

# Mammals of Illinois



<https://www.in.gov/dnr/fishwild/3359.htm>

*Lake Shelbyville Eco-Meet 2018*

## **Junior Varsity**

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## **MAMMAL ANATOMY**

Mammals are characterized by their mammary glands, hair (at least at some point during their lives), ability to maintain a fairly constant body temperature, and the fact that they give live birth to their young.

## **REPRODUCTION**

Most mammals are viviparous, meaning they give birth to live young. However, five species of monotremes, including platypuses and echidnas, lay eggs. All mammals produce sexually—males equipped with sperm and females equipped with an egg mate in order to produce an offspring. Most mammals that give live birth are formed with a placenta. After a long gestation period, the fetus has sufficiently developed, and chemical signals start the birthing process. The newborn should typically begin independent respiration shortly after the mother gives birth. Not long after birth, the placenta is passed. Most mammals eat this, as it is a good source of protein and other vital nutrients necessary for caring for the young.

Some mammals are marsupials. Marsupials are characterized by premature birth and continued development of the newborn while attached to the nipples on the mother's lower belly. Their gestation period is very short in comparison to a placental mammal's gestation period. The pouch or marsupium, from which the group takes its name, is a flap of skin covering the nipples. Although prominent in many species, the pouch is not a universal feature. In some species, the nipples are fully exposed or are bounded by remnants of a pouch. The young remain firmly attached to the milk-giving nipples for a period of time equivalent to the time a fetus in placental development would spend finishing its development in the mother's womb.

After birth, young mammals then live off their mother's milk for a considerable amount of time. The mammary glands of mammals are specialized to produce milk, which is a liquid used by newborn as their primary source of nutrition.

## **LOCOMOTION**

The majority of mammals travel across land. A mammal moves its legs backward and forwards beneath its body in order to move. The mechanics of mammalian walking and running can get quite complex, involving the use of tendons and the back as energy storing springs to enhance efficiency. This process has been closely studied in cheetahs, where the back is actually dislocated and relocated during each stride.

The modes of locomotion used by animals have been classified into more than 30 different types. These groups are not exclusive. In fact, it is not unusual for an animal to change from one type of movement to another (i.e. walking to jumping) in a given

period of time. A horse, for instance, has three natural gaits: a walk, a trot, and a gallop. The most common four-legged locomotion you will observe is the walk, sometimes referred to as the diagonal walk. This is used by most hoofed animals as well as by cats and dogs. In this walk, the animal uses diagonally opposite legs (i.e. front left and right hind legs move forward, and then the front right and left hind legs move and so on). Giraffes and a few other animals, such as brown bears and camels, move both legs on one side and then both legs on the other side. In some cases, the hind leg starts first, so there is a slight lag. This is also called pacing and is the first gait observed in young colts. The trot is similar to the dog walk but faster, with a moment in each stride when all four legs are off the ground. The gallop is a succession of leaps. The legs may hit the ground together, both of the front and then both of the hind, as in the ermine. The front legs may also be set down one at a time followed by both of the hind feet together, as in the hare.

Most terrestrial mammals can jump or leap, but some use this form of locomotion far more regularly than others. Leaping occurs either from two legs only (as in a monkey) or from all four legs simultaneously (as in the pronghorn). Leaps can be mixed as well. Cats, for instance, leap mostly from their hind legs but get some lift from their front legs too, which leave the ground before the hind legs do.

Primarily aquatic mammals, such as seals, have much more ungainly gaits. Most seals effectively crawl, stretching forward then hunching their back to bring the hind part of the body as far forward as possible before raising and pushing the front forward again. This is a slow process but is nonetheless effective. Elephant seals drag themselves forward with their front limbs only. Falkland Sea Lions use a sort of slow gallop, comparable to that of a hare. However, they can move as fast as a running man when necessary.

Humans walk on two legs. On occasion, gibbons, gorillas, and chimpanzees also walk on two legs. More common, perhaps, are the kangaroos of Australia, which jump on two legs. Jerboas, jumping mice, and a variety of other smaller Australian marsupials utilize a similar method of locomotion.

Brachiation is another form of locomotion meaning to move by swinging from branch to branch with your arms. Primates frequently use this type of locomotion. Climbing trees can be achieved using gaits similar to both the dog walk and the giraffe walk. Squirrels actually gallop up trees. Squirrels are also unique in their ability to walk down trees as well. The ankles on their hind legs are so flexible, they can turn 180 degrees, allowing them to be equally useful going up and coming down.

Many land mammals can swim, including big cats. Some bats can even survive falling in the water. Hamsters fill their cheek pouches with air before taking the plunge. Some species are semi-aquatic and are equally at home on land and in the water. (ex: otters, hippopotamuses) For most terrestrial mammals, swimming involves walking in the water. In essence, they use the same gaits in the water as they do on land.

Mammals that are more fully aquatic, however, exhibit additional adaptations to life in the water. Beavers fold their front legs under their chests while swimming. Sea otters float quite happily on their backs. Seals are so adapted to the water that they are clumsy and foolish-looking on land. Different species of mammals swim in different ways. Many seals and sea lions use both front and hind limbs when swimming. But, Elephant Seals only every use their hind limbs.

Finally, some mammals have taken to the air. In fact, about 20% of all species of mammals can fly. The bats make up the flying mammals. Apart from them, a few species of mammals can glide. Flying squirrels, for instance, are equipped with a flap of skin stretched between their fore and hind limbs. When stretched out, this flap allows them to glide, often for considerable distances. Australia is home to gliding marsupials and the Malay Archipelago has a flying (gliding) Lemur. Gliding flight only goes down, however. Eventually, the mammal has to climb up a tree to regain the lost height. Bats, on the other hand, really fly—most of them very well. Bats have wings of skin stretched between greatly lengthened finger and arm bones. Bats tend to fly erratically, though some species have been recorded flying at speeds of over 13 miles per hour in level flight. The record for speed in bat flight is held by the Big Brown Bat at 15.5 miles per hour.

## CONSERVATION

As of 2017, Illinois has 5 mammal species on the endangered list and 4 mammal species considered threatened.

### Endangered

Easter Woodrat  
Gray Bat  
Indiana Bat  
Rafinesque's Big-Eared Bat  
Southeastern Myotis

### Threatened

Eastern Small-Footed Bat  
Franklin's Ground Squirrel  
Gray/Timber Wolf  
Northern Long-Eared Bat

## MAMMALS OF ILLINOIS

Approximately 59 species of mammals are known to occur in Illinois. This study guide will cover 25 species. Three of these species were introduced from the "Old World," meaning they were brought over by settlers. The others are native to Illinois. Mice, shrews, rabbits, and squirrels are the most common mammals found naturally in Illinois. Larger mammals, including beavers, badgers, and deer, are not as abundant. Bison, elk, bears, wolves, and mountain lions, in addition to other mammals that once roamed the prairies or lived in the forests of Illinois have vanished from the state, or are present only on small farms and in zoos.

In the days of the pioneers, many wild animals served as sources of food and clothing for settlers. Mammals also served as a means of livelihood for the trappers who sold their fur. Although these animals are not as important and respected today, wild animals continue to be a significant asset. Still today they are sought after for trapping, hunting, and sightseeing enjoyment.

BEAVER  
*Castor canadensis*



<https://wildthingswildliferemoval.com/beaver-removal/>

**CHARACTERISTICS:** Prominent, orange front teeth; large, paddle-like, scaly tail

**HABITAT:** Lakes and streams bordered with poplars, birches, or other food trees

**FOOD:** Poplar, Maple, Birch, Willow, Cattails, and other plants

**NOTES:** Famed for their dam-building ability, North America's largest rodents begin by making an underwater foundation of mud and stone. Then, they gnaw down trees, leaving characteristic cone-shaped stumps. Their lodges are made of sticks and mud with an underwater entrance and an inside platform above the water.

**BIG BROWN BAT**  
*Eptesicus fuscus*



<https://www.lpzoo.org/blog/neighborhood-guide-chicago-bats>

**CHARACTERICS:** Strong; steady light; large size

**HABITAT:** Flies in forest; roosts in caves, hollow trees, and buildings (especially in summer)

**FOOD:** Insects

**NOTES:** Occasionally seen flying during the day, but usually flies at night. They detect beetles and other insects by emitting high-pitched sounds that bounce off objects and come back as echoes. Like the Little Brown Bat, the Big Brown Bat is very furry in exterior appearance.



**BOBCAT**  
*Lynx rufus*



<https://www.louisianafur.com/bobcat.html>

**CHARACTERICS:** Short tail, black on top only; fur varies from dark (forest) to light (open areas); spotted belly, spots more conspicuous than on Lynx cat

**HABITAT:** Canyon country, chaparral, forests and swamps

**FOOD:** Rabbits, other animals, reptiles, and birds

**NOTES:** The most common wild feline in North America. It adapts well to the presence of man. Generally solitary animals.

COYOTE  
*Canis latrans*



<https://www.dnr.illinois.gov/conservation/wildlife/Pages/Coyote.aspx>

**CHARACTERICS:** Gray on back with red flanks; tawny legs, feet, and ears; tail held between legs when running

**HABITAT:** Open forests, prairies, and brush

**FOOD:** Rodents, rabbits, and other small animals

**NOTES:** Belongs to the dog family. Have adapted well to the presence of man. Have a nocturnal serenade of howls, barks, and wails. Mate with dogs.

EASTERN CHIPMUNK  
*Tamias striatus*



<http://ehspest.com/eastern-chipmunks.htm>

**CHARACTERICS:** Stripes on head, sides, and back; back stripes extend only to the rump

**HABITAT:** Forests, brushy areas, gardens

**FOOD:** Hazelnuts, acorns, basswood fruits, hickory nuts, and corn

**NOTES:** Ground-dwelling squirrels. Spend most of their lives at or below the surface, though they will also climb trees. Their extensive burrows are up to 12 feet long. Partially hibernate in the winter.

EASTERN COTTONTAIL  
*Sylvilagus floridanus*



[http://www.theanimalfiles.com/mammals/rabbits\\_hares\\_pikas/eastern\\_cottontail.html](http://www.theanimalfiles.com/mammals/rabbits_hares_pikas/eastern_cottontail.html)

**CHARACTERICS:** Short-eared, short-tailed rabbit; white tail conspicuous when running

**HABITAT:** Brush areas, forest edges, swamps

**FOOD:** Grass, clover, dandelion, plantain, alfalfa, soybean plants, buds, bark, and twigs

**NOTES:** Each year, a female cottontail produces several litters, each with up to seven young. Rabbits born in early spring may breed that very summer. Cats, foxes, hawks, owls, and hunters help to keep their number in control.

EASTERN MOLE  
*Scalopus aquaticus*



[https://naturalhistory.si.edu/mna/image\\_info.cfm?species\\_id=294](https://naturalhistory.si.edu/mna/image_info.cfm?species_id=294)

**CHARACTERICS:** Soft, velvety fur, gray in north, golden to darker brown elsewhere; hairless tail

**HABITAT:** Moist, sandy soils in grassy areas

**FOOD:** Insect larvae, earthworms

**NOTES:** Spends most of its life beneath the surface of the earth. After a rain, it moves through shallow tunnels searching for earthworms, insect larvae, and other prey. Its permanent passageways lie ten inches or more below the surface. They do not hibernate. They're solitary except during the breeding season and are very destructive in producing their tunnels and mounds.

FLYING SQUIRREL  
*Pteromyini*



<https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/Flying-Squirrels>

**CHARACTERICS:** Grayish brown on back, white below; folds of skin between front and back legs; large eyes

**HABITAT:** Broad-leaved and mixed forests

**FOOD:** Nuts, seeds, tree buds, fruits, insects, and birds' eggs

**NOTES:** They do not truly fly. Instead, they glide downward using wide flaps of skin along its sides to help slow their descent. Their tails are used as a rudder. They are nocturnal.

FOX SQUIRREL  
*Sciurus niger*



<http://www.animalspot.net/fox-squirrel.html>

**CHARACTERICS:** Rusty-yellow with a mixture of gray on the upper parts and reddish yellow on the underparts; bushy tail is bordered with red

**HABITAT:** Varied; hedgerows, pastures, and timber

**FOOD:** Nuts, fruits of oak, elm, beech, corn, tree buds, mushrooms, and birds' eggs

**NOTES:** Does not hibernate. Occurs throughout the state.

GRAY FOX  
*Urocyon cinereoargenteus*



<https://www.nrri.umn.edu/carnivores-minnesota/species/gray-fox>

**CHARACTERICS:** Coarse coat, salt and pepper gray with orange and white markings; bushy tail, black-tipped with black stripe on top

**HABITAT:** Open woodlands and grasslands

**FOOD:** Small mammals, birds, insects, carrion, and fruit

**NOTES:** Belong to the dog family. Can easily climb trees and are the only North American members of the canine family that can do so. Have dens in ground burrows, hollow logs, tree trunks, and rocks.



GRAY SQUIRREL  
*Sciurus carolinensis*



<https://www.in.gov/dnr/fishwild/5689.htm>

**CHARACTERICS:** Usually gray on back and sides, whitish below (many northern ones are all black); large bushy tail

**HABITAT:** Broad-leaved forests, parks, and suburbs

**FOOD:** Buds, seeds, acorns, fungi, corn, soybeans, berries, and grapes

**NOTES:** Does not hibernate. Usually not found in locations with Fox Squirrels. Does not interbreed in nature.

HOUSE MOUSE  
*Mus musculus*



<https://www.cdc.gov/rodents/resources/images.html>

**CHARACTERICS:** Head and body gray to grayish brown; long scaly tail; prominent ears

**HABITAT:** Around buildings

**FOOD:** Food intended for man

**NOTES:** Came from Asia. Enormous reproductive capacity—one female may have eight litters in one year, with as many as twelve in a single litter.

LITTLE BROWN BAT  
*Myotis lucifugus*



<https://www.batworlds.com/little-brown-bat/>

**CHARACTERICS:** Low zigzagging flight; small size; dark shiny fur

**HABITAT:** Flies near wooded areas and water; roosts in caves, hollow trees, and buildings

**FOOD:** Insects

**NOTES:** Probably the most common bat in Illinois. Common in and around cities. Females and young cluster together while males are solitary. Perhaps most easily distinguished from its close relative, the Big Brown Bat, by its short, almost “squished,” nose.

LONG-TAILED WEASEL  
*Mustela frenata*



[https://www.fws.gov/refuge/willapa/wildlife\\_and\\_habitat/long\\_tailed\\_weasel.html](https://www.fws.gov/refuge/willapa/wildlife_and_habitat/long_tailed_weasel.html)

**CHARACTERICS:** Long, slim body; tail black at tip; feet and legs brown; body brown above and pale below; yellowish white (except tip of tail) in winter in northern part of range

**HABITAT:** Open country, forests, many other areas, usually near water

**FOOD:** Rats, mice, squirrels, ground squirrels, and birds (including chickens)

**NOTES:** Can cause considerable damage in a chicken coop. Benefits man by killing rats and mice in fields and barns.

MINK  
*Neovison vison*



<https://www.dnr.illinois.gov/conservation/wildlife/Pages/Minkl.aspx>

**CHARACTERICS:** Long, slim body; dark red-brown fur, except for small pale area on chin and scattered white spots on underside

**HABITAT:** Along rivers, streams, and lakes; occasionally in tidal marshes

**FOOD:** Muskrat, fishes, rabbits, and snakes

**NOTES:** Excellent swimmers. Never lives far from water. Fierce and fearless fighters. Adults are usually solitary.

MUSKRAT  
*Ondatra zibethicus*



<https://nature.mdc.mo.gov/discover-nature/field-guide/common-muskrat>

**CHARACTERICS:** Reddish brown color, except for light gray belly; black tail with vertically flattened scales

**HABITAT:** Marshes, ponds, lakes, slow streams with reeds and cattails

**FOOD:** Aquatic plants, snails, clams, crayfish, and frogs

**NOTES:** Muskrats use aquatic lodges that are smaller than beaver lodges and made of grasses and sedges instead of sticks and mud.

NORWAY RAT  
*Rattus norvegicus*



<http://acvcscd.org/programs-services/rodents/norway-rat/>

**CHARACTERICS:** Coarse fur; dull gray-brown on top, paler below; long, scaly, nearly hairless tail (not bicolored)

**HABITAT:** Buildings, wharves, dumps, sometimes in fields

**FOOD:** Eats almost anything dead or alive

**NOTES:** Originally from Asia. World's most destructive mammal. Has been an economic and health problem. Spreads disease and contaminates food.

OPOSSUM  
*Didelphimorphia*



<http://www.thealexandriazoo.com/VirginiaOpossum.html>

**CHARACTERICS:** Long, pointed, pinkish nose; white face; large leaf-like ears; long, sparsely haired tail; pale gray

**HABITAT:** Farmland, forest, usually near water

**FOOD:** Insects, small animals, grain, fruit, and carrion

**NOTES:** North America's only marsupial (pouched mammal). Bears litter of up to 14 kits, each about the size of a honeybee. Immediately after birth, they crawl into their mother's pouch where they nurse for several month. As adults, they have 50 teeth (more than any other North American land mammal). Active mostly at night. Occasionally "play opossum" when cornered.



PINE VOLE (WOODLAND)  
*Microtus pinetorum*



[http://blackhillsgarden.com/index.php?p=1\\_114\\_All-about-voles](http://blackhillsgarden.com/index.php?p=1_114_All-about-voles)

CHARACTERICS: Soft fur, reddish brown on back, gray below; very short tail

HABITAT: Forest floors covered with thick duff (decaying vegetation); orchards

FOOD: Underground parts of plants, including peanuts and potatoes

NOTES: Smallest North American vole. Tunnels in leaf litter and in the soil.

RED FOX  
*Vulpes vulpes*



<https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/Red-Fox>

**CHARACTERICS:** Usually reddish on back and face, white on underparts; bushy tail with white tip; black legs and feet

**HABITAT:** Farmlands, forests with open areas

**FOOD:** Mainly small mammals, birds, insects, carrion, and fruit

**NOTES:** Red Foxes are not always red. Some are black (known as silver foxes), and some are brown. They are notorious chicken thieves.

SHORT-TAILED SHREW  
*Blarina brevicauda*



<http://wildlifeofct.com/northern%20short-tailed%20shrew.html>

CHARACTERICS: Dark metallic gray color; relatively short tail

HABITAT: All and habitats, except deserts

FOOD: Mostly insects, some small mammals

NOTES: Unique among North American mammals for having venomous saliva.

STRIPED SKUNK  
*Mephitis mephitis*



<https://oeupos.ca.uky.edu/content/stripped-skunk>

**CHARACTERICS:** White facial stripe, neck patch, and “V” on back; mottled bushy tail

**HABITAT:** Open forest, farmlands, brush areas, prairies; usually near water

**FOOD:** Mostly insects

**NOTES:** When provoked, the Striped Skunk arches its back, raises its tail, stamps its front feet, and shuffles backward. If the warning is not heeded, it ejects a fine spray of acrid, blinding fluid from its anal glands. As a result, few animals, other than large owls, prey on skunks.

THIRTEEN-LINED GROUND SQUIRREL  
*Ictidomys tridecemlineatus*



<http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index/mammals/thirteen-lined-ground-squirrel>

**CHARACTERICS:** Many stripes on sides and back (some broken into dots); small ears; large eyes; slightly bushy tail

**HABITAT:** Bushy areas, overgrown fields, small stands of trees, open areas

**FOOD:** Insects, seeds, grasses, and other herbs

**NOTES:** Hibernates. Burrowing animals. Often stand erect at the entrance to their burrows.

WHITE-TAILED DEER  
*Odocoileus virginianus*



<https://www.adirondackalmanack.com/2013/11/deer-rutting-season-adirondacks.html>

**CHARACTERICS:** Tail white on underside, raised when alarmed; males' antlers have main beam with several prongs; fur reddish in the summer and grayish brown in the winter

**HABITAT:** Forests, swamps, adjacent brushy areas

**FOOD:** Variety of plants, including trees

**NOTES:** The most abundant hoofed mammal in North America. Active in the early morning and at dusk. Except in winter, they are not gregarious and seldom appear in groups of more than three. Antler development is determined by nutrition, not age.

WOODCHUCK (GROUNDHOG)  
*Marmota monax*



<https://www.in.gov/dnr/fishwild/5694.htm>

**CHARACTERICS:** Large head; chunky body; short legs; small bushy tail; no special markings

**HABITAT:** Open forest, forest edges, rocky areas, roadsides

**FOOD:** Clover, alfalfa, and other plants

**NOTES:** Hibernates in its burrow until late winter. Often seen sitting upright at the entrance to their burrow, looking for predators.

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