

5 COMMON RUT MISCONCEPTIONS

By Dr. James C. Kroll

Of the hundreds of questions I am asked each year, the most frequent involve the rut in some manner. There still seems to be a great deal of confusion about the breeding biology of whitetails, and there remains considerable misinformation about the rut. Yet, How many words and pages on this subject have been published in the past three decades? I would guess a stack of magazines with articles on the rut would come close to reaching the top of one of our highest mountains? So, in this article I will address the five greatest misconceptions I have noticed among hunters. We begin with the number one question.

Cold weather triggers the rut

Each fall I read some of the most frustrating material in outdoor magazines, not to mention what I hear and see on TV about what triggers the rut! White-tailed deer are short day breeders, meaning as days become shorter certain physiological changes take place that prepare them for the breeding season. Their brain keeps track of day length in a curious “reverse” manner, using the concentration of melatonin (a chemical produced at night) in the blood. The pineal gland (actually a vestigial third eye) in the brain secretes this hormone, which in turn is monitored by two other brain organs, the hypothalamus and suprachiasmatic nucleus (the actual brain clock). Production of various sex-related hormones then is stimulated to affect the testes and ovaries.

Oddly enough, my research supports an odd relationship between the full moon and whitetail breeding. Most races of whitetails “want” to breed shortly after a full moon. Which moon is dependent on the subspecies or race involved. The most well-known full moon is the “Harvest Moon,” occurring sometime in September. The next full moon, less well-known, has been called the “Hunter’s Moon,” for at least 400 years in Europe. That is because red deer tend to breed on or about this moon. The succeeding full moons have no names, but are involved in whitetail breeding. The Avery Island race of whitetails, occurring from southern Louisiana along the Gulf Coast to just north of Corpus Christi, Texas tends to breed in late September to early October (Hunter’s Moon), while other races will key on later moons. Doing so allows whitetails to fawn at a time that in turn leads to the proper time for fawns to wean. At this time, they are on their own in regard to food. Late breeding in south Texas deer, I believe is timed to the hurricane season; viz., fawns will wean just after a period of major rainfall that stimulates forage growth.

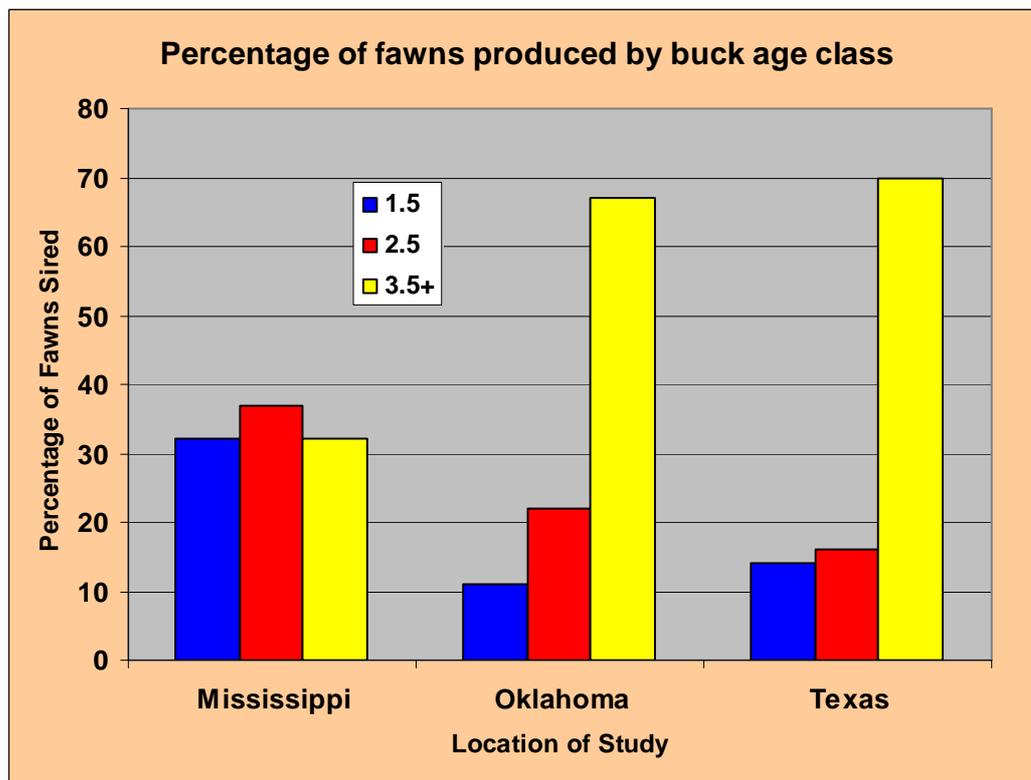
Cold weather has no real effect on when deer breed. The reason so many hunters think it does is, just like humans, deer feel more comfortable when the temperatures are cooler. There also is an increased need to acquire calories. So, the fact you see more deer moving during colder weather does not mean

temperature triggered the rut. Does manage to get pregnant perfectly well, even during unusually warm Fall conditions. This definitely is a misconception!

All bucks breed

I am particularly interested in this one, since there has been a lot of press lately about DNA studies on how many offspring individual bucks produce. One study (R. W. DeYoung, S. Demarais, K. L. Gee, R. L. Honeycutt, M. Hellickson and R. A. Gozales, 2009 Journal of Mammalogy) in particular drew a lot of attention, when they concluded yearling and two-year old bucks breed, and contribute 30-33% of offspring to the population. The study was conducted in three geographic areas—King Ranch (Texas), Nobel Foundation (Oklahoma) and Noxubee Refuge (Mississippi). The authors were “surprised” to discover not all offspring were produced by “dominant” bucks. This was not surprising to me!

If we examine the results of this study, it does indeed fit what we have known for some time about whitetail breeding, especially in places where poor sex and age structure are encouraged by traditional deer management. The graph below summarizes the findings of DeYoung, et. al.



There are two important aspects of this study. First, the herds at the Noble Foundation and King Ranch, progressively contained a higher proportion of older bucks; and, the populations with more mature bucks resulted in more offspring from this age class. It is obvious to me under more natural buck age structure—

that occurring prior to European hunting in North America—produces a breeding system favoring older bucks. Second, the “name of the game” in natural selection is getting more of your offspring into the next generation. It is about differential reproduction, not total dominance of breeding. That is elementary genetics where I was educated! Furthermore, we tend to forget about the fact over half the surviving offspring of bucks are does; and, the majority of the younger bucks doing some breeding actually are sons.

The take home message on this misconception is natural deer herds favor more offspring from mature bucks; and, over-harvest of bucks leads to poor age structure and heavy stress on immature bucks. This certainly is a case for managing for older bucks.

The old does come into estrus first

This one is a natural extension of the above discussion. For years, “old time” deer biologists have insisted older does are necessary for successful production of fawns, especially in colder climates. The typical rut curve shows three peaks, one for older does, a smaller one for young does, and in some cases, a small peak as much as two months later for doe fawns. The reality is, when deer herds are in good condition and under proper nutrition, there is little difference in timing of estrus for old and young does! I also have seen as much as 60% breeding in a later estrus by doe fawns under such conditions. I have been working for some years at the Turtle Lake Club in the northern tip of the Lower Peninsula of Michigan. We discovered when the herd was reduced to productive capacity and provided adequate nutrition, younger does were just as successful as the “old girls” left by years of inadequate doe harvest. So, the answer to this one is, young does are just as likely to breed early in the rut, provided the herd is being managed for younger age structure. This promotes a more exciting and pronounced rut, making YOUR hunt more enjoyable.

Why worry about sex ratios, when all does get bred?

Boy, this is one misconception that really gets under my skin! In my early days as a biologist in eastern Texas, I grew tired of hearing someone stand up at a public hearing and proclaim, “I am against shooting does, you only need one bull for several cows.” First of all, deer are not cows! The breeding biology of the two species could not be more different. The reproductive tracts of bucks are not designed to breed large numbers of does. I compared weight-related semen production for cows and deer, finding bucks are not even in the same league as bulls.

Poor age structure leads to what I long ago called a “trickle” rut. It is characterized by a few does (usually the older ones) coming into estrus, then a delay followed by a few more. In most cases, the first does to achieve estrus are the ones that lost their fawns to poor nutrition. You probably have seen such

does in your hunting career. They are easy to recognize in your herd. Think about the does that show up on your food plot in September. There are some with worn out reddish summer hair, and there are those that already have a nice gray winter coat. The latter are the ones that lost fawns, and are no longer nutritionally stressed.

Yes, in most cases most of the does do get bred, even under terribly skewed sex ratios. However, it is more when they are bred than if. A prolonged breeding season leads to prolonged fawning season, which in turn leads to poor fawn survival and recruitment. It also places severe stress on bucks, particularly the immature ones discussed above.

Bucks follow estrous scents to find does.

I saved this one for last, because it is one that intrigues me the most. We have done considerable research on scent communication in whitetails, much of which contradicts common “wisdom” about the topic. First of all, we have been conducting artificial breeding for almost 20 years to support our genetics research. Part of this work involves bringing does into estrus at an exact time so we can artificially breed them. A offshoot of this work involves clearly the vaginal tract of mucus produced when a doe is about to ovulate. Out curiosity, we decided to conduct field research on the attractiveness of this material. After all, if anything contains estrous scent, it would have to be vaginal mucus. We collect the liquid directly from the doe and placed it immediately into an ultra-freezer. Later we took the material to the field in a special cold container and deposited it in mock scrapes. To date, we never have gotten bucks to pay much attention to the material!

This and other research we have conducted over the years bring us to the following thoughts. First of all, pure logic would dictate that the chemical (and we think there are several) produced when a doe comes into estrus has to be short-lived. If not, the woods would turn out to be a pretty confusing place! Direct courting and breeding observations support a buck gains interest in a doe from both physical postures and behavior, followed by close contact with the external portion of the doe’s reproductive tract.

It is well-known, does do not stand for mounting immediately on approach by a buck. Rather, they tend to be coy and run off with the buck in hot pursuit. This probably guarantees several important biological events, including battle for her “favors” among other bucks joining in the chase. We commonly have folks tell us about seeing a doe come running by their stand, followed in a few minutes by a buck with his nose to the ground much like a hound. The observer, we feel makes a sound observation but a very weak interpretation. The hunter presumes the buck is tracking estrous scent left behind as the doe runs. What we now think is he actually is following scent from her inter-digital gland, which pretty much is unique to each deer. That precisely is why that same hunter will report another

buck coming by later and completely ignoring the trail taken by the doe and her suitor. Since he was not there to observe the physical behavior or to investigate the doe personally, he just assumes it is another deer that passed by.

Finally, the gangs of bucks that assemble around a doe approaching estrus is erroneous thought to come to a scent in the air. We now think they come to the sound of the growing chase than from any scent in the air. I have hundreds of observations of bucks coming to such a chase from upwind, making it physically impossible for him to be reacting to an odor.

Hopefully, this article has cleared up some of the misconceptions I commonly encounter over the range of whitetails. In spite of science, there still will be firm belief in some of the 5 misconceptions discussed above. A lot of folks conform to a good friend's scientific law: "If I hadn't believed it, I wouldn't have seen it with my own eyes!"