

As I exited our small camper trailer, white frost reflecting the waning moonlight fortified the fact that it was extremely cold. It was December 14, 1973--Pennsylvania's buck hunting opening day--and I along with my brother Rich and good friend John Syrek were in the heart of Pennsylvania's renowned deer country, Centre County.

Anticipating a chance at getting a buck, we ascended the side of the dark mountain two hours prior to legal shooting time in an attempt to get situated before hunters arriving late would enter the forest. Maybe we thought they would spook a buck to us.

Not one hour after legal shooting time, shots rang out below me, and the louder they sounded, the more excited I became. Suddenly a confused five-pointer scoring maybe 60 inches on the Boone and Crockett scale appeared in front of a maze of rhododendron not 30 yards from me, and my hunt was over. It was exhilarating, and I couldn't wait to show off the buck to my companions. That was hunting in the big woods. Centre County was a long drive from my home in Fayette County, but well worth it because of the increased probability of seeing bucks.

Deer were scarce near my home in the southwestern portion of Fayette County during the 1970's; just seeing a track was exciting. Most avid deer hunters traveled north to counties like Potter, McKean, and Centre. It wasn't until I attended Penn State at State College and witnessed for myself what many hunters already knew. Centre County, like many other northern counties, represented a whitetail haven. Just 20 minutes out of State College, I could observe over 100 deer on any evening from the highway. It was deer-rich environment and a wonderful place to hunt. What I didn't realize was that the thing I

enjoyed most, lots of deer, was not only detrimental to deer quality, but degrading to the habitat as well.

The same thing was about to happen near my home in the southwest portion of Fayette County. Deer were slowly immigrating into areas I simply thought were uninhabitable by whitetails. This fact was verified in the late 1970's and early 1980's while on my return trips back home I kicked more deer than rabbits from the thickets I hunted as a boy.

Realizing that the deer herd was in trouble, Dr. Gary Alt, Pennsylvania Game Commission's deer management section supervisor, offered the board of game commissioners his recommendations for the 2002-2003 deer season.

Alt's suggestions included a revision of deer management units, an early antlerless season for all firearms hunters in October, and antler restrictions that reflected habitat quality.

With the majority of does in October shot prior to the rut, bucks would breed more does that had a good chance of surviving and raising a fawn. Essentially, the early removal of does would alleviate much of the pressure the excessive number of deer placed on the habitat.

Another important consideration was the reduction of deer vehicle collisions, which occur most during the November rut.

Antler restrictions were based on habitat diversity. A three-point on one side restriction, protecting spikes and "y's" for the north woods area that makes up two thirds of the state, and a four-point-on-one-side restriction in the Southeast and western agricultural areas were initiated.

By placing these restrictions into effect, an estimated 100,000 bucks would enter into the next age class. Of these bucks, an estimated 50% that survive would have eight points. With patience, the bucks surviving into the next age class would produce larger racks, in turn augment hunter satisfaction.

Although a viable plan, the projected surplus number of bucks would have negatively impacted the already abused habitat. More important, it would have damaged the coalition of hunters, foresters, and farmers willing to back the commission's decision. Thus more emphasis was placed on a substantial reduction of the doe herd in order to compensate for the additional number of young bucks.

Pennsylvania's new management philosophy addressed all concerned through public appearances, local newspapers, timely popular articles, and the Internet. Pennsylvania wildlife biologists realized that the hunter is actually their customer, and they must service their needs. In turn, Alt emphasized the important role the hunter must play. In his opinion, the hunter must represent a free environmental service to the nonhunting public when it comes to controlling deer herds and improving habitat. Through education, the Pennsylvania Game Commission championed what many thought unapproachable. The Pennsylvania hunter wanted lots of deer along with bigger bucks. At least that's the way it was when I grew up there. But few individuals realized the impact mushrooming deer populations had on the habitat. Not only deer, but all forested species from woodchucks to warblers, were affected as the understory disappeared and regeneration of trees virtually came to a halt in some locations.

The Pennsylvania Game Commission conducted an intensive doe harvest in 2001 in order to reduce the deer herd by 5%. This reduction was an attempt to make room for

the estimated number of bucks they would save in 2002 when the antler restrictions were implemented.

Statewide, antler restriction regulations were adopted in Pennsylvania during the 2002-03 hunting season. The objective was to protect 50 to 75% of yearling bucks from harvest. Although the harvest regulations were statewide, it is important for deer managers to understand the impact protecting yearling deer in one county would have on an adjoining county. For example, if 70% of the yearling bucks survived the buck harvest in county A, where would the surplus disperse, and what impact would it have on the adjoining county. The fact that a variety of external factors force yearling bucks to move a considerable distance from their birth place, the game commission decided to investigate not only dispersal patterns of surviving bucks, but their survival rate as well. To accomplish this task, a three-year telemetry study of bucks captured at eight months of age was initiated in 2003. According to Dr. Duane R. Diefenbach and his colleagues, a total of 296 buck fawns and 32 adult bucks have been radio collared in two study areas. The study areas are located in Armstrong County in western Pennsylvania and Centre County in central Pennsylvania.

According to Dr. Diefenbach, yearling bucks dispersed primarily during the spring and fall and dispersal rates were greater in Armstrong County (70%) than Centre County (44%). Yearling bucks in Armstrong County had an average dispersal distance of 6.2 mi. compared to 3.6 mi. in Centre County. The substantial difference was attributed to the heavier forest cover in Centre County.

Why do yearling bucks disperse? Initially, researchers believed dispersal of yearling bucks resulted from intimidation by mature bucks during the breeding season.

However, Holzenhein and Marchinton 1992, working in Virginia, found that aggression exerted on yearlings from closely related females forced yearling bucks to disperse. They also found that bucks orphaned before reaching dispersal age did so at a lesser rate. The researchers' findings also indicated that orphaned fawns had a higher survival rate than did their unorphaned counterparts.

Working with Dr. Steve Demarais in South Texas in 1985, we found the home range for orphaned fawns to be less than that of unorphaned fawns, but survival for the unorphaned group was higher than that of the orphaned group. Our data indicated that the higher mortality rate of orphaned fawns could be attributable to a lack of fawn/dam interaction, and may in part be caused by coyote predation to which young fawns are particularly susceptible to in South Texas.

During the initial Pennsylvania hunting season in which antler restrictions were enforced, 44% of collared deer survived, hunters shot 38%, 4% died of various causes, and 14% were eliminated from the study because of loss or malfunction of their radio collar.

Diefenbach presented the latest statistics of Pennsylvania's new deer project at the Southeast Deer Study Group meeting in February 2004. According to Diefenbach, their program is working. Only 35% of the juvenile males were harvested. This is really significant when one considers the fact that over the last 20 years, 80% of the annual harvest was composed of juvenile males.

More important is the fact that hunter approval is high, and unquestionably will improve as sportsmen see the benefits of allowing bucks to reach an older age class.

Obviously to the sportsman seeing larger-racked older bucks will be rewarding, but there is more to this program.

Although the quality of bucks will increase as a result of age, it will be the habitat that benefits the most. Reversing the long-term negative impact excessive deer numbers have had on Pennsylvania's forests will take time. But once deer numbers are reduced to within the carrying capacity of the land, those seedlings and highly desirable herbaceous plants will begin to rebound.

Change is difficult to accept, but the bond the Pennsylvania Game Commission continues to form with hunters, landowners, foresters, etc. through education and cooperation will insure the keystone state a healthy deer herd thriving on a continually improving habitat, no matter where those yearling bucks disperse.

Captions for slides. All photos by Bob Zaiglin.

1. Dispersal of yearling bucks was once attributed to intimidation by mature bucks during the breeding season.
2. Recent research indicates that aggression exerted on yearlings by closely-related females forces yearling bucks to disperse.
3. A variety of external factors force yearling deer to disperse.
4. The thing most hunters desire, an abundance of deer, is not only detrimental to herd health, but more important, the habitat.