

Chapter VII. Mammals

Black Bears *Ursus americanus*

The name 'black bear' can be misleading. New Mexico's black bears actually come in a variety of color phases ranging from black and brown, to cinnamon (the most common color), reddish and blonde.

An adult male black bear can weigh up to 400 pounds, though the average male weighs about 250 pounds. Female black bears typically weigh between 150 and 180 pounds. Their powerful limbs each have five toes and five short, curved claws for digging and cutting. Their front feet are about as long as they are wide, but the hind feet are long and narrow and resemble a human foot. Black bears have strong muscular necks and are very adept climbers. Black bears can scramble up a tree with remarkable ease.

Black bears potential life span may exceed more than 30 years. In New Mexico, bears have been documented to live 20-25 years. In most of their range where they are hunted the average life span is about 7-8 years. Their most frequent causes of death are hunting by humans, predation by other bears, and their becoming a nuisance by getting used to human food and subsequently having to be killed.



The black bear is not a threatened or endangered species in the West. However, because of its mating habits and reproductive cycle, bear populations are watched closely. Bear breeding in New Mexico generally doesn't begin until an animal is 5-6 years old, and a female who successfully raises cubs will mate only once every two years. For this reason, wildlife management policies take care to prevent over-hunting of black bears. In New Mexico, black bears breed between mid-May and July but give birth in the winter in the den. The reason is the delayed implantation of the egg. Though fertilized, the egg remains a cluster of cells and doesn't implant itself into the uterine wall until mid-November. Embryos may not develop at all if the female doesn't have enough body fat by the time fall arrives.

Females give birth in January or February with a litter size of one to two cubs. Newborns are about the size of a mouse and weigh just six to eight ounces. The newborn bears are blind and helpless and purr while they nurse. Within a month, they will weigh between 2-2½ pounds.

Mother bears provide excellent den care, and infant mortalities are rare. By the time they venture out of the den in April or May, the cubs weigh six to seven pounds.



Front foot



Hind foot

Mule Deer *Odocoileus hemionus*

Mule Deer have large ears that move constantly and independently, from whence they get their name, "Mule" or "Burro Deer." They do not run as other deer, but have a peculiar and distinctive bounding leap over distances up to 8 yards, with all 4 feet coming down together. In this fashion, they can reach a speed of 45 m.p.h. for short periods.

This stocky deer with sturdy legs is 4 to 6-1/2 feet in length and 3 to 3-1/2 feet high at the shoulder. During the summer, the coat on its upper body is yellow- or reddish-brown, while in winter more gray. The throat patch, rump patch, inside ears and inside legs are white with lower portions running cream to tan. A dark V-shaped mark, extending from a point between the eyes upward and laterally is characteristic of all Mule Deer but is more conspicuous in males.

Males are larger than females. The bucks' antlers, which start growth in spring and are shed around December each year, are high and branch forward, forking equally into 2 tines with a spread up to 4 feet.



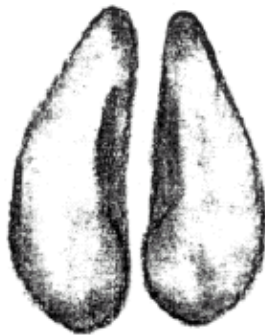
The Mule Deer is slower and less colorful than the White-tailed Deer, but its pastel, gray-buff color provides a physical adaptation to the desert environment which disguises it from predators like the Cougar, the Coyote and the eagle who will swoop down on a fawn.

Mule Deer have no canine teeth and, like the cow, have a multi-part stomach, the first two chambers of which act as temporary storage bins. Food stored here can be digested later when the deer chews its cud.

The tail is usually tipped in black with a white basal portion, and its under parts are white. The Mule Deer large ear is gray on the outside and white on the inside. Another physical adaptation, its larger feet, allows the Mule Deer to claw out water as much as two feet deep, which it detects with its keen sense of smell.

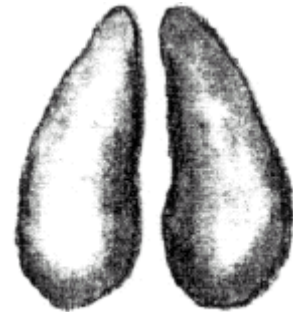
Mule Deer are active primarily in mornings, evenings and moonlit nights. This inactivity during the heat of the day is a behavioral adaptation to the desert environment that conserves water and keeps the body temperature within livable limits. Sweat glands and panting also provide evaporative cooling during hot periods. Mule Deer are browsers and eat a great variety of vegetable matter, including fresh green leaves, twigs, lower branches of trees, and various grasses. They are particularly fond of blackberry and raspberry vines, grapes, mistletoe, mushrooms and ferns. They eat so carefully they can even consume the fruit of cactus.

Mule Deer breed in late November and early December. A buck will find a suitable doe and they will often play chase games at breakneck speeds before mating. They will remain together for several days.



Front

The shape of the deer track varies somewhat with the type of ground on which the animal lives. On soft soil, as in some woodlands, the toes are likely to be relatively more pointed. On hard, rocky ground the hoofs are worn enough to produce blunt tips. Generally the length of an adult deer track is between 2 3/8 and 3 1/4 inches long. Tracks left by fawns are generally 1 3/8 inches long.



Hind

From April through June, after about a 200-day gestation period, the doe delivers 1 to 4 young (normally 2). Fawns are born in late May or early June. A doe will usually produce a single fawn the first year she gives birth and then produce twins in following years. The fawn, colored reddish with white spots, weighs about 6 pounds at birth. It must nurse within the first hour and stand within the first 12 hours. During early weeks of life, the fawn sees its mother only at mealtimes for feeding. Spots begin to fade by the end of the first month. They have white camouflage spots and are further protected by having little or no scent. Fawns usually stay with the doe for the first full year.

Life span in the wild is 10 years, but Mule Deer have lived up to 25 years in captivity.

Desert Bighorn Sheep *Ovis canadensis nelsoni*

The Desert Bighorn Sheep is a subspecies of Bighorn Sheep that occurs in the desert Southwest regions of the United States and in the northern regions of Mexico. The characteristics and behavior of Desert Bighorn Sheep generally follow those of other Bighorn Sheep, except for adaptation to the lack of water in the desert: bighorn sheep can go for extended periods of time without drinking water.

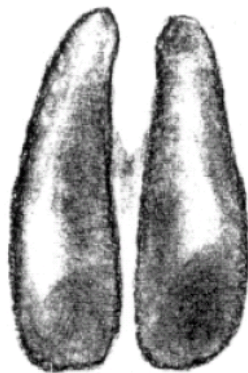
Desert bighorn are stocky, heavy-bodied sheep, similar in size to mule deer. Weights of mature rams range from 125 to 200 pounds, while ewes are somewhat smaller. Due to their unique padded hooves, bighorn are able to climb the steep, rocky terrain of the desert mountains with speed and agility. Bighorn rely on their keen eyesight to detect potential predators such as mountain lions, coyotes, and bobcats, and they use their climbing ability to escape.



Both sexes develop horns soon after birth, with horn growth continuing more or less throughout life. Older rams have impressive sets of curling horns measuring over three feet long with more than one foot of circumference at the base. The ewes' horns are much smaller and lighter and do not tend to curl. The head and horns of an adult ram may weigh more than 30 pounds. Annual growth rings indicate the animal's age. Both rams and ewes use their horns as tools to break open cactus, which they consume, and for fighting.

The desert bighorn has become well adapted to living in the desert heat and cold and, unlike most mammals, their body temperature can safely fluctuate several degrees. During the heat of the day, bighorn often rest in the shade of trees and caves.

Southern desert bighorn sheep are typically found in small scattered bands adapted to a desert mountain environment with little or no permanent water. Some of the bighorn may go without visiting water for weeks or months, sustaining their body moisture from food and from rainwater collected in temporary rock pools. They have the ability to lose up to 30 percent of their body weight and still survive. After drinking water, they quickly recover from their dehydrated condition.



Front

Bighorn sheep tracks also resemble deer tracks. However, the hooves of bighorn sheep have straighter edges and the tracks do not often take the traditional heart shape. In other words, they tend to be more blocky and somewhat less pointed. Tracks of an adult bighorn sheep are generally 3 ½ inches long, while tracks of a bighorn lamb are generally 2 inches long.

Rams battle to determine the dominant animal, which then gains possession of the ewes. Facing each other, rams charge head-on from distances of 20 feet or more, crashing their massive horns together with tremendous impact, until one or the other ceases.

Bighorns live in separate ram and ewe bands most of the year. They gather during the breeding season, July-October, but breeding may occur anytime in the desert due to suitable climatic conditions. Gestation lasts about 6 months, and the lambs are usually born in late winter.

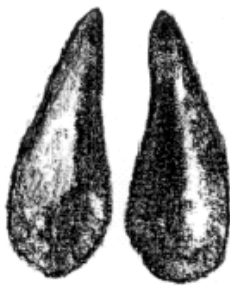
Pronghorn *Antilocapra americana*

The pronghorn is the only surviving member of the family Antilocapridae, and the fastest land mammal in North America running at speeds of 61 mph and the second-fastest land animal, second only to the cheetah. The pronghorn is also known as the pronghorn antelope. Both the males' and the females' horns are made up of a hair like substance that grows around a bony core; the outer sheath is shed annually.

Bands of pronghorns live in open grasslands, gathering into larger herds in the winter. They breed in mid-September, and the doe carries her fawn until late May. This is around six weeks longer than the pronghorn's slightly larger distant relative, the whitetail deer.



Newborns weigh 5 to 9 lbs. Adult male pronghorns weigh 100 to 145 lbs., while females weigh 75 to 100 lbs. The main color of adults is brown or tan, with a white rump and belly and two white stripes on the throat. A short dark mane grows along the neck, and males also sport a black mask and black patches on the sides of the neck. Pronghorns feed entirely upon vegetation, chiefly shrubs and forbs.



Front

Generally, the front tracks are about 3 ¼ inches long for adults. Young pronghorn tracks are generally about 1 5/8 inches long. Although pronghorn tracks are much like those of deer, the pronghorn track tends to be more narrow toward the front.



Hind

Elk *Cervus canadensis*

Elk is a large species of the deer family. Mature bulls will range in weight from 800 to 1,000 pounds, while cows will weigh 600 to 800 pounds.

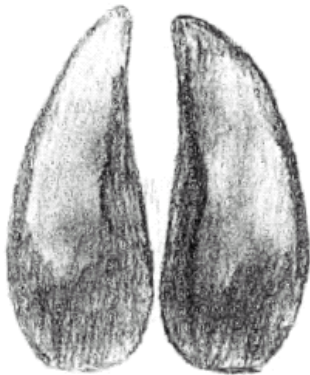
Elk range in forest and forest-edge habitat, feeding on grasses, plants, leaves and bark. Although native to North America and eastern Asia, they have adapted well to countries where they have been introduced, including New Zealand and Argentina. Their high level of adaptability poses a threat to endemic species and ecosystems where they have been introduced.



Male elk have large antlers which are shed each year. Males engage in ritualized mating behaviors during the rut, including posturing, antler wrestling and bugling, a loud series of screams which establishes dominance over other males and attracts females. The bugle call is one of the most distinctive calls in nature.

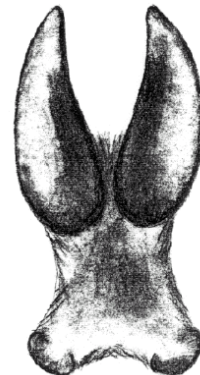
With good nutrition, elk cows may breed to calve at 2 years of age. Young elk cows will begin to exhibit estrous at about 450 pounds. On average most cows will have their first calf at 3 years of age. Cows and bulls will reach physical maturity at 4 to 5 years of age. Cows breed in late September. The gestation for elk cows is 250 days, which means calves are generally born in May and June. Calves weigh between 30 and 40 pounds at birth, and 225 to 275 pounds at weaning about 6 months of age.

In early summer, elk migrate to high mountain grazing grounds where the cows will give birth. Each cow typically has a single calf, which can stand by the time it is 20 minutes old.



Front

Elk tracks are definitely larger and rounder in the outline than those of deer, so there is usually no difficulty in distinguishing them. Generally the length of an elk track is 4 and $4 \frac{3}{4}$ inches. In areas where elk share the same range with cattle, it can be difficult to distinguish the two. Adult cattle tracks are large and blocky, and quite distinct. But young cattle leave a track that is often very similar to that of adult elk. In such cases, look around for more distinctive tracks and for possible cow chips.



Front (running)

Gunnison's Prairie Dog *Cynomys gunnisoni*

Gunnison's prairie dog is a yellowish buff color mixed with black above; slightly paler below with a short, white-tipped tail. It is approximately 12-14 inches in length, between 12-15 inches tall, weighing about 23–42 ounces. 1 to 8 young born in May. Active by day, chiefly early and late. Active April through October aboveground. The Gunnison's prairie dog is one of five species of prairie dog, all of which are native to North America. The Gunnison's prairie dog is a keystone species of the sagebrush ecosystem. They create habitat, provide food, and help keep the soil and plant communities healthy. For example, their abandoned burrows are used by burrowing owls, weasels, snakes, badgers, and even foxes. The Prairie dog is an important food source for coyote, weasels, foxes, hawks, eagles, and the endangered black footed ferret. In addition, their burrowing helps to aerate the soil, add organic matter, and help to increase water penetration. The prairie dog occurs in the four corners area of Arizona, New Mexico, Colorado, and Utah.



Abert's Squirrel *Sciurus aberti*

The Abert's Squirrel is a tree squirrel that is native to the Rocky Mountains from United States to Mexico, with concentrations found in Arizona, New Mexico, Colorado, Utah, and parts of Wyoming and north central Mexico. They are non-territorial squirrels and their home ranges often overlap.

Also known as the tassel-eared squirrel. It has long tufts or tassels of fur on its ears. Its fur is gray on the sides, reddish on the back and white on the belly. It has a bushy tail with white fur on the underside. In the summer, its ear tassels may be smaller or they may disappear. Abert's squirrel has long rear paws and strong hind legs. It spends a lot of time in trees and is well-adapted for climbing and leaping from branch to branch.



Abert's squirrels are 18-23 inches long with a tail of 7.5-10 inches. They are strictly diurnal. They do not store food like other North American squirrels. The vast majority of the squirrel's diet consists of parts of the ponderosa pine. Feeding on the tree's seeds and buds in the warmer months, it depends on the inner bark of the tree for nourishment in the wintertime. Consequently, Abert's squirrels are found in coniferous forests with large populations of ponderosa pines.

The Abert's squirrel typically builds its nest in the branches of the ponderosa pine in groups of twigs infected with mistletoe.

Bats

Bats play an extremely important role in our ecosystems. Some help control insect populations, some are pollinators and others spread seeds for plants. Fossils dating to 50 million years show that bats of that period were similar to bats of today. Before humans began to affect their numbers, bats were extremely abundant. Losing bat populations could compromise the health and stability of our environment.

Bats are the only mammals with the ability of true flight. Their forelimbs and hands are modified into wings and connected with a soft membranous skin. There are nearly 1000 species of bats, which amount to approximately a quarter of all mammal species. One species of bat in Asia weighs less than a penny while another in South America has a wingspan of up to six feet. Bats are found everywhere except in the most extreme desert and polar regions. Around forty species live in the US and Canada; Fifteen (15) species of bats inhabit Carlsbad Caverns National Park.

Many specialized features of the bat's anatomy are related to its ability to fly. Like dolphins, most bats communicate and navigate with echolocation. A bat emits high frequency sounds which bounce off objects and back to its specialized ears. Bats are able to detect objects as small as a human hair and their echolocation is more effective than anything humans have developed. Bats are not blind however and some actually have excellent vision.

Bats will often hibernate or migrate based on temperatures and the relative availability of food. Most travel less than 300 miles to find a suitable cave or abandoned mine, where they may hibernate for up to six months, surviving solely on fat reserves. They will often hibernate in large colonies. Typically bats return to their birthplaces and hibernating sites, but how they find their way is not understood. Information on how to find sites such as small cave entrances apparently is passed on from generation to generation. Bats also live in trees, houses, abandoned buildings and other structures. Bats also enter a daily state of reduced metabolism called torpor in order to conserve energy.

Most bats mate in the fall but actually do not give birth until the spring. The young grow rapidly, often learning to fly within three weeks. Some species gather in very large nursery colonies. Newborn young bats are carried by the mother on foraging flights, but are left behind once they are too large to carry. On average mother bats rear only one young per year. Bats are long-lived, with some living more than 30 years.

Worldwide, bats are the major vertebrate predators of night-flying insects including mosquitoes and numerous crop pests. The 20 million free-tailed bats from Bracken Cave in central Texas eat a quarter of a million pounds of insects each night. Although North American bats most commonly eat insects, there are also species that feed exclusively on fruit or nectar. Throughout the tropics the seed dispersal by fruit eating bats and pollination activities of nectar eating bats are vital to the survival and reforestation of rain forests. In a cleared rainforest area bats may drop up to 95% of the seeds that produce the first "pioneer" plants in a clearing, which leads to the redevelopment of the rainforest (that's an ecosystem service!). Many plants throughout the world that are used for timber, medicines, food and drinks,

fuel, dyes, and other uses rely on pollination and seed dispersal by bats.

New Mexico bats eat solely insects (the closest vampires bats are in Central America). They play a huge role in controlling mosquitoes and other insect pests including those that feed on agricultural crops and important tree species. Hawks, owls, raccoons, cats, and snakes prey upon bats in New Mexico.

Humans pose the most significant threat to bats. One common problem is disturbance of cave dwellings. If there are too many visitors to a cave bats will abandon it. Gates and fences erected at cave entrances to keep people out must be carefully installed or they can disturb the bats into abandoning the cave. Some bats also are susceptible to loss of forest habitat and even from the tearing down of old buildings they are using. Bats are also at risk from pesticides and pollutants. Many bats are exterminated simply because they are looked upon as nuisances or as being dangerous. Rabies is a common fear but rarely occurs in New Mexico bats (rabies is much more common in raccoons and skunks).

Bats of New Mexico and some comments:

- Western Pipistrelle—often the first bat out, sometimes even in daylight
- Big Brown Bat—prefers human-made structures for roosting sights
- Spotted Bat—black fur with three white spots and large pink ears, a late night flier
- Pallid Bat—stalks scorpions, centipedes and small reptiles, nickname is "Rambo bat"
- Townsend's Big Eared Bat—ears nearly as long as body
- Allen's Big Eared Bat—audible calls
- Mexican Free-Tailed Bat—largest concentrated groups of mammals in the world, can tolerate ammonia as high as 5000ppm
- Pocketed Free-Tailed Bat—long, narrow wings
- Big Free-Tailed Bat—likes moths, ants and crickets; communal in small groups of about 100
- Western Mastiff Bat—largest bat in NM and USA; must free-fall at least 10 feet to begin flight
- Southwest Myotis—daytime roosts still unknown
- California Myotis—some hibernate, others do not
- Long-Eared Myotis—hunts in tangled vegetation for insects
- Little Brown Bat—common throughout USA
- Western Small-Footed Myotis—may hibernate under rocks
- Fringed Myotis—can rescue fallen pups
- Cave Myotis—migratory, ears can touch tip of nose
- Long-Legged Myotis—hunts in open country using one prominent harmonic tone
- Yuma Myotis—desert hunter that lives close to water
- Western Red Bat—red fur, male more colorful than female
- Eastern Red Bat—red fur
- Hoary Bat—varied vocalizer, CF-FM both
- Yellow Bat—fur a dusky yellow
- Silver-haired Bat—frosted black fur; roosts and hibernates in frees, forages close to ground