Portraits of the Bison

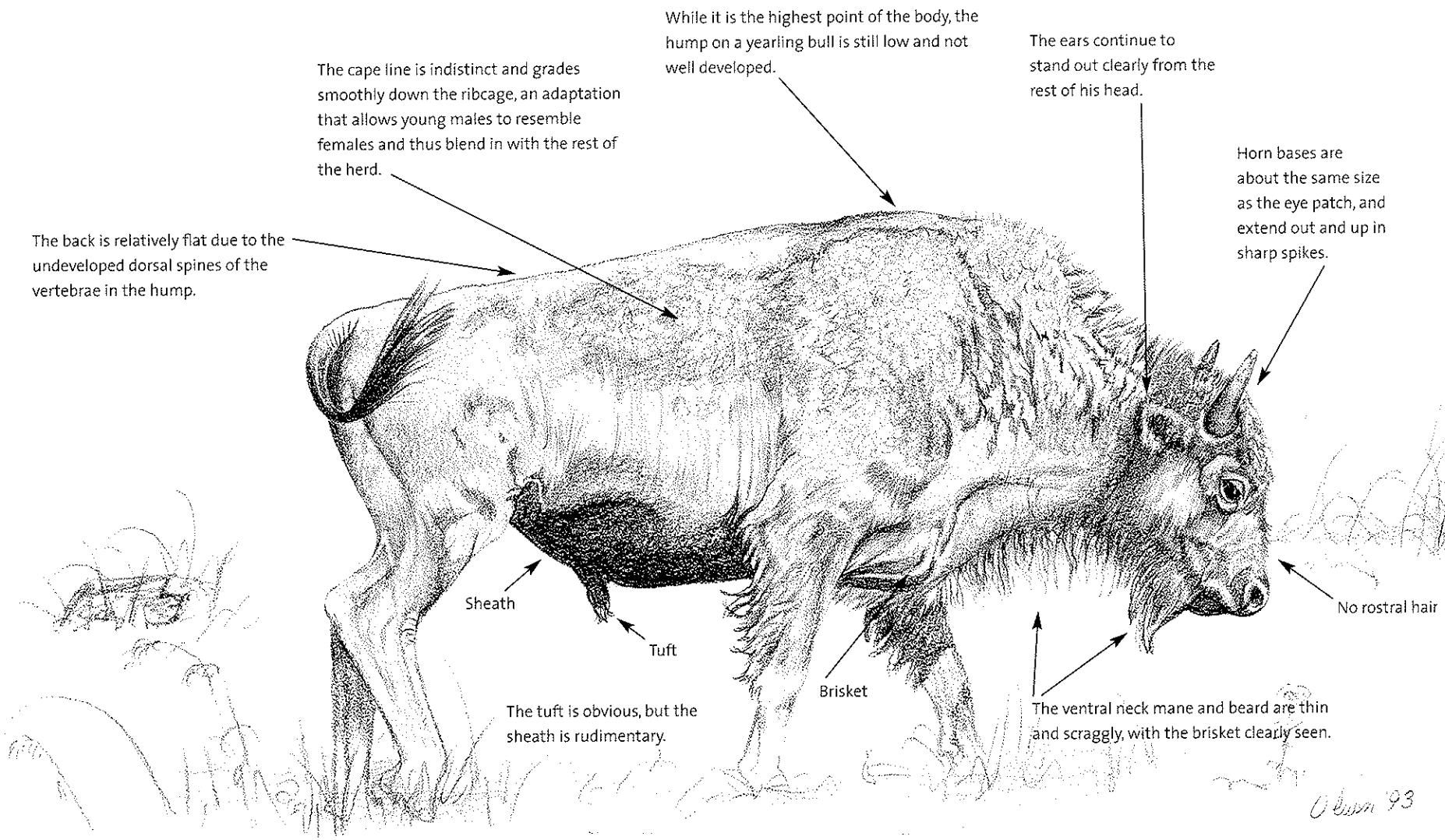
An Illustrated Guide to Bison Society

Our sincere thank you to Wes Olson who generously gave Montana Fish, Wildlife & parks permission to reprint and use the bison drawings and images from his book Portraits of the Bison.

Wes Olson

Photographs by Johane Janelle

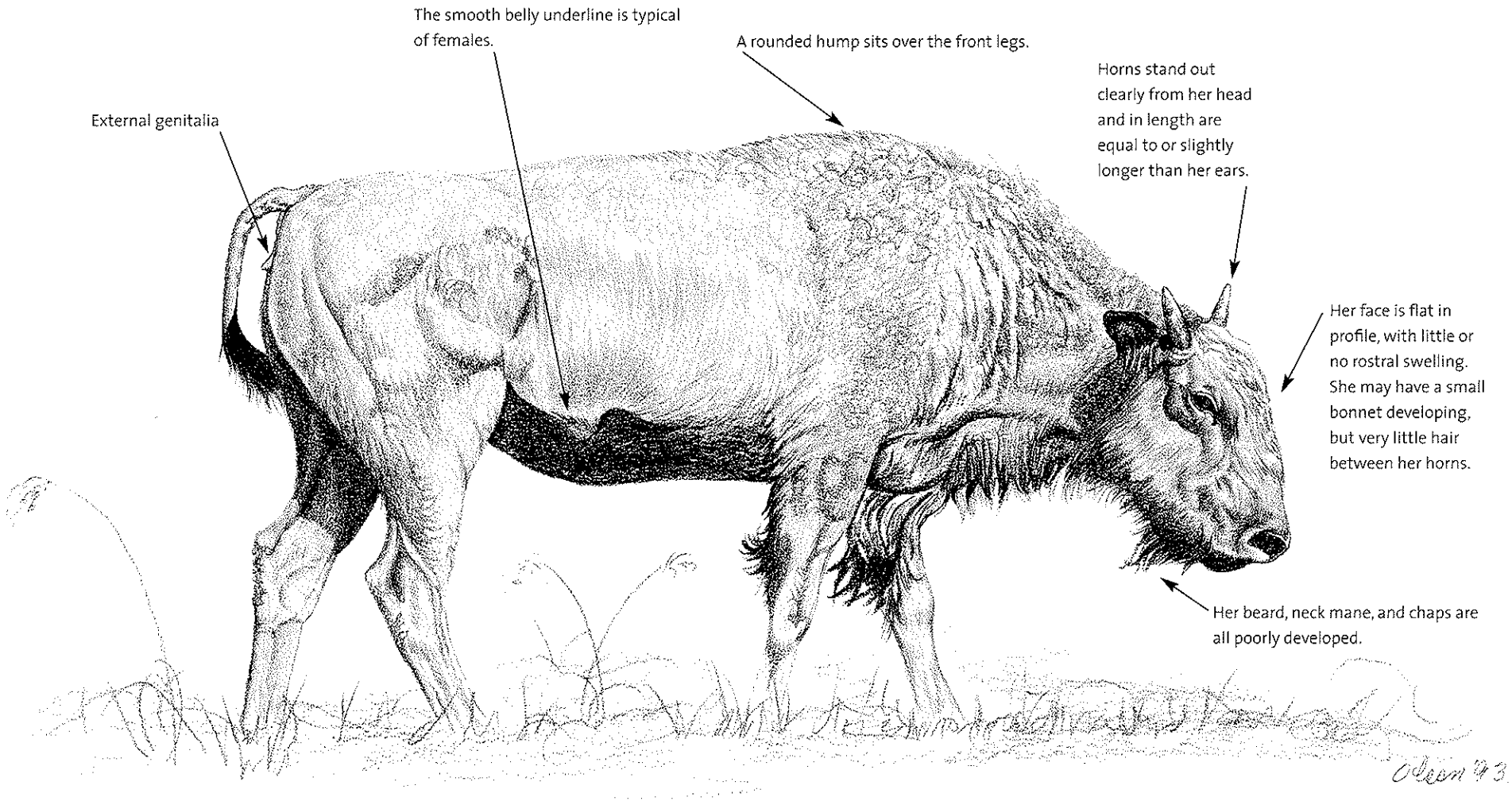
Male Yearlings



The yearling plains bison bull resembles subadult cows both physically and mentally. He occupies a rung on the social ladder that is fairly low, and he is easily dominated by older males. While still slim, his horns are thicker at the base than are those of the yearling female. By this age, the horns project out and up past the ears, with little or no recurve at the tips. His cape grades smoothly over the ribs, and his beard is thin and scraggly. The highest point of the hump is over the front legs.

The top of the yearling plains bison bull's hump is roughly equal in height to the base of an adult cow's tail. His back is relatively flat due to poorly developed dorsal vertebrae, which will later form his hump. His chaps are rudimentary and tend to look like those of a young cow. He can now be easily identified as a male by the presence of a tuft, but his sheath remains poorly developed. His chaps have finally begun to grow, but they are shorter than the leg is wide. Not until he reaches adulthood at the age of seven or eight will this bull begin to emit the spectacular vocalizations so characteristic of rutting bull bison.

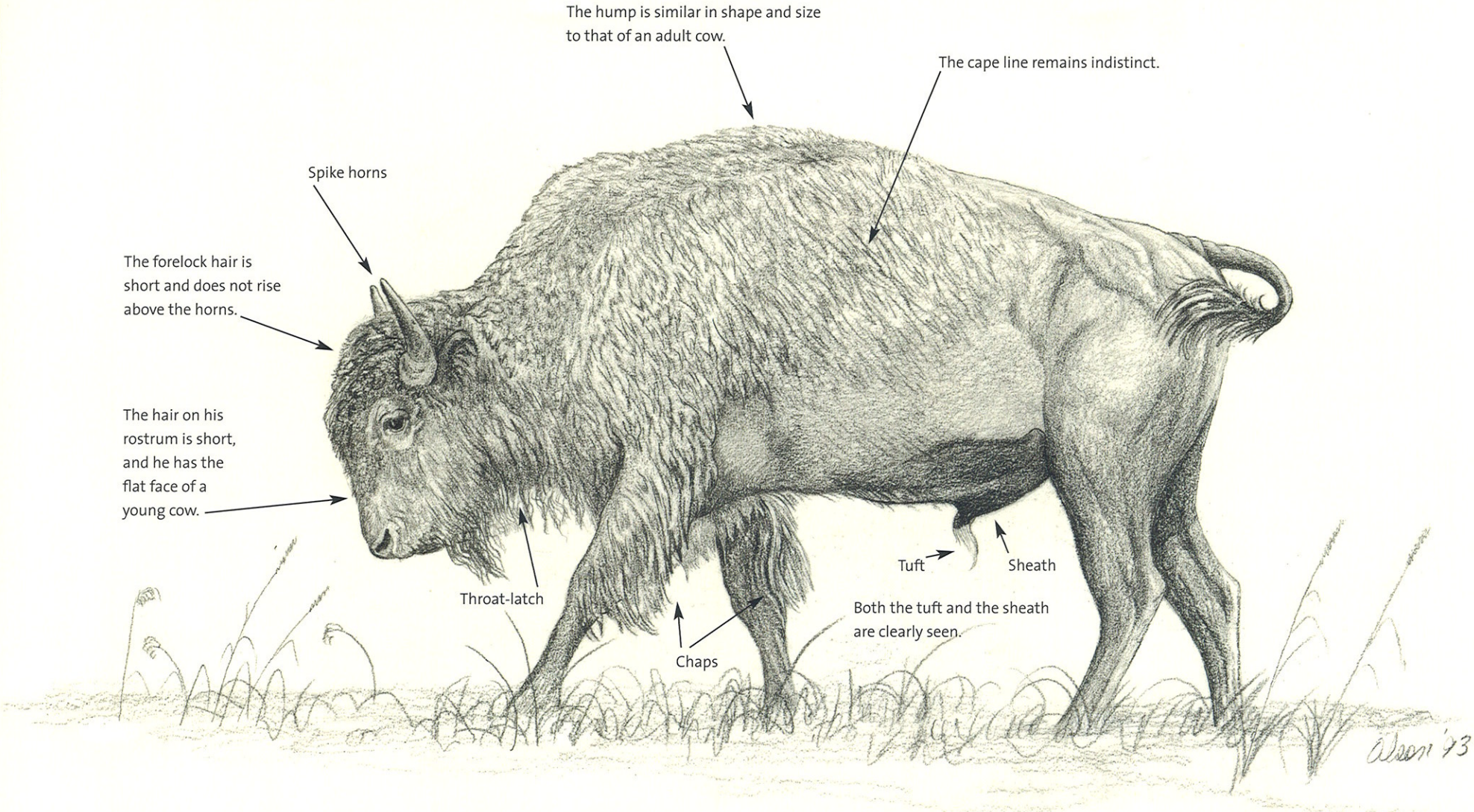
Female Yearlings



As with the male yearling, the female plains bison yearling's hump is also highest over the front legs. Her ears stand out very clearly from the rest of her head, and her horns are fine and delicate. The hair between her horns is very short, and there is little evidence of the bonnet that she will wear as an adult. Occasionally a yearling female will be large enough to conceive during the breeding season, but this is rare in the wild.

The yearling female plains bison has a sleek and uninterrupted underbelly. She shares many physical traits with the yearling male, but the finer horns and the different external genitalia easily distinguish the two.

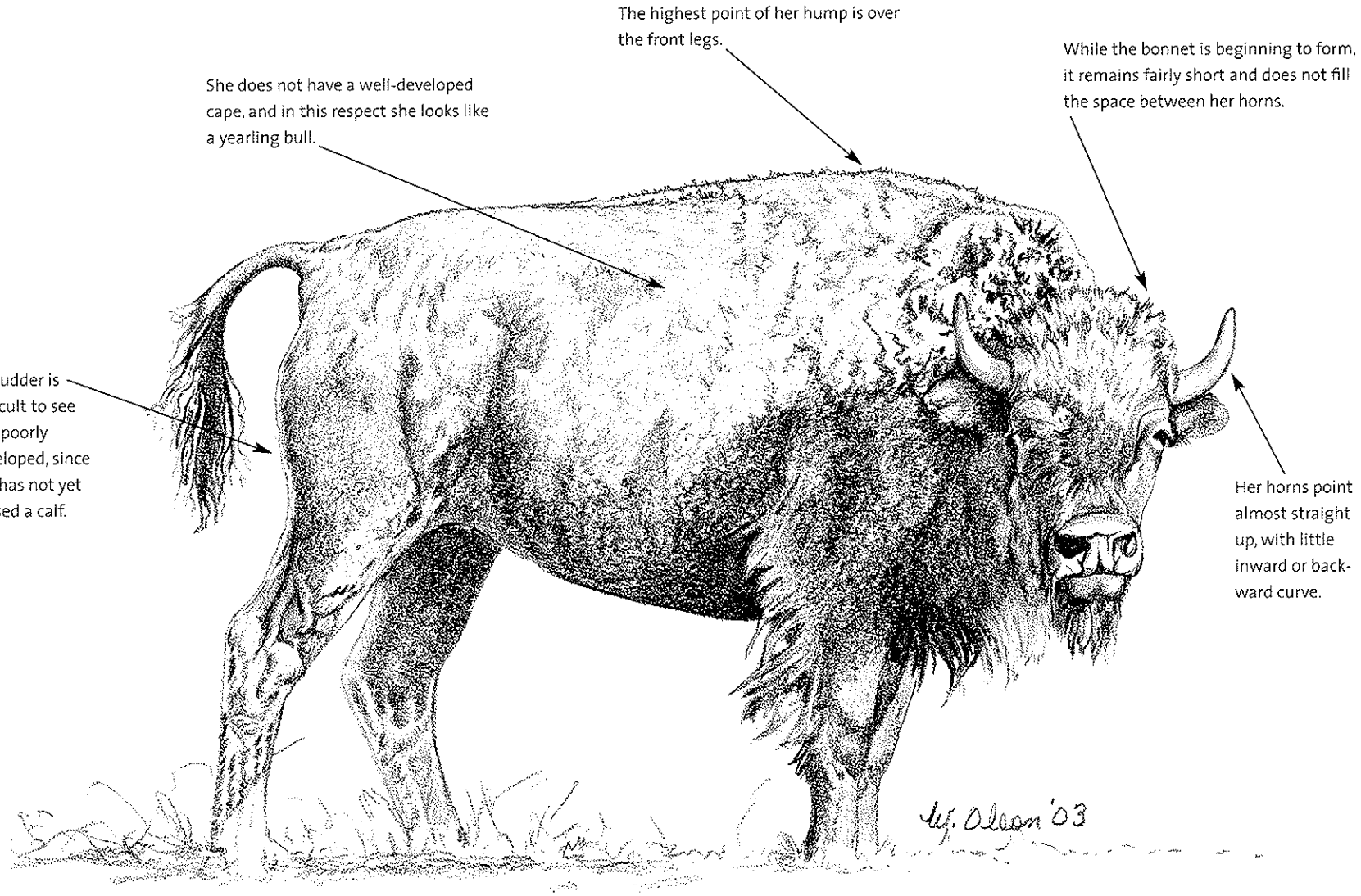
Male Two-Year-Olds



The two-year-old bull, while physiologically capable of breeding, is usually not permitted to do so by the older, more dominant bulls. Perhaps as a self-defense mechanism against aggression by these bulls, the two-year-old continues to wear a coat that resembles a cow's. The hair between his horns remains short and does not project above his horn tips. The hair on his face is short as well, and in profile his face looks quite flat. By this age, his horns project out and straight up, giving rise to the term "spike bull."

This young bull is slightly smaller than an adult cow and easily distinguished from her by the presence of his tuft, and by the size and shape of his horns. His chaps are becoming pendulous and are longer than the leg is wide. The beard and neck mane are larger than on a yearling, but the throat latch is still higher than his chin. The neck mane passes between his front legs on a level equal to the underside of his chest.

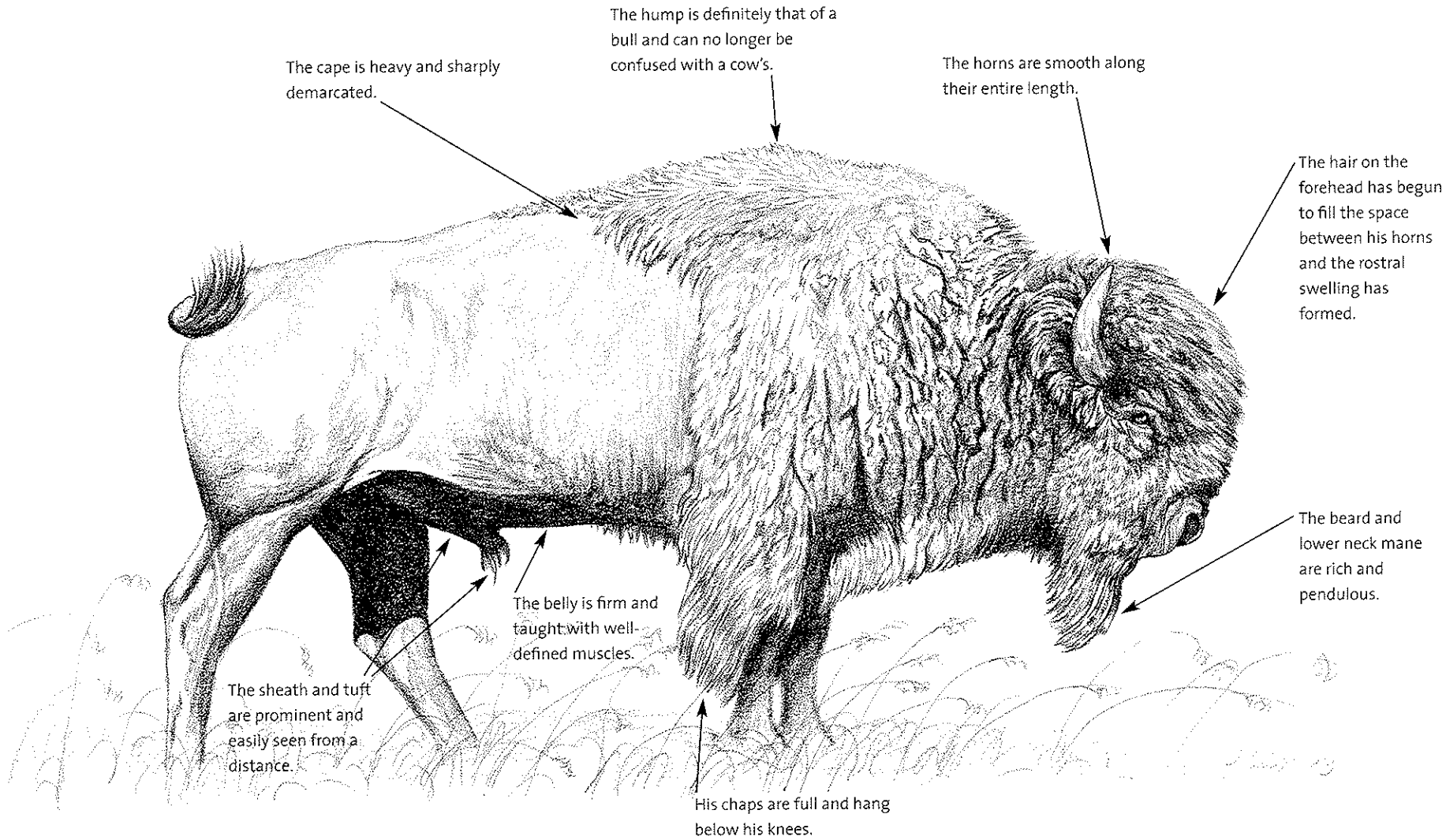
Female Two-Year-Olds



This young cow is entering her first reproductive year. If two-year-old cows enter the breeding season, during July and August, in good physical condition, most of them will conceive and nine months later produce their first calves at the age of three.

Two-year-olds cows can be difficult to distinguish from large yearling bulls, or smaller two-year-old bulls. The absence of the penis sheath is the primary indicator of her sex, and the size and shape of her horns, combined with her poorly developed cape and bonnet, are the principle indicators of her age.

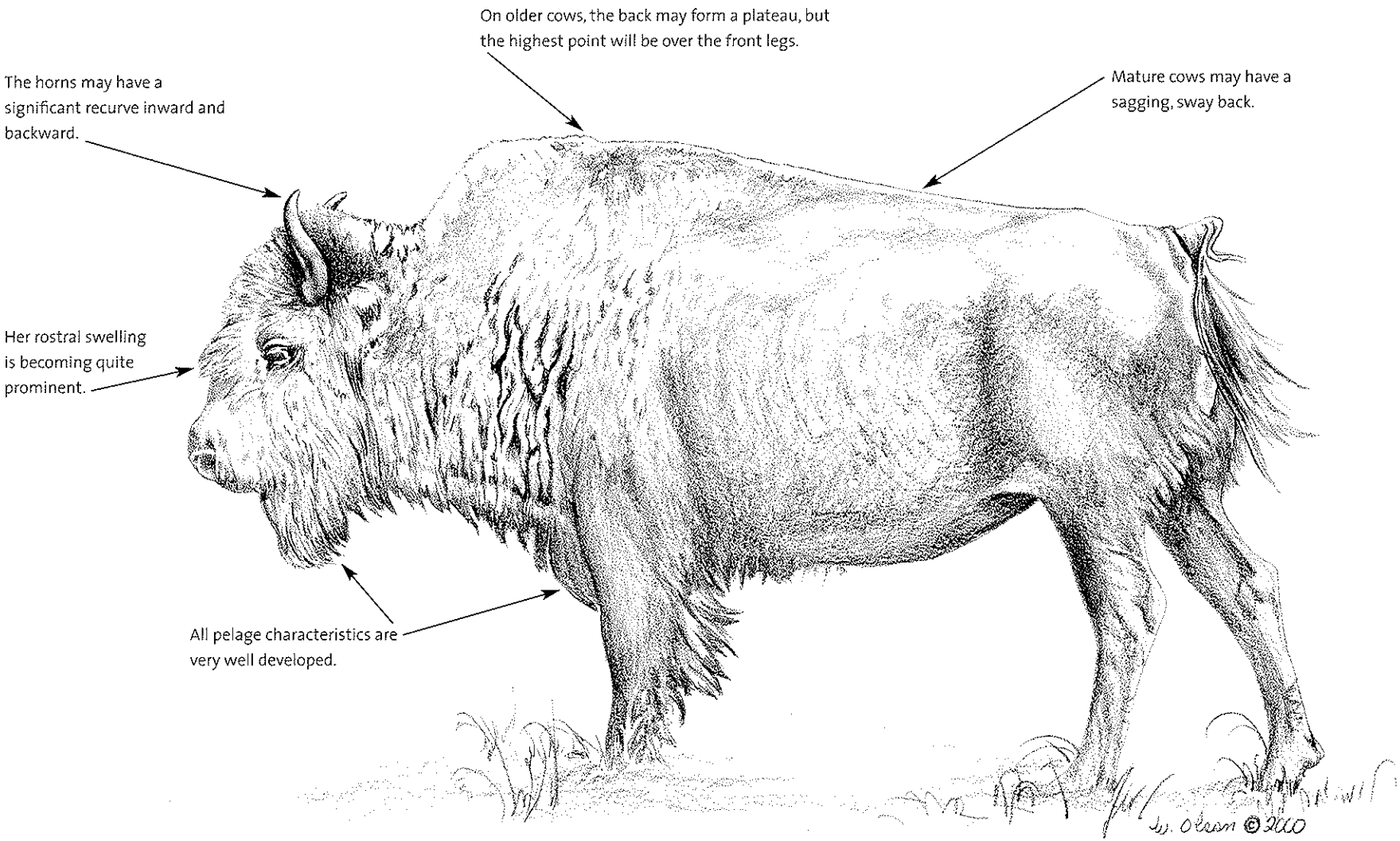
Mature Males
(approximately 4–7 years old)



Mature bulls, such as this one, are the challengers in a rutting aggregation. There are two principle roles for bulls during the rut. The first and primary goal of all bulls is to be a "tending" bull—one that has a receptive mate and is guarding her against the advances of rival bulls. The second role is the "challenger" bull—one that does not yet have a mate and is looking to displace a tending bull. These challengers are large, aggressive males striving to attain ascendancy in the rut, and they can often be seen approaching a bull that is tending a cow. If his overt behaviour is strong enough to bluff the tending bull, the latter may yield the field to the challenger. If the tending bull is larger, older, more experienced, or simply more determined, the challenger may try the visual bluff a bit longer, then stalk off in search of a less dominant bull to harass.

The primary visual differences between these mature bulls and their older counterparts (the dominant bulls) is the lack of the horn ring and the presence of a firm, flat stomach. They may have less hair on the bonnet, but their beards, chaps, and neck mane are all very well developed.

Mature Females
(4–14 years old)



While it is possible, based upon horn and facial hair morphology, to separate cows into rough age classes beyond the age of four, there is no behavioural or biological reason to do so, as all of these cows contribute equally to bison society. As a result, the group comprised of cows from age four to approximately fourteen is represented by the cow shown here.

The photographs on pages 100–102 demonstrate the changes in the shape of the hair on the bridge of the nose as a cow ages, and this can be useful in assigning rough ages to adult cows. These photographs also show the general shapes of female bison horns as they age, and used with other characteristics, horn shape and size can be useful in placing cows into rough age groups.