

## Cattle, Horses, and Bison on a twenty below morning.

The cattle in this photo are taking in some “rays” on a twenty below morning.

Bison, cattle, and horses are designed to withstand cold weather. They grow excellent winter coats. Their legs and hooves are much less susceptible to cold than our hands and feet. But best of all, their digestive process (rumination) creates heat as a significant by-product.



Virtually all northern animals grow winter coats, but you might be amazed at how different the coats of each species are.

Cattle grow long, thick, coats each winter and shed them for short coats in the spring. Their winter coats have a hair density of about 5,000 hairs per square inch. In general, the greater the hair density the better the insulation.

Horses have a layered coat. The outer coat is coarser and has around 1,200 hairs per square inch. The inner coat is finer with about 2,000 hairs per inch. Horses also shed in the spring.

Bison coats are much more complex. Some experts say that bison have twenty-six different sizes (length and diameter) of hair. Bison winter coats are of different lengths on different parts of their bodies.

They have “capets” on their shoulders, “bonnets” on their heads, “beards” under their jaws, very fine hairs called “down” etc.

The hair density on some parts of their bodies is 20,000 hairs per square inch. Bison take months to shed their winter coat. They were sometimes called “big shaggies.”

In all species, when their winter coat is right, snow and frost will accumulate, un-melted on the exterior. Snow or frost simply acts as an additional insulating layer.

Rumination in animals, primarily bovines, is a complex digestive process. Rumination is crucial to get high food value from forages.

The chemical and biological activity in rumination produces a lot of excess heat. That heat is important in the ability of many large animals to prosper in northern latitudes.

Bison and cattle are great ruminators. Horses are not true ruminants, but their digestive process does give them some of the same benefits.

Because the animals need the heat of rumination in cold weather, it is important to have suitable forage, generally high fiber hay, available at all times.

Back to the photo of the cattle standing broad side to the sun.

If you have ever camped out in the winter, you know that you get coldest at sunrise, just before the sun begins to warm the day.

The cattle spent the night lying together in an area protected from the wind. I took the photo just after they positioned themselves in the morning sun. Some of them are chilled. You can see that by the way their backs are hunched. Much like you might hunch your body together at a windy bus stop.

The calf in the upper center is especially chilly. They seem uncommonly cold on this morning. The weather had been relatively pleasant and switched quickly to bitter cold. That fast change may have been difficult for them. Within a half hour after I took this photo, the cattle were running and kicking up their heels. They just needed to get out of bed and move.



I have added a second photo that shows horses warming themselves on the same morning. The smaller palomino that is lying down in the photo is Buckwheat, a 20-year-old Shetland. He seems to be more comfortable at cold temperatures than the full-size Mustangs.

Bison, with their superior coats are quite indifferent to cold. I have added a third photo of Bill, our herd bull. Notice the complexity of his super winter coat. Bill could not be more comfortable. Best regards and stay warm. Wear a good coat. Tom

