

The Outside Story



Moon Phase and the Rut (Or: Something to Argue About at Deer Camp)

By: Dave Mance III

Deer hunters, like professional athletes, are always looking for an edge – it's the nature of the pursuit. And so we're susceptible to superstition, alluring gadgets, marketing campaigns. A classic genre that combines all three of those elements is the moon table – a chart that tells you when the best hunting days are based on the moon phase. These charts were a sporting magazine staple in the early days. In the print world they have largely gone the way of the Marlboro Man, but you can now buy an app which uses the moon to tell you when to take your hunting vacation.

Whether deer movement is affected by moonlight is an intriguing question. But because it's hard to isolate the moon from all the other phenomena that affect deer behavior, I can't imagine how you'd go about proving or disproving any particular theory. Scientists have conducted radio-collar studies with small groups of deer trying to gain insight, but the samples were so small, and the data ambiguous enough, that there's not a lot to take from it.

The idea that the moon triggers the rut, however – a subset of the deer/moon genre – doesn't really hold up under scrutiny. Mammologists have long held that the rut is triggered by declining daylight in the autumn, which has nothing to do with the moon phase. Several studies over the past decade – one in Pennsylvania, one in Illinois, one in New Brunswick – all reaffirmed the idea by aging fetuses extracted from road-killed does over the course of multiple years. Since we know a whitetail has a gestation rate that's pretty close to 200 days, and fetuses by and large have consistent growth rates, they can be measured and you can count backwards to determine the date of conception. What the researchers found was remarkable consistency in the date of the average peak of the rut from year to year, regardless of the weather conditions or the moon.

This idea that day length triggers the breeding cycle (scientists refer to this as photoperiod) makes intuitive sense in a northern climate, since in most years deer need to synchronize birthing with the seasons. If a fawn comes too early, it'll be too cold and the doe won't have adequate nutrition. If it comes too late, the fawn won't be able to accumulate enough body weight to make it through winter.

Having said that, it's important to view the idea of photoperiod as a general rule, not the end-all-be-all factor. Budbreak in trees is another natural phenomenon based partly on photoperiod, but as the bizarre spring of 2012 showed us, when the buds broke two weeks earlier than normal after a week of 70 degree weather in March, trees take a cue from temperature, too.

Hard and fast rules are so much more satisfying than general rules, and yet nature is full of the latter. This provides an opening through which one can cast doubt. Looking at the New Brunswick deer fetal study, which ran for 9 years, the average peak of breeding fell within a 7-day period every single year. On eight of the nine years it fell in the same 4-day period in late November. But a few outliers were breeding from mid-October through mid-December all 9 years – on a graph the data resemble a bell curve – so somewhere an astute hunter was watching a doe in heat in October and wondering what gives. In such a case it's human nature to seek alternative explanations. It's the same phenomenon that climate change deniers ply more cynically every winter, when during cold snaps they make sarcastic quips about global warming. There, too, the data set tells a general truth that's nevertheless easy to exploit.

I asked Rod Cumberland, who was the New Brunswick deer project leader at the time of the study, why some does came into heat early or late, and he told me that “reproductive readiness is governed by nutritional plane.” It's conjecture, but his thought was that the early breeding does were ones who were not impregnated the previous year – for whatever reason – and did not lactate all summer. Because they were in better physical condition, they were ready to breed

earlier. He said that the vast majority of does who bred during the peak rut were females that did carry a fawn or fawns the previous year. And that the late breeders were a combination of females that missed connecting with a buck in late November during the first estrus, and also doe fawns who had reached 65 pounds and became receptive in December.

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