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BODY CONDITION SCORING AND BISON

BODY CONDITION SCORING CAN HELP BISON producers manage their herd for optimal health, production, and profitability. Body condition refers to the amount of fat that an animal is carrying. Body condition scoring is a system designed to estimate the amount the fat that the animal has. It is a useful management tool that helps farmers do a better job feeding their stock.

BODY CONDITION SCORING SYSTEMS

The first body condition scoring system was developed for sheep because producers could not determine how fat or thin a ewe was when she was in fleece. The manual palpation method for determining BCS was developed to overcome this problem. This system was later adapted for use with beef and dairy cattle and later for bison.

The system presented for bison in this article has been adapted from the beef and dairy cattle five point scale. A body condition score (BCS) of 1 indicates that the animal is very thin. A BCS of 5 indicates that it is very fat.

Since bison are seldom caught in a squeeze to allow a “hands on” body condition scoring system, most of the criteria used to assess the animal are visual clues. While learning how to body condition score bison, it is helpful to feel the bison in a squeeze so that you can feel what you think you are seeing under their thick hair coat. Once a person is experienced in scoring bison, visual clues are adequate.

TARGET CONDITION SCORES

Ideal condition score depends on the time of year. Over the different seasons of a year it is normal for a bison’s weight and body condition score to fluctuate. Most people aim to have their bison fat in the fall so that they do not require as much feed over the winter. Most experienced producers aim to have their bison lean in the spring because excess fat may lead to calving problems. By the beginning of breeding season, the cows should be back to a moderate to good body condition to ensure optimal conceptions rates.

<table>
<thead>
<tr>
<th>TIME OF YEAR</th>
<th>IDEAL SCORE</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>November</td>
<td>4</td>
<td>3-4+</td>
</tr>
<tr>
<td>April</td>
<td>2+</td>
<td>2-3</td>
</tr>
<tr>
<td>July</td>
<td>3+</td>
<td>3-3+</td>
</tr>
</tbody>
</table>

By knowing your herd’s body condition score, you can adjust your feeding to meet the above targets. If the animals are too thin, increasing the amount or quality of feed and supplements will increase their body condition score. If the animals are too fat, the opposite is possible and money can be saved in the winter feed bill.

One must be aware that any change in BCS should be gradual as rapid changes, either up or down, can cause health problems. Rapid weight loss in fat bison can precipitate a disease called “Fatty Liver Syndrome” and cause death. Rapid weight gains on grain diets are possible but this type of diet can cause digestive upsets and may cause death as well.

BCS AND BODY WEIGHT

In bison, one unit of BCS is roughly equivalent to 90 pounds of live tissue weight. The approximate composition of this tissue would be 70% fat, 24% water, 6% protein and 1% mineral (adapted from dairy cow research by Otto and co-workers, 1991).

BCS AND REPRODUCTION

Experience indicates that cows that are too fat at calving (BCS >4), were more prone to reproductive diseases such as difficult calving than cows with lower BCS. Cows that are thin (BCS<2) experience reduced fertility.

ASSIGNING A BODY CONDITION SCORE

Often an animal being evaluated does not meet the exact criteria of a given BCS but falls somewhere between 2 scores. The evaluator can assign them a value with a “+” sign which indicates that they are slightly more than the score given but not at the level of the next score. For example a cow scoring between a BCS of 2 and a BCS of 3 may be scored as a BCS 2+. Why do I need to look at more than one area on the bison?

There is variation between animals in how they deposit fat. Factors such as age, sex, subspecies differences, and even individual animal variation will affect the score that they exhibit at each of the scoring areas of the body. By scoring several areas and averaging the scores we get a much more accurate overall body condition score for the animal than just using one area. For example an old bison cow may look like a BCS of 2 when looking at her ribs but the other areas indicate that she is a 3. This cow would get an overall score of 3. The following table can be used to score bison in the field.
# Body Condition Scoring Guide for Bison

This table can be used to score bison in the field.

<table>
<thead>
<tr>
<th>BCS</th>
<th>Ribs</th>
<th>Spine (Backbone)</th>
<th>Hip Bone</th>
<th>Tail Head</th>
<th>Hump</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 very thin</td>
<td>prominent in summer; many ribs visible; in winter, visible but less distinct</td>
<td>very sharp; angle of muscle is steep</td>
<td>prominent and edges are very sharp; rump muscles are caved in</td>
<td>devoid of fat; deep sunken depressions on either side of the tailhead; no fat palpable if bison is in a squeeze</td>
<td>sharp topline; narrow with flat sides when viewed from the front; sharp contrast between the hump and shoulder when viewed from the side</td>
</tr>
<tr>
<td>2 moderately thin</td>
<td>some ribs visible in summer and winter</td>
<td>evident but not sharp; angle of muscle is steep</td>
<td>readily seen and edges are sharp; rump muscles cave in slightly</td>
<td>sunken depressions on both sides of the tailhead; small amount of fat palpable if bison is in a squeeze</td>
<td>hump is narrow but not sharp; sides are flat when viewed from the front; distinct contrast between the hump and the shoulder</td>
</tr>
<tr>
<td>3 moderate</td>
<td>may be visible in summer but not sharp or distinct; edges round and covered in flesh; not visible in winter</td>
<td>not prominent but can be seen; angle of the muscle has a moderate slope similar to the roof of a tent</td>
<td>visible but not sharp; rump muscles are flat and angular</td>
<td>slight hollowing on either side of the tailhead; some fat palpable if bison is in a squeeze</td>
<td>well developed but not bulging; noticeable distinction between the hump and shoulder</td>
</tr>
<tr>
<td>4 moderately fat</td>
<td>may be visible in summer but not sharp or distinct; edges round and covered in flesh; not visible in winter</td>
<td>not readily seen; angle of the muscle has a gentle slope</td>
<td>barely visible; muscles are full but not bulging</td>
<td>slight depression in bulls and no depression in cows</td>
<td>full hump when viewed from the front but not round and bulging; little distinction between the hump and shoulder when viewed from the side</td>
</tr>
<tr>
<td>5 very fat</td>
<td>not visible in winter or summer; covered in fat</td>
<td>not visible and is buried in fat; angle of muscle has little slope and is flat</td>
<td>covered in fat and is not seen; rump is rounded out and full</td>
<td>no depression (bulls) or bulging with fat (cows) on both sides of the tailhead</td>
<td>thick with rounded top when viewed from the front; blends into the should when viewed from the side</td>
</tr>
</tbody>
</table>
**BODY CONDITION SCORING WORKSHEET FOR BISON**

Assign a score to each body area and then average the numbers for an overall score.

DATE: _______________

<table>
<thead>
<tr>
<th>TAG #</th>
<th>RIBS</th>
<th>SPINE</th>
<th>HIB BONE</th>
<th>TAIL HEAD</th>
<th>HUMP</th>
<th>OVERALL</th>
</tr>
</thead>
</table>
LABELLED ILLUSTRATION OF A BISON
Illustration of a Bison with a BCS score of 3.
CROSS SECTION OF THE LOIN AREA
Generic Cross Section of the Loin Area.

BCS 1

BCS 2

BCS 3

BCS 4

BCS 5
BODY CONDITION SCORES FOR BISON
Overview of all the body condition scores for Bison

BCS 1
WHOLE BODY
• Thin
RIBS
• Prominent, many ribs visible in summer
• Visible but less distinct in winter
SPINE
• Backbone very sharp
• Steep angle of muscle
HIP BONE AND RUMP
• Hip bone prominent, edges very sharp
• Rump muscles caved in
TAIL HEAD
• Devoid of fat
• Deep, sunken depressions on either side of tail head
• No fat palpable if bison in squeeze
HUMP
• Sharp top line
• Narrow with flat sides when viewed from front
• Sharp contrast between hump and shoulder when viewed from side

BCS 2
WHOLE BODY
• Moderately thin
RIBS
• Some ribs visible in summer and winter
SPINE
• Backbone evident, but not sharp
• Steep angle of muscle
HIP BONE AND RUMP
• Hip bone readily seen, edges sharp
• Rump muscles cave in slightly
TAIL HEAD
• Sunken depressions on both sides of tail head
• Small amount of fat palpable if bison in squeeze
HUMP
• Hump is narrow, but not sharp
• Sides flat when viewed from front
• Distinct contrast between hump and shoulder
BCS 3
WHOLE BODY
• Moderate
RIBS
• Edges round, covered in flesh
• May be visible, but not sharp or distinct in summer
• Not visible in winter
SPINE
• Backbone visible, but not prominent
• Angle of muscle has moderate slope, similar to roof of tent
HIP BONE AND RUMP
• Hip bone visible, but not sharp
• Rump muscles flat and angular
TAIL HEAD
• Slight hollowing on either side of tail head
• Some fat palpable if bison in squeeze
HUMP
• Well-developed but not bulging
• Noticeable distinction between hump and shoulder

BCS 4
WHOLE BODY
• Moderately fat
RIBS
• Individual ribs generally not visible in summer
• Not visible in winter
SPINE
• Backbone not readily seen
• Angle of muscle has gentle slope
HIP BONE AND RUMP
• Hip bone barely visible
• Muscles full, but not bulging
TAIL HEAD
• Slight depression in bulls
• No depression in cows
HUMP
• Full hump when viewed from front, but not round and bulging
• Little distinction between hump and shoulder when viewed from side
BCS 5

WHOLE BODY
• Fat

RIBS
• Covered in fat
• Not visible in summer or winter

SPINE
• Buried in fat
• Backbone not visible
• Angle of muscle has little slope, flat

HIP BONE AND RUMP
• Hip bone covered in fat, not visible
• Rump rounded out, full

TAIL HEAD
• In bulls, no depression on either side of tail head
• Either side is bulging with fat in cows

HUMP
• Thick, rounded top when viewed from front
• Blends into the shoulder when viewed from side