

A Year in the Life of the White-tailed Deer Makin' tracks

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What would be more appropriate for this final article in the “Year in the Life of the White-tailed Deer” series than an article on deer tracks? Tracks certainly are the most important evidence, and sometimes the only evidence, that a deer has been in the area. However, the presence of the track reveals one obvious fact – the track maker has left the immediate area. In other words, tracks can only give us information on past deer activity in the area, but this historical information can be very useful in predicting future movements.

Tracks can provide much more information than simply that a deer has been there. An experienced woodsman can glean other details, such as when the track was made, the size of the deer that made it, and *sometimes* the sex of the track maker. But before we go into reading tracks, we need to discuss the hooves that make those tracks.

Deer are members of the order Artiodactyla, or the even-toed ungulates. Other members of this order include sheep, goats, cows, and pronghorns. The relatively small size of a deer's hooves provides minimal contact with the ground, thereby reducing friction and allowing greater speed. The concentrated points of contact also allow for rapid changes in direction.

Hooves are basically modified fingernails, so in essence, a deer is walking on the tips of its toes, much like a ballerina. A deer's foot actually extends from the joint associated with the tarsal gland to the tips of the hooves.

The outer surface of a hoof is made of a highly keratinized material and is quite hard. The sole, in contrast, has a softer, spongy surface that provides good ground contact. The two parts, or toes, of a deer's foot correspond structurally to our middle and ring fingers, while the dewclaws behind the hooves correspond to our index finger and pinky.

Although you may not notice it at first glance, there are some important differences between the hooves on the front legs and those on the rear. Because they bear more weight, and take more impact when running, the front hooves tend to be slightly larger than the rear, especially in bucks. Front hooves of an average adult buck will be about 3 inches long and 1 ½ to 2 inches wide. In addition, the dew claws on the front legs are much closer to the hooves than those on the rear, which makes it quite easy to tell a rear foot from a front foot.

The deer's hoof has another interesting adaptation that helps enhance their running and leaping ability. Attached to the hoof is a specialized ligament, called a springing ligament. When the hoof is supporting the deer's weight, this ligament is stretched tight.

As the hoof leaves the ground, the ligament rebounds and the hoof snaps backward providing extra spring to the gait and increasing both the speed and the thrust of the deer's stride.

Hooves are constantly growing throughout the life of the deer, and the rate of growth appears to be adapted to a normal rate of wear. This means that in areas of soft or sandy soils hooves can become overgrown and may appear long and pointed. However, in rocky, mountainous terrain where abrasion is greater, hooves will tend to be shorter and blunt. Several years ago we conducted a little study at the University of Georgia Deer Pens to determine the rate of growth of deer hooves. We found that, on average, a deer's hooves grow at a rate of about 2 ½ inches per year, or roughly about 5 millimeters per month. As you might expect, the hooves of younger deer grow faster than those of adults, and hoof growth rate is greater during summer than winter.

Hunters have long debated whether a deer's sex can be determined from its tracks. The presence of impressions from the dew claws has often been interpreted as a sign that the track maker was a buck. However, there are a number of factors that affect whether or not dew claw impressions will be left, including the dryness and texture of the soil, whether the track came from a front or back hoof, and whether the deer was walking or running. Because of these factors, dew claw presence in the track is not a reliable indicator of sex.

We do know from a number of studies that there are some differences in hoof sizes between adult male and adult female deer, but whether these differences are sufficient to reliably determine a deer's sex is debatable. Over 50 years ago a biologist and sportsman named Weston argued that "No man, not even the most astute woodsman, can positively and consistently identify the sex of a white-tailed deer by its track alone". Several years later a group of researchers in California conducted a study of the characteristics of black-tailed deer hooves. Although their results indicated that there were significant differences in both hoof length and hoof width between the sexes of yearling and adult deer, they cautioned that there was considerable overlap in these measurements. This means that in most cases it would not be possible to accurately determine the sex from tracks in the wild.

At the University of Georgia, a student named Pete Swiderek repeated this study by looking at white-tailed deer hooves. He found that, except for the tracks of larger bucks, the sex of a deer couldn't be determined by measurements of its tracks.

Thus, these studies have demonstrated what many hunters have known all along... a really big track was likely made by a buck, but it's impossible to tell the sex of an average size track based on size. But there are some other clues besides size. A mature buck's hooves tend to be more rounded at the tip than a does, particularly the front hoof. However, terrain and soil conditions can influence this as well.

If you're lucky enough to be hunting or scouting while there is some snow on the ground, there are a number of clues that will help you determine the sex of the track-maker. I

spent many-a-day as a youngster growing up in Yankee-land just following deer tracks in the winter to determine what the deer were doing, and these tracks taught me a lot! In particular, I frequently learned about their use of escape cover when the track-maker caught me studying his tracks. But I also learned some aids in identifying the sex of the deer I was following. For example, looking at the size of the tracks of other deer associated with the track-maker is certainly a good clue – small accompanying tracks suggest a doe with her fawns.

Urination patterns also may differ. Both sexes often stop and urinate in one spot, but at times bucks may just urinate as they walk, so a urine trail in the snow is a pretty good clue. Similarly, two tracks close together with urine splashed around them would signal that the deer rub-urinated, a behavior more commonly associated with bucks.

Bucks tend to be lazier than does when walking, particularly during or after the rut. Often, a buck may leave drag marks in a light snow from his front feet, whereas a doe typically won't.

Despite these clues, however, there is only one way to be absolutely certain about the sex and size of the deer that made a particular track, and that is to find the track while the deer is still in it!