

Cottontail Rabbit and Other Rabbits

The rabbit is one of the most familiar animals living around us. In many areas it is one of the most important small game animals, providing food and sport for many people. The rabbit may also be appreciated for its value as a wild thing, which we may catch a glimpse of outdoors in the undeveloped areas as well as in our own backyard. It is one of the animals which has adapted best to man's alteration of the land. In order to guarantee the rabbits continued abundance, it is important to become familiar with its habits. In reading this guide you will become familiar with the descriptions and habits of three rabbit species. Each wild animal leaves its own unique markings within its living area. If you know what to look for and where to look, you may learn a great deal about the rabbit by searching for these signs. Those markings which are most obvious and easy to identify will be explored in this guide.



The rabbit may be found throughout the United States. It is included in the order *Lagomorpha* which also includes hares and pikas. Rabbits and hares are then grouped together into the same family. The members of this family have strong, well developed hind legs and large, sensitive ears. The muscular hind legs enable them to move swiftly on the ground by jumping and to escape from predators with "zigzag" motions. The large ears are important in detecting danger. There is one major difference between the rabbit and its closest relative, the hare. A rabbit gives birth to young which are completely helpless. It is not until two weeks after birth that the young rabbit is able to leave the nest. Young hares are born with their eyes open and their bodies already covered by fur. They are able to move around by themselves very soon after birth.

The three rabbit species found in the Southeast are the Eastern cottontail rabbit (*Sylvilagus floridanus*), the marsh rabbit (*Sylvilagus palustris*), and the swamp rabbit (*Sylvilagus aquaticus*). Adult cottontail rabbits grow to a length of 14 to 17 inches and to a weight of 2 to 4 pounds. They are covered by brownish or grayish fur with a distinct rusty patch on the upper neck. Perhaps their most distinguishing feature is the white "cottontail".

The marsh rabbit is 14 to 16 inches long and weighs from 2½ to 3½ pounds. The marsh rabbit is best described as a "dark, coarse-haired, small-footed" rabbit without the distinct rusty neck patch found on the cottontail. If you compare the feet of the two species you will find that the feet of the cottontail are white on the upper side, while the feet of the marsh rabbit are reddish colored. The marsh rabbit's tail is small compared to the cottontail's.

The swamp rabbit, or canecutter, is 14 to 17 inches long and weighs 3½ to 6 pounds. This is a brownish-

gray rabbit which has rusty feet like the marsh rabbit and no distinct neck patch. An adult swamp rabbit will often be much larger than the other two species, as indicated by its weight.

To make many of these comparisons, it's often necessary to have the rabbit in your hand. In the wild the best way to tell the difference is often knowing what type of area is preferred by each species. Both the marsh rabbit and the swamp rabbit prefer wet bottomlands and swampy areas. The cottontail is more likely to be seen in upland areas, although it may also be seen in swamplands. Try to become familiar with a rabbit of each species. You can examine rabbits obtained by hunters. Note the color and size variations. Find out where the rabbits came from. With practice you can learn to make accurate field identifications.

There are several important signs or clues to guide you in searching for rabbits and learning about their habits. Rabbit tracks are often visible on the ground surface in snow, mud or dust. Examination of the tracks can also tell you other types of information. By measuring the distance between the forefeet and the hindfeet you can get an idea of the rabbit's size. By measuring the distance between sets of tracks, you can see how far the rabbit is able to leap. If you see rabbit tracks which show a walking step — where one foot moves opposite to the other — then you can identify these tracks as belonging to a marsh rabbit. It is the only rabbit known to move in this way.

*EASTERN COTTONTAIL
RABBIT*



To distinguish between cuttings made by deer and rabbits, examine the cut edge of a twig. A deer tears the twig off, leaving a ragged edge. Rabbit bites are small and repeated. The tooth marks are visible. Rabbit droppings, or scat, may best be described as thick disks approximately one-fourth inch in diameter. By careful searching in an area, which you feel offers good food and cover for rabbits, you may locate several signs. If you are in doubt about what animal deposited a pile of droppings, the presence of tracks nearby may confirm the identity. Rabbit scat seen along runways bordering water, or on floating material or partially submerged logs, will almost always belong to the marsh or the swamp rabbit. Cottontail runways will probably be on higher, drier ground.

The rabbit is a prey species. Included among its most efficient predators are foxes, bobcats, hawks, owls, weasels, wild dogs, housecats and man. A high rate of reproduction must occur to ensure a balance between the number of rabbits killed by predators and the number left to reproduce. Rabbits have many young. A doe, or female rabbit, has the potential to produce as many as five litters during one year. Each litter may contain from four to seven young. This means a pair of rabbits could produce as many as 35 young



rabbits each year! Because of many predators, the average life-span of a rabbit in the wild is less than one year. Out of each 100 rabbits born during a year, approximately 80 will die before they are one year old. The balance must also be maintained in another direction. Because of the high birth rate, predators help to keep rabbit numbers below the carrying capacity of the land. Carrying capacity is the largest number of healthy animals a certain area of land can support with enough food and cover for all.

Most rabbits give birth between March and May. In the warmest areas breeding may take place during almost any month of the year. During the last few days before giving birth the doe rabbit begins to build a nest. It is a cup-shaped hole dug into the ground and lined with grass and fur plucked from the mother's abdomen. The nest may be located in a well-hidden spot or on open ground. Even when the nest is located in an open area, it is often very hard to find. The gestation period, or the amount of time the mother carries the young before giving birth, varies slightly among the three species. For the cottontail and marsh rabbit the gestation period usually lasts 28 to 30 days. The swamp rabbit has a slightly longer gestation period of 35 to 40 days. The young are born more developed and will spend less time in the nest. The helpless young of the cottontail and the marsh rabbit remain in the nest for 10 to 14 days after birth. The mother rabbit nurses her young very early in the morning and very late in the evening. She does not usually remain in the nest during the day. If a nest is located and no parent is seen nearby, you should not assume that the nest has been deserted.

It would be unlikely to find rabbits in the middle of acres and acres of nothing but grass. In an area with an overgrown fence row and a ditch bank, several brush piles and blackberry thickets and a variety of plants, it is almost certain you will find rabbits. Rabbits are found in areas with an abundance of edge. (The term "edge" describes the scattering of different kinds of plants for food and cover.) The home range of a rabbit is almost always less than 10 acres. Some rabbits may spend their entire lifetimes on one acre of land. This means that the rabbit must be able to find places where it can feed, escape from predators and raise its young in a small area. The rabbit is an animal that prefers brushland. Woodland areas with little undergrowth lack the type of food and cover which the rabbit requires. You may see a change in rabbit numbers on a certain area of land as trees mature and shrubby vegetation is shaded out. The preferred habitat is most often brushy pastures and fields.



Rabbits live entirely on plant material. Some of the most important rabbit foods and the seasons when they are used are listed below:

Foods	Parts Eaten	Season Used			
Greenbrier	Plant	Sp			W
Bluegrass	Plant	Sp	Su	F	
Clovers	Plant	Sp	Su	F	W
Wheat	Plant, Grain	Sp	Su	F	W
Soybeans	Plant, Seeds	Sp	Su	F	
Corn	Grain			F	W
Timothy	Plant	Sp	Su		
Orchard Grass	Plant	Sp	Su		
Oats	Plant, Grain	Sp	Su		
Sumacs	Bark			F	W
Apple	Fruit, Bark			F	W
Roses	Bark, Twigs, Fruit				W
Horse Nettle	Fruit	Su		F	W
Blackberries	Plant	Sp			W
Broomsedge	Plant	Sp			
Korean lespedeza	Plant	Su		F	
Poison ivy	Plant				W

(from *Wildlife Foods*, Members Subject Guide #19, Missouri, by Leroy J. Korschgen, Biologist, 1969.)

Rabbits may include almost all plants in their diet to some degree. This ability to use many kinds of food may be one reason why rabbits have adapted better than some other animals to man's presence. The use of different plant foods may change with the seasons. In spring and summer, fresh sprouts and leafy plants are more abundant. In fall and winter, rabbits must depend more on woody plant material.

The rabbit has a number of parasites and diseases which affect its health and well being. Many of the parasites found on rabbits do not cause death if the population is healthy. When there are too many rabbits in one area, there is often too little food and cover to go around. As a result, the population is less healthy and many more rabbits die as a result of diseases and parasites.

One of the parasites often found on rabbits is the "bot" or "wolf warble." This is the larva of a fly which lays its eggs on the hair of a rabbit. When the egg hatches, the larva burrows into the skin to develop. The larva itself does not kill the animal, but the opening it makes in the skin may cause an infection. When you examine the outside of a rabbit you may notice wart-like growths found primarily on the feet

and legs. This is a tumor of fibroma. It is caused by a virus transmitted by the mosquito. These tumors are not fatal to the rabbit and are not harmful to man. There is no need to discard the meat of rabbits with either "bots" or fibroma virus. When cleaning rabbits you may notice white, bladderlike cysts inside the body cavity. These cysts contain larval dog tapeworms which are not harmful to man. It is important that you do not feed raw rabbit meat to your dogs or cats. The larval tapeworms grow to adulthood in animals like the dog, cat or fox which feed on rabbits. The one disease which is fatal to almost all rabbits is rabbit fever or tularemia. After becoming infected with this disease, the rabbit dies within a week to 10 days. Outbreaks of diseases such as tularemia often occur when rabbit numbers are high. This serves as another means of population control to keep rabbit numbers at healthy levels below the carrying capacity of the land.

When you become familiar with the rabbit's food and cover preferences, you will be better equipped to find rabbits during hunting season. A good understanding of the relationship between food and cover is important. If you see a great deal of good rabbit food but no places to hide, it's best to search else-

where for rabbits. In colder weather the animals may be hard to find. Rabbits tend to use holes or burrows more often at this time. During warmer weather you are more apt to find them on the move. Check with your local fish and game agency to become familiar with the rules and regulations concerning rabbit hunting in your area.

Undamaged meat can be obtained by shooting just ahead or over the moving rabbit so the foreparts receive the shot. You should clean the rabbit immediately after it has been killed to prevent spoilage.



Steps for field dressing rabbits are as follows:

1. Make a one-inch cut in the skin across the back at right angles to the spine.
2. Pull this slit apart and draw the skin away from the rabbit's body, removing it from the legs and neck.
3. Remove the head and cut the legs at the ankle joints.
4. With a sharp knife, make an incision down the chest and stomach regions, cutting through the pelvis.
5. Hold the body by the front legs and flip it down sharply. This will cause the entrails to snap out.

In cold weather, plastic bags can be used to store the meat in the field. In warmer weather, it is best to use a muslin bag which allows the meat to air out rapidly. As a good sportsman, it is very important to take proper care of the meat you obtain while hunting to prevent waste.

The rabbit is primarily a farm game animal. In areas where clean farming is practiced, fewer rabbits will be found. Several management steps may be taken to increase the number of rabbits. If you allow fence rows and ditch banks to become overgrown and

windrows to remain in fields you can increase the amount of edge. Brush piles may be constructed to provide good cover. You can provide winter food for rabbits by leaving several rows of unpicked corn during the winter. Flatten these unpicked rows down so they will be more available to the rabbits. Any prunings made on trees around your yard can be stacked together and placed near a good hiding place. If you provide food, you must be sure it is only a short distance away from cover. The rabbit can be a pest by barking trees in your yard or eating crops planted in small gardens and fields. By making sure that there are other attractive food sources, you can reduce rabbit damage and enjoy the values of having this important game animal on your land. Habitat improvements of this type help to increase the number of rabbits available during hunting season. Good management of rabbit habitat is much more important than control of predators or artificial stocking.

ACTIVITIES

1. Search for a rabbit nest. The preferred nesting location is usually an open grassy area or the border of a lawn or field. You will be surprised at how hard it is to find the nest, because the female conceals it so carefully with grasses. You may want to start by watching for rabbit signs to see if there is rabbit activity in the area. In the early morning or late evening you may want to watch for the

mother rabbit herself. At these times she comes to the nest to feed her young. It is best not to approach the nest while the mother is present. If you locate a nest do not handle the young. Try to observe their development by noticing whether their eyes have opened and whether fur has started to appear on their bodies. If you disturb the nest in any way, replace everything just as you found it before leaving. Notice such things as the time of year and the location of the nest.

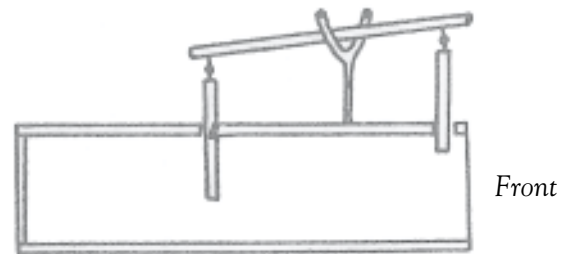
2. Make a wildlife resources map and mark the places where you find rabbit signs and activity. Details for making a map are given in the activity guide entitled *Making a Wildlife Resources Map*.
3. Construct a brush pile in an area which you feel would offer good habitat for rabbits. The pile should be at least 12-15 feet in diameter and approximately five feet high. You can form a base using poles 6 to 10 inches in diameter. These poles should be laid on the ground four or five inches apart. Lay smaller poles at right angles on top of the base and pile brush over the poles. If rocks or old machinery are already present, these can be used as the foundation. It is important to leave spaces in your foundation as runways. Otherwise the brush pile is of little use to the rabbit.
4. Build a rabbit box trap and conduct a live trapping study to determine where rabbits are present. This study may be performed as a group project so that you can use several traps at once. You will need to start a field notebook so that careful notes can be kept during the project. For each trap day, record weather conditions, tem-



perature, time of day, trap location and type of bait. You may wish to plan and construct your own rabbit box or trap, some more complicated than others. The local library or county Extension office should be able to help you find plans. A simple plan for a box-type rabbit trap is given below.

A SIMPLE PLAN FOR A BOX-TYPE RABBIT TRAP

Rabbits may be legally taken in season by either hunting or trapping. Livetraps may be purchased, but they are often quite expensive. One simple way to make a rabbit trap like the "old timers" used to make is as follows: Use one 1" x 6" x 12-foot board. Cut 3 pieces 2'6" long and a fourth piece 2'3". Nail these together edge-to-edge to form a tubelike box. Cut and nail another piece onto one end for the back. The short side of the box is the top. A $\frac{3}{4}$ inch hole should be drilled in the center of the top about $\frac{2}{3}$ the distance from front to back. (The front of the box is the end where the top board is short.) Nail a narrow strip across the very edge of the front of the top, leaving enough room for a door to slide through.



about 2 $\frac{1}{2}$ ft. long
6" x 5" opening (roughly)

Cut a door the right size to slide through the hole. Whittle a fork from a tree limb large enough to rise about 5 inches above the top of the box. Whittle a trigger, as shown in the drawing, from another limb. Next, whittle a lever long enough to connect the trigger with the front door. Make appropriate connections with nylon string.

During the trapping study, traps may be set where you see evidence of rabbit activity. You can even set some at random locations. By using random locations, you may determine in what areas rabbits are present. Valuable information can be gained whether you trap an animal or not. If you consis-

tently never trap an animal in a wooded location, this may tell you that this is not the type of area utilized by rabbits. Baits which are commonly used are shelled corn, carrots, apples or lettuce. You may want to pre-bait, or leave the trap open for several days, to get the rabbit accustomed to taking the bait. One way to determine whether or not it is a rabbit taking your bait, is to set the trap opening in a spot with light sand, or soft soil, in front of the trap and watch for footprints. When removing a rabbit from the box, you can keep the animal much calmer by covering its eyes. This may be done by using a head grip. Grasp the back of the head behind the ears with the first and second fingers and use the thumb to cover the eyes. The third and fourth fingers can be placed under the chin. Watch out for the powerful hindfeet which can cause painful scratches.

By keeping careful notes in your field book you can learn a great deal of valuable information in your study. You may see relationships between trapping success and weather conditions, type of bait used, location of the trap, and time of day. Traps set around marshy areas may capture marsh or swamp rabbits rather than cottontails. During the trapping study, it is important to check traps (at least once a day), so that a captured animal will not have to remain in the trap for long periods of time.

SAMPLE FIELD NOTES

Date: March 6, 1999

Time: 8:45 p. m.

Temperature: 65° F.

Weather Conditions: clear, cool - no precipitation

Location of trap: Pasture edge approximately 50 feet from Jct. of State Rds. 1502 and 1509.

Species: Marsh rabbit, *Sylvilagus palustris*

Sex:

Remarks:

FURTHER READING

Burt, William H. and Richard P. Grossenheider. 1976. *A Field Guide to the Mammals*. Houghton Mifflin Company, Boston.

Madson. John. 1959. *The Cottontail Rabbit*. Olin Mathieson Chemical Corporation, East Alton, Illinois. [This booklet may be ordered from Olin Mathieson Chemical Corp.]

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