



BIG GAME ANIMALS

Big Game Animals

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Cover Photo: Desert Bighorn • Tom J. Ulrich

Introduction

When North America was first settled, big game animals were found in all of the different types of habitat. As the settlements grew and moved westward, large numbers of these animals were killed and much of their habitat was changed by agricultural and forestry practices. As a result of this, the populations of most species declined and in some cases almost became extinct. Only the deer, after a period of extremely low numbers, increased and established a larger population. Following the decline in the big game populations, various wildlife management practices were started. Some were successful while others proved to be tragic. An example of poor management was seen on the Kaibab Plateau. In 1906, President Theodore Roosevelt set aside the Kaibab Plateau on the North rim of the Grand Canyon as the Grand Canyon National Game Preserve. Hunting was not allowed and predators were eliminated. With the removal of these limiting factors, the deer herd increased from about 4,000 mule deer when the preserve was established to about 100,000 animals by 1924. This was far more deer than the food supply of the area could support. Thousands of deer starved, leaving fewer animals than when the preserve was established. Some of the more successful management practices were the establishment of hunting seasons with limits and various restrictions, managing the habitat for better food, water and shelter conditions and introduction of native and exotic species to uninhabited areas. All of these techniques should be carefully considered before they are used in any area.

Big game animals are commonly considered as hoofed-grazing or browsing animals. The clawed mammals such

as cats or bears may also be included. The hoofed game animals have three different types of horns or antlers. The deer, moose, elk and caribou (family Cervidae or "Deer") have antlers. Except for some of the caribou, antlers occur only on males. Antlers are a solid bone structure that are shed each fall and regrown the following spring and summer. While the antlers are growing they are covered with "velvet" which is rubbed off in the fall. Contrary to the belief of some, the number of points on the antler does not give the age of the animal. The antler size and number of points depend on the physical condition of the animal and the quality of food it has eaten. A healthy, young buck will frequently have more points than an older buck that is in poor condition. The true horns of the sheep, goats and cattle (family Bovidae) are permanent structures that continue to grow throughout the life of the animal. Both males and females have horns with the males' horns being larger. The bighorn sheep and mountain goats' horns have an annual ring for each year of growth. By counting the number of rings, the age of the animal can be determined. The pronghorn antelope (family Antilocapridae) has the third type of horns, which is a permanent, flat bony core with an outer sheath of modified hair that is shed each fall. A new sheath forms under the old sheath prior to shedding.

Additional information on big game animals can be obtained from your State Fish and Wildlife Agency, the U.S. Fish and Wildlife Service, the U.S. Soil Conservation Service or your County Extension office. Libraries also have books and pamphlets containing a wealth of information on these animals.

White-Tailed Deer
Odocoileus virginianus



Tom J. Ulrich

WHITE-TAILED deer are the most common big game animal in North America. They are found in a wide variety of brushy or forested habitats. As their name implies, the white-tailed deer have white hair on the under side of their tail. When the animal runs and bounds, the tail is carried up and the white hair appears as a flag which can be seen at long distances. Whitetails have good senses of smell, hearing and sight that they rely on for detecting danger in the brushy habitats in which they live. The weight of the adult bucks varies from 125 pounds to more than 350 pounds and does weigh from about 100 to 150 pounds. The Key deer of Florida and the deer in Central America may weigh no more than 50 to 80 pounds as adults.

White-tailed deer are browsers, feeding mainly on leaves, twigs and

buds of woody plants. Their diet varies widely from area to area and also at different times of the year. In the spring and summer a variety of green foliage is eaten. During fall, woody twigs, fruits and nuts are sought wherever they occur. The winter diet is mostly woody twigs and needles. Mating habits of the white-tailed deer can be described as polygamous, one buck mating with several does. During the fall mating season or “rut”, bucks may fight for a doe. About seven months after the mating, the fawns are born. The doe’s first born is usually a single fawn. Older does have two, three or even four fawns each year with twins being the most common. The fawns are spotted when they are born and remain hidden until they are old enough to follow the doe.



Mule Deer
Odocoileus hemionus



Tom J. Ulrich

WESTERN North America is the range of the mule and black-tailed deer. They live in a wide variety of prairie, brushland, desert or mountain habitats. The larger mule deer are found inland and have a black tip on the end of their tail. Its relative, the black-tailed deer, with a tail that is almost all black, lives in the coastal area from California to Alaska. Mule deer in the mountains are usually migratory. They spend the summer at high elevations and return to lower elevations at the approach of winter. In prairie and desert habitats, some mule deer may remain in one area all year. Mule deer differ from whitetailed deer in several ways. The whitetail's antlers consist of tines raising from a beam that curves forward. Mule deer have a main beam that fork upward into two tines that may fork again on the larger bucks. Also, the ears of the mule deer are larger and

their tail is shorter and less conspicuous. Another difference is the way they run. Whitetailed deer run and leap, carrying their tails up and mule deer bound with a stiff legged gait, carrying their tails down. Mule deer and whitetails are similar in size. The larger bucks weigh over 350 pounds, but most weigh from 150 to 250 pounds. Adult does weigh from about 100 to 150 pounds.

Like the white-tailed deer, the mule deer are browsers. During the summer, leaves and various forbs (flowering herbs or weeds) are eaten. With the approach of winter the diet changes to buds, twigs and stems of woody plants. In early spring grasses may be eaten, when they are the only plants available. Mating occurs from September to December with the fawns being born from April to June. The mule deer does give birth to one, two or three fawns.



Caribou
Rangifer tarandus



Tom J. Ulrich

THE history of caribou is similar to that of the bison. They were important to the Indians and Eskimos for food, shelter and clothing and at one time the population numbered in the millions. With the coming of the white man, the population decreased. The effectiveness of the rifle and forest fires were the main reasons for this decrease. The fires burned mature forests that contain the slow growing plants that are important food for caribou. Some of these food plants are lichens, mosses, sedges and various shrubs. Caribou are found in the tundra and coniferous forests of northern North America, Europe and Asia. They are the same species as the reindeer. The word caribou is the Indian name for "pawer". This is due to the caribou's winter feeding habit of pawing a hole in the snow with their broad front feet to

feed on the buried vegetation. There are two groups of caribou in North America, the woodland and the barren-ground caribou. Barren-ground caribou, which weigh from 275 to 375 pounds, spend the winter in the forested areas and migrate up to 600 miles north to the tundra in the spring. They remain there during the summer and return to the forests in the fall. Some barren-ground caribou remain on the tundra all year. The larger woodland caribou, which weigh from 400 to 600 pounds, are found in the northern coniferous forests the entire year. Caribou are polygamous. During the fall rut, fighting is a common occurrence. Eight months after mating, a single calf is born. Twins are uncommon. The calves are extremely hardy and are able to keep up with the cows within a few hours.



Elk
Cervus canadensis



Tom J. Ulrich

BEFORE the colonization of North America, elk inhabited the forests, prairies and mountains from the Atlantic to the Pacific and from Mexico to Central Canada. As the continent was settled the elk population decreased, leaving only remnants of the original population in the mountains of western North America. Since then elk have been live-trapped in Yellowstone Park, Jackson Hole and Washington and shipped to many other states.

The first settlers in North America gave the elk their name. In Europe, the moose is referred to as an elk. Some of the Indians called the elk “wapiti”. The average weight of the elk is about 600 to 700 pounds. Large bulls may weigh as much as 1,200 pounds.

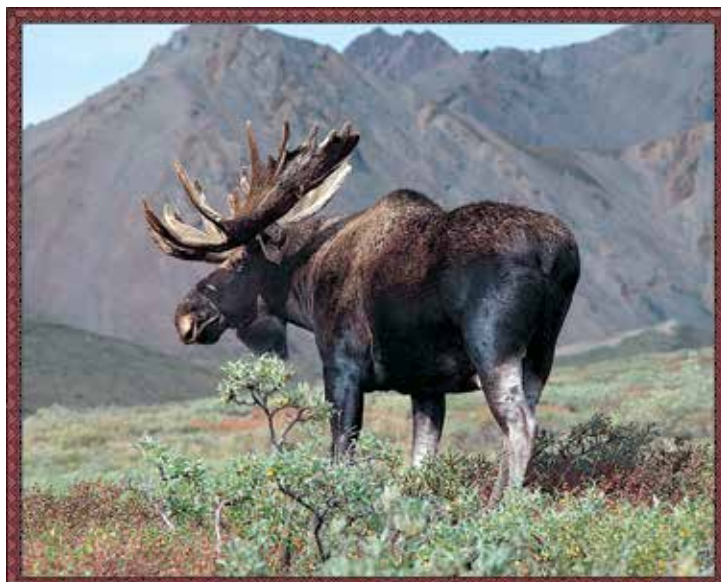
Elk are both grazers and browsers, eating various grasses, forbs, leaves, twigs and bark. At times, they will compete with domestic livestock and other game animals for food. Elk are gregarious. In the spring, after calves are born, they migrate up

the mountains as the snow melts. They remain there the entire summer in herds. Cows, calves and young bulls are found in herds while adult bulls remain alone or in small groups. In the fall, when mating starts, the bulls collect a harem of as many cows as possible. The harem varies in size from a few cows to a group of 20 or more, depending on the size and strength of the bull. The bull spends most of his time defending the harem from other bulls. Sometimes other bulls will try to steal part of the harem or challenge the herd bull in combat for possession of the harem. Following breeding and with the approach of winter, the elk move down the mountains to

the valleys below. Here they spend the winter in an area of less snow. At the present time, some of the elk herds spend the winter on refuges or winter ranges which have been acquired to provide winter food and to keep the elk off private lands where they may damage fences and haystacks.



Moose
Alces alces



Tom J. Ulrich

MOOSE are found in the northern forests of North America, Europe and Asia. The word “moose” is an Indian name meaning “he eats off” or “twig eater”. This refers to their browsing habits. In the winter, moose feed on stems and twigs of trees and shrubs. During the summer, they feed on available green vegetation found on land as well as on aquatic plants found in streams and lakes. At times, the moose will submerge to a depth of eighteen feet to obtain the aquatic plants.

Moose are the largest member of the deer family in North America. In Alaska a large bull weighs 1500 pounds. They

are smaller in the southern part of their range. Here large bulls will weigh about 1000 to 1200 pounds. Cows are smaller in size. They are generally solitary animals with a good sense of smell and hearing, but have poor eyesight. Occasionally groups of three to six are observed in winter feeding areas. Under the moose’s throat is the “bell” or dewlap. This is a flap of skin that may be 10 inches in length and serves no apparent purpose. Moose are polygamous. Bulls sometimes fight for the cows during the fall rut. Eight months after mating one or two calves are born.



Pronghorn Antelope
Antilocapra americana



Tom J. Ulrich

PRONGHORN antelope are native to the prairies of North America. At one time, they numbered in the millions and were found on the open plains from the Mississippi River to the West Coast and from Mexico to central Canada. With the settlement of the plains, the antelope population was reduced to the point of near extinction. Since then, proper management practices have been applied and the antelope population has increased to the present size.

The name pronghorn comes from the pronged or sharply pointed horn of the male antelope. The females' horns are smaller and more slender. Antelope have exceptional eyesight and speed. Their

eyes can be compared to high-powered binoculars. Their speed classes them as one of the fastest animals. They can run as fast as 50 or 60 miles per hour. Antelope are reluctant to jump over objects. They will not cross a woven wire fence used for sheep, but will crawl under or through the barbed wire strands of a cattle fence.

A conspicuous characteristic of the antelope is the white rump patch. When the pronghorn is frightened or alarmed, their hair stands erect and appears as a white flash that can be seen for miles. The weight of the adult antelope buck is between 90 and 140 pounds. Does are about 20 pounds lighter. Antelope are mainly forb and browse eaters, especially sagebrush, with grass being a minor food source. This may account for more antelope being found on cattle ranges than on ranges grazed by sheep. Cattle eat the grasses leaving the forbs and browse plants for the antelope, while the sheep and antelope compete for food.

Antelope are gregarious. In the spring,

bucks establish territories with small bands of does, yearlings and fawns. From November to February they are in mixed bands. About eight months after mating, one or two kids are born. The kids remain hidden with the doe feeding them several times a day until they are strong enough to travel with the adults.



Bison
Bison bison



Tom J. Ulrich

THE history of the bison or buffalo is well known. It is estimated that at one time there were 60 million bison in North America. Their range extended from the Atlantic to the Pacific and from Mexico to Alaska. With the settling of the country, they were killed in large numbers until there were less than 1000 bison left by 1891. Since then, the numbers of bison have increased with most herds being found only on preserves and private ranches. Buffalo are the largest hoofed mammals in North America. A large bull may weigh over 2000 pounds, although most bulls do not weigh that

much. The cows are smaller, weighing only about 800 to 900 pounds. Their eyesight is poor, but they have good senses of smell and hearing. Both bulls and cows have horns. They are grazing animals that feed mainly on grasses. During the late summer mating season, bulls are polygamous and do not gather harems. Instead they form temporary pairs and breed with a number of cows each year. About nine and a half months after mating one or two calves are born. Within a short time the calf is able to keep up with the rest of the herd.



Musk Oxen
Ovibos moschatus



Tom J. Ulrich

THE arctic tundra of North America is the range of the musk oxen. They are well adapted to this extremely cold and dry climate that has little rainfall and only about 10 to 30 inches of snow each winter. The snow becomes drifted in ravines and on hillsides, leaving some areas almost free from snow. The musk oxen feed on various grasses, shrubs and lichens that are found in these areas. Their hearing is good and they have exceptional eyesight that is subjected to a variety of changing lights. They are able to see during the darkness of the winter months, the constant daylight of the summer months, and with the glare on the snow in spring. Both bulls and cows have horns. Their hair consists of a short, dense undercoat and a long, coarse outer coat. The longer hair may reach a length of two or three feet. They have small tails and short ears that are hard to see due to the long hair.



Bulls weigh from 700 to 900 pounds. Cows are smaller. Musk oxen are usually found in herds with the exception of some bulls that remain apart from the herd, either alone or in small groups. When danger approaches, the herd forms a circle, standing shoulder to shoulder facing outward. The calves are in the center of the circle. Another way is forming a line facing the approach of a single enemy. During the fall rut a bull takes possession of the herd and chases the other bulls away. Occasionally there is fighting between the bulls. A calf is born about eight months after mating. Twins are uncommon. The calves are extremely hardy animals, with some being born when the temperature is below zero degrees Fahrenheit. They remain close to the cow and within a few weeks are eating the sparse vegetation that is found on the tundra.

Bighorn Sheep
Ovis canadensis canadensis



Tom J. Ulrich

THERE are two subspecies of Bighorn sheep in the United States, Mexico and Canada. They are the Rocky Mountain bighorn and the desert bighorn. Before the coming of the white man, Rocky Mountain bighorn sheep were found over most of the rugged mountainous terrain of western North America. Since that time their number has been greatly reduced, leaving only isolated populations. The decrease of the bighorn population was mainly due to hunters, disease contracted from domestic livestock, and reduction of the food supply through competition with domestic livestock. At the present time, the bighorn population is becoming larger through habitat management and reintroduction of wild bighorn sheep into uninhabited areas. Their diet consists of a wide variety of grasses, shrubs and miscellaneous plants. The type of food eaten depends on the time of year and habitat in which

they are living.

Most of the year, bighorn sheep are found in separate bands of rams or ewes with their young. During the fall when mating occurs, the males scatter and are found singly or with bands of females. The bighorns are promiscuous. That is, the rams do not collect a harem, but breed with any ewe. Rams sometimes fight over ewes. When fighting, the rams stand a few feet apart, facing each other. They lunge at each other with their horns, meeting with a loud crack that can be heard for miles. These charges may be repeated many times. At times, the rams will stand close together and strike each other with their forefeet.

The victor remains with the ewe upon completion of the "joust". A single lamb is born six months after breeding. Twins are uncommon. In a few days, the lambs are able to keep up to the ewe as she navigates the rugged terrain.



Desert Bighorn
Ovis canadensis nelsoni



Tom J. Ulrich

THE desert bighorn are found in the arid mountain regions of southwestern United States and Mexico. Their distribution is dependent upon the availability of water. In some areas, waterhole development and improvement have been beneficial to the desert bighorn population growth and success.

The desert bighorn are smaller than the Rocky Mountain bighorn. The rams

weigh only from 120 to 200 pounds, while the Rocky Mountain bighorn weigh from 150 to over 300 pounds. Ewes of both subspecies are one-half to two-thirds the size of the ram. The ears of the desert bighorn are longer and the horns are thinner and less massive, with a more open curl. They feed on a wide variety of shrubs, grasses, herbs and sedges.



Dall's Sheep
Ovis dalli dalli



Tom J. Ulrich

THERE are two subspecies of Dall's sheep found above the timberline in the mountains of northwestern North America. They are the Dall's sheep and the Stone's sheep. The main difference between these two subspecies is their color. Dall's sheep are white and Stone's are bluish gray.

Dall's and Stone's sheep are smaller than Bighorns and have longer and thinner horns with more of an outward flair on the tips. Thus they are sometimes called "thin horns".

Dall's sheep are very alert animals

with good senses of smell, hearing and sight and can see a moving object many miles away. During the summer they feed mainly on grasses and forbs. In the winter they feed on the available vegetation which may include browse. The social behavior of the Dall's sheep is similar to that of the bighorn sheep. They are found in separate bands except during the mating season when the rams and ewes are found together. As with the bighorns, there are frequent fights or jousts between the rams. Six months after mating one or two lambs are born.



Stone's Sheep
Ovis dalli stonei



Jim Shockey

THE Stone's sheep's range is in the northern part of British Columbia and the Yukon Territory, which is south of the Dall's sheep's range of Yukon Territory and Alaska. There is a variation in color of the sheep in the northern part of the range. These animals are more of a gray color to almost white. At one time they were considered a separate subspecies and were called the Fannin.

The Stone's sheep are slightly larger than the Dall's sheep. Rams weigh as much as 250 pounds, while the Dall's

weigh 220 pounds. Ewes are one-half to two-thirds the size of the rams. Their feeding and breeding habits are similar to the Dall's sheep.

All four subspecies (Rocky Mountain bighorn, desert bighorn, Dall's and Stone's) are highly prized by the big game hunter. Because of the limited number of permits and the rugged terrain, it is very difficult for a hunter to bag all four. The feat of collecting all of them is called the "Grand Slam".



Mountain Goat
Oreamnos americanus



Tom J. Ulrich

MOUNTAIN goats are native to the high mountain slopes of northwestern North America. They have been successfully transplanted to mountain areas of other states. When in danger, the mountain goats rely on their sure footedness rather than speed and will climb steep and almost impassable places to escape predators. The shape of their hooves is the reason for their ability to climb the steep mountain sides. The bottom of the hoof has a pad that protrudes beyond the edge of the hoof, forming a convex surface that prevents the goat from slipping. Mountain goats have good eyesight that can see a moving object at a long distance. They have a dense wool under coat and a long outer coat of hair that reaches 7 to 8 inches in length. Both sexes have sharp, slender

horns. The male's horns are about 12 inches long. The females' are shorter and more slender. The average weight of the males is about 175 pounds with a maximum of over 300 pounds; females are smaller. In contrast to other big game animals of the mountain, mountain goats often move upward during the winter to feed on exposed vegetation of the high wind-blown areas. Grasses and forbs are their primary food, but they will eat most of the vegetation that is available. Male goats remain alone except during the fall mating season. At that time, they join the bands of females and young. Sometimes fights occur between the males. Six months after mating, one or two kids are born. In a few days, the kids are able to climb the steep terrain with the females.



Collared Peccary
Dicotyles tajacu



Tom J. Ulrich

THE collared peccary, sometimes called javelina, are found in the brushy semi-desert and humid forests of southwestern North America and South America. They get their name from the ring or collar of white hair around their neck and the word “percari” which is the Brazilian name for animals that make paths through the woods. The coloration of the adult peccary is referred to as salt and pepper. This is due to the black and white bands of color on each hair. A musk gland that gives off a very strong odor is found on their back about 7 or 8 inches above the tail. The purpose of this gland is unknown. They have good senses of smell and hearing, but poor eyesight. The male and female javelinas are simi-

lar in appearance.

They weigh about 30 to 55 pounds. There have been stories about their fierceness. The peccary will usually run, but when cornered, will fight using the sharp tusks in their upper and lower jaws. The food of the peccary consists of cactus, mesquite beans, roots, nuts and miscellaneous vegetation. Much of their water is taken in the form of succulent vegetation. Peccaries are gregarious. The band may number from a few to 30 or more. The males, females and young are all found together. They are polygamous and have no set breeding season. About four months after mating one to two young are born. The young are able to keep up with the band in a few hours.



Black Bear
Ursus americanus



Tom J. Ulrich

BLACK bear are residents of the woodlands in much of North America. Their color is not always as their name implies. It may be a variety of different shades of brown, cinnamon or black. They have good senses of smell and hearing, but rather poor sight. The size of the adult bruin varies from 200 to over 600 pounds. Being omnivorous, their diet consists mainly of grasses, berries, insects and both fresh and decayed meat. Large quantities of food are eaten during the summer and fall, until a thick layer of fat develops. This

fat is utilized during the winter hibernation. Actually, it is not a true state of hibernation, but rather a deep sleep since the body temperature remains high. Bear are polygamous, usually mating every other year. From one to four cubs, weighing less than a pound, are born during the winter when the bears are in the den. When spring arrives, the cubs are large enough to leave the den with the female. They remain with her until they are eighteen months old and then they have to take care of themselves.



Brown or Grizzly Bear
Ursus arctos



Tom J. Ulrich

AT one time the grizzly and brown bear were considered separate species. Recent studies indicate they are the same species, but continue to be commonly identified as either brown or grizzly bear. The range of the brown bear is along the Pacific Coast of Alaska and Canada. Grizzly bear are found in the mountainous interior of Western North America. Their range has decreased in size since the coming of the white man and at the present time there are only limited numbers in the mountain areas of western North America, with the majority being in Alaska and Canada. Adult males will weigh from 800 to 1200 pounds. The females are smaller. As with the black bear,

they are various shades of brown with some having white tipped hairs. These bear have a good sense of smell that they use to locate their food which may be any meat or vegetable matter that is available. In the summer the brown bear along the coast feed on the salmon that enter the rivers to spawn.

In the fall before hibernation, berries are the main source of food. The reproductive process of brown bear is similar to the black bear. They may breed every other year, sometimes every three years, with the cubs being born in the den. The cubs stay with the female for a year and a half and then they have to take care of themselves.



Polar Bear
Ursus maritimus



Tom J. Ulrich

AS their name implies, polar bear are native to the polar region of Europe, Asia and North America. They are found on ice fields or on land along the arctic coastline. Polar bear are good swimmers and at times are found many miles from land or the ice fields. When swimming, they use just their front legs, letting their hind legs extend behind their body as a rudder. The average weight of the polar bear is about 1000 pounds. Large males may reach 1600 pounds in weight.

Females are smaller. They have good senses of smell and sight that they use very efficiently to obtain food. Living in the type of habitat that they do, their main food is meat, with seals being the most important source. At times carrion or vegetable matter is eaten. Polar bear are solitary animals that travel most of the time. The female has cubs every three or four years. The young stay with the female for two and a half years.



Cougar
Felis concolor



Tom J. Ulrich

COUGAR have many different names. Some of the more common ones are mountain lion, puma, panther, painter and catamount. They are found mainly in wooded areas. Some are at sea level while others are high in the mountains. At one time their range extended from South America to Southern Canada. At the present time, most cougar are found in the western part of North America. However, there are also numerous reports of cougar being seen in several other areas in the United States and Canada. The color of the cougar is grayish brown or reddish. Adult males weigh between 140 to 160 pounds. The weight of the adult females is between 90 and 110 pounds. The length of the cougar is from 6 to 8 feet, which includes the tail. The role of the cougar in the western states

has changed. At one time they were considered harmful to the deer population, which makes up the major source of the cougars' food and were shot in large numbers. Now some states consider them as a game animal and control the number that are taken each year by licensed hunters. Only when they prey on domestic livestock are they killed as predators. Cougar are polygamous and have no set breeding season, although most of the kittens are born in the spring. Three months after mating, from one to six spotted kittens are born, with the average being two or three. They stay with the female for at least a year or until they can take care of themselves.

Only when the offspring are gone does the female have another litter.



