Dr. DEER

BY DR. JAMES C. KROLL

SECONDARY-RUT REALITIES

Reflecting on the many articles I've written for ***North American Whitetail*** over the years, I realize the most frequent topic has been the rut. Yet in spite of countless words penned by me, as well as others, for many hunters the rut remains almost as mysterious as it was three decades ago.

One aspect that seems to elude comprehension involves the stages of the actual breeding period. So let's discuss this key part of the deer's year in more detail. We'll pay particular attention to what many hunters call the "secondary" rut, which occurs in December across much of the range of the species.

HOW IT SHOULD WORK

The standardized rut curve consists of up to three peaks in breeding. To understand this curve, let's examine why there are three peaks and how each came to occur.

Each subspecies of whitetail has developed an ideal time to breed. (The term "breed" in this case refers to a buck and doe actually mating — not other rut-related behaviors, such as scraping, rubbing or roaming in search of a potential mate.) And most breeding should, by definition, occur around peak rut. This primary phase occurs in November for many subspecies, though certainly not all. Each subsequent "peak" should be smaller, meaning it sees fewer actual matings than the one prior to it.

THE MOON'S IMPACT

As I detailed in a feature article last month, the timing of breeding in a given geographic area is keyed to a certain full moon. Whitetails breed at the time of year that, on average, yields the highest overall fawn survival.

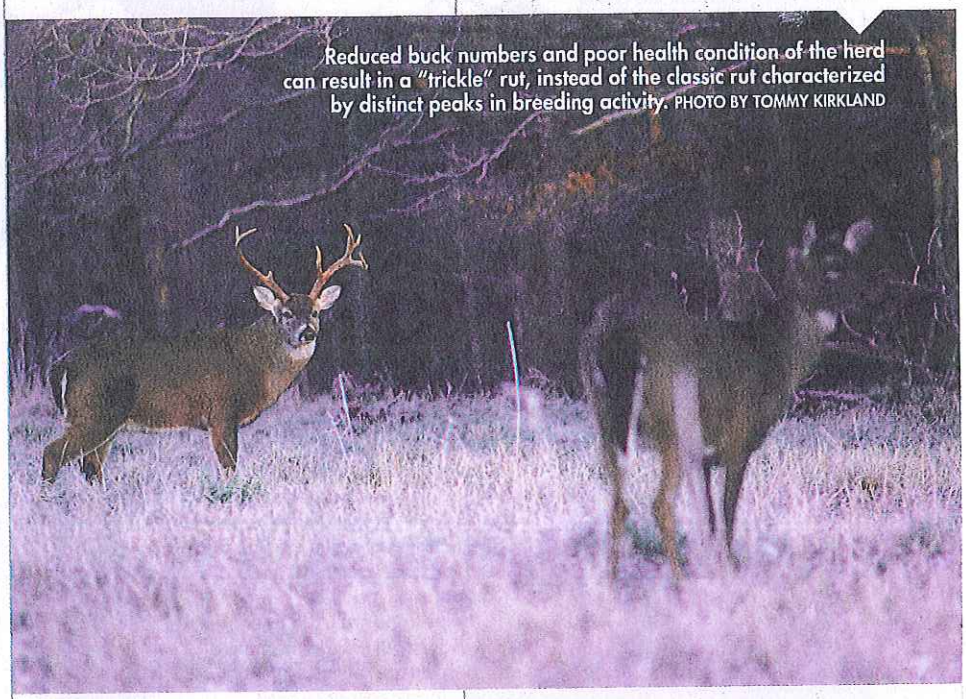
The first full moon of autumn is the "harvest moon," so named because many crops historically have been taken from the fields around this time. Roughly four weeks later, that full moon is followed by the so-called "hunter's moon." This name traces back over 400 years, to when Europeans tied October's full moon to the rut for red and fallow deer.

The lunar cycle in reality isn't exactly 28 days long. There are five calculations of the "lunar month," and they vary considerably. The length of the lunar month ranges from 27.21222 to 29.53059 days (synodic month), on average.

Of course, a whitetail couldn't care less about this and has no way of measuring a lunar month down to 5 decimal places. Yet the deer are heavily influenced by the lunar cycle and use it to time their breeding to fit the geographic area. (I'd need half this issue to explain exactly how this system evolved, so just take it on faith.)

In an ideal world, actual breeding of does in a given area should take place over a few days, forming a sharp peak in activity. One of the best examples of this tight synchronization comes to us from Georgia's Fort Perry Plantation. When we conducted our landmark research there for a 10-year stretch from the late 1980s through the late 1990s, nearly all breeding would occur during a stretch of about three days in late October.

As you might imagine, it's amazing to be on well-managed land when nearly all of the adult does are in heat. Dominant bucks are tending them, and younger bucks are frantically running all over, looking for action. And if you like to rattle whitetails, the week prior to this tight breeding window was just about as close to "heaven" as



Reduced buck numbers and poor health condition of the herd can result in a "trickle" rut, instead of the classic rut characterized by distinct peaks in breeding activity. PHOTO BY TOMMY KIRKLAND

deer hunting ever gets.

Almost exactly four weeks later there was a lesser peak, followed by a small peak the following month. The three peaks were classic for the species — but not so typical for modern deer.

The first peak represented the breeding of the majority of mature does (age 2 1/2 or older). They'd weaned their fawns in late summer-early fall, had changed from summer to winter coats, had put on fat and were fully ready to begin the reproductive cycle anew.

The yearling does were in the process of reaching mature body size, so they had to grow both muscle and coat prior to breeding. These females made up nearly all of the second wave of breeding.

Finally, the distinct early breeding peak at Fort Perry the previous year, along with outstanding food plots, allowed the current year's female fawns to exceed 60 pounds by fall. That's the minimum size a doe needs to reach to become sexually mature. These fawns represented the third peak of breeding. And believe it or not, up to 60 percent of our doe fawns bred each year, usually producing a single buck fawn the following spring. (Younger does tend to produce a higher percentage of male offspring, for reasons that aren't entirely clear.)

What we saw at Fort Perry is the way nature intended whitetails to breed: a short, spirited window in which most mating occurs, followed by fairly predictable cycles of progressively fewer fawns being conceived. Unfortunately, in most areas this no longer is the case.

HERD HEALTH & THE RUT

In the early 1990s, fellow whitetail researcher Dr. Harry Jacobson and I began pointing out our concern for the health and well being of our favorite game animal, based on a trend toward unbalanced populations and nutritional stress. We, along with some other scientists, saw the need for a better way of managing deer.

Under traditional deer management (whether bucks-only harvest or restricted doe harvest), whitetail populations were getting out of alignment with their habitat. Today, there are more than 30 million deer in North America, more than were here when Columbus arrived.

Of course, recently we've seen a number of agents hitting the herd. Drought in particular has taken its toll, both on native habitat and the farm crops that deer in many areas eat. Whatever the cause, when coupled with over-population, herds must deal with increasingly unpredictable forage conditions.

In South Texas, ranchers long ago came to the cattle management strategy of expecting a 50 percent annual calf crop. This was caused by half of the cows not being in sufficient physical condition to breed if they had spent that year nursing a calf. They had so much nutritional stress that they couldn't produce adequate milk *and* get back into breeding condition. Those cows would breed the next year, after recovering from the rigors of nursing.

It can work the same way in stressed deer. A doe coming into the fall in poor condition after nursing a fawn (or two) won't prime at the time her genetics dictate. What should be a distinct peak in the timing of breeding thus becomes significantly blurred. In extreme situations, yearling does and doe fawns either don't breed or conceive much later than they should. This all but dooms the fawns produced by these individuals.

Another factor also can result in significantly late breeding: a shortage of bucks. In regions where buck harvest places a heavy toll on that segment of the population, there literally aren't enough to go around. Yes, all of the does get bred, but when?

A whitetail doe will cycle up to seven times in a season, a pre-adaptation to this situation. Of course, survival of late-born fawns is lower. If a doe conceives just one estrus cycle late the fawn(s) of course will wean a month later than intended. And this translates to lower fawn survival throughout the range.

The "natural" buck:doe ratio for whitetails is 1:1.5. I learned this from studying herds that haven't experienced significant buck harvest. (Believe me, there are very few today.) The greater number of females in such herds is due to higher natural mortality of bucks. However, the ratio is tighter than what some hunters think, due to their lack of exposure to well-balanced populations.

When you have deer in poor physical condition and a reduced number of bucks, the result is what we call a "trickle" rut. And as it's appearing more and more across the range of whitetails, it's frustrating a lot of hunters — including me. Instead of the short, pronounced primary peak, the rut "trickles" on for weeks, as the does one by one reach breeding condition. That takes a lot of the fun out of hunting, because it reduces daytime buck activity and makes rattling and calling far less effective tactics.

REBUILDING THE RUT

What's the solution to an out-of-whack rut? Sound management. Sadly, in spite of the wealth of information and intense interest among hunters and landowners, some wildlife agencies still can't get their heads around the concept.

One recommendation I made recently as Deer Trustee of Wisconsin was the creation of a Deer Management Assistance Program (DMAP) for landowners across the state. This basic type of program has proved extremely popular and effective in some other states. DMAP typically involves taking steps to rebalance the population, by removing surplus does, limiting buck harvest and maximizing fawn survival. (Roughly half of each year's fawn crop is male, and that's where our future trophy bucks come from.) Such programs are popular with landowners and the hunting public in a number of progressive states.

But some experienced deer biologists can't seem to understand what DMAP is and how important it is to get private landowners and hunters involved in the management process. You'd think that after 30 years of effort, both the public and professional biologists would have a firm grip on the concept.

If we're to continue enjoying the wonderful hunting experiences of the past, private landowners must have the tools to manage whitetails for the common good. And it needs to happen soon. The general public's tolerance of the problems caused by deer overabundance is growing thin.