grain and tame forage as their principal food. Lower than expected reproductive success may reflect the drought experienced in Saskatchewan in 1980.

[1]HUNT, H., G. WOBESER, and F. LEIGHTON. 1980. Whitetails and the 1979-1980 winter in Saskatchewan. Blue Jay 38(4):252-253.

1981 SASKATCHEWAN CHRISTMAS MAMMAL COUNT

Reports of mammals seen during bird counts will be compiled again this year. When on Christmas Bird Counts please note the number of each species of mammal seen, and note species whose tracks you can positively identify.

Send mammal counts with your bird counts by 11 January 1982 at the latest to Margaret Belcher, 2601 Winnipeg Street, Regina, Saskatchewan. S4P 1H8.



Winter. *Ron Jensen.*