

## Great Expectations: Part Two



This big non-typical buck became known as "Skyscraper" after being captured by trail camera photos numerous times over a 4-year period. The buck's territory covered six square miles of land leased by a DMAP club in Amelia County, Virginia. This old warrior was taken during the 2014 hunting season and aged to be 7 1/2 years old.

Bushnell

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In 2006, I wrote an article for the VDHA entitled Great Expectations. The idea behind the article was simple. I proposed that the deer hunting media routinely created unrealistic expectations among deer hunters by depicting gigantic-antlered deer on their magazine covers and hunting shows. I noted that many of the deer depicted on magazine covers and in hunting shows are not "real." Many are privately-owned, half-tame, semi-domesticated, fed supplements, even genetically-engineered bucks standing over a bait pile inside a deer pen.

My first Great Expectations article was related to an excellent article entitled Reality Bucks written by the late Charles J. Alsheimer and published in the January 2006 issue of Deer and Deer Hunting. In a nutshell, Alsheimer described how antler growth was related to age and noted that killing a 140-class B&C free-ranging whitetailed buck was the best most eastern US deer hunters could ever expect. I agreed then, and I still agree today.

This second Great Expectations article results from another recent, excellent article written by Lindsay Thomas of the Quality Deer Management Association entitled,

Will He Be Good Enough Next Year. It can be found at [www.qdma.com/will-good-one-next-year/](http://www.qdma.com/will-good-one-next-year/). I recommend you read it. In his article, Thomas notes that a middle-aged buck (2-1/2 or 3-1/2) is a nice buck for any deer hunter. I agree.

Quality Deer Management (QDM) has fundamentally changed deer hunting across the eastern United States, over the past 30 years, and Virginia is no exception. The chances of seeing and killing a nice buck is better today than ever before, and the opportunities to do so are increasing over time (more about that later). However, many hunters continue to carry unrealistic expectations into the deer woods. Fortunately, we have more and better information on which to base realistic expectations than we did just a decade ago.

A short, simple primer on deer antler growth is in order. Deer antler growth is determined by age, nutrition, and genetics. Genetics must be taken off the table, however. Hunters cannot manage antler genetics through recreational deer hunting. Forget about antler genetics.

Nutrition is important and simple. Deer with access to high quality forage across all seasons, over their lifetime, will

express their full antler potential. Deer that do not have such access will not express their full antler potential.

The last factor is age. As deer get older, their antlers get bigger, up to a point. As most deer hunters know, department biologists age deer by a technique that requires the lower jaw. However, the good news for deer hunters is that deer can be aged in the field with some level of precision by evaluating physical characteristics, such as size and shape of the antlers and body and behavior. The department's biological deer data provides the science behind Antler Point Restrictions (APRs), which hunters can implement in the field. For example, the four-points-on-one-side rule used in seven Virginia counties is designed to protect the majority of 1-1/2-year old bucks from being killed by deer hunters, affording those bucks the chance to reach 2-1/2 years of age (more on this topic later).

One of the central principles behind QDM is simple: If deer hunters want to see and kill bigger and older bucks, they should quit killing young bucks. It is not rocket science. What should a Virginia deer hunter and/or manager expect from QDM? Figures 1 and 2 are based on

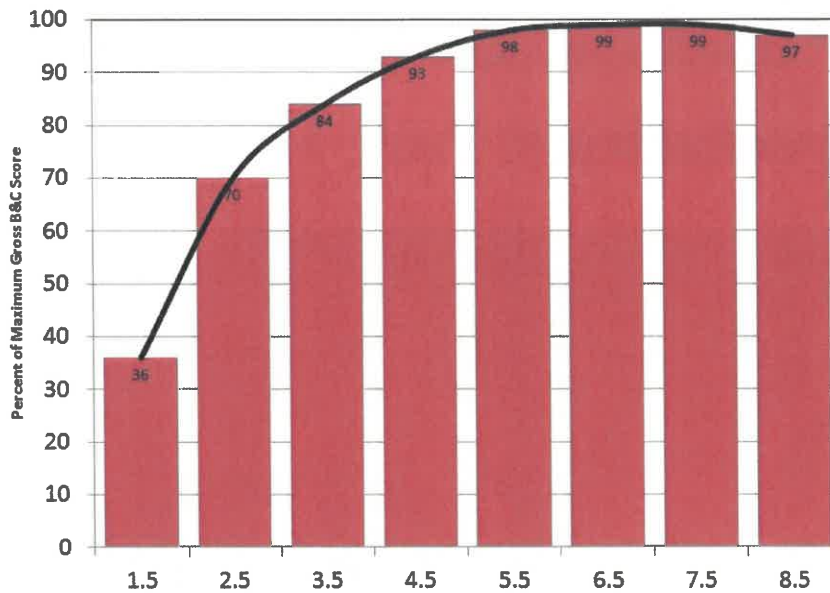


Figure 1. Antler growth by antlered buck age class.

Data from Demarais and Strickland (2017)  
Data Source: Mississippi State and Texas A&M- Kingsville universities

research at Mississippi State University and Texas A&M Kingsville and provide a good road map to realistic QDM expectations. This data can be found in a book published in 2017, entitled Strategic Harvest System by Steve Demarais and Bronson Strickland. It can be purchased on Amazon.

The first graph (Figure 1) demonstrates one of the primary reasons for the success of QDM. Antler growth, as measured by the gross Boone and Crockett (B&C) score in this case, increases significantly during the first several years of a buck's life. On average, a buck's first set of antlers, grown at 1-1/2 years of age, will only express about one-third (~36%) of his full antler potential. If he survives to 2-1/2, he should express about 70% of his full antler potential, nearly doubling his antler growth in just one year. Antler growth potential increases every year between 1-1/2 and 5-1/2, but the relative yearly rate of increase declines as the buck gets older. Full antler potential is reached at 5-1/2 years of age. After that, it plateaus. While the MSU/TX A&M-Kingsville figure is based on the average over six areas in those two states, I am confident this same general trend applies to deer in Virginia.

Figure 2 puts the antler growth potential shown in Figure 1 into a context most deer hunters can relate to - the actual gross B&C score. Note that B&C scores are related to habitat quality. This connects directly back to the effect of nutrition on antler development. We do not have similar data for Virginia, but, if I had to estimate, most deer in Virginia would fall somewhere

between the moderate and higher quality lines of this graph.

One of the most important points to take away here is that, in the higher quality habitats, the average gross B&C score peaked at 130. Don't get me wrong, a 130-inch gross B&C buck is a nice deer. However, 130-inch bucks do not generally appear on magazine covers or in the hunting shows. Readers should also understand that there is considerable variation in the gross B&C antler scores within an age

class. Hence, in higher quality habitat, there are mature bucks that will score 150, 160, or higher, although the percentage of bucks possessing antlers of this size grows smaller as you move farther above 130. Additionally, there will also be older, mature bucks that score 110, 100, or lower. Again, the percentage of deer which score below the average grows smaller as you move further below 130. Deer are like us, they are average. They come in all shapes and sizes. Our expectations as deer hunters/managers must take in this reality. Massive-antlered bucks are statistical outliers.

A good analogy might be baseball. Nearly every one of us played sandlot and/or little league baseball as a kid growing up. Later, some made the varsity high school team. Next, a few played college baseball. Later still, a very few made it to the minors, and an even smaller number made it to the big leagues. Finally, there are those few exceptional athletes who made it into the Baseball Hall of Fame in Cooperstown. The "average" kid played sandlot and/or high school baseball. The bottom line is that deer hunters/managers should not expect "professional" level deer across the landscape. It is simply unrealistic.

In Virginia, the good news is that QDM is prospering. The department has been an advocate of voluntary QDM since 1988, and the primary program that the department has used to help those interested in QDM is the Deer Management Assistance Program (DMAP). While DMAP isn't specifically a QDM

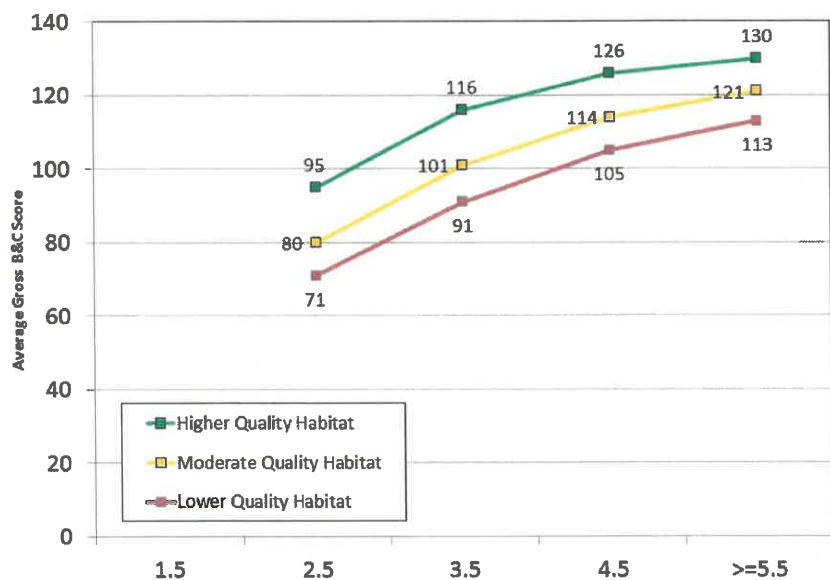


Figure 2. Antler growth by antlered buck age class by relative habitat quality.

Data from Demarais and Strickland (2017)  
Data Source: Mississippi State and Texas A&M- Kingsville universities



Trail camera photos of this 8-pointer were well documented throughout the summer months. The buck was harvested during the bow season and qualified for the Pope and Young Record Book. State game biologists aged the animal to be 4 1/2.



program, over the past two decades about 85% of the Department's ~700-900 annual DMAP cooperators have indicated that they practiced some level of QDM.

Figure 3 shows the antlered buck kill age structure for DMAP properties practicing QDM over the last 19 years. Note, QDM in Virginia is succeeding and evolving. The percentage of the kill comprised of 1-1/2-year old bucks on these properties has declined about 40%, and today only 1 in 4 bucks killed by these cooperators is 1-1/2 years old. Why are there any 1-1/2-year old bucks killed on Virginia's DMAP QDM properties? I offer two explanations: First, many QDM clubs have rules that allow youth or senior hunters to kill any buck. Second, it is also much easier to say that you will practice QDM when you are filling out a DMAP application in June or July than it is to put it into practice in the deer woods in November!

The most important take-home from this graph is that, over the past 19 years, the percentage of the harvest composed of bucks 3-1/2 years of age or older has more than doubled. Specifically, the percentage of 3-1/2-year old bucks has doubled, and the percentage of 4-1/2-year old bucks has tripled over time. I expect this trend to

continue, but at some point, I also predict it will level off.

I should note the data in Figure 3 represents over 12,000 separate, annual DMAP datasets (average about 635 per year) over 19 years, and data from over 85,000 individual antlered deer. Virginia's DMAP QDM data clearly shows that hundreds and hundreds of clubs and properties across the Commonwealth, comprising over one million acres, are successfully producing more middle-aged quality bucks.

The bad news is that outside of the rut, these older bucks are difficult to kill. As I noted in my first Great Expectations article, older, mature bucks in the wild are smart. They do not grow big and old by walking around in front of deer hunters. If an older buck can be killed, it will typically be during the rut. Their sex drive is their Achilles' heel. In his QDMA article, Thomas called this the "huntability" index. I agree with his concept and propose that once a buck reaches 4-1/2 years old, outside of the rut, his huntability index is near zero.

Huntability is not, however, the only downside to managing for bigger and older bucks. QDM comes at a cost. For example, if we started with 100 button buck fawns in the fall, you could expect only about 90 of them to reach their second fall. Then, if you had a QDM rule that protected 100% of these 90 antlered yearling bucks from hunter harvest, only about 81 of them would survive to their third fall when they would be 2-1/2-year old bucks. The lesson here is that deer die from natural factors

other than hunting, such as disease (HD), accidents (cars), predation, etc., and a 10% annual non-hunting male mortality rate is not unreasonable. In the complete absence of deer hunting, about one third of those original 100 buck fawns will be dead from non-hunting mortality by the time they reach 4-1/2 years of age. Add hunting mortality into this dynamic and survival of the 100 buck fawns into the middle and older age classes declines rapidly.

Even further, no hunt club or property in Virginia is an island, and high fences are illegal. Depending on many factors, such as the size and shape of the property under QDM, QDM results for individual hunt clubs can be affected by hunting practices and pressure on neighboring properties.

When you combine all these "costs" into a bundle, Virginia's DMAP cooperators who practice QDM kill about 30% less bucks per unit area than DMAP cooperators who do not practice QDM. The upside is that the QDM DMAP cooperators kill larger and older bucks.

QDM is not only practiced by DMAP cooperators in Virginia. It is also routinely practiced at some level by many deer hunters in many areas across the state. In Bedford County, where I live, there are only a few small DMAP cooperators, yet I routinely talk to local deer hunters who report passing up younger, smaller bucks. This is not the exception. It is the rule.

In 2013, we included a question on the department's hunter survey asking deer hunters about passing up shots at legal deer.

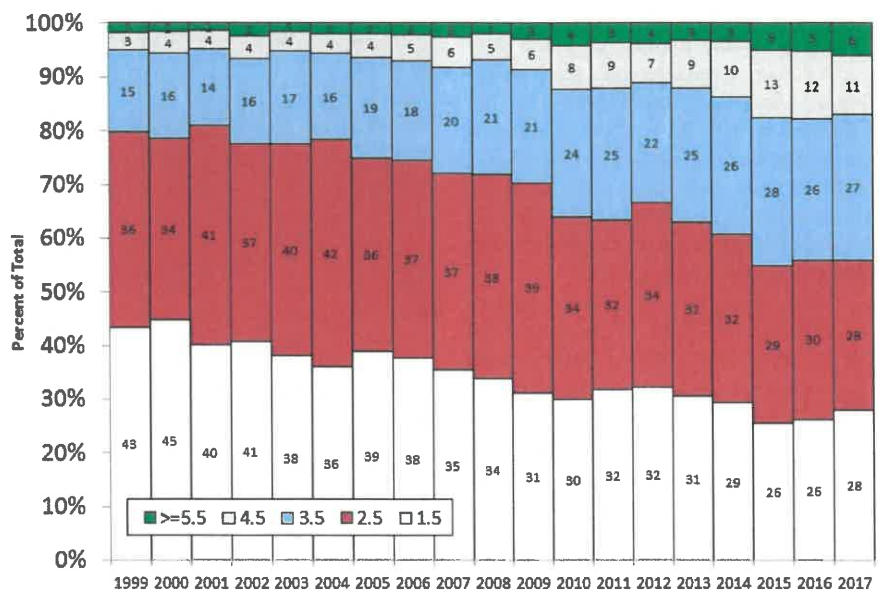


Figure 3. Antlered Buck Age Structure for Virginia DMAP Cooperators That Indicated That They Practice QDM.

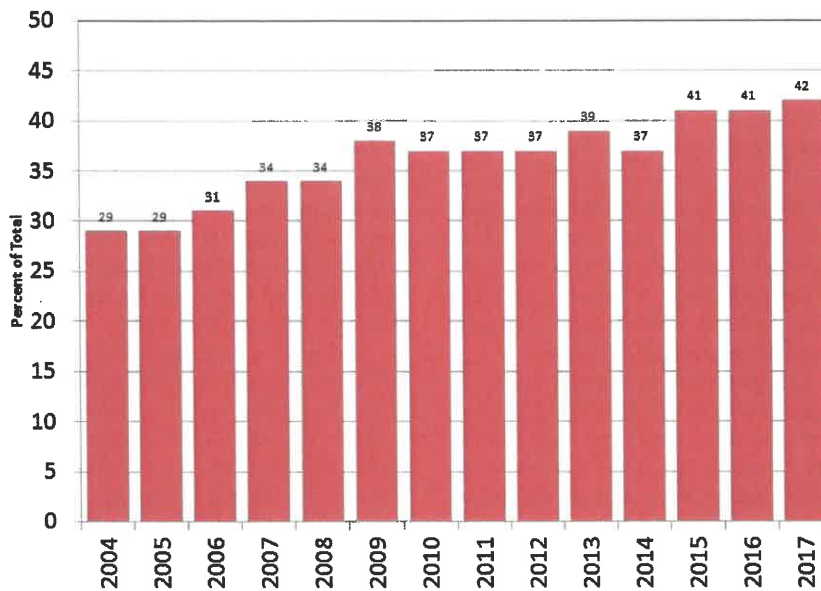


Figure 4. Virginia electronic-checked deer with greater than or equal to eight antler points.

The results corroborated what we assumed was happening. Sixty-eight percent of Virginia deer hunters indicated they had passed up at least one legal, antlered buck in fall 2013. Eighty-three percent indicated their primary reason was that they did not want to shoot a young/small buck. Additionally, 24% reported they had passed up four or more legal antlered bucks in fall 2013. I fully expect this voluntary Virginia QDM trend to continue and probably accelerate in the future.

Hunter survey data showing Virginia's deer hunters passing up young small antlered bucks is supported by the department's electronic deer checking data. As shown in Figure 4, the number of bucks with greater than or equal to eight antler points has been increasing steadily with time. For example, in fall 2004, 29% of antlered bucks that were checked electronically had eight or more antler points. By fall 2017, this number had increased to 42%, and the 14 years of data in Figure 4 represents over 930,000 checked antlered deer.

Thirty plus years ago, when I became an advocate of QDM, it did not dawn on me where the QDM revolution would lead. Speaking just for myself, at that time, the primary QDM goal was simply to just get deer hunters to pass up 1-1/2-year old bucks. Today's younger deer hunters may not believe it, but before the mid-1980's, I had never even heard of the idea of passing up a legal, antlered buck. No one had! If you saw a legal buck, you killed it. In my defense, I did recognize that if most yearling bucks were protected, then the

chances of some of them surviving to 3-1/2 years of age or older would also increase. However, I did not expect that eastern deer hunters hunting small privately-owned properties under free range conditions like those in Virginia, would one day have the opportunity to be routinely hunting four-, five-, and six-year-old bucks.

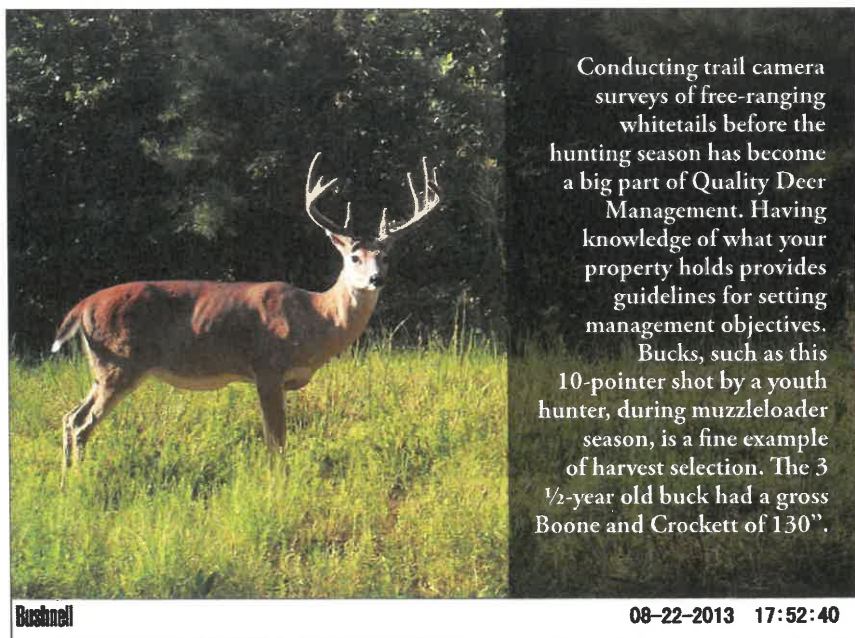
### EPILOGUE

Deer management in Virginia still suffers from unrealistic expectations. This was recently illustrated to me by comments from a QDM DMAP cooperater in

Virginia. He acknowledged 1) his property was literally covered up in antlered bucks, 2) there was an older buck age structure in place, and 3) there were numerous bucks 4-1/2 or older. The problem was not the number of bucks or the age structure of the bucks. The problem was that the bigger older bucks were just not quite big enough. They did not meet his expectations.

If the success of a QDM program in Virginia is judged on producing middle-aged and/or older bucks, it will probably succeed. If it is judged on producing high B&C scores, it is likely to fail.

**EDITOR'S NOTE:** *Matt Knox, a regular contributor to Whitetail Times, is the deer project co-leader with Virginia Department of Game and Inland Fisheries. He holds degrees in zoology and wildlife management from the University of Georgia. In October, the Southeastern Association of Fish and Wildlife Agencies named Matt Knox the 2016 Wildlife Biologist of the Year. "Matt has made significant contributions to important regional and national deer management initiatives," SEAFWA President Gordon Myers said. This high honor as Biologist of the Year Awards are presented to two biologist of state wildlife agencies, one each in the categories of wildlife and fisheries, who in the opinion of the SEAFWA Awards Committee have made outstanding contributions towards wildlife/fisheries conservation. The VDHA and Whitetail Times congratulate Matt Knox for this most notable award. Readers can contact Knox via email at Matt.Knox@dgif.virginia.gov with questions and comments.*



Conducting trail camera surveys of free-ranging whitetails before the hunting season has become a big part of Quality Deer Management. Having knowledge of what your property holds provides guidelines for setting management objectives. Bucks, such as this 10-pointer shot by a youth hunter, during muzzleloader season, is a fine example of harvest selection. The 3 1/2-year old buck had a gross Boone and Crockett of 130".