Selecting the Right Heifers While Ensuring the Conservation of the Bison Species – Tom Lefaive, Turner Ranches

Selecting the right heifers begins with understanding the goals you plan to achieve with your bison herd. It is important to prepare yourself with as much information and knowledge as possible prior to making that selection decision so that the heifers you select fit well with your bison program. Understanding their history, learning from others as well as reading and observing are important tools in the bison business.

I evaluate animals by using four major areas for discussion: 1. characteristics, 2. conformation, 3. soundness and 4. condition. In addition to addressing these issues I would also like to make observations about heifer growth as well as bison conservation.

It is important to understand that any decision we make may affect conservation of the bison species. We must ask ourselves, “Are we trying to change the bison in much the same way that cattle have been managed, or will the decisions we make ensure the long-range conservation of the bison.” We must first strive to manage for the conservation of the species less we lose our freedoms to manage at all. I will begin with a discussion of the four areas.

1. Characteristics

Bison in North America are of two subspecies - plains and wood. They exhibit phenotypic differences. Some animals may exhibit characteristics of both. Some differences may be subtle while others are more pronounced. Structurally, the wood bison stands taller and favor a higher hump that may project forward of the shoulder. The higher structure is beneficial when moving in deep snow and areas with timber debris. The lessening of hair on the leggings, beard and front pelage is typical of the wood bison. The deep snow and ice in the north caused a problem for animals with well developed long hair covering the raised pillage, beard, leggings, and tail. Natural selection favored those animals with less hair and higher in structure.

The plains bison structurally is lower to the ground. The highest part of the hump, on a plains bison is typically located straight above the middle of the shoulder. Their overall structure being lower to the ground is an advantage for bison grazing on the plains. For heifers, the hump is less developed when compared to the males.

Heifer calves should start exhibiting structural characteristics as early as six to eight months and become more developed with age. Heifers should possess female bison characteristics. Heifers have a more elongated head in comparison to the broad wedge shaped head of a male. The horns are smaller in diameter throughout the length. The raised pelage is not as pronounced as the males’ and beard length is shorter.

Bison are very gregarious animals and exhibit a strong social bond to be with others. Placing a heifer calf, yearling, even two-year olds and older females in a pen by themselves is never a good idea. In confinement they may become overly stressed and injure themselves in an effort to escape. We need to examine our methods, techniques and behavior to ensure we are not initiating an undesirable response from the animal. Interpret both their behavior and your behavior that may have caused their response.

I would recommend selecting for bison that exhibit a reasonable response that is warranted by the stimulus with which they were presented. Allow the bison to respond with the same level of response as the level of the stimulus. Place If you approached a bison in a small enclosure or cubical, the animal would most likely become very active and uneasy as you invade their space and most likely will try going vertical against the cubical walls in an effort to escape. This would be a typical and expected response.

2. Conformation

Conformation deals with the symmetrical formation of the bison features - uniformity and balance. Uniformity compares one feature or body part to another. For example, is the size of the animal in keeping with the horn growth exhibited? The age exhibited by the horns may not be in balance with what is exhibited by body growth and development. The head may be that of a two year old heifer but the weight is that of a good sized calf.

A heifer must be of sufficient width and uniform throughout the length of the body. Bison typically possess good depth through the chest cavity and are uniform throughout the length. Taking into account the characteristics, soundness and condition, one might ask, "Is the animal a good to excellent representation of the bison breed". Evaluating overall conformation of a heifer is an important skill for a manager or producer. . Maintaining genetic diversity while making decisions is critical and not all can be critiqued by a standard that is accepted and understood by all.

It is difficult to pick out long-term breeders from six month old heifer calves. We typically pick out some extra calves so that at yearling or better yet two year old age we can make a more critical selection of breeders based on growth and characteristics exhibited at that time. Criteria for calves would initially be to select for calves that exhibit good health, alertness, sufficient growth for their age, and characteristics typically for a heifer. When possible, evaluate a heifer while she is standing next to the cow. An amazing insight can be gained from this opportunity.

I am critical of narrow and weak framed animals, especially if the pelvic area is narrow or one where the back drops down in the last foot approaching the tail, (Slithered rear end). This condition is exemplified if the muscling in the hind quarters is diminished and also tapers in from the side, (Pencil butt). Pelvic problems can easily lead to calving problems later in life. Slithered rear ends, pencil butts, and high tail heads may all affect

the pelvic positioning and structure of the birthing canal and cause restrictions that lead to calving problems. Man's ability to treat, and to keep alive, animals that would normally have died at birth may lead to additional problems if those animals are selected for and enter a breeding program. Some calves may exhibit pelvic damage resulting from a hard delivery. These animals usually compensate for the injury by pulling the hind legs up underneath and exhibit the slithered rear end, or rabbit leg posture. They are generally narrow and weak framed and the width of the animal is noticeably much less than healthy animals with good width throughout the length of the body. A heifer, when she matures, has to hold up under the weight of bulls that may be twice her size.

3. Soundness

Soundness refers to the features of the bison being in good condition and function. The eyes, ears, horns, hooves, sexual reproduction features, tail, and other body features all being present, should be in good condition and free of injury that would limit its ability to function and carry out life processes. Animals with blindness in one eye may carry out life processes but could be difficult to work through the corral facilities and may set up a defensive posture and become aggressive. Injuries to the legs, back and other body features that are severe enough may not allow the female to be bred by a male weighing as much as 2000 pounds.

If an animal is aggressive, examine the animal closely for any injuries that could cause this response. Once the animal has had a chance to heal, they usually exhibit a different response. Animals that have experienced a high fever in their life, or have been pushed with too hot of a grain diet may exhibit extra long hooves and cracking in horn and hoof development. Long hooves are usually seen on older females and rarely on heifers three years old and younger.

Heifers of any age should be able to move freely, and without noticeable limps, stiff legs, and exhibit an alert and healthy stance. Heifers that stand in a "humped- up" posture, head down and usually found off by themselves in a pen may have been injured or are ill. Such animals should not be selected as replacements for a herd.

4. Condition/Nutrition

Bison nutritional needs vary throughout the year, vary with age, and vary with condition or status such as gestation. Select bison that exhibit growth significant for their age. If a heifer has not exhibited its growth potential that is typical for its age, it may not mature and may cycle abnormally due to lack of proper nutrition. The best indicator of overall condition is the appearance of the hair coat. Hair that exhibits life and luster is

indicative of a healthy animal. Mineral deficiencies can sometimes be indicated by the hair coat.

Historically, bison roamed the plains and extended their range to include a variety of elevations, climates, vegetation preferences and were able to seek and fulfill their own nutritional demands. With bison being confined to boundaries, we have limited their ability to seek nutritional demands to what is available within their fenced or natural boundary unless mitigated for by supplying mineral and other nutritional needs. When selecting animals, understand the nutritional program of the ranch from which you are purchasing the animals. Forage records analysis helps to get a handle on what grass has been available. Blood sample results and other lab work available is helpful in interpreting what deficiencies you are seeing in the selected animals. Available historical records may give you a handle on their needs and deficiencies. Transitioning heifers from one nutrition program to another is important especially when trying to maintain a rising plain of nutrition for growth, development and carrying out all of life processes in a timely manner.

Growth

Heifers grow rapidly in their first two years of life. If the growth is interrupted due to stress or other factors, the mature size of the animal will be less. Heifers should develop a frame that represents the growth and development found on adult females with good width, body depth and complimentary “spring of rib” necessary to provide room for carrying a calf and to carry out normal and typical birthing functions without complications. The nutritional demand during growth and development is significant especially for first and second calf heifers where there nutritional demand and intake more closely resembles that of a mature bull using up 1.3-1.4 AUMs during the third trimester of carrying their calves and early nursing of the new born calves. Insufficient nutrition at this time will stress the heifers and the length of time to heal, flush and cycle for breed back is lengthened. Heifers that have achieved a good size with sufficient growth and development prior to being bred will require less time to heal, flush and cycle.

Older females need less nutrition since they require less to maintain their own body and therefore have more nutrition going to the benefit of the fetus or new born calf. Selecting for heifers that exhibit sufficient growth without being pushed with high nutrition supplementation is recommended. Feeding animals a high corn diet for example will have lasting effects on the animal’s ability to graze and digest natural prairie grass in the future. Often times when you bring these animals home and put them on a native grass pasture, they fall apart. We have slaughtered grass fed heifers and had them hanging next to grain finished animals in the slaughter plant and the grass fed heifers exhibited more fat than the grain fed animals.

Conservation of the American Bison

Selection criteria while maintaining the conservation of the species may be a combination of selecting for healthy and disease free animals while allowing for natural processes. In the wild, the healthy survive, and the weak and sick are taken out by predators. By selecting for healthy animals, one may mimic what would have taken place in the wild with wolves and bears near bison herds. Selecting against overly aggressive animals or flighty animals by removing them from the herd may mimic the removal by large predators because these animals often leave the safety of the herd.

The bull-to-cow ratio you select will ultimately affect the revenue from your operation and will also affect how much your operation contributes to the conservation of the American Bison. Single sire herds are limited in how much they contribute to the conservation of the species. Conservation guidelines are being developed. When they have been drafted it is important for bison producers to ensure that the guidelines are practical and recognize the significant contribution made by bison producers to the conservation of bison.