

West Virginia Wildlife Series

A Guide to Mammals of West Virginia

WhiteTail Deer (*Odocoileus virginianus*)



Volume 6

Characteristics:

The white-tailed deer is tan or brown in the summer and grayish brown in winter. It has white on its throat, around its eyes and nose, on its stomach and on the underside of its tail. The male has antlers. Males weigh between 150 and 300 pounds and females weigh between 90 and 200 pounds.

Range:

The white-tailed deer can be found in southern Canada and most of the United States, except for the Southwest, Alaska and Hawaii.

A deer's home range is usually less than a square mile. Deer collect in family groups of a mother and her fawns. When a doe has no fawns, she is usually solitary. Male bucks may live in groups consisting of three or four individuals, except in mating season, when they are solitary. Home range rarely more than a mile across; but can be 2 - 3 square miles.

Habitat:

The white-tailed deer lives in wooded areas. In some areas, deer overpopulation is a problem. Gray wolves and mountain lions used to be predators of the white-tailed deer and helped keep their population under control. But because of hunting and human development, there are not very many wolves and mountain lions left in some parts of North America.

Sometimes a bobcat or a [coyote](#) will kill a young deer, but people and dogs are now the deer's main predator. Because there are not many natural predators, deer populations can sometimes grow too large for their environment and deer can starve to death. In rural areas, hunters help control deer populations, but in suburban and urban areas hunting is often not allowed and deer populations can grow out of control.



Other things can change deer populations. Disease and parasites like lice, mites and roundworms can weaken or kill deer. Young deer and old deer often get sick and die, especially in the winter. Winter is a dangerous time for deer. Their long narrow legs and pointed hooves make it hard for them to move around in the snow and ice and it is easier for predators like dogs to catch them.

Deer and people are living closer to each other because of human development and growth in deer and human populations. Because humans and deer often share a habitat, there can be problems for both of them. When a deer's habitat becomes smaller because of human development, deer will often eat food from gardens. Deer need to cross roads to look for food and water and are sometimes struck by cars. People can also catch a sickness called Lyme disease from the deer tick.

Diet:

The white-tailed deer is an herbivore or plant eater. It follows well-used trails to its feeding areas. It feeds in the early morning hours and in the late afternoon. A deer's diet changes depending on its habitat and the season. It eats green plants in the spring and summer. In the fall, it eats corn, acorns and other nuts. In the winter, it eats the buds and twigs of woody plants.



The white-tailed deer is a **ruminant**. Its stomach has four chambers for digesting food. In the first two chambers, the **rumen** and the **reticulum**, food is mixed with bile to form the **cud**. The cud is regurgitated and re-chewed and swallowed. It passes through the rumen to the **omasum** where water is removed. Finally, the food enters the last chamber, the **abomasum**, where it is sent on to the small intestine where the nutrients in the food are absorbed. This digestive system lets the white-tailed deer eat foods like woody plants that other animals can't digest! If deer have enough food, water and shelter, their population can grow very quickly. Cows, bison, bighorn sheep, goats, llamas, camels and giraffes are also ruminants.

Life Cycle:

White-tailed deer mate in November in the northern parts of their range and in January or February in the southern parts of their range. The female has one to three **fawns** after about six months after mating. Fawns are reddish-brown at birth with white spots that help camouflage them. They can walk at birth and forage for food a couple of days later. They are weaned at about six weeks.

The mother leaves her fawns well-hidden for hours at a time while she feeds. If she has more than one fawn, she hides them in separate places. While they are waiting for their mother to return, the fawns lay on the



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ground with their heads and necks stretched out flat on the ground. This makes it harder for predators to find them. Female fawns may stay with their mother for two years; males usually leave after a year.

Most white-tailed deer live about 2 to 3 years. Maximum life span in the wild is 20 years but few live past 10 years old.

Herbivores:

Animals that eat only plants are called **herbivores**. Deer, grasshoppers and rabbits are all herbivores. There are lots of different plants and lots of different herbivores. Some herbivores eat only part of a plant.

Honey bees take nectar from flowers for energy. When bees gather nectar, they pick up pollen on their fuzzy bodies. As bees travel from flower to flower gathering nectar, they leave some pollen behind. Pollen left behind pollinates flowers and helps these plants reproduce. Bees have a **symbiotic relationship** with the flowers they pollinate. A symbiotic relationship is one that benefits both living things; for example, bees get the nectar they need and the flowers get pollinated! Plants are often very easy for herbivores to find, but they are sometimes low in the nutrients the animals need to grow and stay healthy. Seeds are often packed

with energy-rich nutrients like starches, but other parts of plants -- like stems and leaves -- don't have as many nutrients. Herbivores that rely on those plant parts must spend a lot of their time grazing and browsing to get the nutrients they need!

Some herbivores have digestive systems to help them get the most out of the plants they eat. Animals like sheep, moose, white-tailed deer and cows have a special stomach called a **rumen** where microorganisms break down cellulose. Animals with a rumen are called **ruminants**. Ruminants swallow their food and then regurgitate it and chew on it again to break down the cellulose in the plant. Once the cellulose is broken down, the food returns to the stomach where it is digested. When you hear that an animal is chewing its cud, it is re-chewing food that it had already swallowed!

Diseases common to Deer:

Chronic Wasting Disease

What is Chronic Wasting Disease (CWD)?

CWD is a neurological (brain and nervous system) disease of deer and elk known to occur in limited geographical locations in North America. The disease belongs to a family of diseases known as transmissible spongiform encephalopathies (TSE). These diseases are caused by an abnormal form of a protein called a prion. CWD is a slow accumulation of abnormal prions in the brain and lymphatic tissues of deer and elk that ultimately results in the death of the animal. While CWD is similar to mad cow disease in cattle and scrapie in sheep, there is no known relationship between CWD and any other TSE of animals or people. In deer and elk there is no practical test of live animals to detect CWD and there is no known treatment or vaccine.

How is it spread?

It is not known exactly how CWD is spread. Experimentally, the disease can be spread both directly (animal to animal contact) and indirectly (soil or other surface to animal). It is thought that the most common mode of transmission from an infected animal is via saliva, feces and possibly other body secretions. There is evidence that people moving live infected animals have spread the disease over long distances.

Is it dangerous to humans?

There currently is no convincing evidence that the agent of CWD affects humans. However, public health officials recommend that human exposure to the CWD agent be avoided as they continue to research the disease. This includes not eating meat from known infected animals, or animals that appear sick, and avoid eating the brain, spinal cord, eyes, lymph nodes, spleen, and tonsils where the abnormal prion accumulates.

Where has it been found?

As of August 2005, CWD is known to infect free-ranging deer and elk in portions of Colorado, Illinois, Nebraska, New Mexico, New York, South Dakota, Utah, Wisconsin, West Virginia, Wyoming, and Saskatchewan, Canada. In addition, CWD has been found in captive/farmed elk and white-tailed deer in Colorado, Kansas, Minnesota, Montana, Nebraska, New York, Oklahoma, South Dakota, Wisconsin, and Alberta and Saskatchewan, Canada. CWD has been found in four white-tailed deer in West Virginia. The first deer was a road kill in Hampshire County. An additional three deer have been confirmed CWD positive from tests of 121 deer sampled in the same localized area in Hampshire County by West Virginia Division of Natural Resources (WVDNR) in cooperation with local landowners to determine the distribution and prevalence of the disease. Since 2002, the WVDNR, Wildlife Resources Section, in cooperation with the SE Cooperative Wildlife Disease

Study at the University of Georgia and the Minnesota Veterinary Diagnostic Laboratory than tested 1443 deer from West Virginia for CWD and, as of September 2005, the Hampshire County deer are the only animals thus far to be infected with the disease.



How can you tell if a deer has CWD?

Infected animals may not show any symptoms of the disease. In some stages of the disease, however, infected animals begin to lose control of bodily functions and display abnormal behavior such as staggering or standing with very poor posture and they lose fear of humans. Infected animals become very emaciated (thus wasting disease), appear in very poor body condition, and often stand in or near water and drink excessively. Drooling or excessive salivation may be apparent. However, these symptoms are not unique to CWD and are also characteristic of diseases other than CWD.

What Can Hunters Do?

If you kill a severely emaciated (very skinny) deer or a deer that is obviously sick contact the [WV DNR Wildlife Resources Section office](#) nearest you. Don't feed or bait deer. These practices concentrate deer, increase the likelihood of spread of any disease present in the deer herd, and may introduce foreign contaminants via the feed or bait. Harvest adequate numbers of antlerless deer to maintain deer populations in balance with natural food supplies. A deer population in balance with available habitat is healthier and better able to fight diseases. Use caution in spreading urine based lures in the environment and avoid placing deer lures on the ground or on vegetation where deer can reach them. Placing them out of reach of deer still allows air circulation to disperse the scent. If you plan to hunt deer or elk in a state known or suspected to harbor CWD follow that state's rules on removing animals from the area. Bring back only boned out meat and thoroughly cleaned skull plates and antlers. If you hunt in Hampshire County, dispose of the non-edible portions of your deer in a responsible matter and cooperate with WVDNR requests for information and samples needed for CWD testing. If you observe live deer or elk being transported in a truck or trailer notify your local [DNR office](#) as soon as possible.

Hemorrhagic Disease:

Hemorrhagic disease is the most important viral disease of White-tailed deer in the United States, and outbreaks every year in the southeast. The disease is caused by related orbiviruses (Reoviridae) in the epizootic hemorrhagic disease (EHD) or bluetongue (BT) virus serogroups. Because disease produced by both EHD and BT viruses is indistinguishable, the general term, hemorrhagic disease, often is used when the specific virus responsible is unknown. The EHD and BT viruses are transmitted by biting flies, and as a consequence, hemorrhagic disease is

seasonable and occurs in late summer and fall (approximately late July thru November).

Communication:

Whitetail deer spend most of their lives in groups, a habit that improves their chances of survival. With many eyes and ears on alert, the deer can easily detect an approaching intruder. When one deer senses trouble, it quickly communicates alarm to other group members.

Once the deer is convinced the danger is real, it will flag while dashing for safety. The animal bolts away with tail upright, waving it back and forth and exposing the white underside and rump patch. Hair on the tail flares, making it appear larger than it really is. Deer flag less often in dense cover; where signals are not as easily seen by other deer; then in open country. Vocalizations are not as important as visual signals, but can still help predict behavior. Deer, especially does, sometimes snort when disturbed or alarmed. The short blasts of air made singly or in series are less common than flagging.

Injured deer sometimes bawl, or make an intense, high-pitched, prolonged call. Bawls warn other deer to flee. Deer living in groups may stomp their feet when alarmed to warn others. but foot-stamping can be heard for only a short distance. During the rut, bucks produce two primary sounds. The most commonly heard call is the tending grunt - a low guttural grunt.

Tail Wagging

Tail wagging is the casual side-to-side motion without hair erect, signals no danger. Similar to tail switching in horses and cattle, it is most commonly seen in warmer weather.

Tail Flicking

Tail flicking is the sharp side-to-side motion with the tail horizontal or upright and hairs erect, signals mild alarm. Tail flicking means the deer has sensed something wrong, but doesn't know how to respond. It may stop feeding and raise its head, or lower its head as if to feed and then jerk up again. If the animal doesn't detect anything, it will probably relax and resume normal behavior. But if the disturbance continues, it will take a flight. A whitetail alerts others and quickly brings its group together by holding its tail horizontally or upright with hair erect, without waving it back or forth. This signal means the deer knows an intruder is close but doesn't know exactly where. Once the deer is convinced the danger is real, it will flag while dashing for safety. The animal bolts away with tail upright, waving it back and forth and exposing the white underside and rump patch. Deer living in groups may stamp their feet when alarms to warn others. But foot-stamping can be heard for only a short distance.

Behavior:

When a white-tailed deer is alarmed, it may stomp its hooves and snort to warn other deer. It may also "**flag**" or raise its tail and show its white underside. When a mother deer is running, this white underside can help her fawns follow her.

Whitetail deer are the most nervous and shy of our deer. They wave their tails characteristically from side to side when they are startled and fleeing. They are extremely agile and may bound at speeds of up to 30 miles per hour through tangled terrain in a forest. Whitetail deer are also good swimmers and often enter large streams and lakes to escape predators or insects or to visit islands. They are also good leapers and swimmers. Whitetail deer do not migrate to a winter range but yard up in their own territories during heavy snow. They are

notorious for continually using the same pathways when foraging, but will not bed down during the day in areas that they have used previously.

Whitetail deer are generally considered solitary, especially in summer. The basic social unit is a female and her fawns, although does have been observed to graze together in herds of up to hundreds of individuals. Females generally follow their mothers for about two years, but males leave the group within the first year. Bucks may form transient groups of 2-4 in the summer, but these disband prior to the mating season. Males begin rutting as early as September, and at this point become entirely preoccupied with mating. They do not guard harems (as with elk) but rather fight each other individually, clashing antlers to gain access to a particular female.

Whitetail does are painstakingly careful to keep their offspring hidden from predators. When foraging, females leave their offspring in dense vegetation for about four hours at a time. While waiting for the female to return, fawns lay flat on the ground with their necks outstretched, well camouflaged against the forest floor. Fawns withhold their feces and urine until the mother arrives, at which point she ingests whatever the fawn voids to deny predators any sign of the fawn.

Whitetail deer are not especially vocal, although young fawns bleat on occasion. Injured deer utter a startlingly loud "blatt" or bawl. Whistles or snorts of disturbed whitetails are the most commonly heard sounds.



Identifying Deer Scat:

By knowing what the animal eats, we will know how to identify whitetail deer scat. Whitetail deer scat is a sure sign there are deer around and high concentrations of scat is a good indication there are deer hanging around that area. Fresh deer scat will be a light brownish green and very moist with a sheen on it almost, and soft. They are typically oval-shaped pellets, sometimes acorn-shaped, $\frac{1}{2}$ to $\frac{3}{4}$ inches long, dark brown in color, lightening with age.

Older scat will be dark, almost black and very hard. Sometimes it will be in looses piles and other times it will be clumped up in bigger blobs.

Bigger deer leave bigger scat and bigger piles. The smaller the scat is, the smaller the deer. By looking closely at the stool, you should be able to see what they have been eating; this varies from season to season.

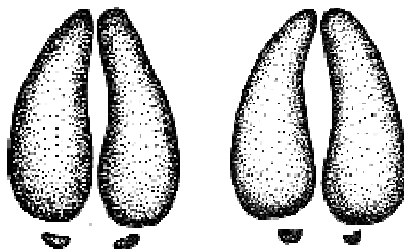
Deer tend to leave droppings in the vicinity of where they are eating, so a good indication of where you will find a whitetail deer is by searching their dining places.

These are some of the ways on how to identify whitetail deer scat. By utilizing the above, we are able to have a better understanding of where the deer may be frequenting, as well as the size of deer, and the time it may have been in a specific area.

Its winter scat pellets average $\frac{1}{2}$ inch long.

Deer Tracks:

The tracks will vary from a rough "V-shape" while running to a straight line with slower speeds. The track varies according to the surrounding landscape. In soft, woodland areas the print is more pointed and on harder ground where the hoof may be worn, the track may appear with a blunter tip. The hoof print may be described as two paisley shapes facing one another with smaller "dots" of the dew claws at the wider end of these paisleys.



The key difference in distinguishing the gallop of the white-tailed and mule deer is while the mule tends to bound as if on springs, the white-tailed deer "rocks" by swinging its hind feet ahead of the

front ones. The white-tailed deer is known to drag its hooves between steps creating troughs between each print. The hoof print itself is nearly indistinguishable from that of the mule deer.

Determine age and gender by the size of the print. Measuring from dew claw to hoof tip, a fawn and yearling doe should measure 4 inches or less; a 4 $\frac{1}{2}$ inch footprint is usually an adult doe or yearling buck; a 5 to 6 inch print is a 2 year or older buck.

Number of toes: 2 front and 2 rear

Front Foot: 3 in L x 1 $\frac{7}{8}$ in W

Rear Foot: 2 $\frac{5}{8}$ in L x 1 $\frac{1}{2}$ in W

Straddle: 5 - 10 in

Trail Width: 6 in

Slow Stride: 18 - 21 in

Running Stride: 6 - 15 ft

Definitions:

Straddle - The distance between the insides of opposing feet.

Pitch - The distance a foot angles in or out in relation to the animals' line of travel.

Trail Width - The distance between the outermost prints in any one pattern.

Stride - The distance from the foremost toe of one print to the foremost toe of the next print.

Track Size - The length and width of a track. (Sometimes used to determine species.)

This series of Wildlife guides has been compiled and edited by Bill Church.

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