**All About Isle Royale Moose – A**

Moose cows give birth to calves in late May when it is still cold and spring has not yet really arrived in the boreal forest. At this time the cow are malnourished and not yet recovered from the past winter’s ticks. It may seem too early, but this early start is essential so that calves are prepared to survive their first winter.

At birth calves weigh only 30 pounds but can walk within hours of birth. For the first two months of life, much of their nourishment comes from the mother’s milk. Calves begin testing different foods within a couple of weeks, and by late July they eat large amounts of vegetation. By late fall, calves are fully weaned. At this time, healthy calves weigh 300 pounds, almost ten times their birth weight. However throughout their entire first year, calves depend on the protection of their mothers. A healthy mother is a formidable defense!

Typically, eight of every ten cows are pregnant each fall. By the following spring, twenty months later, only one or two of every ten cows still have a surviving calf. By some standards the survival of a calf is miraculous; by any standard it is against the odds.

During summer, moose consume thirty to forty pounds of vegetation (referred to as "forage") a day. That would be like you or me eating 7 pounds of salad every day. Because each bite may contain only a few grams of food, moose bites and chew several thousand times every day. Moose patiently feed for about eight hours every day.

Moose forage is voluminous, but low in nutrition. To get the nutrients they need from this kind of food moose possess one of the most complicated digestive systems ever created by Mother Nature (aka, natural selection). To get the most out of it, moose digest their food a bit, regurgitate it, chew on the cud, and re-swallow it for a second round of digestion. Moose patiently chew their cud about eight hours every day.

In preparation for winter, moose increase their body weight by as much as twenty-five percent. Imagine gaining twenty-five percent of your body weight by eating only vegetable salads – no salad dressing, just the salad. The extra food is stored in their bodies as fat that can be used as a source of energy over the winter when they are unable to find enough vegetation due to snow cover or loss of leaves by deciduous plants.

Text and Images from *Wolves and Moose of Isle Royale* (http://www.isleroyalewolf.org/)

**All About Isle Royale Moose - B**

More than any other member of the deer family, moose spend time in the water. The moose’s association with water is so distinctive that moose may appropriately be considered the hippopotamus of the north country.

Moose are well-suited for spending time in water. Long, strong legs allow moose to walk easily in shallow waters and swim in deeper waters. Moose also have large, complex noses. A moose nose consists of massive cartilage, specialized muscles, folded and recessed skin, and fatty pads. These features may represent a complex, nostril-closing system, that allow moose to forage underwater without breathing in any water.

Aquatic environments offer much to moose. Water brings coolness. In the water, moose reduce their respiration rate by almost 30%, and their overall energy expenditure by about 10%. Water also brings nutrition. Of all the food that moose consume, aquatic plants are the richest in protein and sodium. Water also brings safety. Even a weak, vulnerable moose is considerably safer from an attacking wolf when standing in just a few feet of water.

For moose, winter is full of suffering and triumph over that suffering. It is not the cold - moose are hardly bothered by it. It is the difficulty of getting food. During winter, moose mostly eat twigs from deciduous trees and shrubs and the twigs and needles of balsam fir and cedar. Each bite of food is a mere gram – just 1/28th of an ounce. Moreover, twigs and needles contain only one third the nutrition of leaves that moose eat during summer.

The fare is not only meager, but also difficult to gather. The snow is deep - moving from tree to tree is difficult and energy consuming. Imagine yourself walking through chest or knee deep snow from tree to tree collecting about nine thousand twigs – one twig at a time – every day. This is how moose – an 800 or 1000 pound creature – survive the winter.

When snow is deep and food is sparse, moose restrict their intake of food because the amount of energy it takes to get the food is greater than the amount of energy the food provides. Moose pass much of the winter resting and ruminating, in solitude and hunger. Ultimately, moose lose weight every single day, for about five months of every year. Nevertheless, most moose live to see the spring that follows each winter.

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