

In sales, you constantly drive toward the last day of the fiscal or calendar year, when you know if you met or fell short of your goal. If you succeed, you'll feel fulfilled as you look back at the effort and hard work it took to reach that point. But then you're unceremoniously pushed off the pinnacle. The next day, you're back at the beginning, facing another arduous climb up the mountain. The only difference is you will likely be asked to climb even higher.

Many things in life are cyclic — continuous processes of beginning, growth, finality and then renewal. Antler growth provides a perfect example, and it's similar to the growing cycle. Both involve many aspects and activities that ultimately determine the final numbers or score, and they're constrained at the top end by ability or market conditions. Reaching that top end hinges on several inputs, all of which must be perfect to achieve maximum potential. Every year, a salesperson is asked to sell more, and each year a buck ages, it naturally tries to grow bigger antlers. Sometimes, it seems like nothing is happening, whether sales aren't increasing or antlers aren't growing. However, there's always activity that will affect the outcome.

HOW LONG IS THE ANTLER GROWING CYCLE?

Some people define the antler growing cycle as the period when visible growth occurs. Depending on where you live, the first signs of protruding velvet antler buds mark the beginning of the antler growing cycle. In many parts of the country, that's late March or April, with growth continuing through spring and summer until early fall, when velvet is shed, revealing hardened antlers. Velvet shedding typically occurs in September, which means about six months have passed from the time the antler appeared to when growth stopped. Quick

back-of-the-napkin math indicates that's about 180 days of antler growth, but the actual number varies somewhat, so you often see the growing period listed as 160 to 200 days. Does that mean the antler growing cycle averages 160 to 200 days? Not exactly. That seems contradictory, but a closer look reveals more. The antler growing period is when active growth occurs, which covers a 160- to 200-day period. However, the cycle arguably occurs year-round — a 365-day process. Factors directly affect antler growth when the antler is growing, but others indirectly affect antler growth outside the growing period. Let's examine what happens during each period.

ACTIVE ANTLER GROWTH

Antler growth begins at a small level — so small, in fact, that you cannot see it without a microscope. A layer of regenerative cells on a region of the deer's skull called the pedicle lets the antlers grow every year. Without those cells, antler regeneration is not possible. That's been proven by surgically removing the pedicle, which essentially stops antler regrowth. This also occurs in the wild when a pedicle is damaged, resulting in irregular antler growth or the lack of growth.

Antler growth is controlled hormonally. After the rut, testosterone levels decrease, which causes the eventual shedding of the hardened antler. A slight increase in testosterone occurs in late winter and early spring, triggering the beginning of antler growth. Then testosterone levels decrease until early fall. Testosterone levels are low during most of the growth period, but hormonal variances are not limited to testosterone, as prolactin and luteinizing hormone are also low during antler growth but peak in winter. Conversely, growth-promoting hormones such as insulin-like growth factors are highest during the peak of antler growth. To go into great detail on

THE ANTLER GROWING CYCLE:

MORE THAN YOU MIGHT EXPECT

Folks often discuss antler growth as a 160- to 200-day period. Actually, managers should think of antler growth as a year-round cycle.

■ by Matt Harper





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“THE ONSET OF ANTLER GROWTH PROMPTS AN INCREASE IN NUTRITIONAL REQUIREMENTS.”

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hormonal functions and activity would require several articles, but I wanted to provide a few examples to show the effects the endocrine system has on antler growth.

The onset of antler growth prompts an increase in nutritional requirements. Because antler growth sometimes begins before spring green-up, nutritional deficiencies can occur. Studies have shown that nutritional deficits early in antler growth can lead to decreased overall antler size, meaning compensatory gains might not occur after higher-quality green vegetation becomes available. Any lack of nutrition is exacerbated when bucks enter late winter or early spring in poor condition, but we'll discuss that later. During early antler growth, a buck's protein needs start to increase from a 10 to 12 percent protein requirement in winter to 18 percent or more during antler growth. That's partly driven because additional protein is needed to build the growing antler. Energy requirements and mineral and vitamin needs also begin to increase. When early spring rolls into late spring and summer, the antler growth rate begins to peak. Protein requirements remain at 18 percent or more as collagen continues to form the antler structure. Collagen is the most prevalent protein in an antler and essentially forms a matrix, or framework. Analysis of a growing antler will show that it can be as high as 80 percent protein. Mineral needs also increase in late spring and early summer in preparation for antler mineralization (hardening). It's often thought that minerals consumed and digested by bucks are transported directly to the antler. Actually, minerals in growing antlers are taken from the skeletal system and transported via the bloodstream and velvet of a growing antler to be deposited on the collagen matrix. That doesn't mean dietary mineral requirements are not important. Antler growth is secondary to body health and condition, and unless a buck has adequate digestible minerals in its diet, the buck's body will not sacrifice skeletal structure and general health to grow bigger antlers.

As summer turns to early fall, mineralization increases, and in September, a buck sheds velvet to expose a hardened antler. A hardened antler is a little more than 50 percent mineral, and although it consists of several minerals, calcium,

phosphorus and magnesium comprise the majority.

THE OTHER PART OF THE ANTLER GROWING CYCLE

When antler growth has stopped and bucks sport a set of hardened bone atop their heads, you might think the cycle is complete. That's partially correct. However, the cycle is not finished, because factors that begin when velvet is shed can affect the next year's cycle. In fact, you might argue that the emergence of hardened antlers is not the end but the beginning.

Remember, a buck will not sacrifice skeletal health to transport more mineral to a growing antler to increase density and mass. That health-over-antler prioritization is not specific to minerals but rather for the entire nutritional plane. Antlers are secondary sex characteristics and will always be trumped by body condition and overall health. If a buck requires nutrients to rebuild its body, it will do that first before shifting them to antler growth. Think of it like a bucket with small holes. As you fill the bucket with water, some leaks out. But only when the bucket is full will most of the water spill as it overflows. Some nutrients — the leaks — will go to antler growth, but only when the bucket of body condition and health are maximized will most nutrients spill over the top and be used for antler growth. During the rut, bucks burn energy by fighting other bucks, and seeking, chasing and breeding does. They are constantly on the move during the weeks-long preoccupation for copulation and can dramatically decrease their body condition. In fact, during the rut, bucks can lose 20 to 25 percent of their body weight, leaving them a shadow of the deer they were in early fall. The end of breeding season coincides with winter, which, at least in most of the country, is the time with the least quality and quantity of nutrition. A buck must regain its body weight and condition via whatever food it can find. That's why older bucks are more susceptible to winter kill. Even if bucks survive winter, they must rebuild their bodies when late winter and early spring arrive before most nutrition can go toward the next set of antlers. That's why I consider the entire year as the actual cycle. Even if antlers are not

growing, the availability of nutrition to help grow and maintain body condition and health will affect the antler development the next spring, summer and fall.

MANAGING THE CYCLE

When you understand that nutritional requirements don't disappear because antlers stop growing, you realize the importance of managing nutrition on an annual cycle. Most people know that high-quality, high-protein food plots are important during antler growth. But have you considered how fast green-up occurs with a food plot type? Because antlers often start growing before general green-up, choosing a food plot variety that greens up early will get nutrition to the deer herd sooner. Imperial Whitetail Clover is extremely cold tolerant and always one of the first food sources to green up in spring. Because it's a perennial, Imperial Whitetail Clover is already present and growing, providing protein to bucks weeks or months before annuals planted that spring. Supplements such as Imperial 30-06 and 30-06 Plus Protein are great management tools to help provide the high level of minerals needed for antler growth (where legal). But to fully manage the antler growing cycle, you must also consider the nutritional needs during fall and winter. Planting adequate amounts of food plots such as Imperial Winter Greens and Tall Tine Tubers helps provide the nutrition bucks need to maintain good condition as they come out of winter to begin growing antlers in spring. Where legal, Imperial Thrive can also be used to help supplement bucks during winter.

CONCLUSION

By definition, a cycle is continuous. It never stops. Yearly antler regeneration, growth and maturation is a magnificent phenomenon. But if you want to manage the antler growing cycle, consider all aspects. Just because it's February and deer have temporarily slipped from thought doesn't mean they're not out there and what they're experiencing at that time won't affect the outcome of the cycle in September.

