



**US Army Corps
of Engineers®**
Rock Island District

ANIMALS AROUND US

Objectives:

To be able to identify the four things an animal's habitat must provide.

To be able to identify habits and habitats of animals given in the study guide.

To be able to understand the terms "hibernation" and "winter sleeper".

Activities:

Students will each receive an "Animals Around Us" study guide. Eco-Meet test questions will be taken from the study guide.

Before the Eco-Meet Animals' test, a short presentation on local wildlife will be presented to the students. Live animals may be used in the program.

Study Questions:

- What four things must all animals have no matter where they live?
- What can happen to an animal when it's habitat changes?
- Originally, beaver lived over most of North America, what happened to cause the beaver population to be cut drastically in the middle 1800's?
- Which of the animals covered in this study guide would you be likely to find along the Mississippi River? Why?
- What is the difference between a "hibernator" and a "winter sleeper"?

Animals Around Us

No matter where you are, at home, at school, or on vacation, the fascinating world of wildlife is there to be discovered. Stop, look, and listen, and you will be surprised by how many animals are around. At first you may recognize only the familiar sights and sounds of robins or crickets. But the more you learn about animals, the more animals you will see.

A big part of discovering wildlife around you is knowing where to look. Animals of all sizes, shapes, and colors live in all kinds of places called HABITATS. You probably know that squirrels and pigeons live in cities. But did you know that some peregrine falcons live there too? More and more, birds or all kinds and other animals like turtles, woodchucks, raccoons, and deer are finding what they need to live near, even in, towns, suburbs, and cities. No matter where they live, all animals must have FOOD, WATER, SHELTER, and SPACE.

Animals get hungry and thirsty and have to eat and drink. Their FOOD may be plants, other animals, or both. Animals-that eat other animals are called carnivores, animals that eat only plants are called herbivores, and animals that eat both plants and animals are called omnivores.

The WATER animals need may come from a raindrop, a puddle, a stream, or a drinking fountain; or it may be stored in leaves, stems, and berries. An animal's SHELTER must protect it from both the weather and it's predators. An animal needs SPACE in which to play, rest, find food, and raise its young. Different types of animals need different amounts of space. Because so many creatures find all that they need to survive in places like farms and woodlots, city parks and vacant lots, school yards and even backyards, you don't have to travel to national parks. and wildlife refuges to see wild animals. Explore your own yard and you might discover humming birds, butterflies, warblers, turtles, chipmunks, or intriguing insects.

Obviously, it is impossible to watch animals if there aren't any animals around. That is why forests, streams, prairies, and other habitats are so important. They are essential for wildlife to live. But habitats can change. A drought can dry up animals' drinking water. A flood can destroy shelter and food. Other changes are man-made. Wetlands are drained, forests are cut down, rivers are polluted, houses and shopping centers are built. Each change takes food, water, shelter, or space from wildlife. As their habitat changes, animals must adapt to the changes, move to a new habitat, or die.

Unfortunately, some animals don't survive when their habitat changes. The California condor, gray wolf, black-footed ferret, Florida panther, and many others are in danger of becoming extinct because their habitats were changed either too much, too quickly, or both. We must not forget that, although the extinction of passenger pigeons or Carolina parakeets or any other animal may seem insignificant, each species plays an

important role in the complex web of life. Each time an animal species becomes extinct the rest of the food web is affected.

Fortunately, many animals have survived changes in their habitat. Some animals have even been helped by them. Killdeer nest on level surfaces. Lawns, parking lots, and flat roofs add to the number of available nest sites for this bird. Raccoons are scavengers and have adapted very well to living in city storm sewers and feeding on a variety of insects, nuts, and garbage.

People have also done a great deal to help wildlife and their habitats. Laws have been passed to protect endangered and threatened wildlife. Some zoos and research centers breed rare animals in hope of releasing some of them in areas where they once lived. And land has been saved as refuges so that animals have places to live.

Close to home, gardeners and landscapers help wildlife by using plants that provide food and shelter. And you, too, can help wildlife. Put up a feeder or birdhouse at home or school. If you put a dish of water on the lawn, birds and squirrels might drink from it. Birds also like to bathe in water. Even if you live in an apartment, you can feed birds. Put sunflower seeds or other kinds of birdseed in a window box or on the windowsill.

So, you see, it's not hard to make a place for wildlife and have fun at the same time. Everyone can do it.

HIBERNATION / WINTER SURVIVAL FOR ANIMALS

DEFINITION OF HIBERNATION:

Hibernation is passing the winter in a state of sleep and low metabolic activity. A hibernating animal's body temperature is much lower than normal and its rate of breathing and heart beat are very slow. All body mechanisms slow down and run on the animal's fat for energy.

EXAMPLES OF HIBERNATION:

A woodchuck will breathe once every six minutes which is 200 times slower than their normal rate. At this rate, life requires a minimum of energy and a hibernating animal's fat layers can meet this demand. The ground squirrels' temperature drops from 90 degrees Fahrenheit to 39 degrees. Its digestive and hormonal systems appear to stop and the heartbeat is very faint.

HIBERNATION VS. A WINTER SLEEPER:

A winter sleeper is one who sleeps through the winter but their body temperature does not drop to its surrounding. If hungry, the animal awakes and hunts for food then returns to its den to sleep. This activity continues throughout the winter. Examples of winter sleepers would be bears, raccoons, skunks, and porcupines.

Thus, the difference is that hibernation causes the animals body temperature and metabolism to slow down and adjust to its surroundings while winter sleepers maintain their normal body temperature and metabolism.

PROCESS OF HIBERNATION:

Animals that hibernate protect themselves against the cold and reduce their need for food. Animals that hibernate eat large amounts of food in the fall. The food is stored as fat in their bodies and used as food during hibernation.

What happens to an animal while hibernating?

- Animals' body temperature goes down.
- Circulation slows down.
- Heart beat slows down.

What makes animals hibernate?

- No one really knows.
- Scientists believe the "trigger" to hibernation is in the animals brain (hypothalamus) or adrenal glands.

TYPES OF HIBERNATION:

Butterflies and moths, cold-blooded animals, hibernate by changing from a caterpillar into a cocoon.

Frogs, lizards, snakes, toads, and turtles cool down as the air around them cools down. As this occurs, their body processes cease. They do not become active until warm weather arrives.

Bears are not true hibernators. They sleep through winter but their body temperature does not drop to its surrounding.

Bats hibernate. every day and become active at night.

Hummingbirds spend their nights in hibernation.

Thus, hibernators of Iowa/Illinois are the woodchuck or ground hog, the 13 striped ground squirrel, chipmunks, snakes, rodents, and bats.

TYPES OF DWELLINGS USED TO HIBERNATE:

Chipmunks make their homes in woods, meadows, and gardens. They burrow a home underground beneath stumps or roots. Woodchucks live deep in the ground in a bed of grasses. Their home., a tunnel, is usually three yards long with one entrance and many exits. They stay within 100 yard radius. Bats hibernate in caves, garages, and dark damp places.

CONCLUSION:

Winter brings below-freezing temperatures to many areas. Animals living in these areas must adapt to survive the cold weather. Hibernating is one-way. The animals sleeping selection is a crucial one once the harsh weather arrives. If a proper site is not chosen, the animal can freeze to death. The act of hibernating and winter sleeping along with a proper den selection are necessary for the animals future existence.

WOODCHUCK



The woodchuck, or groundhog, is one of the best known wild mammals but few realize this rodent is a member of the squirrel family. Its common name, "woodchuck," is an anglicized corruption of an Indian name for this species. The origin of its other name, "groundhog," is obvious from the animal's squat appearance, waddling gait, and habit of living in the ground.

DESCRIPTION

This common rodent varies from 16 to 27 inches in total length; it has short, powerful legs and a medium long, bushy, and somewhat flattened tail. The long, coarse fur of the back is a grizzled grayish-brown with a yellowish or reddish cast. Woodchucks weigh between 4 and 14 pounds, being lightest in spring when they are just out of hibernation and heaviest in fall prior to hibernation.

DISTRIBUTION AND ABUNDANCE

When North America was first settled, woodchucks were relatively scarce, but as timbered areas were opened and woodland edge, fence rows, and meadows increased, the chuck's range expanded and the animals prospered. Woodchucks prefer to live along the "edges" where timbered areas are bordered by open land or along fence rows and heavily vegetated gullies or stream banks. Here they dig their burrows. The main entrance is often located beneath a tree stump or rock and is usually conspicuous because of a pile of freshly excavated earth and stones. Side entrances are smaller and better concealed. The tunnels lead to an enlarged chamber, 3 to 6 feet underground, which contains the nest.

HABITS

Woodchucks usually hibernate in winter although during periods of mild weather, some individuals may awaken. Normally by the end of October, most woodchucks are curled up in a profound sleep in their underground nest. So deep is this sleep that even if an animal is warmed up, it requires several hours to awaken. Emergence from hibernation begins as early as the first week of February but severe cold weather may delay this. As the daily temperatures rise and plant growth increases, the chucks spend more and more time above ground. During this period the main activity is feeding and basking in the spring sun.

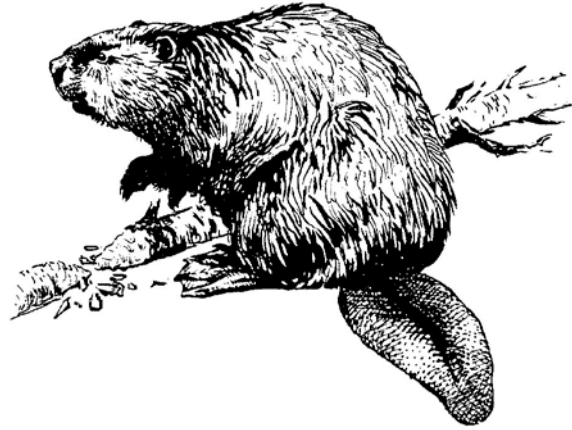
In digging, the front feet and claws are used primarily, but the teeth may be employed to move stones or cut roots. The amount of subsoil removed in the course of digging one burrow averaged 716 pounds. Digging is done so rapidly that a small burrow can be finished in one day, though upkeep is continued as long as the burrow is occupied.

BEAVER

The beaver is the largest rodent in North America. An adult beaver can reach 4 1/2 feet in length and weight up to a record of 90 pounds.

DESCRIPTION

Beavers are easily distinguished by their large size, webbed hind feet, and large, horizontally flattened tail. The body fur is dark brown above and lighter brown below; the tail is blackish.



DISTRIBUTION AND ABUNDANCE

Originally, beavers lived over most of North America but as a result of extensive trapping most of the beavers were exterminated in the eastern and southern parts of the United States. In Illinois beavers were common in every major watershed prior to the Civil War, but by 1875 only a few colonies remained. The beaver numbers have increased in some areas so that they are very destructive to the environment.

HABITAT AND HOME

Beavers live in and along streams, rivers, marshes and small lakes. For their home in running water, they usually dig a tunnel and den in a high bank. In quiet water like lakes, marshes, or backwater, they frequently construct a large, bulky lodge out of tree limbs-or other debris.

HABITS

Beavers are well known for their engineering skills, particularly in building dams. Beavers-construct dams across small streams and they also create a system of waterways for floating food and construction materials. Paths from their feeding grounds to the water become well worn and at the water's edge may end in mud slides. Beavers usually stay within 1/2 mile of their home during the entire year.

When felling (cutting down) a tree, the beaver usually cuts the first notch at a convenient height then makes a second one about 3 inches below the first. The bark and wood are-cut out chip by chip until the tree snaps and falls. The beaver cannot direct the angle at which the tree falls; but since most trees along streams tend to lean toward the water, they are cut on the leaning side which is most easily reached by the beaver and thus fall into the water.

FOOD

Beavers are primarily bark eaters, consuming the bark of tender twigs and the new growth between the outer bark and the wood of branches and trunks. They eat corn wherever it is available, and various water plants.

REPRODUCTION

The breeding season starts in January or February. The single annual litter is born in April, May or June and usually consist of 3 or 4 young. When the kits are born they are completely furred and have their eyes open and incisor teeth visible. Although they are able to swim at birth, they seldom come out of the den and swim until about one month old. The kits are weaned when about 6 weeks old but stay with their parents until approximately 2 years of age.

IMPORTANCE

The search for beaver pelts was one of the inducements to the exploration and settlement of the country. In 1763 Pierre Laclede and August Chouteau founded a fur-trading post below the convergence of the Missouri and Mississippi Rivers; by 1880 this settlement, St Louis, was the raw fur center of the world. Currently, beaver pelts are used extensively in the manufacture of ladies' coats and as trimming for other fur and cloth coats. The flesh is edible.

The relationship of beavers to the land and its wildlife is intricate. For centuries beaver dams have backed up silt-laden waters and subsequently formed many fertile valley floors in the wooded areas of northern North America. Beaver dams have stabilized stream flow, slowed down runoff, and created ponds which profoundly influence fish, muskrats, minks and waterfowl.

The damage caused by beavers depends on the area the beaver occupy. Beavers do take some corn, dam some drainage ditches, and burrow into protective levees. They may also destroy all the trees in an area.

MANAGEMENT

Destruction of a dam does not discourage beavers; they promptly rebuild it. Instead, an unwanted dam should be fitted with a pipe to low the*water level and reduce flooding. To protect trees from beaver cutting, the trunks may be painted with creosote or enclosed In wire netting up to a height of 3-feet. Usually the only way to prevent severe damage to an area is to remove some of the individuals.

OPOSSUM

Opossums belong to a very ancient order of mammals, marsupials or pouched mammals. They are the size of a house cat and have a long, pointed muzzle, short legs and a long, naked scaly tail. The fur is usually gray but can also be black, cinnamon or white.



DISTRIBUTION & ABUNDANCE

The opossums bare ears, toes and tail would seem to indicate it is an animal of the deep south. Within the last 50 years, the opossum has expanded its range until it can be found as far north as Canada. Today the opossum is a common sight throughout most of North America.

HABITAT & HOME

Opossums can be found in cities, rural areas and almost any place in between.. The opossum will use any vacant den and may even add leaves to an old squirrel nest and live in the top of a tree. It may also move in with any animal that does not object such as a skunk or armadillo. The opossum is not very fussy about home territory or food range. They eat everything: meat, fruit, carrion, insects, worms, snakes, lizards, birds, eggs., mushrooms and dog and cat food that has been left outside. About half of the opossums diet is made up of rats and mice.

REPRODUCTION

Baby opossums can be born throughout the year. In the south babies are usually born in January and February but in Iowa and Illinois they are usually born in April and May.

At the time of birth a baby opossum is the size of a honey bee and weighs 1/15 ounce. Its eyes and ears are still developing, heart, stomach and other organs can be seen through the transparent body covering. The tiny peg like legs must transport the baby from the birth canal at the base of the tail, along a path in the mother's fur to the pouch in the middle of her stomach.

A mother opossum can give birth to as many as 18 babies, she only has nipples for 12 so a baby must find its way to the pouch or it will die. Once they are in the pouch, they will attach themselves to a nipple and their sole concern is food. In the first week they will have increased their size 10 times and in two months they will be the size of large mice. When an opossum is three months old it will be on its own.

IMPORTANCE

The opossum has recently become a subject of great interest to medical science. The opossum has an amazing ability to recover from very serious injuries. They are very adept at repairing bones that are broken and science wants to know how the opossum can repair the breaks so well and so quickly. We once thought the opossum would "play dead" to protect itself from its

enemies. Science has discovered that the opossum is having a voluntary epileptic seizure and maybe there is something in the opossum's brain that will help people with epilepsy.

The fur has limited value but because so many are caught each year the total value of the fur is enormous. The fur is used as trimming on some cloth coats.

The value of the opossum as a walking garbage can is also of great importance. The job they do cleaning up plant and animal material and as rat and mice eaters, make this slow, not very smart marsupial a positive animal in our environment.

RACCOON

The cute black mask and ringed fiery tail can give a very misleading picture of the raccoon. A raccoon can beat off, cripple and even kill two or three husky hounds. A raccoon is as clever as a fox and will use every trick in the book. It will wade in streams, walk on fallen logs, dive underwater and jump from tree to tree to break their trail.



DISTRIBUTION & ABUNDANCE

The raccoon is native to every state in the 48 continuous states. It is a very stocky animal with a painted "masked" face and a furry, banded tail, and large ears. An adult raccoon can weigh up to 49 pounds, but they usually weigh between 10 and 25 pounds. They are usually 30 to 36 inches long. They are usually gray in color, but black, brown or even pure white individuals are not uncommon. The raccoon's Latin name LOTOR means "the washer".

HABITAT

The raccoon is an excellent survivor and they are at home in a major city, in the woods or on farmlands. They like moist areas and their homes are usually near water. Often the water source is as small as a drainage ditch. Trees are also important, but rocky areas, abandoned buildings, and trash dump sites will work if there are limited trees.

HABITS

The hunt for food begins at dusk. The raccoon leaves its den and moves to shallow pools of water to hunt for crayfish, frogs and small fish. Their long, dexterous fingers are well suited for catching and holding slippery creatures. To a raccoon almost everything is food. They will eat crickets, snakes, turtles, bird eggs, mice, and grubs, which they find by pulling apart rotten logs. Also a trip to a garbage can is included all in a night's foraging. The raccoon is very fond of sweet corn, grapes, cherries, plums and raspberries. The raccoon diet includes more vegetables than meat.

REPRODUCTION

The female raccoon will not mate with just any male. He must be acceptable to her and after she makes her choice, she will not have anything to do with other males for that season. Mating starts in late February in the Midwest, and nine weeks later, three to six babies will be born. The mother may prefer a hollow tree for a home, but will use rock dens or even the attic of a house.

The babies will open their eyes when they are about 3 weeks old. When they are two months old, they will start to hunt for food with their mother. As they hunt for food, the mother has full responsibility, and the young follow without question. The young may stay with the mother for the first winter.

IMPORTANCE

The raccoon's appetite can cause some problems, particularly their fondness for corn and melons. The raccoon can also be very destructive to the nests of waterfowl and game birds.

The value of the raccoon's coat for fur coats, hats and trim help to keep the raccoon numbers in balance.

Even though a baby raccoon is very cute, intelligent and at times affectionate, they do not make good pets. It is their strength and willingness to use their teeth as they grow to adults that makes them very dangerous

STRIPED SKUNK

(*Mephitis mephitis*)

DESCRIPTION

The striped skunk is predominately black with the typical white marking. It's total length is from 20 to 30 inches, and it's weight from 3 1/2 to 10 pounds.

Skunks are most known for their ability to discharge an obnoxious scent when they are frightened or threatened. This disagreeable scent or musk is secreted by two internal glands located in both sexes at the base of the tail. These glands open to the outside through small nipples; when the tail is down, the nipples are hidden, but when it is raised, the nipples are exposed. The skunk has voluntary control over these scent glands and can aim behind, to either side of, or in front of itself by changing the direction of aim of the nipples. The scent glands contain approximately 1 tablespoon of thick, volatile, oily liquid which is enough for 5 or 6 rounds. The musk of skunks is painful to the eyes, but does not cause permanent blindness.



HABITAT AND HOME

The striped skunk is at home in a variety of habitats but prefers forest borders, brushy field corners, fence rows, and open grassy fields broken by wooded ravines and rocky outcrops, wherever permanent water is nearby. The den of a skunk is customarily in the ground but occasionally is located in a stump, refuse dump, cave, rock pile, crevice in a cliff, farm building, wood pile, or haystack.

HABITS

Striped skunks leave their dens in late afternoon or early evening and forage most of the night. Although the home range may have a diameter of 1 to 1 1/2 mile, in any one night the skunk may meander over only a small portion of it.

In autumn, striped skunks acquire a layer of fat and, as the weather gets colder, spend more time in their dens. When the temperature nears freezing, they become drowsy and sleep intermittently. However, the body temperature does not become lowered as in the case of most truly hibernating animals.

FOODS

Skunks eat plant and animal foods in about equal amounts during fall and winter but take considerably more animal matter during spring and summer when insects, their preferred food, are more available. Bees, wasps, and their hives, together with larvae and honey, are also eaten. Skunks also consume large numbers of mice and rats as well as moles, shrews, ground squirrels, young rabbits, and chipmunks. The larger mammals are usually eaten as carrion while the smaller ones are caught by the skunk. Birds and their eggs are fed upon rarely. An economic evaluation of the feeding habits show that about 68 percent of the diet is beneficial to man, 27 is neutral, and only 5 percent is harmful.

REPRODUCTION

Begin to breed in February. Females more than one year old mate at this time while younger females mate about a month later. The single litter of 4 to 6 young is born from early May to early June. At birth young skunks are almost naked but possess the beginning of the adult's characteristic black and white color markings.

IMPORTANCE

The striped skunk's fur is thick and glossy and is graded according to the amount of white. 3,000 to 5,000 striped skunk pelts are sold annually. Skunk meat untasted with musk is tender and good eating. Skunks are efficient mousers and also contribute to the control of insects; for these reason, they are an asset around farms and should be tolerated and regarded as interesting and valuable members of a farm wildlife. community.

MANAGEMENT

As a precaution against depredation by skunks, chicken houses should be properly fenced and beehives raised off the ground. When skunks are not desired, they can be eliminated by keeping farmyards clean, repairing possible access places in farm building, gathering eggs daily, and burying dead poultry. The practice of digging skunks from their dens should be discouraged.

MUSKRAT

(*Ondatra zibethicus*)

The appropriate common name refers to the mild and not unpleasant odor of this rodent.

Although superficially rat-like in appearance, the muskrat is not a close relative of the despised house rat.



DESCRIPTION

This medium-sized mammal has short front legs, stronger and longer hind legs and a vertically flattened, scaly tail which is slightly shorter than the combined length of head and body. The hind feet are partially webbed. The back is blackish-brown while the sides are lighter brown with a reddish tinge; the under parts are still lighter, shading to white on the throat. Adults are from 16 to 25 inches in total length and weigh from 1 1/2 to 4 pounds.

DISTRIBUTION AND ABUNDANCE

The muskrat is widely distributed throughout Alaska, Canada, and the United States; as a transplant, it is also established in Europe and Asia. The muskrat population has been reduced somewhat due to the loss of suitable places to live following straightening of stream channels, drainage of lowlands, and general abuses of watershed everywhere.

HABITAT AND HOME

Muskrats are semi-aquatic, living in marshes, sloughs, streams, rivers, ponds, and lakes. Here they dig homes in a stream or pond bank or build large houses out of vegetation in the shallow water. The nest or den is reached by means of a tunnel which usually opens under water.

HABITS

In addition to building homes, muskrats often undertake other construction. Platforms are made of mud and vegetation for resting and feeding, and sometimes jetties are built along marshy shores for landing places.

The area an individual occupies depends to a certain extent upon the size and shape of the water area in which it lives. Muskkrats living in the center of a marsh usually occupy a circular area, while those living along the shoreline of a marsh or river occupy a narrow area extending from bank burrow out several hundred feet into deep water.

Muskrats readily fight one another, especially during food shortages. The defeated individual must leave while the victorious remains. This is one way the muskrat population of an area is kept within the limits of the food supply.

FOODS

In the marshy areas muskrats eat rootstock and stems of cattail and three-square bulrush, and the seeds of lotus. In other areas white clover, corn, and bluegrass are preferred foods. Muskrats also will eat fresh water clams, snails, crayfish, fish and frogs.

REPRODUCTION

The breeding season begins in late winter and extends until the middle of September. Pregnancy averages 28 days. From 1 to 5 litters may be produced annually by a female but 2 or 3 are the most common. The litters usually contain between 4 and 7 young.

At birth the young are blind, nearly helpless, and practically naked. By one week of age they are covered with coarse gray-brown fur. The eyes open between 14 and 16 days of age. About this time the young can swim and dive and climb on low, floating objects. Weaning occurs between 3 and 4 weeks of age. It is possible for young born in early spring to breed in late summer but most breed for the first time in the spring following their birth.

IMPORTANCE

Muskrat pelts are the most common fur on the commercial market, and almost the entire crop is used in the manufacture of ladies' coats. Muskrat fur has good wearing quality; the skin makes strong leather and takes dye well.

In some parts of the United States the carcasses of fall and winter muskrats are sold on the market as "marsh rabbit" or "marsh hare." The flesh has a gamey flavor. Dried musk is used in the manufacture of perfumes and in preparing scent for trapping animals.

MANAGEMENT

The most important management measure is to regulate the trapping. Where muskrats are too numerous, trapping is the most satisfactory means of control.