

Dr. Deer's Whitetail World

BY DR. JAMES C. KROLL

The 2006 Rut: What Happened?

Last year, I wrote a column titled "What On Earth Happened To The 2005 Rut?" Well, as Yogi Berra once said, "It was déjà vu all over again!"

The 2006 season may have been, by many accounts, the worst in many seasons. It also appeared to be uniformly troublesome across the entire range of whitetails. Even our ***North American Whitetail TV*** crew experienced some of the most difficult hunting conditions in our four years of programming. In spite of the difficulties, however, we also harvested some of our best bucks so far. Is this a continuing trend, some manifestation of global warming?

Normally, I would have to resort to a professional opinion about what went on in 2006. However, since I just happened to be involved in some long-term research that may shed some light on the problem, I think I can put forth more than a simple opinion. Back in 1991, the Institute for White-tailed Deer Management & Research had grown to the point that I needed help. Prior to that time, most of our early landmark research had been conducted by me and several graduate students. With my growing responsibilities, however, I felt a need to hire a research scientist to oversee my field research. This was not an easy decision, since the field part of my work had been and always will be the most fun!

I had been watching a young scientist who worked for Texas A&M University's La Copita Ranch near Alice, Texas. Ben Koerth received his master's from Texas Tech University, studying mule deer, and he had become well known for his brush management work in South Texas. Everyone said, "If you can get Ben, it'll be a real plus for the Institute."

I needed someone who could take an idea and a research plan and execute it to perfection. Ben clearly was the man, and he came on board in early 1991. The first work we did was a study on the productivity of east Texas deer in relation to intensive forestry activities. A significant part of this work was to study reproduction. Over the next five years we collected hundreds of does during late winter. We examined the reproductive tracts, including counting and aging the fetuses carried by these does. This would give us a good indication of reproductive performance.

THE "STANDARD RUT CURVE"

Breeding Season from October 7 to January 21

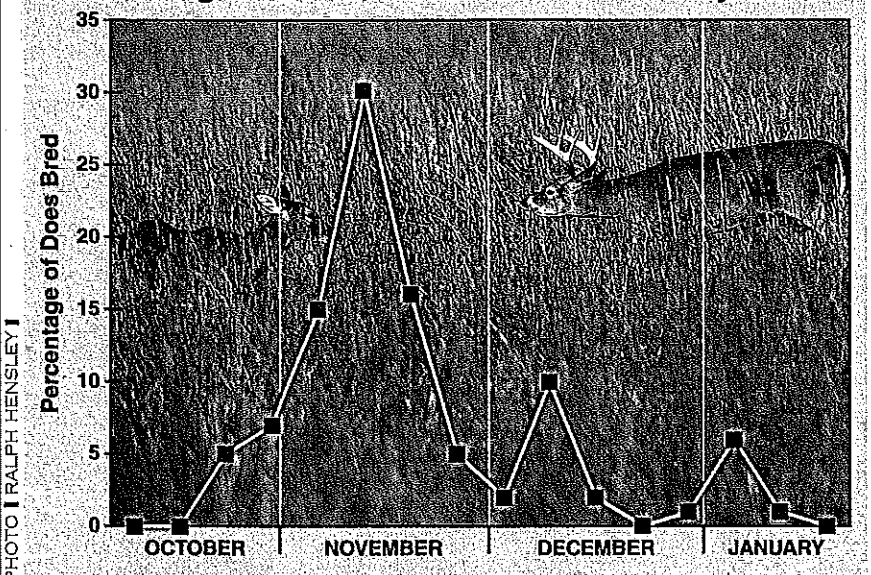


PHOTO | RALPH HENSLEY

Because Dr. Deer's "Standard Rut Curve" chart, which we ran in the July 2006 issue, is fairly accurate for much of North America, it's appropriate to run it again here. In 2005, the average conception date in the Turtle Lake Club study was Nov. 5, but in 2006 it moved up a full 12 days to Nov. 17, proving that the peak of the rut does shift from year to year.

GRAPH | DR. JAMES KROLL

MANY VARYING FACTORS

Methods developed and adopted during this part of our study allowed us to pinpoint the rut for each year. We soon learned the "rut" was not a static thing that occurred at the same time each year. Some years it occurred early, other years it was late, and still others showed no real peak of breeding. We dubbed this lack of peak breeding a "trickle rut." Later, in the late '90s, we wrote about trickle ruts in ***North American Whitetail.***

Reproduction continues to be a major focus of Institute activities. We currently are working with one of the largest and oldest hunting clubs in the Midwest — Turtle Lake Club near Hillman, Michigan. The club contains some 25,000 acres and was founded by 20 individuals in 1885. At that time, the club lands were characterized by a landscape devoid of timber. The "cut out" and "get out" mentality of the early timber barons quickly depleted much of the once beautiful north woods country to a landscape that resembled the aftermath of the detonation of an atomic bomb.

However, the far-sighted founders of Turtle Lake Club jealously guarded and nurtured their land to restore the forest. Today, the club contains some of the most beautiful conifer-hardwood habitats to be found around the Great Lakes. While the forest was being restored, deer herds in the area

began to show signs of declining quality. This was mostly due to ever-increasing deer numbers.

In 2005 the club entered into a long-term agreement with the Institute for White-tailed Deer Management & Research to produce a sustained yield of quality bucks. Since landowners and hunters in the region look up to Turtle Lake Club as an example, we were more than willing to help.

A significant part of our management assistance program involves good record keeping. If you don't keep good records on your deer harvest, management activities and habitat improvement efforts, there is no way to succeed. So, the first step was to set up a sound records program. Club manager Wayne Sitton committed to proper data collection. He dutifully collected every measurement and detail we needed to develop a sound management plan. Part of this work involved conducting an annual "health check" of does harvested from the property.

A health check is a fairly complicated affair involving necropsies from an adequate sample of does taken off the property. A necropsy is the wildlife equivalent to an autopsy performed on a human by pathologists. This "CSI" study can tell us more about a deer herd than almost anything else. In 2005, we entered into a cooperative study with the Michigan Department of Natural Resources and the Michigan Department of Agriculture to conduct the first such study.

LOOKING FOR ANSWERS

Just as with an autopsy, a necropsy is not a pretty thing to watch. We literally take the deer apart as we search for clues to the overall health of the herd. We remove and examine every internal organ. Kidneys are extracted and then weighed with and without the fat surrounding them. Kidney fat has been shown to be a good indicator of body condition, especially late in the season.

Here's a good example of what I'm talking about. I've hunted western Canada for years. One of my favorite outfitters is Dave Bzway of Alberta Wilderness Guide Services. Gun season normally runs for four weeks during November. Unfortunately, American hunters often cannot return with their meat, so the carcasses of harvested animals are hung in Dave's shed for local use (the meat is never wasted).

Because of this, Dave ends up with a perfect chronological record hanging neatly in his shed each season. Bucks killed during the first week characteristically have thick body fat, while those from the second week have much less. By the fourth week, the carcasses are virtually free from any fat at all, meaning that any buck that makes it throu hunting season will be facing at le the next three months with no reser fat. It's no wonder so many matu bucks in this area fall victim to win kill!

The reason we look so carefully the amount of fat around the kidney that this fat is some of the first to used. Remember, deer store "wh fat," while cows also store "yellow fa The difference between the two ba cally is melting point. White fat d solves more easily and disappears lo

before yellow fat. A buck or doe with little kidney fat in November surely will be nutritionally stressed later in the year.

BREEDING DATES — SOLVING THE PUZZLE

The next step in our necropsy is to remove any fetuses from the reproductive tract. Often we'll find that a doe lucky enough to survive a tough winter may still be carrying two fawns. (Or she may have re-absorbed one or both of them.) If she's still carrying one or both fawns, we'll then measure the crown-to-rump length of each to determine its sex. The sex of a fetus is quite obvious by 60 days' gestation.

The average number of fetuses per doe and the sex of these tell us a great deal about what is going on with the herd. But the fetuses also tell us something relevant to the question at hand. Research by scientists many years ago showed that there is a 95 percent correlation between the crown-to-rump length of a fetus and the date of conception. So our collection of does from Turtle Lake Club gave us a very clear picture of *when* they were bred.

The distribution of conception dates is commonly referred to as the "rut phenology." In many of my previous articles regarding the rut and breeding dates, I've pointed out that there should be three distinct peaks to the rut: 1) The major peak most often includes mature does and/or those in good condition. 2) The second peak includes yearling does (18 months of age). And 3) The third peak involves doe fawns. That's right! In healthy herds, even some doe fawns (6 to 7 months of age) will breed. This proportion can be as high as 40 percent.

A well-managed herd should have this distinct three-phase rut curve with a peak at the optimum time for your does to breed. Remember, fawns are born about 198 days after conception, and these fawns are weaned 45 to 60 days after that. If fawns do not wean at the proper time, over-winter survival will be diminished. Poor fawn survival and recruitment will lead to reduced availability of bucks two to four years later.

WHAT WE LEARNED

The rut phenology in any given year can give us a clear picture of

what happened during the previous breeding season. A curve that adheres to the "normal" breeding phenology curve means the herd is in good condition, and/or the growing conditions during the previous spring and summer were excellent. A curve not well defined or a curve broken into multiple peaks suggests a problem.

Our studies conducted at Turtle Lake Club in 2005 and 2006 show some interesting results. First, the average conception date in 2005 was Nov. 5. In 2006 that date moved to Nov. 17, 12 days later. There also was evidence of a trickle rut. Furthermore, our research clearly shows evidence that more younger does were successfully bred during the peak in 2005 than in 2006. In fact, the difference in average age for the two peaks was 3.9 and 4.5 years, respectively, and this contradicts what many biologists in the region have always considered as "fact"— that older does are always more successful breeders.

Since most states schedule hunting seasons well in advance, there will be years in which opening day will catch the rut and other years when it does not. As herds continue to grow out of control around the country, I'm afraid we will be seeing more and more late ruts, as well as trickle ruts.

The take-home message from this brief review of our 2005-2006 results at Turtle Lake Club is that ruts indeed tend to shift in timing from year to year. Since most states schedule hunting seasons well in advance, there will be years in which opening day will catch the rut and other years when it does not. As herds continue to grow out of control around the country, I'm afraid we will be seeing more and more late ruts, as well as trickle ruts.

Some states even schedule rifle seasons on purpose to exclude the rut, primarily to reduce antlered-deer harvest. To date, we have not come up with any statistical relationship that would permit us to protect the rut for the coming year. Factors that I believe contributed to the later, split rut in northern Michigan those two years included dry weather conditions and low acorn crops. Herds at or near carrying capacity often are "energy-regulated." That is, in years when high-energy foods are abundant, the rut appears to be more pronounced and fawn recruitment increases.

Finally, outdoor writers often try to link timing of the rut to a single factor, such as moon phase or position. Although we have indeed found a unique correlation between the peak of the rut and the timing of the full moon, the *condition* of deer coming into breeding season has as much to do with the timing the rut, if not more!