

Trail Cameras: Toys No More

Sure, it's a lot of fun to set out a camera or two and try to capture an image of a big buck. Some hunters even have used them to pinpoint good stand sites. But these devices hold so much more potential.

By Dr. James Kroll & Ben H. Koerth

For the past quarter-century we've been directly involved in developing one of the greatest innovations in whitetail hunting and management: the infrared-triggered camera.

In 1978, our work began with what we then called "camera triggers," as part of the research program of the newly formed Institute for White-tailed Deer Management & Research (Stephen F. Austin State University, Nacogdoches, Texas). Our first model was nothing more than two cigarette pack-sized devices: One emitted an infrared beam, while the other was a receiver. If the beam was broken, a camera was triggered, taking a photo of whatever broke the beam. This was a crude device, but it produced some amazing images of deer we never even knew were in our woods.

Since that time, numerous companies have developed very sophisticated devices, ranging from not much more than what we used in those days to high-tech computers that record data about each "event." Now we even have an infrared-triggered video system for unmanned observation of deer. It's gratifying to give a talk and have folks come up afterwards to show us stacks of their "candid" photos of great bucks and interesting deer behaviors.

Although a significant percentage of hunters now use these devices, we still do not see them being used to their full extent and capacity. Just as GPS (global positioning systems) units can do far more than just help a hunter get from Point X to Point Y, your camera can do far more for you than just showing the bucks that inhabit your hunting area.

CAMERAS IN HUNTING

One of the major changes of the last 30 years has been the shift toward viewing the deer woods as a place for year-round recreation. In keeping with this, we sometimes receive "before" and "after" photos from hunters who have found particular bucks with trail cameras, then shot those deer.

The scouting and patterning applications for infrared-triggered cameras are numerous, and they can greatly expand your hunting enjoyment. Here are some ways cameras can make the process easier.

The idea of patterning whitetails has been around a long time, but the average hunter still does not understand what the word really means. In *The Art & Science of Patterning Whitetails*, James and co-author Gordon Whittington defined it as finding out what the deer in your hunting territory are doing and what they are likely to do in various situations in the future. Patterning is not about determining what a specific buck is going to do at a precise moment in time; that is generally impractical to attempt. Yet you can learn a great deal, not only about what deer are doing in your area but also what a specific buck generally does. And the camera is ideal for that job.

The price of these cameras continues to drop, as companies move to China for manufacturing; some units now cost less than \$100 U.S., making them affordable for almost everyone. As the price has fallen, we have seen folks who traditionally had only one camera purchase more of them. This makes patterning deer easier; however, even if you have only one, you can learn a great deal.

Using cameras should be a year-round recreational activity. We have them positioned strategically around our research property: along trails, at feeders or food plots, at rubs and scrapes, and at random within various habitat types. Over the course of a year, we learn when specific bucks begin growing their antlers, when they strip velvet, when they cast antlers and even the other deer they like to run around with.

Long ago, we introduced the idea of the "toady" buck, a slang term for sycophant (flatterer). This is the name we applied to the younger or subordinate buck(s) that tend to associate with dominant bucks. This usually is the first buck in an area to be killed, because he is less cautious. However, if

he manages to survive, he benefits from being around the more dominant animal. He learns how to be dominant and seldom is challenged by other bucks.

These bucks do not stay together every moment, however. It often is a fluid situation, with two or more bucks spending time together, and then drifting apart. They come together periodically, each time with the subordinate buck showing proper respect. It is a harmonious relationship.

Using the cameras, we have been able to identify the various social groups on hunting properties. We have learned the dynamic nature of these buck groups, and we can pretty much work out their loose social structure. By either moving the cameras repeatedly or using several, we have been able to determine the yearly pattern of the buck groups and their changing composition.

What good does this do? Obviously, it permits you to see which bucks normally associate with each other. While hunting, you might not see the big, mature buck you are looking for, but the presence of one of his associates might mean he is in the area. That is valuable information in itself.

Working out a herd's social structure is where infrared-triggered video cameras are superior to those taking still photos. With video, you actually are able to see the interactions between individuals (sometimes very subtle), and determine which of the deer is in charge and how the pecking order is arranged. And if you are concerned that the flash on a standard camera might spook deer, video offers another advantage: It uses infrared lights (which deer cannot see) to illuminate the surveillance area.

Placing cameras over rutting sign lets you discover where specific bucks are at any time. A buck photographed repeatedly at one or two sites is going to be there for some time. Because bucks return to the same rubs and scrapes each year, this knowledge can be used to develop a plan for the next year. On the other hand, a buck photographed only once is likely a "floater" caught passing through the area. He is a much more difficult animal to harvest. But you may be able to work out a general time frame of when he moves into your hunting territory.

We also use cameras to get an idea where a buck is likely to cast his antlers. Shed hunting is another way in which many whitetail enthusiasts have expanded the recreational experience. After the season, use cameras to locate where the buck you were unable to harvest is spending the winter. Monitor the photos for signs of antler casting. He might show up one morning with both sides still on, and then come back that afternoon with only one. (The date and time imprinted on each photo let you narrow down the timing.) The buck surely did not travel a great distance at that time of the year, so chances are the missing antler is in the vicinity.

Plot all of your data on a good aerial photo of the area. Mark lines showing where the individual members of a social group have been photographed over time, and a unique picture will emerge. You will be able to see on paper the dynamics of the buck's social groups. Develop a time series of which bucks you have photographed and where. You will be amazed how useful all this is in patterning deer.

CAMERAS IN MANAGEMENT

As noted, these cameras represent a year-round way of "hunting" deer, but they also give you a valuable set of tools in managing the herd. Let's take a look at how useful they can be.

In previous articles, we have noted the importance of determining how many deer are on your land and the various methods you can use to come up with that figure. While all of the methods for counting deer work to some degree, some have definite advantages over others. That is one of the reasons we were so excited when we developed the technique to use cameras to count deer.

The cameras give what we feel might be the best estimate of total population size, but their use goes far beyond simply providing the number of deer.

The reason cameras are so useful for other purposes in the end result is not simply a tally on a sheet or a memory you must describe verbally. The cameras provide you with actual still/video images of the animals. It is easy to show those photos or tapes to friends, family or others with whom you hunt.

Once you use the photos to calculate the size of your deer population, what else can you do with them? The list is probably only limited by your imagination, but here are some of the areas where we have found them consistently useful.

It is important to know the age structure and average antler development of your buck population. The great thing about the bucks in the photos is that they cannot run away. You can study them as long as you want to estimate the age of the animal. If you are unsure, you can show the photos to others to get their opinions on age. Video permits you to re-run, play, pause and carefully examine a buck from many angles; what's more, the behaviors displayed can offer hints to age and social rank.

Determining the age structure is an easy task. Simply take all of the photos of the individual bucks and divide them into stacks, based on your estimate of their ages. If you feel confident enough, divide them by each year, starting with yearlings (1 1/2 years of age) and going up through whatever age you believe the oldest buck is. Keep in mind that in most populations, young age classes are usually the most numerous. Thus, photos of young deer will likely form the biggest stack, no matter how many older bucks are present.

Now simply count the photos in each stack. These figures can be plotted in a graph and the graphs then compared from year to year to determine how your management is affecting the age structure of the bucks on your land. Ideally, the number of older bucks will make up a greater percentage in successive years.

Unfortunately, many people are not confident they can accurately age deer to a specific year from photos. In most management situations, that is okay. If you can correctly identify three basic age classes, you can have a positive impact on the age structure of your herd. Those three age classes are: yearling bucks (1 1/2 years); middle-aged bucks (2 1/2 or 3 1/2); and mature bucks (4 1/2 or older).

If you restrict your buck harvest to mature bucks only, the number of older bucks in the herd should increase. After all, young deer make up the bulk of the population. By not dipping into these age classes during hunting season, they are better able to survive and move into the older age brackets. The result is more mature bucks with a better chance to grow the kind of antlers we all want.

Of course, no matter how old they get, not all bucks are created equal. To make improvements in overall antler quality of your herd, the bucks with what are perceived as inferior antlers should be culled and the best animals left to pass on their antler genetics. This goes against the nature of most hunters, but the best deer probably should not be shot until they have had at least several years in the breeding population.

We are currently conducting a large-scale research project on the subject, but to date, it has been our experience that young deer should not be culled on the basis of antler quality. Effective buck culling begins no sooner than the age of 3 1/2.

Therein again lies the usefulness of your photos. Within each age class, sort the stacks by antler quality. Mature bucks with small antlers should be targeted for harvest, while those with outstanding antlers can be protected for future years.

Normally, overall antler quality is based on a standard scoring system, such as Boone and Crockett. However, sometimes it is difficult to accurately judge the size of a buck's antlers from live photos -- particularly if you have only one photo of him or the angle/picture quality is not the best. And some folks just find it difficult to judge antler size no matter what. However, one thing most people can

do is to count the number of points. That is why we developed a diagnostic called the 8-point:10-point ratio to help people judge the progress of their management programs.

Mature bucks seemingly "want" to have fewer than 10 typical points. Thus, in a poorly managed herd the mature buck population typically will contain many basic 8-pointers, with relatively few bucks sporting 10 or more typical points.

The number of typical points is closely tied to overall score; the more a deer has, the higher his odds of scoring well. If you want to increase overall antler quality, a major goal would be to boost the number of bucks with at least 10 points.

Early on in your management program, you likely will have a high 8-point:10-point ratio among older bucks. Mature 8-pointers -- particularly with small racks -- can be targeted for culling. If you then leave mature bucks with 10 or more points, they will be more likely to spread their genes through the herd.

To determine the 8-point:10-point ratio, go back to the live photos of bucks that are older than 2 1/2 years. Sort the stacks of the various age classes into bucks with fewer than 10 typical points and those with 10 or more. Eventually, with consistent harvest and good nutrition management, the number of older bucks with 10 or more typical points will increase. Comparing your herd's 8-point:10-point ratio through the years gives you a great indication of your success in improving antler quality.

CONCLUSION

These are only a few ways in which infrared-triggered cameras and videos can improve the deer and the hunting in your area. And every year innovative hunters and managers come up with exciting twists to using these cameras and expanding our enjoyment of these wonderful animals. In short, if you don't have a camera, you're missing out on a lot of fun!