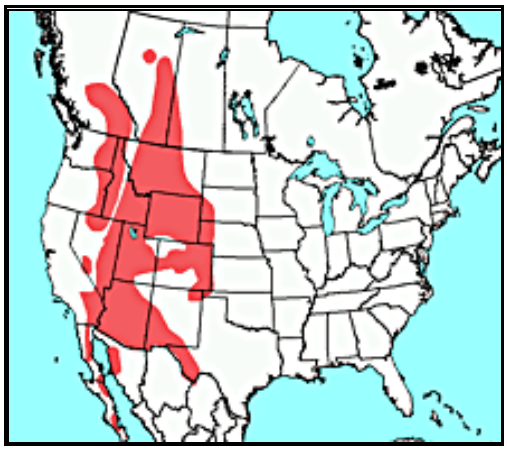
Bighorn Sheep
(*Ovis canadensis*)

ORDER: Artiodactyla
FAMILY: Bovidae

Conservation Status: The Peninsula Bighorn Sheep, *Ovis canadensis cremnobates,* is an Endangered subspecies; the Mexican Bighorn Sheep, *Ovis canadensis mexicana,* is Vulnerable.

Ovis canadensis − male (upper), female (lower)

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



Bighorn Sheep live only in remote, treeless mountain terrain. They use steep slopes and cliffs to escape from wolves, coyotes, and cougars. Many migrate seasonally, some moving a few hundred meters up or down a mountainside and others going 10−20 km from one mountain range to another. Some males make much longer migrations. Males and females live apart except during the mating season, when males vie for access to females. Larger size and age usually confer an advantage. The males rear up on their hind legs, kicking with their front legs and clashing their horns. Although Bighorn Sheep have heavily buttressed heads that absorb the shock of butting, these battles can result in death. Ewes usually give birth to one lamb, in May; twins are extremely rare. The lambs can follow their mothers within a day after birth, and nurse for 4−5 months. Bighorns eat seasonally available grasses and other vegetation, and cactus in the desert. They are attracted to natural salt licks, cattle licks, and piles of salt placed along highways for melting snow. In some places where bighorn populations went extinct, groups have been reintroduced, but many parts of their original range are no longer suitable. The species is declining in desert areas.

Also known as:
Mountain Sheep

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 1.6−1.9 m males; 1.6−1.7 m females

Weight:
Range: 75−135 kg males; 48−85 kg females

FIELD NOTES

DATE: _____ LOCATION: _____

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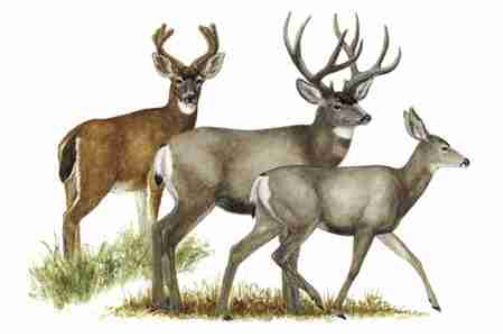
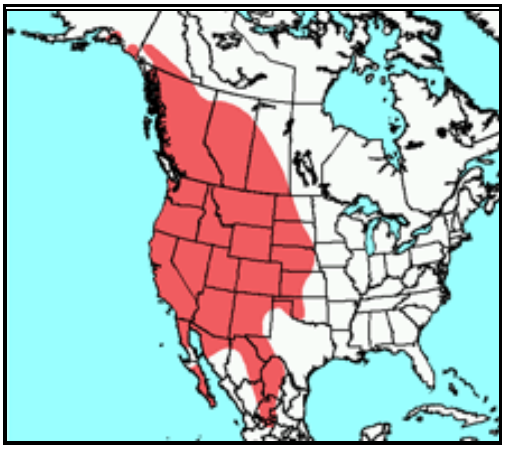
Mule Deer
(*Odocoileus hemionus*)



Odocoileus hemionus − coastal summer variation, left (male); inland winter variation, male (center) and female (right)
Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Artiodactyla
FAMILY: Cervidae

Mule Deer live in a broad range of habitats − forests, deserts, and brushlands. Mountain populations migrate to higher elevation in warmer months, looking for nutrient−rich new−grown grasses, twigs, and shrubs. They maintain separate summer and winter ranges, connected by a migratory pathway. In milder climates, they do not migrate. They live in small social groups of about three, except during the winter, when large groups may come together to feed in open meadows. Females tend to stay close to where they were born. Males disperse farther, establish their own territories, and compete for access to females during the October and November breeding season. The males lose their antlers after breeding and grow new ones yearly, with each set becoming larger than the previous one. Newborns, with spotted coats, are well−camouflaged.



Also known as:
California Mule Deer, Black−tailed Deer

Sexual Dimorphism:
Males are usually heavier than females.

Length:
Range: 1.3−1.7 m males; 1.3−1.6 m females

Weight:
Range: 40−120 kg males; 30−80 kg females

FIELD NOTES

DATE: _____ LOCATION: _____

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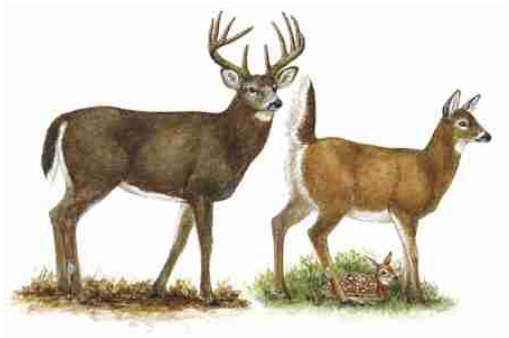
White−tailed Deer
(*Odocoileus virginianus*)

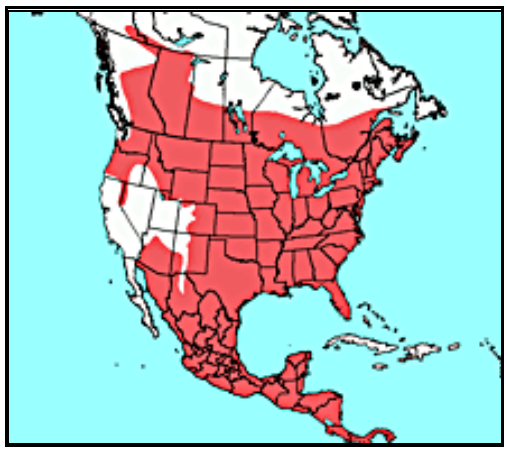


Odocoileus virginianus − male, winter coat, left; female, summer coat, right, with fawn
Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Artiodactyla
FAMILY: Cervidae

Conservation Status: The Key deer, *Odocoileus virginianus clavium*, is an Endangered subspecies and the Columbian white−tailed deer, *Odocoileus virginianus leucurus*, is Near Threatened.

The White−tailed Deer is distinguished from the Mule Deer by the smaller size of its ears, the color of its tail, and most strikingly, by antler shape. In Whitetails, the main beam of the antlers grows forward rather than upwards, and each tine develops as its own separate branch rather than being split into a forked pair. The two species also run differently when they are alarmed. Mule Deer stot, a boing−boing−boing motion in which all four feet leave and hit the ground with each bound, whereas White−tailed Deer spring forward, pushing off with their hind legs and landing on their front feet. Today White−tails are very widespread in North America: there may be as many as 15 million in the United States. These Deer are adaptable browsers, feeding on leaves, twigs, shoots, acorns, berries, and seeds, and they also graze on grasses and herbs. In areas where they live alongside Mule Deer, the species naturally separate ecologically, the Whitetails staying closer to moist streams and bottomlands, the Mule Deer preferring drier, upland places.



Also known as:
Deer, Whitetail

Sexual Dimorphism:
Males are about 20% larger than females.

Length:
Range: 0.85−2.4 m males

Weight:
Range: 22−137 kg males

FIELD NOTES

DATE: _____ LOCATION: _____

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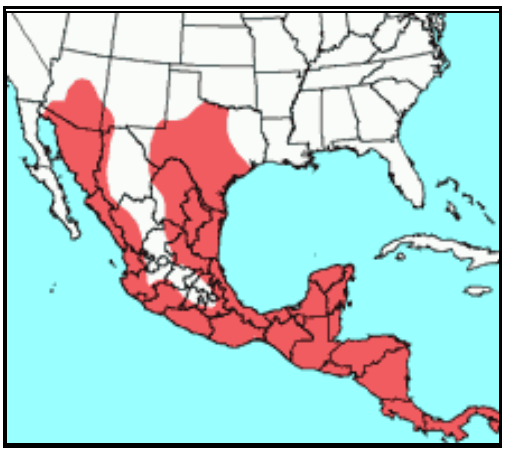
Collared Peccary
(*Pecari tajacu*)

ORDER: Artiodactyla
FAMILY: Tayassuidae

There are only three species of Peccaries in the world, all in South America. Only Collared Peccaries also live in North America. Their range includes a great variety of habitats, and they eat all kind of vegetation, including cactus. They live in highly social and communicative groups. Grooming is an important social behavior, and they have at least 15 different types of calls signaling alarm, submission, and aggression. Territorial groups of 15−50 animals stay together, and cooperate to defend the herd, but they form subgroups that disperse to feed. An alpha male is the dominant animal in the herd. Peccaries often have twins.

Pecari tajacu − inset shows group at waterhole

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



Also known as:
Javalina

Sexual Dimorphism:
None

Length:
Range: 0.85−1.02 m

Weight:
Range: 15−25 kg

FIELD NOTES

DATE: _____ LOCATION: _____

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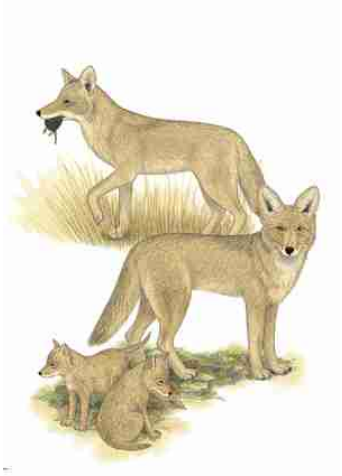
Coyote
(*Canis latrans*)

ORDER: Carnivora
FAMILY: Canidae

Coyotes are among the most adaptable mammals in North America. They have an enormous geographical distribution and can live in very diverse ecological settings, even successfully making their homes in suburbs, towns, and cities. They are omnivorous, eating plants, animals, and carrion. Socially, coyotes live in a variety of arrangements. Some live alone, others in mated pairs, and others in packs, which may consist of one mated pair, their new young, and offspring from the previous season that have not yet left their parents. Packs are an advantage when preying on larger mammals such as deer, or defending food resources, territory, and themselves.

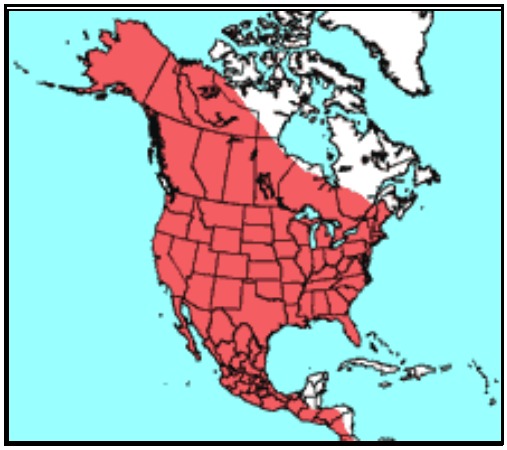


Canis latrans − eastern animals are larger (top); typical western animal and pups are shown below
Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 750−1,000 mm

Weight:
Range: 8−20 kg males; 7−18 kg females



FIELD NOTES

DATE: _____ LOCATION: _____

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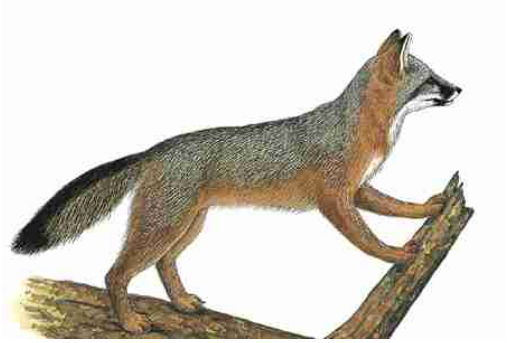
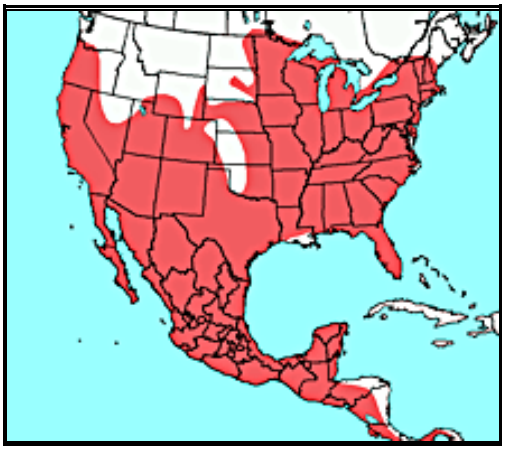
Common Gray Fox
(*Urocyon cinereoargenteus*)



Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Carnivora
FAMILY: Canidae

Gray foxes are adept at climbing trees. They are active at night and during twilight, sleeping during the day in dense vegetation or secluded rocky places. Nursing mothers and pups use a den— a hollow log, abandoned building, tangle of brush, or cracked boulder—for shelter. When she is nursing small pups, the female stays within a few hundred meters of the den, but otherwise adults may range over a 2—5 square km area. Pups begin to forage on their own at about four months of age, and maintain close ties with the mother until they are about seven months old. By about ten months, both males and females are old enough to reproduce, and most females will have a litter annually from then on.



Also known as:
Zorra, Zorra Gris, Gato de Monte

Sexual Dimorphism:
None

Length:
Range: 800−1,130 mm

Weight:
Range: 3−7 kg

FIELD NOTES

DATE: _____ LOCATION: _____

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Kit Fox
(*Vulpes macrotis*)

ORDER: Carnivora
FAMILY: Canidae

The kit fox has been thought by some to be a subspecies of the swift fox. This fox currently inhabits desert and semi−arid regions between the Sierra Nevada Mountains and the Rocky Mountains and on down into Baja California and the North Central states of Mexico; it is also found in the San Joaquin Valley of California.

Several features distinguish the kit fox from the swift fox. Kit fox ears are larger and set closer together than the swift fox. The head of the kit fox is slightly broader between the eyes and the snout is narrower. The kit fox has a longer tail, relative to the body, than the swift fox.

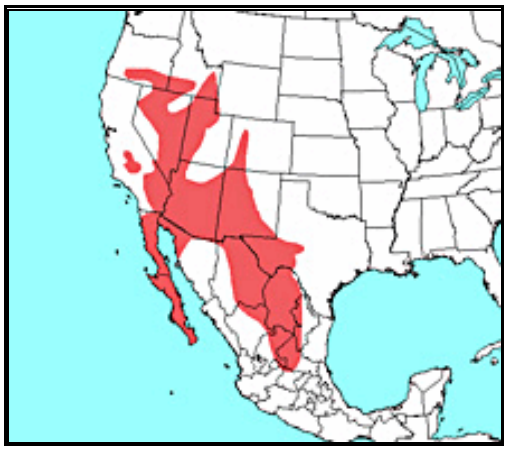
Their diet consists of the most readily available small mammals in the region, especially rodents and rabbits. The relationship of kit fox populations to populations of banner−tailed kangaroo rats (*Dipodomys spectabilis*) in the San Joaquin Valley and to black−tailed jack rabbits (*Lepus californicus*) in Utah have been well documented.

Length:
Range: 730−840 mm

Weight:
Range: 1.4−2.7 kg

Vulpes macrotis − Kit Fox

Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



FIELD NOTES

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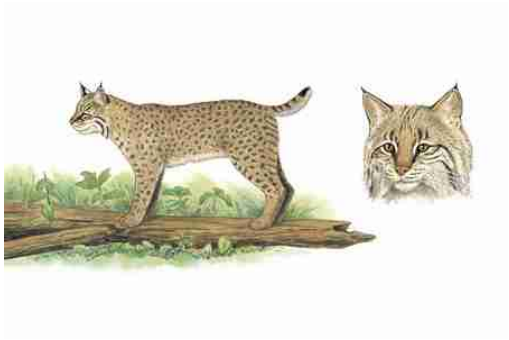
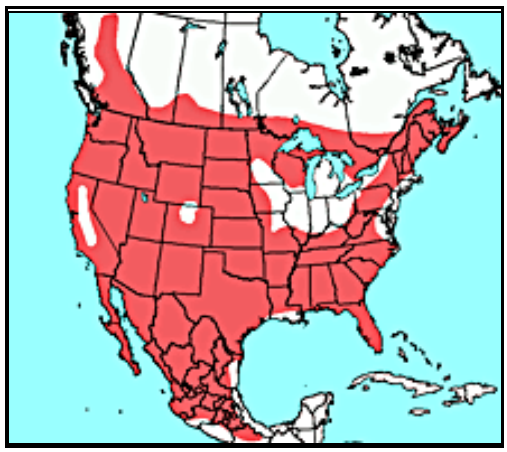
Bobcat
(*Lynx rufus*)



Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Carnivora
FAMILY: Felidae

The Bobcat is the most widely distributed native cat in North America. Bobcats occupy many habitat types, from desert to swamp to mountains. They are mostly nocturnal predators, taking quarry ranging in size from mouse to deer. Rabbits and hares make up a large part of the bobcat's diet. Like Lynx, male and female Bobcats maintain territories by scent−marking. An individual s territory does not overlap with another Bobcat s of the same sex, but females home ranges can fall within the territories of males. Females breed sooner than males, at about one year of age; males are ready to breed when they are about two. One litter, with an average of three kittens, is born each year.



Also known as:
Wildcat, Bay Lynx, Barred Bobcat, Pallid Bobcat, Red Lynx

Length:
Average: 869 mm males; 786 mm females
Range: 475−1,252 mm males; 610−1,219 mm females

Weight:
Average: 12 kg males; 9 kg females
Range: 7.2−31 kg males; 3.8−24 kg females

FIELD NOTES

DATE: _____ LOCATION: _____

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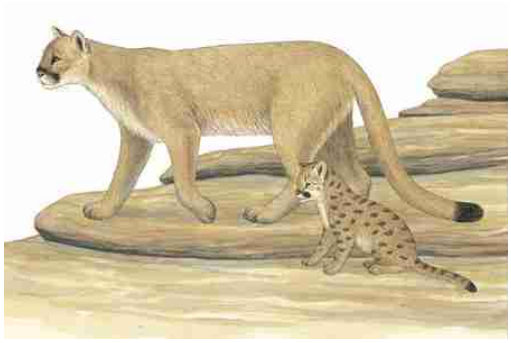
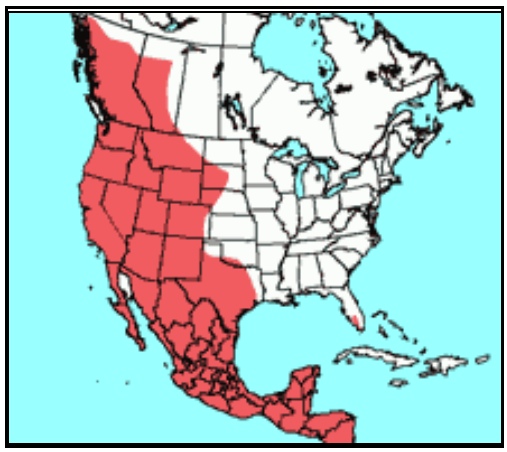
Cougar
(*Puma concolor*)



Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



ORDER: Carnivora
FAMILY: Felidae

Conservation Status: Two subspecies *P. concolor coryi*, the Florida Panther, and *P. concolor cougar*, the Eastern Cougar, are Critically Endangered; the parent species is Near Threatened.

Cougars avoid open habitats such as flat, shrubless deserts and farm fields, but can make a living in swamps, forests, and desert scrub habitat. They live solitary lives at low population densities, and usually avoid humans, but about four attacks are reported annually in the United States and Canada. Cougars hunt at night, either stalking their prey or waiting in ambush to pounce. They take hoofed mammals, sometimes including domestic livestock, and other prey, including rabbits, hares, porcupines, bobcats, coyotes, beavers, opossums, skunks, and even other Cougars. They rarely bed down in the same place two days in a row unless they are watching young or consuming a large kill. Some states and provinces allow Cougars to be hunted for sport

Also known as:
Mountain Lion, Puma, Florida Panther, Catamount

Sexual Dimorphism:
Males are significantly heavier than females.

Length:
Average: 1,270 mm males; 1,140 mm females
Range: 1,020−1,540 mm males; 860−1,310 mm females

Weight:
Average: 62 kg males; 42 kg females
Range: 36−120 kg males; 29−64 kg females

FIELD NOTES

DATE: _____ LOCATION: _____

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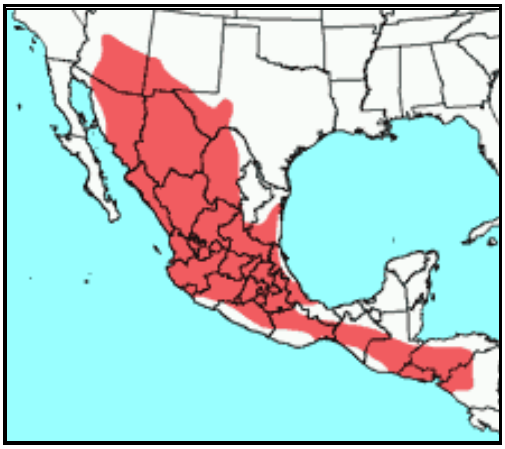
Hooded Skunk
(*Mephitis macroura*)

ORDER: Carnivora
FAMILY: Mephitidae

The Hooded Skunk is a desert animal, preferring rocky canyons and valleys, and the vegetation along stream edges. It lives at elevations of less than 2,000 m above sea level. It forages at night for meals that may include small mammals, birds, and some plants, and it digs for beetles and other insects, which seem to be its preferred food. Striped, Spotted, and Hog−nosed skunks are all found within the Hooded Skunk's range. The four species coexist by adopting different behavioral and ecological strategies.

Mephitis macroura − double, thin−striped variant, upper right; single wide−striped variant, lower left
Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



Also known as:
White Sided Skunk, Southern Skunk, Zorrillo

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 560−790 mm

Weight:
Range: 820−1,200 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Striped Skunk
(*Mephitis mephitis*)

Mephitis mephitis − typical pattern, lower left; white tail variant, upper right
Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Carnivora
FAMILY: Mephitidae

The Striped Skunk is the most common skunk in North America, yet most of what we know about it comes from studies of captive individuals. Like all skunks, it has a superb defense system, the ability to spray a foul−smelling fluid from two glands near the base of its tail. Skunk musk is oily and difficult to remove. If sprayed in the eyes, it causes intense pain and temporary blindness. Skunk kittens can spray when they are only eight days old, long before they can aim, a skill they exhibit only after their eyes open at about 24 days. Skunks attempt to give a warning before they spray: both Hooded and Striped skunks stamp their front feet before turning around and spraying. Like all skunks, Striped Skunks are nocturnal and eat a variable diet, mostly of insects, but also including small mammals, carrion, and some vegetation.

Also known as:
Skunk, Big/large Skunk, Polecat

Sexual Dimorphism:
Males are 15% larger than females, but females have longer tails.

Length:
Range: 575−800 mm

Weight:
Range: 1,200−5,300 g

FIELD NOTES

DATE: _____ LOCATION: _____

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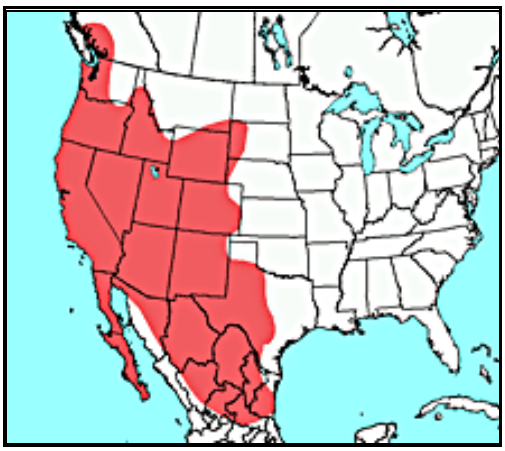
Western Spotted Skunk
(*Spilogale gracilis*)

Spilogale gracilis − inset shows pattern variation among a family
Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Carnivora
FAMILY: Mephitidae

Eastern and Western Spotted Skunks were for years thought to be one and the same species, but they differ in an important detail of the reproductive process. In the Western Spotted Skunk, a very long period of delayed implantation occurs. The fertilized eggs begin to develop, then stop growing at a very early stage and float freely in the uterus. When they "implant," attaching to the uterine wall, growth begins again. Breeding occurs in September or October and the fertilized eggs remain on hold for 6−7 months. In March or April, development resumes, and two to six kits are born about a month later, coinciding with a plentiful food supply. The skunks are carnivorous, feeding on mice and other small mammals, insects, lizards, birds, and carrion. They also eat some vegetable matter.



Also known as:
Civet Cat, Hydrophobia Cat, Polecat

Sexual Dimorphism:
Males are 7%−10% larger than females.

Length:
Average: 425 mm males; 383 mm females
Range: 350−581 mm males; 320−470 mm females

Weight:
Average: 700 g males; 400 g females
Range: 500−900 gm males; 200−600 gm females

FIELD NOTES

DATE: _____ LOCATION: _____

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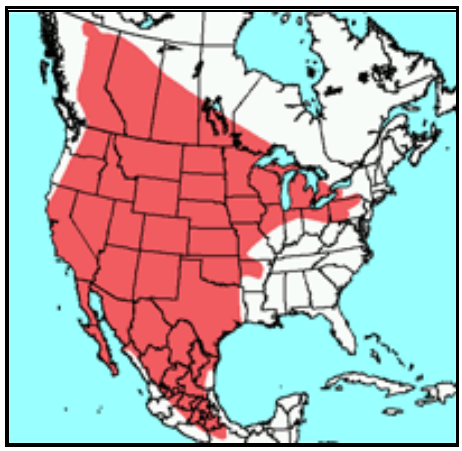
American Badger
(*Taxidea taxus*)

ORDER: Carnivora
FAMILY: Mustelidae

Taxidea taxus − typical coat pattern, right; southwestern variant with longer dorsal stripe, left
Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Badgers look like short, shaggy, medium−sized dogs. They are powerful diggers. One, taken to a football game as a mascot, escaped and dug its way under the field. They dig after and feed on ground squirrels and pocket gophers, and also eat toads, frogs, birds, snakes, insects and insect grubs, wasps, bees, and worms. They sleep through most of the winter in a den, spending about 29 hours at a time in a state of torpor, rousing briefly, and then sleeping again. In torpor, which is not true hibernation, the Badger's heartbeat slows to about half the normal rate and its temperature drops. Humans are the Badgers' worst enemy, trapping and poisoning them, but they are now protected in some states and provinces.



Also known as:
North American Badger, Tlalcoyote, or Blaireau

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 600−790 mm

Weight:
Range: up to 12 kg in the wild, 18 kg in captivity

FIELD NOTES

DATE: _____ LOCATION: _____

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Ringtail
(*Bassariscus astutus*)

Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Carnivora
FAMILY: Procyonidae

Ringtails are nocturnal, cat−sized carnivores. They are good climbers and are found in habitats that range from dry canyons to wet woodlands, in highland and lowland terrain. They prey on small mammals, but their varied diet also includes other vertebrates, insects, nuts, and fruit. These animals are solitary and territorial, marking their home ranges by depositing urine and feces.

Also known as:
Babisuri, Bandtailed Cat, Basaride, Bassarisk, Cacomistle, Cacomixtle, Civet Cat, Comandreja, Guayanoche, Mico de Noche, Mico Rayado, Onza, Pintorabo, Ring−tailed Cat, Rintel, Sal Coyote

Sexual Dimorphism:
None

Length:
Average: 793 mm males; 756 mm females
Range: 616−811 mm

Weight:
Range: 0.9−1.3 kg

FIELD NOTES

DATE: _____ LOCATION: _____

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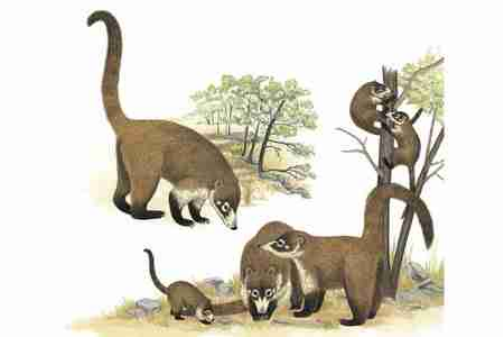
White−nosed Coati
(*Nasua narica*)

ORDER: Carnivora
FAMILY: Procyonidae

White−nosed Coatis are the most diurnal members of the family Procyonidae. They often sleep curled up in trees, and come down at dawn to forage, rooting with their long, mobile snouts and digging with long, curved claws for insects, larvae, eggs, and small vertebrates. Adult males often live alone, but females and young coatis travel together in bands, vocalizing and grooming each other. They do not hunt cooperatively or share food, but they join forces to defend against male coatis and other intruders. Females raise their young alone, in a nest. Mortality can be high when the young first leave the nest, from predators—including male coatis, big cats, monkeys, and boa constrictors—and accidents and disease.



Nasua narica − male, upper left; females and young, lower right
Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Also known as:
Coatimundi, Gato Solo, Pizote

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 750−1,350 mm

Weight:
Range: 2.5−5.5 kg

FIELD NOTES

DATE: _____ LOCATION: _____

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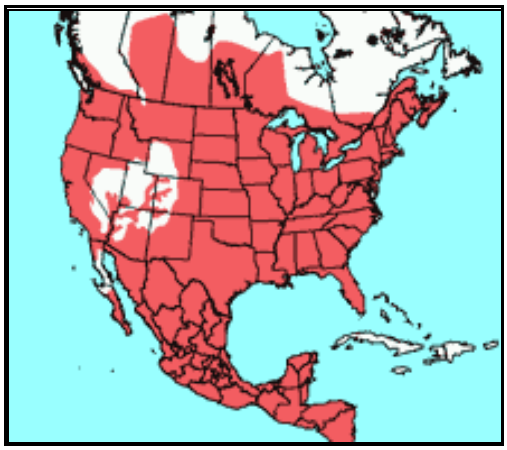
Northern Raccoon
(*Procyon lotor*)

ORDER: Carnivora
FAMILY: Procyonidae

Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Raccoons are among the most adaptable of the Carnivora, able to live comfortably in cities and suburbs as well as rural and wilderness areas. They use small home ranges, as small as 1—3 square km, and show flexibility in selecting denning sites, from tree hollows to chimneys to sewers. A varied diet is at the root of their adaptability. Raccoons eat just about anything, finding food on the ground, in trees, streams, ponds, and other wet environments, and from unsecured trash cans, which they open adroitly by hand. They can live anywhere water is available, from the deep tropics well into southern Canada. Even in the suburbs, Raccoons can occur at densities of almost 70 per square km. Females can breed when they are not yet a year old, and typically have litters of four young, which they raise themselves. The female nurses her cubs for about 70 days. The cubs' eyes open at 18—24 days and they begin exploring the world outside the den when they are 9—10 weeks old. By 20 weeks of age they can forage on their own.



Also known as:
Coon

Sexual Dimorphism:
Males are 10%−30% larger than females.

Length:
Range: 603−950 mm

Weight:
Range: 1.8−10.4 kg

FIELD NOTES

DATE: _____ LOCATION: _____

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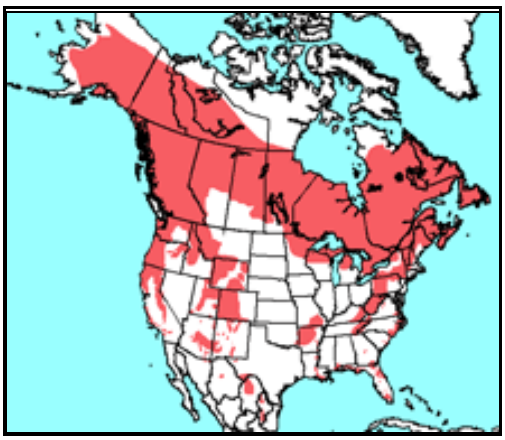
American Black Bear
(*Ursus americanus*)

Ursus americanus − eastern, black variant

Credit: painting by Consie Powell from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



ORDER: Carnivora
FAMILY: Ursidae

Most Black Bears hibernate for up to seven months, and do not eat, drink, urinate, or exercise the entire time. In the South, where plant food is available all year, not all bears hibernate—but pregnant females do. The female gives birth to 1−6 cubs (usually 2 or 3) in January, while she is deep asleep in her den. The newborn cubs snuggle next to her for warmth and nurse while she fasts. They grow from a birth weight of 200−450 g each (about 7−16 pounds) to the 2−5 kg they will weigh when the family leaves the den in the spring. Black Bears eat a little meat, and some insects, but they rely on fruit, nuts, and vegetation for the bulk of their nutritional needs. They are not all black. Most are, with brown muzzles, but in some western forests they are brown, cinnamon, or blond, and a few, in southern Alaska and British Columbia, are creamy white or bluish−gray.

Also known as:
Many common names are given to the many subspecies that have been described, such as: Olympic Black Bear, Glacier Bear, California Black Bear, Florida Black Bear.

Sexual Dimorphism:
The largest males may be nearly twice as heavy as the heaviest females.

Length:
Range: 1,44−2,000 mm males; 1,200−1,600 mm females

Weight:
Average: 120 kg males; 80 kg females
Range: 47−409 kg males; 39−236 kg females

FIELD NOTES

DATE: _____ LOCATION: _____

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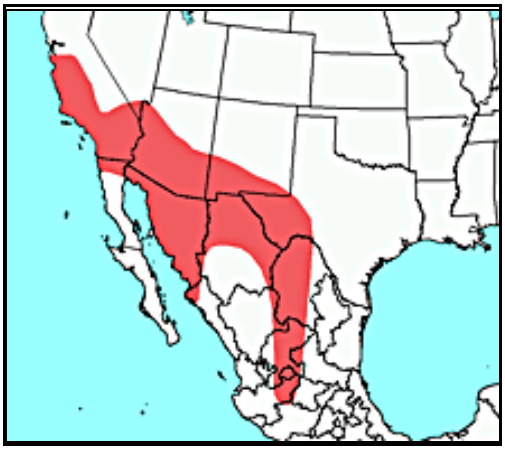
Western Mastiff Bat
(*Eumops perotis*)

ORDER: Chiroptera
FAMILY: Molossidae

Eumops perotis − upper left (with *E. underwoodi*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Western mastiff bats live in rugged, rocky canyons typical of the arid Southwest, where they inhabit crevices in vertical cliffs. Because of their relatively large body size and narrow wings, these bats are unable to take off from a flat surface, and must instead freefall from a height to initiate flight. Hanging upside−down in a crevice, it can let go, gain airspeed as it drops, and flap away for its nightly hunt for insect prey. If an individual is on the ground, it will scramble up a tree or other object to get high enough to be able to launch itself into flight. In the early 1900s, they often roosted in buildings in southern California, but this may not be the case today.



Also known as:
Greater Mastiff Bat, Bonnetted Bat

Sexual Dimorphism:
Males are larger than females.

Length:
Average: 175 mm
Range: 159−187 mm

Weight:
Range: 45.5−73 g

FIELD NOTES

DATE: _____ LOCATION: _____

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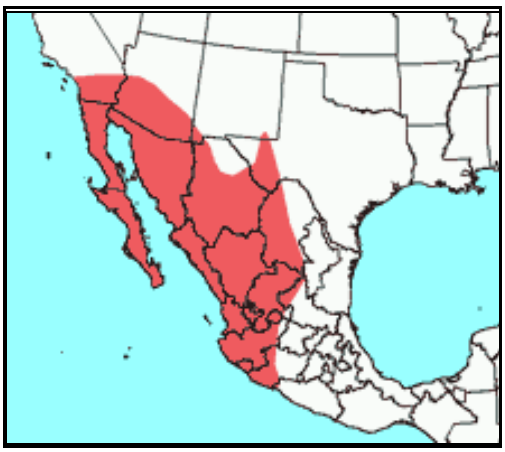
Pocketed Free−tailed Bat
(*Nyctinomops femorosaccus*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Molossidae

A small fold, or "pocket" in the wing membrane of the free−tailed bat, near its knee, gives this bat its common name. Pocketed free−tailed bats have large ears and long wings, and fly rapidly, generally pursuing insects on the wing. They eat many kinds of insects, but seem to prefer small moths. Small colonies, usually fewer than 100 bats, roost together in caves, crevices in rocky cliffs, or buildings. Females have a single pup each year, not twins.



Sexual Dimorphism:
None

Length:
Average: 109 mm
Range: 99−118 mm

Weight:
Range: 13.8−17 g

FIELD NOTES

DATE: _____ LOCATION: _____

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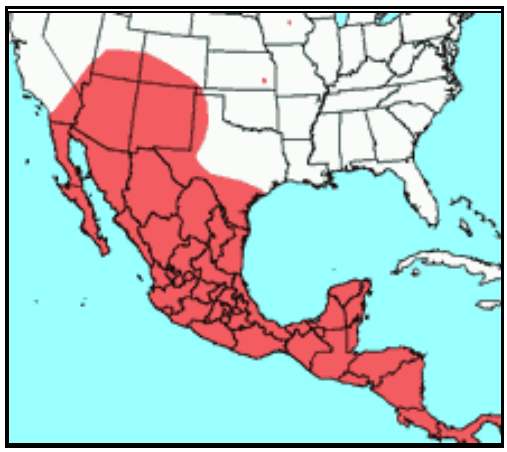
Big Free−tailed Bat
(*Nyctinomops macrotis*)

ORDER: Chiroptera
FAMILY: Molossidae

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

The big free−tailed bat has long, narrow, tapering wings. The length and shape of the wings give it speed and enable it to fly long distances, but its flight is not as maneuverable as that of bats with shorter, broader wings. These bats live in rugged habitats in the Southwest in the summer and migrate to Mexico in the winter. When they are foraging, they emit echolocation calls that sound like clicks to human ears. Most bats use calls that are beyond the range of human hearing. The bats forage, mostly for large moths, in total darkness, not leaving their day roosts until well after sunset. Their tails extend well beyond the tail membrane (uropatagium), the membrane that stretches between the hind legs.



Sexual Dimorphism:
Males are slightly larger than females.

Length:
Range: 145−160 mm males; 120−139 mm females

Weight:
Range: 22−30 g

FIELD NOTES

DATE: _____ LOCATION: _____

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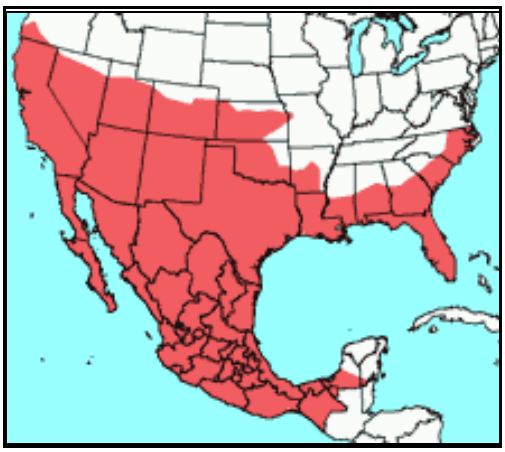
Brazilian Free−tailed Bat
(*Tadarida brasiliensis*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Molossidae

Conservation Status: Near Threatened.

Millions of Brazilian free−tailed bats spend their summers in the southwestern United States. Gigantic colonies summer in Bracken Cave, Texas; Carlsbad Caverns, New Mexico; and even within the city of Austin, Texas, under the Congress Avenue Bridge. They are a spectacular sight spiraling out of their day roosts like great, dark, swirling clouds when they emerge in the evening to forage. The bats eat untold numbers of insects each night, sometimes catching their prey at altitudes of a mile or more. They typically migrate to central and southern Mexico in the winter, where they live in smaller colonies. They mate there, and fly north again − as far as 1,300 km − between February and April. Females give birth to a single pup, in June, and nurse it for about six weeks. Although they number in the millions, conservation is a concern, because they raise their young in a limited number of caves, and because pesticides can accumulate in their body tissues.



Also known as:
Guano Bat, Mexican Free−tailed Bat

Sexual Dimorphism:
Males may be about 5% longer than females but females weigh about 5% more than males.

Length:
Average: 95 mm
Range: 85−109 mm

Weight:
Range: 10−15 g

FIELD NOTES

DATE: _____ LOCATION: _____

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California Leaf−nosed Bat
(*Macrotus californicus*)

ORDER: Chiroptera
FAMILY: Phyllostomidae

Conservation Status: Vulnerable.

California leaf−nosed bat *(Macrotus californicus)*

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

California leaf−nosed bats usually use their sense of sight (rather than echolocation) when they are foraging, and resort to echolocation only in total darkness. They fly slowly, close to the ground or to vegetation, and often take butterflies and katydids, which are immobile at night when the bats are hunting. They do not migrate or hibernate. They cope with the temperate desert by finding warm daytime roosts in caves, mines, or buildings. In the winter, large groups roost together in long, warm mine tunnels, usually in geothermally−heated rock, and forage only for about two hours each night. Pups are born from May to July in maternity colonies that are also often located in caves. There are about 100−200 females in a maternity colony, each with a single pup.

Sexual Dimorphism:
None

Length:
Average: 94.3 mm
Range: 85−99 mm

Weight:
Range: 12−22 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Pallid Bat
(*Antrozous pallidus*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Common throughout its range, the pallid bat occurs in arid and semi−arid regions throughout northern Mexico and the western United States. Pallid bats eat beetles, grasshoppers, and moths, and they forage for slow−moving prey, such as scorpions, flightless arthropods, and sometimes lizards, at and near ground level. They use echolocation to detect prey, but also use their large ears to listen for prey movements. Pallid bats visit flowers in their hunt for insects, and are natural pollinators of several species of cactus.

Length:
Range: 92−135 mm

Weight:
Range: 13.6−24.1 g males; 13.9−28.9 g females

FIELD NOTES

DATE: _____ LOCATION: _____

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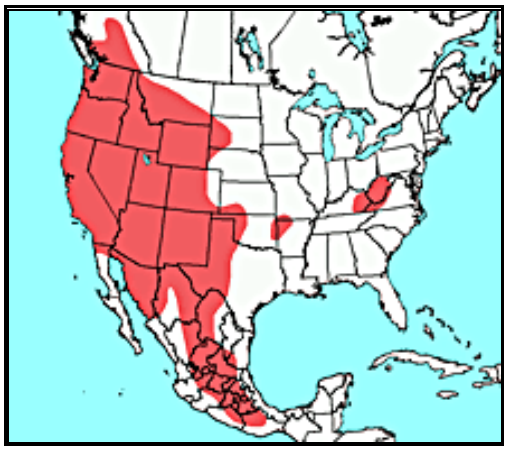
Townsend's Big−eared Bat
(*Corynorhinus townsendii*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Conservation Status: Vulnerable.

Sporting prominent ears that look almost like wings, Townsend's big−eared bat largely preys on moths over open pasture and forest canopy. For females, foraging increases during pregnancy and lactation, from one or two foraging bouts per night to three, and the distance traveled also increases, from 1.0 km to more than 4.0 km per night. Females form maternity groups in the spring, in caves and shelters, where they give birth to a single pup. In addition to winter hibernation, these bats also experience daily periods of torpor during cooler weather, a sleeplike state of reduced motor and metabolic activity. Townsend's big−eared bat occurs in the western United States, northward to British Columbia, as far east as the Rocky Mountain States from Idaho to Texas, including Kansas and Oklahoma, and there are also populations in Arkansas, Missouri, Kentucky, Virginia, and West Virginia.



Also known as:
Western Long−eared Bat, Western Big−eared Bat, Western Lump−nosed Bat, Mule−eared Bat

Sexual Dimorphism:
Females are larger than males.

Length:
Range: 89−116 mm

Weight:
Range: 9−12 g

FIELD NOTES

DATE: _____ LOCATION: _____

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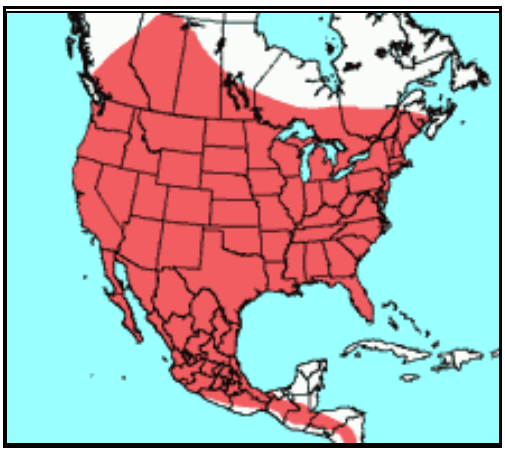
Big Brown Bat
(*Eptesicus fuscus*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Big brown bats make their homes in rural areas, towns, and cities, sometimes choosing barns, houses, or other buildings as roosts. Males usually live alone; females gather in maternity colonies in the spring and summer to give birth and raise their young. A maternity colony may include 20 − 75 adults and their offspring. Females in the eastern United States usually give birth to twins; those in the West usually have a single pup each year. Females may return to the same colony year after year. On warm, dry evenings, the bats leave the roost shortly after sunset to forage for insects especially flying beetles which they catch and eat in the air. When the weather is cold or wet, they may stay in the roost, dropping their body temperature and living on stored fat. In the winter, they hibernate. Many migrate a short distance (less than 80 km) to find mines or caves for hibernation, but some spend the winter in attics or walls where the temperature is cool but stays above freezing.



Also known as:
Brown Bat

Sexual Dimorphism:
Females are larger than males.

Length:
Average: 112 mm
Range: 87−138 mm

Weight:
Average: 16 g
Range: 11−23 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Spotted Bat
(*Euderma maculatum*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

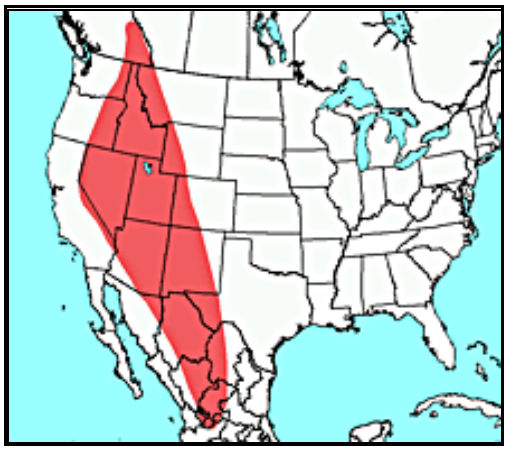
Conspicuous and distinctive, with three highly visible white spots on its black back, and large−than−life ears for its body size, the spotted bat would doubtless be the object of more human attention if it flew during the day. As it is, these bats are caught only rarely, and few of their roosts have been found. They inhabit coniferous forests and lowland deserts, from sea level to 3,000 m, and prey on a variety of moths and other insects. They feed on the wing, using echolocation calls that humans can hear (most bats' calls are beyond the range of human hearing).

Also known as:
Pinto Bat

Sexual Dimorphism:
None

Length:
Range: 107−125 mm

Weight:
Range: 15−22 g



FIELD NOTES

DATE: _____ LOCATION: _____

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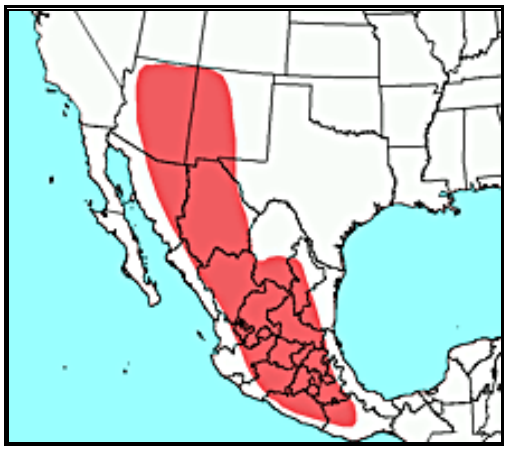
Allen's Big−eared Bat
(*Idionycteris phyllotis*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

As with other big−eared bats, the huge ears of Allen's big−eared bat can be curled back along the sides of the neck so they resemble the horns of a ram. When its ears are tucked out of the way in this manner, one of the cartilage folds of the ear (the tragus) remains erect and may actually look like a small ear, which can make it hard to identify a roosting bat. Few have been observed in their roosts; most information about them comes from bats that were netted while they were flying. These versatile bats adapt their flight patterns and sound emissions (echolocation calls) to varying terrains. They are capable of straight, direct flight, but can also fly slowly, maneuver well, and even hover, so they can forage in and among tree branches. They mostly eat small moths but also take other insects.



Also known as:
Mexican Big−eared Bat, Lappet−browed Bat

Sexual Dimorphism:
Females may be about 5% longer than males.

Length:
Average: 110 mm
Range: 103−135 mm

Weight:
Range: 8−16 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Western Red Bat
(*Lasiurus blossevillii*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

This close cousin to the eastern red bat (*Lasiurus borealis*) is genetically distinct. These bats are found along the west coast and southwestern US and into Mexico where thought to hibernate in the winter. Lasiurine bats are solitary creatures that roost in broad leaved trees, especially cottonwoods and willows in the foothills and lower mountains of the southwest and in the fruit and nut orchards of the west, where they resemble dried leaves when they are curled up and asleep. They are often found near streams. Their preferred diet is moths − street lamps are the ideal cafeteria for these tasty morsels.

Length:
Range: 92−112 mm

Weight:
Range: 6−10 gm

Illustrations of *Lasiurus borealis,* (eastern red bat); *L. blossevilli* is quite similar in appearance but slightly smaller
Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

FIELD NOTES

DATE: _____ LOCATION: _____

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Hoary Bat
(*Lasiurus cinereus*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

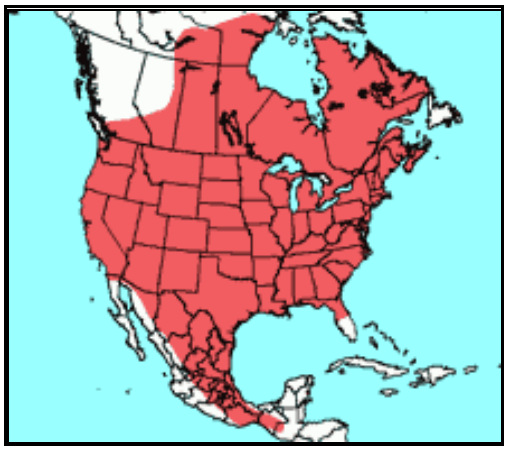
Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Hoary bats are found from northern Canada all the way to Guatemala, and also in South America and Hawaii. They are solitary and roost in trees. Their frosted, or hoary, look comes from a tinge of white over their grayish−brown fur. Their flight is distinctively fast and direct and can be used as an identifying trait. Hoary bats eat moths, beetles, grasshoppers, wasps, and dragonflies.

Sexual Dimorphism:
Females are larger than males.

Length:
Average: 80.5 mm males; 83.6 mm females
Range: 77−87 mm

Weight:
Range: 20−35 g



FIELD NOTES

DATE: _____ LOCATION: _____

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Southern Yellow Bat
(*Lasiurus ega*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

A strong flier with yellowish fur, the southern yellow bat is a lowland species, adapted to both dry and wet habitats. It roosts in trees, particularly palms. These bats are often seen hunting over water, including over swimming pools. Very few species of bats have more than one or two young at a time, and most have just two nipples, but some bats in the genus *Lasiurus* have four nipples and can have triplets or quadruplets. Southern yellow bats most often have triplets. The young bats nurse for about two months before they are able to fly and forage for themselves.

Lasiurus ega − inset shows white hairs on underside of wing

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Also known as:
Western Yellow Bat, Tropical Yellow Bat

Sexual Dimorphism:
Females are larger than males.

Length:
Average: 115.1 mm
Range: 102−118 mm

Weight:
Average: 11.9 g
Range: 10−14 g

FIELD NOTES

DATE: _____ LOCATION: _____

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California Myotis
(*Myotis californicus*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Vespertilionidae

California myotis are found in deserts and arid basins. They drink at small waterholes, and when they forage, they fly low and slow over water and other open areas, and at forest edges. Many California myotis are active in winter, but some that live at higher elevations or farther north hibernate. Mating usually occurs in the fall, and sperm is stored in the female's uterus until spring, when ovulation and fertilization occur. A single pup is born in June or July, when food is plentiful. The young develop rapidly and can fly in about a month.

Also known as:
California Bat

Sexual Dimorphism:
Females are larger than males.

Length:
Range: 70−94 mm

Weight:
Range: 3.3−5.4 g

FIELD NOTES

DATE: _____ LOCATION: _____

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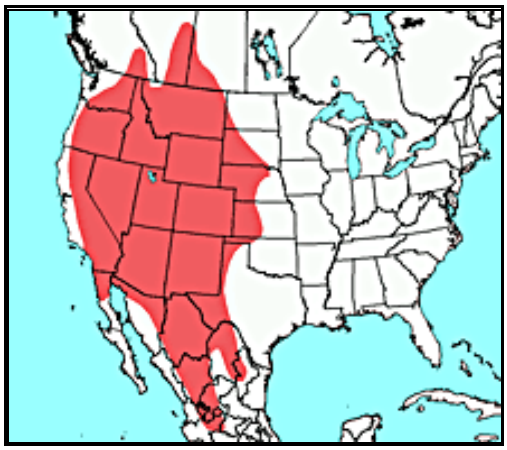
Western Small−footed Myotis
(*Myotis ciliolabrum*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Vespertilionidae

The western small−footed myotis occurs in limited areas of southwestern Canada, throughout much of the western United States, and into Mexico. It is better adapted to moist areas than to dry ones. It roosts alone or in small groups in rock crevices, mines, caves, or buildings, and even occasionally uses in an abandoned swallow's nest as a roosting site. It eats insects, including flies, beetles, moths, and ants. Like many bats, the western small−footed myotis mates in the fall and sperm is stored in the female's body over the winter, while she hibernates. In the spring, the female ovulates and fertilization occurs. A single pup is born in May, June, or July, and is ready to fly when it is about a month old.



Also known as:
Small−footed Myotis, Western Small−footed Bat

Sexual Dimorphism:
Females are larger than males.

Length:
Range: 76−90 mm

Weight:
Range: 2.8−7.1 g

FIELD NOTES

DATE: _____ LOCATION: _____

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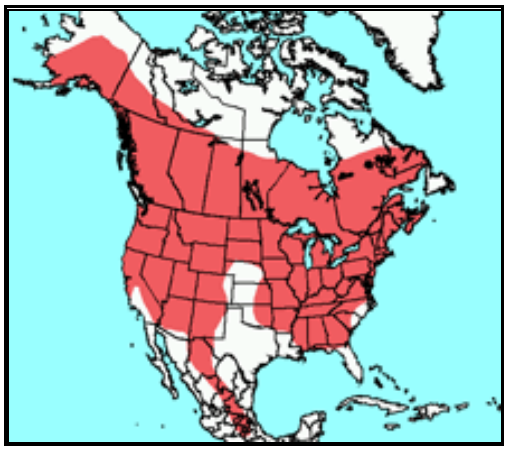
Little Brown Bat
(*Myotis lucifugus*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Myotis lucifugus − inset shows long toe hairs

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Echolocation of little brown bats has been well studied since the invention of bat detectors, electronic devices that can "hear" the ultrasonic calls bats make, which are usually beyond the range of human hearing. Little brown bats typically produce calls lasting about 4 milliseconds. While cruising, they emit echolocation calls about 20 times per second, spacing the pulses at 50 millisecond intervals. When attacking airborne prey, the pulse rates rise drastically, to 200 per second, with only 5 millisecond gaps between calls. The information the bats receive through echolocation allows them to orient themselves, and to locate, track, and evaluate their insect prey. Little brown bats feed near or over water, mainly on aquatic insects such as caddis flies, mayflies, and midges, and typically consume half their body weight in insects each night. Nursing females may eat up to 110 percent of their body weight each night.



Also known as:
Little Brown Myotis

Sexual Dimorphism:
Females are slightly larger than males.

Length:
Average: 87 mm
Range: 60−102 mm

Weight:
Average: 10 g
Range: 7−13 g

FIELD NOTES

DATE: _____ LOCATION: _____

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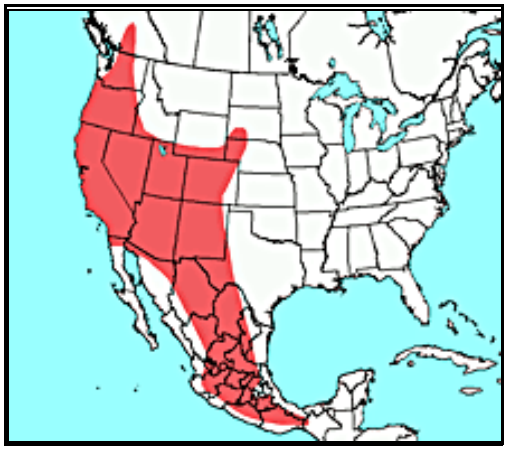
Fringed Myotis
(*Myotis thysanodes*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Myotis thysanodes − inset shows trailing edges of tail membranes
Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

The fringed myotis belongs to the long−eared myotis group, all of which tend to be high−elevation forest bats. This species has the shortest ears and occupies the lowest elevation of the group. Its wings are short and broad, indicating maneuverable, low−speed flight, and it seems to be a specialist at gleaning small beetles from vegetation surfaces. Beetles may make up 70 percent of its diet. Fringed myotis have one baby a year, and it is huge in proportion to the mother's size. A newborn's weight is 22 percent, and its length is 54 percent, of the mother's. Newborn bats are left hanging in special roosts, where 2−10 adult females are always present to care for them. The other females fly out at dusk to forage and return at dawn, but are there as necessary to nurse their young. Before they are three weeks old, the young can fly, and by three weeks, they are as large as adults.



Sexual Dimorphism:
Females are larger than males.

Length:
Average: 89 mm
Range: 80−99 mm

Weight:
Average: 8.8 g
Range: 6−11.8 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Cave Myotis
(*Myotis velifer*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

The cave myotis, one of the larger myotis species, has a stubby−nosed appearance. The ears reach only to the end of the short nose when bent forward. Typical of North American bats, cave myotis feed on insects, especially moths and beetles. They breed seasonally, giving birth to a single offspring of about 3 g, or 25 percent or more the weight of the mother. The young are flying and foraging for insects when they are about a month old, but nurse for about six weeks. A nursing bat hangs upside down next to its mother, nestled in her wing, sometimes hanging onto the roost with one foot and its mother with the other; the female has a nipple under each arm, near her armpits.

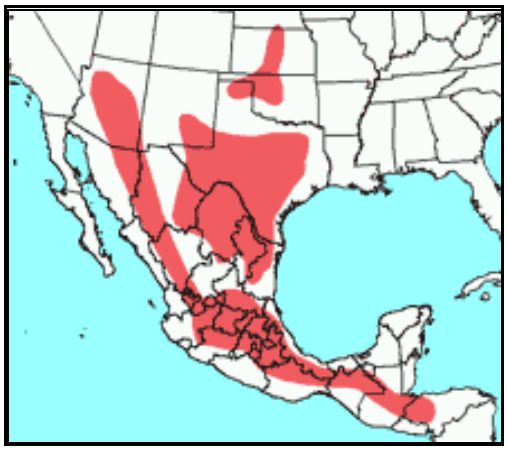
Myotis velifer − inset shows darker variation

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Sexual Dimorphism:
Females have longer forearms than males.

Length:
Average: 56.7 mm
Range: 44.2−55 mm

Weight:
Average: 12 g
Range: 9−14 g



FIELD NOTES

DATE: _____ LOCATION: _____

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Long−legged Myotis
(*Myotis volans*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Long−legged myotis typically occupy mountainous or relatively rugged areas. They often live in coniferous forest, although they are sometimes found in oak or streamside woodlands, and even deserts. They feed mostly on moths, but are opportunistic, eating whatever soft−bodied insects are most abundant. When several long−legged myotis are feeding in the same area, and two bats seem to be on a collision course, they alter their echolocation calls, adding a lower−frequency "honk."

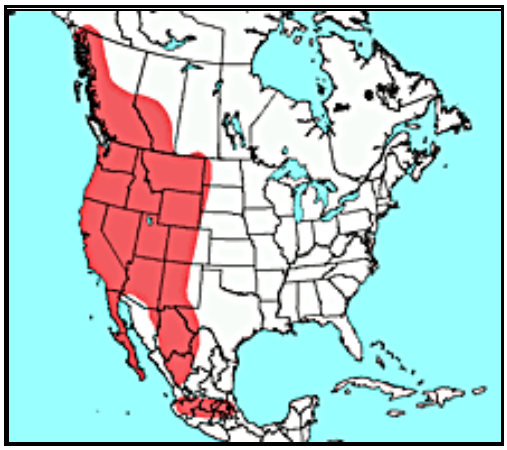
Also known as:
Hairy−winged Myotis

Length:
Range: 76−106 mm

Weight:
Average: 7.5 g
Range: 5−10 g

Myotis volans ssp. *interior*

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



FIELD NOTES

DATE: _____ LOCATION: _____

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Yuma Myotis
(*Myotis yumanensis*)

ORDER: Chiroptera
FAMILY: Vespertilionidae

The skull and jaws of the Yuma myotis suggest a dependence on relatively soft insects, and the little dietary information available supports this. It fits well with the bat's habit of foraging over water, where moths and other soft−bodied insects tend to be common. The bats are often seen cruising back and forth just a few inches above the water, and have never been found living far from a pond or river. In captivity, if they do not have water, they quickly become dehydrated and die. Groups of bats roost together in the summer, under bridges, in buildings, mines, or caves, and even in mud nests made by cliff swallows. This species varies in size and coat coloration over its extensive north−south geographic distribution, sometimes making it difficult to distinguish them from the closely related little brown bat. So far, genetic studies have shown them to be two distinct species, however.

Myotis yumanensis − light−colored desert variant is shown, with darker forest variant in inset
Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Sexual Dimorphism:
None

Length:
Average: 80.6 mm
Range: 75−89 mm

Weight:
Average: 5.9 g
Range: 4.7−7.1 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Western Pipistrelle
(*Pipistrellus hesperus*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Chiroptera
FAMILY: Vespertilionidae

Western pipistrelles sometimes leave their roosts before sundown, and can be mistaken for late−flying butterflies, because they are so tiny and fly slowly and erratically, with much fluttering of their wings. Most common at low elevations in desert scrub and arid grassland habitats, they are also found in adjacent woodlands. Although they range over the arid West, western pipistrelles require a ready source of water—a lake, stream, or even a swimming pool. They—and some shrews—are the smallest mammals in North America, with weights ranging from 2—6 g. In spite of their tiny size, western pipistrelles usually give birth to twins, which are born and raised in small maternity colonies. The largest colony yet found comprised just four female bats and their eight young.

Also known as:
Canyon Bat

Sexual Dimorphism:
Females are larger than males.

Length:
Range: 60−86 mm

Weight:
Range: 2−6 g

FIELD NOTES

DATE: _____ LOCATION: _____

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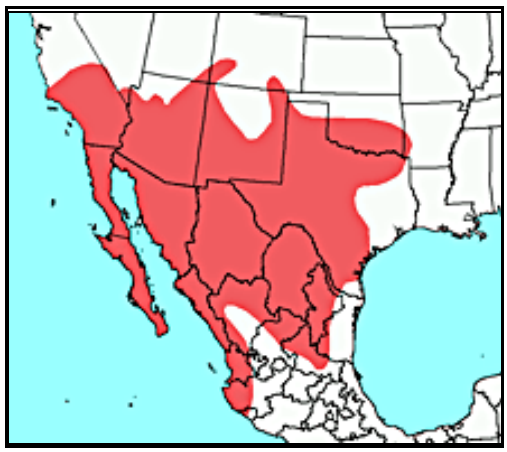
Crawford's Gray Shrew
(*Notiosorex crawfordi*)

Notiosorex crawfordii − Crawford's Gray Shrew

Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Insectivora
FAMILY: Soricidae

These shrews live in deserts, but they seek out moister microhabitats within them, such as brushpiles or fallen logs. They have been found in beehives, and their tiny, golfball−sized nests have been found in dens built by—and sometimes still occupied by—woodrats. Captive individuals ate a variety of insects, including cockroaches, beetles, mealworms, and moths, and also accepted carrion. They would not attack live rodents, or eat salamanders, earthworms, or scorpions. Crawford's Gray Shrews give birth to litters of 3 to 5 relatively helpless, but rapidly maturing, young, which leave the nest by six weeks of age.



Also known as:
Gray Shrew, Desert Shrew

Length:
Average: 87.6 mm
Range: 77−98 mm

Weight:
Average: 4.3 g
Range: 2.9−6.3 g

FIELD NOTES

DATE: _____ LOCATION: _____

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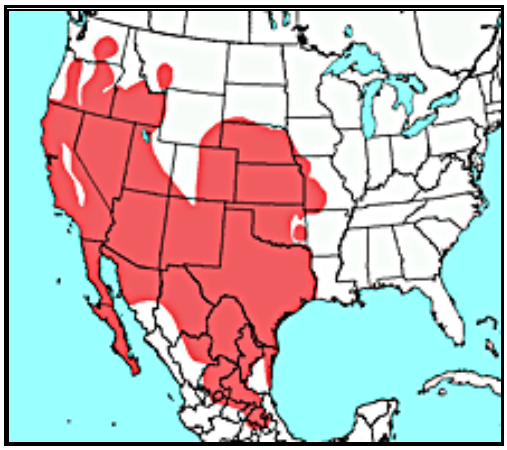
Black−tailed Jackrabbit
(*Lepus californicus*)

ORDER: Lagomorpha
FAMILY: Leporidae

Credit: painting by Ron Klinger from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Black−tailed Jackrabbits are tremendous leapers, able to jump more than 6 m horizontally. They live in some of the hottest and driest regions of the continent, can survive on poor−quality foods, and get most or all of the water they need from their food. Where they can, they eat green vegetation, but they can survive in parts of the Southwest where creosote−bush forms a large part of their diet. They cope with extreme heat by lowering their metabolism and resting in the shade during the day, which conserves water. They get rid of extra salt through their urine, and blood flows close to the skin in their enormous ears, a cooling mechanism. Although mostly nocturnal and solitary, large groups sometimes form near a good food supply. With their typically high reproductive output, Black−tails can be agricultural pests, and there were periods in the 1800s and 1900s when aggressive rabbit drives herded and destroyed 5,000−6,000 animal in a single day. In spite of this, they are quite common and widespread.



Member of order Lagomorpha.

Also known as:
California Jackrabbit

Length:
Range: 465−630 mm

Weight:
Range: 1,300−3,300 g

FIELD NOTES

DATE: _____ LOCATION: _____

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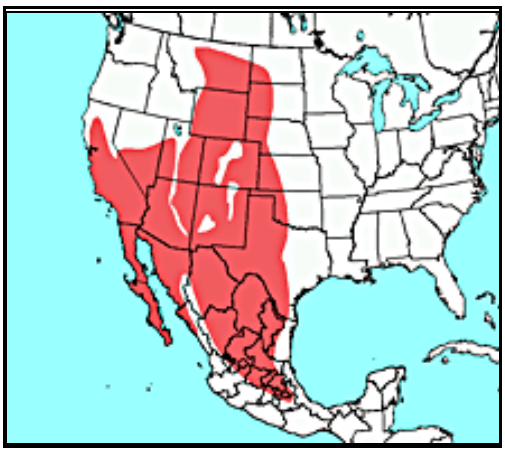
Desert Cottontail
(*Sylvilagus audubonii*)

Credit: painting by Ron Klinger from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Lagomorpha
FAMILY: Leporidae

Living well below sea level in Death Valley and also in woodland and grassland up to 2,000 m elevation, Desert Cottontails are able to tolerate diverse habitats. They are most active at dawn and dusk, and spend hot days resting in a burrow or in a "hide," which is a shallow depression in the ground or in vegetation. Like all rabbits, they are vegetarians, feeding on grasses, shrubs, and forbs. They also eat acorns. When they can, they forage under shrubs, and when they venture out from under shelter, they move cautiously, and freeze when alarmed. They breed year−round, and mature quickly: breeding is seen in individuals as young as three months of age.



Also known as:
Audubon's Cottontail

Sexual Dimorphism:
Females are larger than males.

Length:
Average: 385 mm
Range: 372−397 mm

Weight:
Range: 755−1,250 g

FIELD NOTES

DATE: _____ LOCATION: _____

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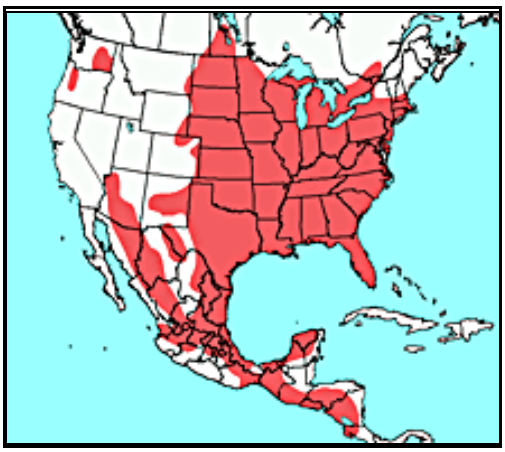
Eastern Cottontail
(*Sylvilagus floridanus*)

Credit: painting by Ron Klinger from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Lagomorpha
FAMILY: Leporidae

Eastern Cottontails share habitats with seven other cottontails and six species of hares. They have been transplanted to areas outside their historically widespread range, which included swamps, prairies, woodlands, and forests. They have two ways of escaping danger: a zig−zag dash or a slink, in which they creep along, low to the ground, with their ears back. Eastern Cottontails are among the most prolific lagomorphs. Females can have seven litters a year, producing as many as 35 young. Litters, usually of 3¦, are born in a fur−lined nest of dried grasses and leaves.



Also known as:
Florida Cottontail

Sexual Dimorphism:
Females are larger than males.

Length:
Average: 430 mm
Range: 395−477 mm

Weight:
Range: 801−1,533 g

FIELD NOTES

DATE: _____ LOCATION: _____

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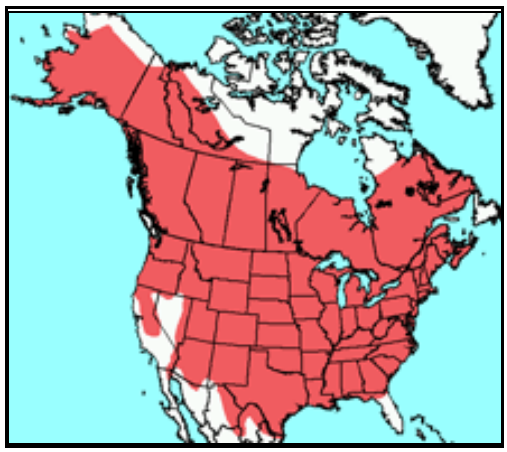
American Beaver
(*Castor canadensis*)

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Castoridae

The largest North American rodent and the only one with a broad, flat, scaly tail, the Beaver is now common and widespread, even in areas it did not inhabit during pre−colonial times. The modifications it makes to the environment by felling trees and building dams result in changes to plant, animal, and microbial communities that are sometimes desirable and sometimes not. The Beaver itself is not easily seen, being nocturnal and secretive, but it can be spotted in ponds, lakes, or large streams at twilight by a quiet observer. Its pelage is brown, with gray underfur, and is prized by trappers. The webbing on its hind feet help it to swim; claws on the digits of its forefeet give it dexterity in handling food; comblike claws on its hind feet help it in careful grooming; and it can close its mouth behind its front teeth, so that it can carry woody material without taking in water. Beavers cache and consume the inner bark of both deciduous and evergreen shrubs and trees, as well as terrestrial and aquatic plants. Their young, called kits, leave the colony at the age of six months.



Also known as:
Canadian Beaver, North American Beaver

Sexual Dimorphism:
None

Length:
Range: 1,000−1,200 mm

Weight:
Range: 16−30 kg

FIELD NOTES

DATE: _____ LOCATION: _____

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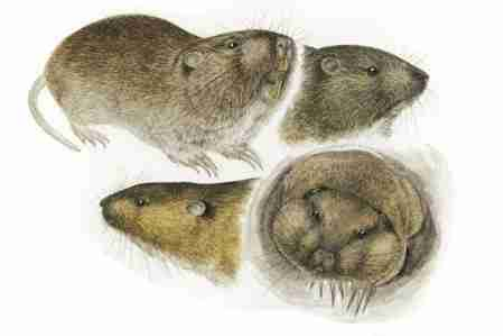
Botta's Pocket Gopher
(*Thomomys bottae*)



Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Geomyidae

Pocket gophers dig with their front claws and with their teeth. A pocket gopher can close its mouth behind its front teeth, so it can dig without getting a mouthful of dirt. Its "pockets" are fur−lined, external cheek pouches, one on each side of its mouth, which it uses to transport food. Botta's Pocket Gopher has an extremely broad geographic range, and individuals vary widely in appearance: they can be nearly white, gray, brown, or blackish−brown. They vary in size, too. Males are larger than females. Males grow throughout their lives, whereas females stop growing after their first pregnancy, so older males can be much larger than females. Pocket gophers live in small, local populations, spending almost their entire lives underground in their network of burrows.

Also known as:
Valley Pocket Gopher

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 170−280 mm males; 150−240 mm females

Weight:
Range: 110−250 g males; 80−160 g females

FIELD NOTES

DATE: _____ LOCATION: _____

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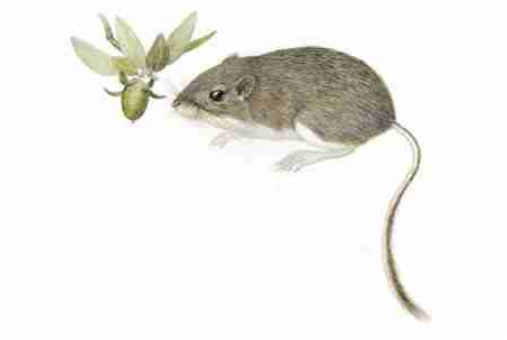
Bailey's Pocket Mouse
(*Chaetodipus baileyi*)



Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Heteromyidae

Bailey's Pocket Mice are solitary, nocturnal, and live in burrows. Pocket Mice mostly eat seeds, using their "pockets," fur−lined, external cheek pouches, to bring seeds to their nests, where they store them in preparation for leaner times. The fur lining of the cheek pouches in members of the family Heteromyidae is an adaptation for desert life: the seeds the rodents carry do not absorb body water the way they would if they were carried in the mouth. Bailey's Pocket Mouse is the only Sonoran desert rodent able to eat jojoba seeds, which are toxic to most mammals.

Sexual Dimorphism:
Males are larger than females.

Length:
Average: 211 mm males; 201 mm females
Range: 206−240 mm males; 176−228 mm females

Weight:
Average: 28.2 g males; 24.5 g females

FIELD NOTES

DATE: _____ LOCATION: _____

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Rock Pocket Mouse
(*Chaetodipus intermedius*)

ORDER: Rodentia
FAMILY: Heteromyidae

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

As their name indicates, Rock Pocket Mice dwell in rocky habitats, and only rarely live in areas with sandy or silty soils. Their inconspicuous burrows are located near or under rocks, in rocky gulches or canyons, or near boulders. The mouse pictured is sitting on a lava rock, probably in New Mexico, and the color of its fur blends with the dark rock. This is typical of pocket mice − their color often matches the background color of their habitat. Rock Pocket Mice breed from February or March through July, and young have been seen from April through August.

Also known as:
Intermediate Pocket Mouse

Length:
Average: 172 mm
Range: 157−188 mm

Weight:
Range: 10.5−19.9 g

FIELD NOTES

DATE: _____ LOCATION: _____

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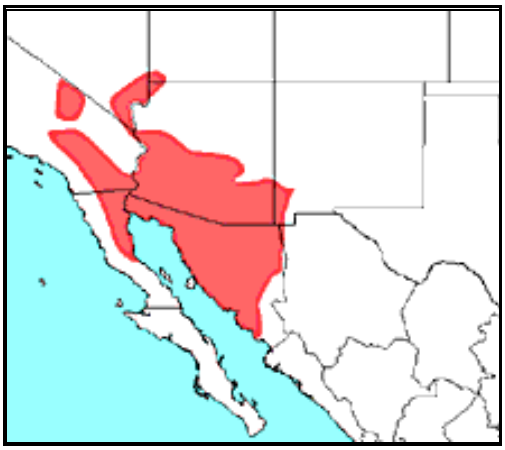
Desert Pocket Mouse
(*Chaetodipus penicillatus*)

ORDER: Rodentia
FAMILY: Heteromyidae

The Desert Pocket Mouse is a common inhabitant of warm deserts throughout the United States and Mexico. It prefers sandy soil and avoids rocky settings, and like other pocket mice, comes out at night to search for seeds. It favors large seeds such as palo verde and mesquite, and uses the shrubs as shelter and protection from predators such as owls while it forages. In winter, these pocket Mice lower their body temperature and enter a state of inactivity known as torpor. They wake occasionally to nibble on the food they have stored. This saves energy and helps them get through the winter.

Chaetodipus penicillatus − Desert Pocket Mouse

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)



Also known as:
Sonoran Desert Pocket Mouse

Length:
Average: 170 mm
Range: 155−185 mm

Weight:
Average: 16 g
Range: 13−20 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Desert Kangaroo Rat
(*Dipodomys deserti*)

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Heteromyidae

Desert Kangaroo Rats live in sand dunes in very hot, dry deserts of the southwestern United States, even below sea level in Death Valley, California. They need deep sand for their burrows, and will not dig them in rapidly shifting sand. Only one Kangaroo Rat lives in each burrow, except for a mother with her young. Desert Kangaroo Rats leave their burrows at night to forage for seeds and other plant food to eat, but they are also active by day, digging new tunnels. The underground network of tunnels includes a grass−lined nest chamber and storerooms for food the Kangaroo Rat carries home in its fur−lined cheek pouches. Desert Kangaroo Rats communicate by drumming their feet on the ground, tooth−chattering, and with squeals, grunts, and growling sounds.

Sexual Dimorphism:
Males are larger than females.

Length:
Average: 342 mm males; 331 mm females

Weight:
Range: 91−148 g males; 83−141 g females

FIELD NOTES

DATE: _____ LOCATION: _____

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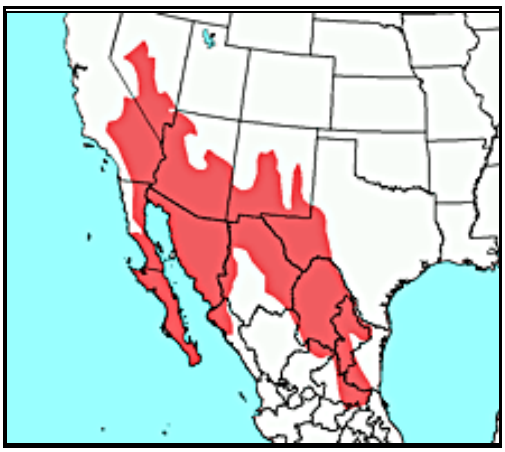
Merriam's Kangaroo Rat
(*Dipodomys merriami*)

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Heteromyidae

Like all members of the family Heteromyidae, Merriam's Kangaroo Rat is found only in the New World. Many kangaroo rats have rather specific habitat preferences, but Merriam's Kangaroo Rat is not one of these. It can inhabit arid regions where the ground is predominantly rocks, gravel, sand, or clay. Like other kangaroo rats (and kangaroo mice), it specializes in bipedal locomotion, which means that it usually moves around by hopping on two feet, like a chubby little kangaroo. The hindquarters of kangaroo rats and mice are strong and well developed to support this method of locomotion. Some kangaroo rats can leap 2 m (more than 6 feet) at a single bound.



Sexual Dimorphism:
Males are larger than females.

Length:
Average: 247 mm
Range: 195−282 mm

Weight:
Range: 33.2−53.1 g

FIELD NOTES

DATE: _____ LOCATION: _____

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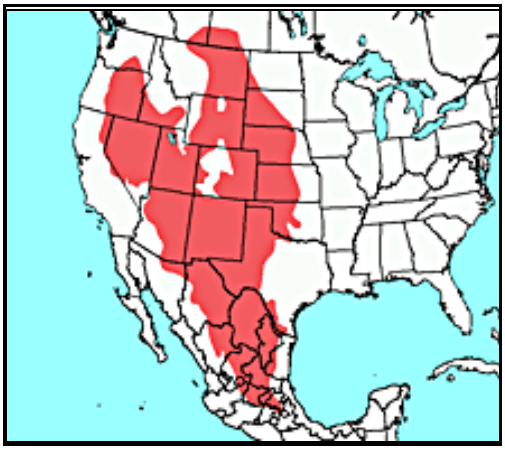
Ord's Kangaroo Rat
(*Dipodomys ordii*)

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Heteromyidae

By occupying the short grass prairie of the Great Plains, and a variety of habitats where there are fine−textured, sandy soils, Ord's Kangaroo Rat has managed a truly enormous geographic distribution. The varied habitats that it occupies include semi−arid grasslands, mixed−grasslands, and scrublands. This ecological variation, together with the considerable geographic range, has contributed to the fact that more than 30 subspecies have been named. Ord's Kangaroo Rats are most active on cloudy nights. They usually stay in their burrows in bad weather and especially on clear, moonlit nights when owls can spot them most easily. Other predators include foxes, coyotes, badgers, and long−tailed weasels.



Sexual Dimorphism:
Males are larger than females.

Length:
Average: 243 mm males; 242 mm females
Range: 210−365 mm males; 208−360 mm females

Weight:
Average: 52 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Arizona Pocket Mouse
(*Perognathus amplus*)

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Heteromyidae

Conservation Status: Near Threatened.

Like other heteromyid rodents, Arizona Pocket Mice are solitary creatures. They spend the day in underground burrows, emerging only at night. In the wild, these Mice eat almost exclusively seeds of forbs or woody plants, though in captivity, they avidly consume lettuce and mealworms in addition to seeds. When the weather is cold, the Mice stay in their burrows, reducing their body temperature and metabolism, but rousing occasionally to eat cached seeds. This is not true hibernation, but a condition called torpor. It is a successful strategy to conserve energy while the temperature is too low for them to endure.

Sexual Dimorphism:
None

Length:
Average: 153 mm
Range: 135−173 mm

Weight:
Average: 11.3 g
Range: 9.2−14 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Little Pocket Mouse
(*Perognathus longimembris*)

Credit: painting by Elizabeth McClelland from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Heteromyidae

Conservation Status: *Perognathus longimembris pacificus*, the Pacific pocket mouse, is a Critically Endangered subspecies; the subspecies *P. longimembris brevinasus*, the Los Angeles pocket mouse, is Vulnerable.

Because they use energy and water so efficiently, Little Pocket Mice can inhabit some of the driest and least vegetated parts of North America. They are abundant in deserts of the southwestern United States and northwestern Mexico, and readily inhabit coastal sage, shrub−steppe, and open grasslands in those regions. This Mouse is able to get by on the water generated through its normal metabolic processes. Its urine and feces are so concentrated, and evaporation is so reduced, that it never requires a drink. When given the choice, Little Pocket Mice invariably select the warmest available environment (below about 30° C). During the summer they inhabit the shallow, warmer parts of the burrow system. When it is cold, the Mice move deeper into the burrow where temperatures are warmest. They typically remain underground for months every year, frequently in a state of torpor, their metabolism and body temperatures lowered, waking occasionally to feed on the seeds they have stored.

Sexual Dimorphism:
None

Length:
Average: 131 mm
Range: 110−151 mm

Weight:
Range: 6.5−10.5 g

FIELD NOTES

DATE: _____ LOCATION: _____

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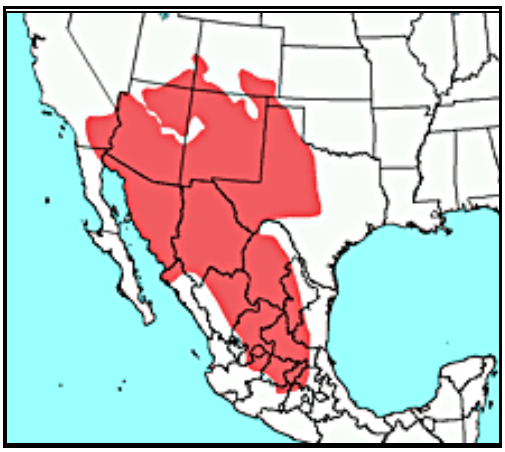
White−throated Woodrat
(*Neotoma albigula*)

Credit: painting by Ron Klinger from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Muridae

Woodrats are also known as Packrats, because they cache various manmade objects in their dens. This habit of collecting foreign objects is useful to scientists, who can place numbered sticks throughout an area and later open a den, record the numbers of the sticks the woodrat has carried home, and determine the size of the animal's home range. White−throated Woodrats occur on forested hillsides, rocky mountainsides, and on flat scrubland. They especially like prickly pear cactus, but also eat cholla, yucca, grass, catclaw, soapweed, and various parts of juniper trees and mesquite. They make their dens of some of these plants, which they can use as a food supply when fresh food is not available. Fossilized woodrat dens can supply information about ancient vegetation and therefore, what the climate must have been like at different times.



Also known as:
Packrat

Length:
Average: 328 mm
Range: 282−400 mm

Weight:
Average: 224 g males; 188 g females
Range: 135−283 g

FIELD NOTES

DATE: _____ LOCATION: _____

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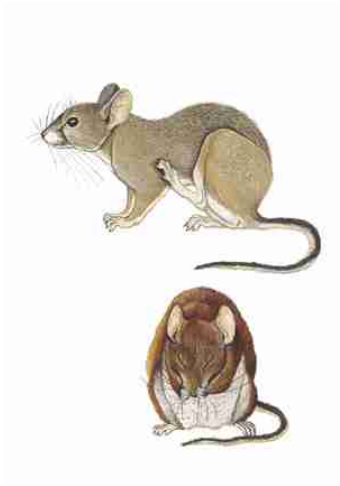
Mexican Woodrat
(*Neotoma mexicana*)

ORDER: Rodentia
FAMILY: Muridae

Mexican Woodrats inhabits rocky outcrops, cliffs, and slopes, primarily in montane regions from northern Colorado to Honduras. They eat a wide variety of leaves, seeds, and berries, and sometimes store large amounts of food. They are medium−sized, grayish−brown woodrats with white underparts, bushy tails, and gray throat hairs. Owls, foxes, coyotes, bobcats, weasels, and rattlesnakes all prey on them. Many Mexican Woodrat populations are separate from each other (disjunct), because patches of suitable habitat are separated from each other by terrain the Woodrat cannot cross. For example, Woodrats living on one mountaintop may remain isolated from Woodrats on another. Fossils of this species that are more than 10,000 years old have been found in Arizona, New Mexico, Texas, and Mexico.



Neotoma mexicana − gray (upper) or rufous brown (lower) coat
Credit: painting by Ron Klinger from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Also known as:
Trade Rat, Packrat

Length:
Range: 290−417 mm

Weight:
Range: 151−253 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Southern Grasshopper Mouse
(*Onychomys torridus*)

Credit: painting by Ron Klinger from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Muridae

Southern Grasshopper Mice are also known as scorpion Mice: they are able to kill (and then eat) scorpions, by first immobilizing the venomous tail and then biting the head. They also prey on beetles that secrete defensive chemicals from the tip of the abdomen, by jamming the pointed barb into the ground and then striking a deathblow to the head. Of the three species of grasshopper mice, the southern Grasshopper Mouse inhabits the driest regions. Although it does not have the physiological adaptations of some other desert rodents, such as kangaroo rats or pocket mice, it may be able to get enough water from the bodies of its prey − arthropods and small mammals − to live without drinking water.

Also known as:
Scorpion Mouse

Sexual Dimorphism:
None

Length:
Average: 143.9 mm
Range: 130−160 mm

Weight:
Range: 20−40 g

FIELD NOTES

DATE: _____ LOCATION: _____

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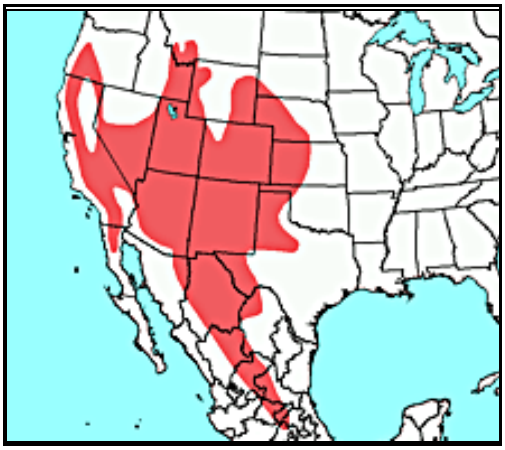
Brush Mouse
(*Peromyscus boylii*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Muridae

Brush Mice occupy rocky and brushy or forested environments in which rock ledges, piles of brush, fallen trees, and boulders offer shelter and denning sites. Although they are reportedly good climbers, they only occasionally build their nests in tree cavities. Within their enormous range, these Mice are found only at elevations above 2,000 m. They consume many kinds of nuts, seeds, and fruit, including grass seeds, acorns, pine nuts, hackberries, juniper berries, and fir seeds.



Sexual Dimorphism:
None

Length:
Average: 194 mm
Range: 175−210 mm

Weight:
Range: 22−36 g

FIELD NOTES

DATE: _____ LOCATION: _____

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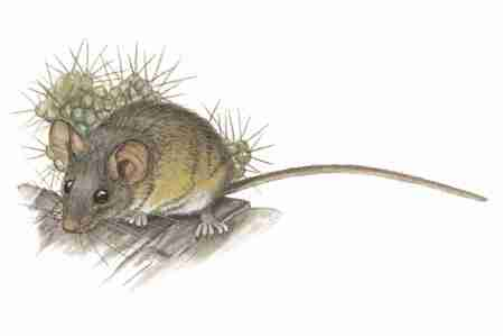
Cactus Mouse
(*Peromyscus eremicus*)



Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Muridae

Cactus Mice are found in habitats with sandy soil and scattered vegetation, from low deserts to rocky foothills. They typically live in burrows, but are also found on the surface in piles of debris, vegetation, or rock crevices. They are active at night, feeding on seeds, insects, and green vegetation, and can become torpid during the day. They may estivate (become dormant, with metabolic rate lowered) during hotter and drier months, so as to reduce water loss. In her lifetime, which is probably about a year, a female can bear three or four litters of up to four young.

Sexual Dimorphism:
Females are larger than males.

Length:
Range: 169−218 mm

Weight:
Average: 24 g males; 24 g females
Range: 18−40 g

FIELD NOTES

DATE: _____ LOCATION: _____

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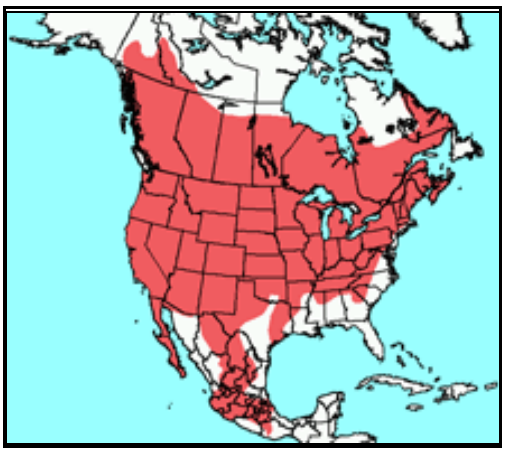
Deermouse
(*Peromyscus maniculatus*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Muridae

Conservation Status: Two subspecies (*P. maniculatus anacapae*, the Anacapa Deermouse, and *P. maniculatus clementis*, the San Clemente Deermouse) are Near Threatened.

Deermice rarely leave their homes during the day, but feed opportunistically at night on whatever is available: seeds, nuts, fruit, berries, insects and other animal matter, and whatever they find tasty in houses. Deermice have the most extensive range of any North American rodent, and are found in almost every kind of habitat. They climb easily, tunnel through snow or scurry about on its surface, and find shelter everywhere from mattresses to tree cavities to burrows in the ground. Populations fluctuate in cycles of three to five years, sometimes correlated with the amount of food available. The Deermouse is important as a laboratory animal, and can be a factor in the spread of some human diseases, including hantavirus, plague, and Lyme disease.



Also known as:
Wood Mouse, Woodland Deermouse, Prairie Deermouse

Length:
Range: 120−225 mm

Weight:
Range: 10−30 g

FIELD NOTES

DATE: _____ LOCATION: _____

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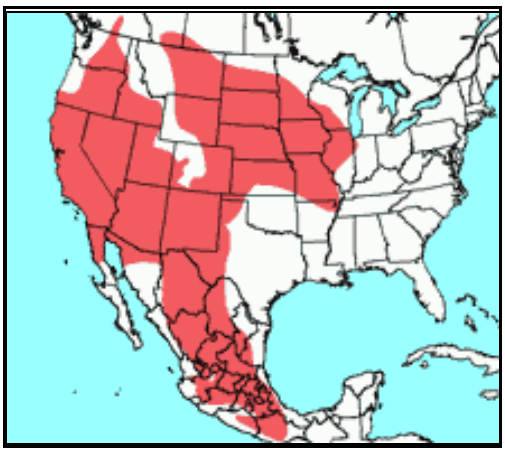
Western Harvest Mouse
(*Reithrodontomys megalotis*)

Credit: painting by Wendy Smith from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Muridae

Western Harvest Mouse are adaptable, widespread, and abundant, especially in meadows, prairies, old pastures, stream valleys, and marshes. They eat seeds, insects, and plants. They rarely live for more than a year, but under optimal conditions, a female can produce more than 50 young in her lifetime. Their nests are built of plant material, usually on the ground, but sometimes in burrows or in vegetation slightly above the ground. Each mouse may have several nests, which it uses at different times. The Mice are nonterritorial and show a great deal of tolerance for one another, even huddling together when it is cold. Such intimate contact carries risks: they are afflicted with many parasites, including protozoans, worms, fleas, chiggers, mites, and lice. They are a vector for a hantavirus that can cause acute respiratory illness and hemorrhagic fever in humans.



Also known as:
Long−tailed Harvest Mouse, Desert Harvest Mouse, Dusky Harvest Mouse

Sexual Dimorphism:
None

Length:
Average: 140 mm
Range: 118−170 mm

Weight:
Range: 8−15 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Arizona Cotton Rat
(*Sigmodon arizonae*)

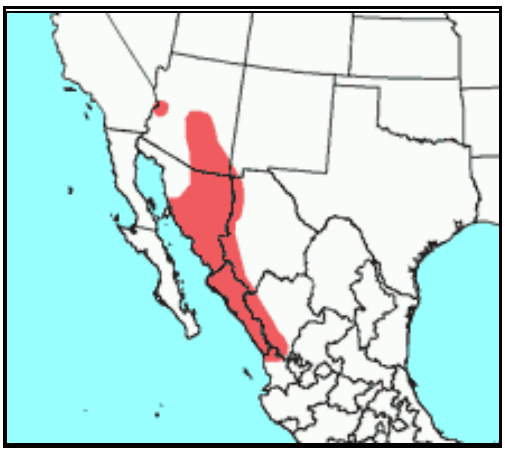
ORDER: Rodentia
FAMILY: Muridae

Conservation Status: *Sigmodon arizonae arizonae*, the Arizona cotton rat, is an Extinct subspecies; the Colorado River cotton rat, *S. arizonae plenus*, is Near Threatened.

Sigmodon arizonae − right (with *S. fulviventer*)

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

All cotton rats have a strong connection with grass, which they feed upon, and in which they construct their runways. Within their range in southeast and central Arizona and western Mexico, Arizona cotton rats inhabit only grassy areas where there is enough water to support grasses, weeds, or brush. They are common around ponds and in irrigated fields. They give birth to fully−furred young who can run around within a few hours after they are born. Population booms sometimes occur shortly after periods of rain.



Length:
Range: 200−349 mm

Weight:
Average: 172 g
Range: 125−211 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Harris's Antelope Squirrel
(*Ammospermophilus harrisii*)

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Sciuridae

Extreme heat does not deter Harris's Antelope Squirrel from vigorous daytime activity. It is agile, scampering over sharp−spined cholla cactus without being pricked, and may sit on top of a cactus to look around. Antelope squirrels dig burrows, usually under desert shrubs such as mesquite, creosotebush, or palo verde, and eat mainly fruit and cactus seeds. Trapping studies indicate the species is found in low densities that vary seasonally. The squirrels are active year−round. They typically breed in December or January and have a litter of 5−9 young about a month later.

Also known as:
Harris's Spermophile, Marmot Squirrel, Gray−tailed Antelope Squirrel, Yuma Antelope Ground Squirrel

Sexual Dimorphism:
None

Length:
Average: 238 mm
Range: 216−267 mm

Weight:
Average: 122 g

FIELD NOTES

DATE: _____ LOCATION: _____

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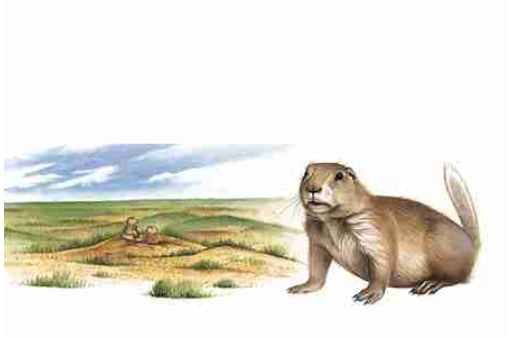
Gunnison's Prairie Dog
(*Cynomys gunnisoni*)



Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

ORDER: Rodentia
FAMILY: Sciuridae

In the spring, when Gunnison's prairie dogs emerge from hibernation, they eat new, green plants. Later in the summer, as plants begin to turn brown and dry out, they concentrate on flowers and seeds. Their colonies are made up of clans, each with an adult male, several females, and their young. A clan has its own burrows and feeding sites. When population density is low, clan territories have little overlap and territorial defense is not a high priority. When there are as many as 60 prairie dogs per hectare, territories are aggressively defended, with all members of a clan, young and old, actively participating.

Also known as:
Zuni Prairie Dog

Sexual Dimorphism:
Males are larger than females.

Length:
Average: 335 mm males; 325 mm females
Range: 317−390 mm males; 309−338 mm females

Weight:
Average: 816 g males; 644 g females
Range: 460−1,300 g males; 465−750 g females

FIELD NOTES

DATE: _____ LOCATION: _____

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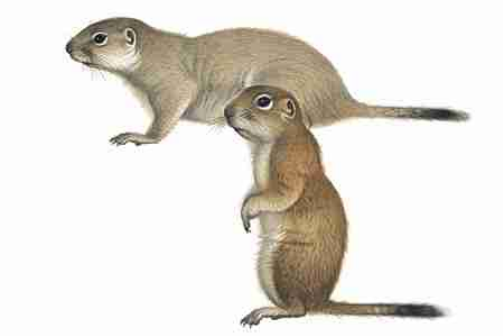
Round−tailed Ground Squirrel
(*Spermophilus tereticaudus*)

ORDER: Rodentia
FAMILY: Sciuridae



Spermophilus tereticaudus − gray−brown (top) and cinnamon (bottom) variants
Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Round−tailed Ground Squirrels occur primarily in sandy, relatively flat desert, from Death Valley, which is about 70 m below sea level, to elevations of 1,200 m. They dig their burrows in loose soil, often under a shrub. Mesquite and creosotebush are typically the dominant plants in their habitat. They can stay active on very hot days, and in some areas they are active year−round. In other places, they spend most of their time underground from September until January, but they do not hibernate. Predators include birds of prey, coyotes, badgers, and snakes.

Also known as:
Roundtail Ground Squirrel

Sexual Dimorphism:
None

Length:
Range: 202−278 mm

Weight:
Range: 110−170 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Rock Squirrel
(*Spermophilus variegatus*)

ORDER: Rodentia
FAMILY: Sciuridae

Image shows variable amounts of black coloration in species

Credit: painting by Todd Zalewski from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Rock squirrels, with their long, bushy tails, look very much like tree squirrels, but seldom climb trees. They are most commonly found in rocky habitats—canyons, cliffs, and hillsides. Occasionally a nest is found in a tree, but they usually dig burrows, choosing a place that offers a near−by lookout where they can watch for danger. Other mammals and even burrowing owls are known to use their dens if the squirrels abandon them. The rock squirrel's geographic range is large, and it is found at elevations from sea level to 2,900 m. Females produce one litter a year in places or at elevations where winter weather lasts longer, and two in warmer parts of their range.

Sexual Dimorphism:
Males are larger than females.

Length:
Range: 466−503 mm

Weight:
Range: 450−875 g

FIELD NOTES

DATE: _____ LOCATION: _____

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Cliff Chipmunk
(*Tamias dorsalis*)

ORDER: Rodentia
FAMILY: Sciuridae

Tamias dorsalis − winter coloration on left, summer on right

Credit: painting by Nancy Halliday from Kays and Wilson's Mammals of North America, © Princeton University Press (2002)

Cliff chipmunk fossils about 2,300 and 8,000 years old have been found in caves in Utah and Nevada. The chipmunks still live in those states, in habitats where sagebrush, fourwing saltbush, chokecherry, wild rose, and cliffrose grow. In other parts of their range, they are found with a wide variety of plants, and their diets include seeds and fruits from many kinds of grasses, shrubs, forbs, and trees. They also feed on insects, frogs, salamanders, snakes, birds, and eggs. Four other chipmunk species share parts of their range. Where one or more other species occurs on a mountain, the cliff chipmunk usually is found at the lowest elevation, but where none of the others occurs, cliff chipmunks range right to the top of the mountain.

Also known as:
Gray Chipmunk, Gray−backed Chipmunk, Gila Striped Chipmunk, Pallid Chipmunk, Chichimoke, Chichimuka

Sexual Dimorphism:
Females are slightly larger than males.

Length:
Average: 217 mm males; 222 mm females
Range: 204−226 mm males; 212−235 mm females

Weight:
Average: 59.5 g males; 62.9 g females
Range: 54.5−63.8 g males; 58.8−66.7 g females;

FIELD NOTES

DATE: _____ LOCATION: _____

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