By Ralph Ritcey 9 February 1991

Only a few weeks ago, we were trying to cope with some of the worst winter weather of the past decade.

Temperatures dropped as low as -40 degrees in the North Thompson, while snow deepened on mountain slopes.

We shivered and complained, but moose hardly noticed the inconvenience. That is no wonder, for moose are well adapted to withstand the rigors of winters far more severe than those they face around Kamloops.

In the northern part of their range, which extends to the edge of the Arctic tundra, temperatures sometimes dip to -60 or worse, and may remain well below freezing for several months. Snow cover in some parts of their winter range can be equally as trying, often exceeding 2 metres in depth.

How can moose survive such conditions? Well, they make it through the winter using some of the same strategies that we do.

First, they dress warmly. Their summer coat is improved by growing longer guard hairs and adding a wooly underfur as winter approaches.

The wooly underfur serves much the same purpose as long johns or woolies that the oldtimers wore from October through May. Moose underfur lasts all winter, but is shed in spring along with the guard hair.

Moose are also like many of us couch potatoes in that they don't do too much in winter except eat and rest. Eating for about 45 per cent of the time and resting the reminder, the wintering moose clearly resembles the average Canadian between Christmas and New Year's.

But they don't count calories because moose don't have to worry about gaining weight in winter. No matter how much they eat, adult moose between fall and spring will lose about one-quarter of their body weight or about 100 kilograms.

The trick to their weight loss is the high fibre (67 per cent) diet and cutting back on intake. (It must be easy to cut back if all you are eating is twigs and bark.) Cutting back is quite necessary to allow time for digestion when on low-quality food.

Microbes in the rumen (the first and largest of the moose's four stomachs) are responsible for helping to convert forage to useable energy and can only do that efficiently when intake is from 10 to 15 kilograms of browse per day. This seemingly large consumption is about half that eaten in the summer, when moose eat more digestible and highly nutritious leafy vegetation.

If moose are to survive until spring on poor forage, they must put on fat before the onset of winter. Moose then have a rather definite yearly cycle of weight gain in summer and weight loss in winter.

This, of course, is quite the opposite to the yearly winter lard-up that many of us exhibit.

Nature has arranged it so that most moose will maintain enough weight to make it to spring despite the poor-quality winter diet. However, some don't make it.

Moose who starve during winter are usually the very young and the very old, and bulls are more likely to succumb than cows. Fat reserves on calves are minimal, so they are the first to succumb to a long winter.

Bulls also carry little fat into the winter, especially those who have loved not wisely, but too much. During the rut, bulls feed little and travel widely in search of cows to carry their genes to succeeding generations. Bulls eat little for a period of about two weeks during the peak of the rutting season.

Moose seniors (moose more than 10 years old are over the hill, while those more than 15 are living on borrowed time) have to struggle through the winter without Denticare. If they escape hunters and predators to live to old age, it is failing molars that do them in.

Grinding pillars (the raised ridges of the molar) on old animals are worn smooth and can't make small twigs out of big ones anymore. A slow death results from starvation even though the moose has eaten forage that would have sustained it in younger times.

Things are further complicated when ranges are crowded and moose are forced to browse repeatedly on plants that have already been browsed. The most nutritious and easily digested parts of the browse plants are terminal buds and twigs.

Twigs selected and eaten in early winter are usually under six millimetres in diameter and contain relatively small amounts of lignin (the fibrous, most indigestible part of the twig).

Later in winter, there is less to choose from, so moose are forced to eat larger and larger twigs with ever-increasing amounts of lignin. This results in a slowing of the rate of digestion, of food intake, and thus fewer calories to sustain life.

When you see that many twigs the thickness of your finger have been consumed, you can assume that the moose are losing weight very rapidly and will surely starve if the winter is a long one.

One of the best places I know of to watch wintering moose in on Green Mountain in Wells Gray Park. There is a vantage point at the widening of the road to the park about 31 kilometres after leaving Highway 5. Moose are usually visible from this vantage point from late January through February.

It is best to search for them in one of their peak feeding periods that occur in the first two hours after daybreak, shortly after noon, and in the last hour before darkness.

You will have difficulty in picking up the moose without binoculars and to have a really good look you will need a 20-power spotting scope.

Nearly all bulls will have lost their antlers by this time. You will be able to pick them out anyway – they're the ones with the wide black snouts.

The cows have narrower, tan-colored noses. Calves are noticeably smaller, have shorter snouts and a more prominent mane.

Watch how easily they move through the deep snow. And, no wonder, snow of about 65 centimetres will only make it to the hock (anatomical equivalent of our ankle) of a moose.

Ralph Ritcey is a retired wildlife biologist who spent many years studying the moose of Wells Gray Park.

Top Moose man talks to Friends

One of the foremost authorities on Wells Gray Park will head up discussions at Friends of Wells Gray annual meeting tonight.

Wildlife biologist Ralph Ritcey will discuss the habitat of Wells Gray at a public meeting at South Central Health Unit, 905 Southill at 7:30 p.m.

Society president Trevor Goward said Mr. Ritcey wrote a report during the 1960s on moose and caribou population and migration which has been used by scientists worldwide.

"He has without question the best knowledge on the moose of B.C.," Mr. Goward said. "He worked in Wells during the 60s for 10 years as a wildlife biologist. During that time he conducted the most intensive research program on wildlife in Wells Gray, especially large game like moose and caribou."

Mr. Ritcey then became the regional biologist for the Kamloops region. Since his retirement in 1988, Mr. Ritcey has remained active with Wells Gray and B.C. Parks.

"He'll talk about a project he undertook to create moose habitat by setting fire to a portion of Wells Gray, which changed it from a dense carnivore forest to shrub for moose to survive the winter."