Maternity in Deer Management: Implications for Doe Harvest

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WITH GOOD RANGE CONDITIONS, doe fawns can be bred, but they rarely raise their fawns. A late season harvest of young does is one strategy to maintain an appropriate deer density.

You have a piece of property on which you manage white-tailed deer. You have worked on the habitat and may provide supplement so that deer on your property are big and healthy. One of the outcomes of good management is that fawn production increases, resulting in a growing deer population. The population may grow to the point that you need to increase harvest to maintain a deer density appropriate for your habitat. Which deer should you harvest?

A buck harvest will be part of your management program, and age and antler characteristics provide criteria that can be used to choose bucks for harvest. However, shooting bucks does not affect population growth nearly as much as harvesting does. Thus, high-quality habitat and good management put you in a position to harvest female deer. Unlike male deer, female deer offer few criteria to guide harvest decisions.

There are many doe harvest programs espoused by managers in Texas. Some managers prefer to harvest does with fawns, others only harvest does with no fawns. Some like harvesting old does (at least to the extent young and old does can be distinguished), while others prefer young does. The different approaches are based on different deer management goals and different ideas about deer reproduction. The goals are your decision as a deer manager. Better knowledge of the reproductive biology of deer will make you more effective in meeting those goals, and this article describes some recent discoveries in reproduction of white-tailed deer.

A NEW STUDY of doe reproductive success shows that some females raise fawns in most years whereas other females rarely raise fawns. These findings suggest that if a doe harvest is necessary, preference should be given to harvesting females without fawns.

Aaron Foley and Randy DeYoung, scientists at the Caesar Kleberg Wildlife Research Institute, recently completed a study of which does raise fawns. They used genetic techniques to determine the mother of young deer captured or harvested on a large research project in the western part of South Texas. The study was conducted on the Comanche and Faith Ranches and was supported by T. Dan Friedkin and the Stedman West Foundation. Aaron and Randy worked collaboratively with Charlie DeYoung, Tim Fulbright, Don Draeger and David Hewitt. They used samples from five years of capturing and harvesting deer from 12 large enclosures, six of which had a pelleted supplement and six of which did not.

As expected, supplemental feed improved nutrition and resulted in higher reproductive rates. One significant change in reproduction was that a higher proportion of doe fawns were bred in the enclosures with supplemental feed. This finding was not a surprise. The surprise came when Aaron and Randy realized that these young deer were not ready to be mothers. They rarely raised a fawn, even in enclosures with supplemental feed. Pregnancy rates of yearling does were high, and these does were more successful in raising fawns than younger does, but not as successful as mature does.

There were interesting reproductive patterns in older does. Pregnancy rates of does at least two years old were high; over 95 percent. Thus, nearly all adult does were bred and gave birth to fawns. However, about half of the does in enclosures without supplement, and about one third of does in supplemented enclosures, rarely raised a fawn. These does may have been poor mothers, chose poor-quality diets, been low in the social hierarchy, or used poor habitat. We don't know why these does were rarely successful, but we know they rarely raised fawns.

In contrast, there were other does that raised fawns every other year, on average. These were the other half of the does in enclosures without supplement, and they were about one third of the does in supplemented enclosures. The final third of the does in supplemented enclosures were the superstars, who raised fawns nearly every year. These does had what it takes to be successful in this environment. They were good mothers, found good quality forage, and may have been at the upper end of the social hierarchy.

What does this information mean relative to choosing a doe to harvest? One implication is that young deer appear to be poor mothers. Harvesting mature does heavily will shift the age structure to young does and could greatly reduce fawn production. This does not sound like a problem if your goal is to reduce the number of deer in your herd. However, young deer are not only likely to produce fewer fawns, the fawns they produce may not be the large, robust fawns capable of growing up to be big, productive adult deer. These findings suggest harvesting at least some young does, including doe fawns, could be a viable harvest strategy, especially because it will reduce the number of mature does in the herd in future years.

NEARLY EVERY mature doe becomes pregnant, but not every doe successfully raises fawns. Some females raise fawns year after year, whereas others rarely raise fawns. Unsuccessful does could be targeted for harvest.

You may still need to harvest mature does to reduce the number of deer on your property. Aaron and Randy's findings suggest you have mature does that know how to raise fawns and others that are less successful. To select for the does that are able to raise fawns, take a lesson from the old rancher tailoring a cow herd to his ranch. Just as the rancher will sell a cow who fails to raise a calf, consider harvesting does that do not have fawns with them. This approach is not perfect and when many does must be harvested, you may not be able to be so choosy. However, given the choice between a mature doe that clearly knows how to raise a fawn and another doe without a fawn at heel, findings from this high-tech maternity study suggest you should put the cross-hairs on the doe without a fawn.