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Earl Says...

The days are getting shorter, footballs are in the air, kids are back at school and everyone is working on food plots and getting ready for the upcoming hunting season. It's my favorite time of year.

I don't know what I enjoy the most, the actual hunting season or getting ready for hunting season. Reading through the new hunting catalogs with the latest equipment, clothes and gadgets, I feel like when I was a boy making my list for Christmas out of the Sears catalog. Even doing the nasty jobs of cleaning out shooting houses and clearing fire lanes is a pleasure after a hot, rainy summer.

And speaking of food plots, I'm sure you'll enjoy Dave Edwards' latest article in this issue. He gives us step by step instructions to ensure we have a successful deer food plot including several "recipes" for making your own mix depending on your soil type, climate and pocketbook. We planted our plots last week at my hunting club, *The Society Hill Gentlemen's Club*, and were very happy to find fertilizer prices down from last year. Everybody is cutting back these days so every little bit helps.

Have you seen a new publication, *Garden & Gun*? It's a great publication about the sporting culture, food, art and people of the South. In the Jan/Feb 2008 issue, they did a feature on one of our subscribers, authors and advertisers, Keith Summerour. Keith is a world famous architect from Atlanta who has a passion for the outdoors and how we incorporate our hunting activities and ourselves into the wildlife surroundings.

Lastly, make your plans to attend the *Tall Timbers 2009 Fall Field Day* Monday, October 19 at Okapilco Plantation. For more information check out their website at www.talltimbers.org. If you want to see a premier quail plantation and learn about the latest quail research, you won't want to miss this opportunity.

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Fall Food Plot Planting – The Ultimate Guide



Planting food plots for wildlife has become very popular among hunters, land managers, and landowners to improve the wildlife value of their property. If you own, hunt, or manage a hunting property, you have probably planted a food plot or two. However, even with all the "how to grow food plots" information available in books, DVD's, TV shows, and internet sites, I routinely see poor or unsuccessful food plots on properties I visit. Because of the food plot "movement", the number of companies in the food plot seed industry has exploded in recent years. With this came a barrage of advertising campaigns, a million "proven" seed blends to choose from, and what I refer to as "hornography" (pictures of big bucks "grown" on food plots). I relate this to the old saying "you can't see the forest because of the trees". I feel the overwhelming marketing campaigns have shifted hunter's/manager's thoughts from "how do I plant a food plot" to "which magic bean do I need to plant". Where in fact,

By Dave Edwards

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Example of a perennial food plot of white clovers and chicory. If managed properly, this food plot will provide a year around food quality source for wildlife. how you plant is much more important than what you plant. I think many newage "food plotters" fall into the "what to plant" trap and fail to learn and understand the importance of basic farming practices. Unfortunately this lack of understanding often results in disappointment and poor quality food plots for many. Having said this, I don't want my friends in the food plot industry to think I am giving them a black eye. They have done great things to help wildlife stewardship and conservation. Many of these companies do a great job explaining to their customers how to plant food plots, why certain crop species do better in specific soils and climates, and how to manage them once they are in the ground to get the most benefit for wildlife. It's not the industry's fault. There are simply so many choices available and so many advertisements that hunters and managers are overwhelmed and have become focused on *what* to plant versus *how* to plant. The goal of this article is to review the basics of planting food plots for wildlife to help hunters and managers grow the best "magic bean" they can.

Since many food plotters focus on *what* to plant, let's start here. Determining what to plant in your food plots will depend on several things, such as your goals, geographic region, soil type, wet or dry site, climate, and available farming equipment. Essentially all food plot species fall into one of three categories – annual, perennial, or biennial. Most commercial food plot mixtures include a blend of annual, perennial, and biennial plant species. In many cases, these mixtures are formulated so that as one species fades, another emerges to ensure a constant supply of food to extend the life of the food plot. It is important to understand the differences in these crops if you plan to maximize your efforts and get the most out of your food plot dollars. Here are the definitions and descriptions of each:

Annuals

Forages that complete their lifecycle in one growing season. Some plant species and varieties have the ability to re-seed the following year while some do not. This means that you must replant these forages each year if you want to keep them in your food plots. Some annuals, such as crimson clover, can be encouraged to re-seed through proper management of the food plot. This may include mowing, fertilizing, and disking the following year, and will depend on the forage species you have planted. Annual plots are generally planted in the spring or



Example of a summer annual food plot of peas and lablab. Annuals are quick to germinate and establish. Not only is this plot providing a high quality food source, but as you can see, this plot is very attractive to deer.



Properly amending the soil pH is often overlooked or skipped by many food plotters, but is the key to growing successful plots.

		i	İ
Crop Species	Planting date	Seeding rate (Ibs./ac.)*	Planting depth
Wheat	Late Sept. –Nov	25# D / 35# B	1⁄4" – 1"
Austrian winter peas	Late Sept. –Nov	10# D / 20# B	1⁄4" – 1"
Arrowleaf clover (Yuchi)	Late Sept. –Nov.	6# D / 7-9# B	1⁄4 " – 1⁄2 "
Crimson clover (Dixie)	Late Sept. –Nov.	10# D / 20# B	¹ / ₄ " - ¹ / ₂ "

Fall Annual Food Plot Mix

* D = drilled B = broadcasted

With management, the clovers will re-seed themselves. Wheat and oats will need to be planted each year.

Perennial Food Plot Blend

(managed for year-round production)

Crop Species	Planting date	Seeding rate (lbs./ac.)*	Planting depth	
White Clover (many varieties to choose from)	October – Nov.	6# D/ 10# B	1/4"	
Chickory (many varieties to choose from)	October – Nov.	5# D / 8# B	1⁄4"	
Crimson Clover (Dixie)	October – Nov.	5# D/ 6-8# B	1⁄4"	

* D = drilled B = broadcasted

Because perennial clovers and chicory often start out slow (they are developing root systems), Crimson clover is added the first fall as the nurse crop. fall. Examples include small grains such as winter wheat, oats, winter peas, cowpeas, soybeans, and corn. These plots/species germinate and grow rapidly. Because actively growing plants are tender, very palatable, and very nutritious, they are often highly preferred food sources for deer and turkeys and serve as excellent attractants for hunting.

Perennials

Plants that require at least 3 years to complete their growing cycle. Under suitable conditions, perennial forages have the ability to persist for more than one year. This means that you can get multiple years of forage production from a single planting. Perennials have specialized root systems that allow them to regenerate from their roots after the leaves and stems of the plant die at the end of the growing season. The number of seasons you will get from a single planting depends of the specific forage species, how well you maintain the food plot, and the region you are in. The primary purpose of perennial food plots in your program is to provide increased nutrition throughout the year.

Because most perennial crops such as white clovers, chicory, and alfalfa are relatively slow to establish, it is important to include an annual crop species in the mixture during the initial planting to provide a quality food source until perennials establish. Because perennials grow well into or through the growing season (summer), weed control is essential to maintain a quality perennial plot. From my experience, perennials are not quite as attractive to deer as annuals (there are always exceptions) but provide a preferred high quality food source when natural browse availability is low or when other annual food plots are not growing.

Example of a 5 acre "Year around" Food Plot



Biennials

Biennials are forages that require two growing seasons to complete their life cycle. They are most often planted in spring, grow throughout summer and fall, go dormant in winter, and begin growing again the following spring. At the end of their second summer they produce seeds and then die. This means these forages will need to be replanted every two years. Biennials are generally added to supplement annual or perennial food plots. Many red clovers are biennials.

Unfortunately, there is no single food plot species that can provide a completely balanced nutritional diet for deer throughout the year. Thus, hunters and managers must select a variety of seed types/crop species that are compatible and will grow well on their property/ soils to ensure year-round, quality food is available in their food plots. One of the best ways to ensure year-round quality food plots is to design your food plot program to accommodate both

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Steps for successfully growing quality food plots:

- Obtain soil samples and test nutrient and pH composition several weeks before planting dates.
- Apply required lime to properly amend soil pH to desired level (most food plot plants grow best with a soil pH of 6.0 7.0). Apply lime at least 6 months prior to planting date if possible to allow time for soil pH level to change. Disk lime into soil. Applying lime at planting time is not ideal, but is better than not doing it at all.
- Two weeks prior to the tentative planting date Prepare seedbed by plowing, disking, or tilling. This is often a process rather than a weekend project. Plow, then allow time for soil to settle, then plow again to create a clean seedbed. This is also when you want to apply required fertilizer. Be sure to incorporate the fertilizer into the growing zone (top 6 inches of soil) by tilling or disking. End product should be a smooth, bare-ground field. Avoid leaving deep ruts or cuts in the field which will result in "seed collectors" when you broadcast seed. Seeds landing in these deep crevices will get covered too deep and will not germinate.
- Watch the weather. Ideal planting conditions occur when soil already has good moisture with forecasted rain within a week after planting date. A good rule of thumb when testing the soil for adequate planting moisture is to grab a handful of soil and make a fist with it. If the soil compacts and stays together making a ball, soil moisture is good. If the soil does not stick together well (even in sand), it is probably too dry to plant.
- Sow large seeds first (e.g., wheat, oats, Austrian winter peas, etc).
- Lightly disk or drag the field to lightly cover the seed. Do not cover seed deeper than 1 inch.
- Firm the seedbed with a cultipacker. This step will serve 2 purposes. First it will ensure the larger seed has good seed-to-soil contact. Second it will create a very smooth, firm seedbed for the smaller clover seeds to be planted.
- Sow small seed (e.g., clovers, chicory, etc)
- Cultipack seedbed again to push small seed into seedbed ensuring good soil contact and improve germination rate. If you do not have a cultipacker, simply broadcast the small seed and do not cover. Rain will adequately cover these small seeds.



Growing successful food plots is more than simply plowing and planting. It is a process rather than a weekend project.

annual and perennial species. Depending on the situation, I generally recommend devoting 40% of your food plots to perennial crops and 60% to fall and summer annual food plots – biennials are generally components of both.

While in some cases you will pay more for the product, many commercial seed companies have done the homework for you and reputable seed companies have seed blends that have been tested with proven results. All commercial seed is required to have a seed tag (list and composition of seeds or ingredients in the bag). Read the seed tag carefully and understand what you are buying before purchasing or planting it. Certainly do not fall into a marketing trap. I don't want to come across to you as being skeptical of commercial seed blends. I have, do, and will use commercial seed blends in my management strategies. There are many very reliable seed companies that produce high quality blends. However, because so many companies with competing marketing strategies exist, and considering the convenience of buying these blends, I simply want to caution you to choose carefully.

While there are lots of commercial food plot mixes on the market, I have included a few of my favorite "tried and true, nothrills" fall food plot blends that provide both attraction for hunting while providing quality nutrition for deer (and other wildlife). These are very basic blends comprised of seeds that can be purchased at most farmer's cooperatives across the Southeast. The annual food plot blends provided are designed to provide attraction during hunting season yet the annual clovers will persist and provide good nutrition through early summer in most areas. Again, these are not "magic beans", nor will they do well in every situation. They are just basic blends I have found to work well in many soil types and conditions and are relatively easy to grow and manage. One of the best places to start researching "what to plant" on your property is your local state wildlife agency or a wildlife management consultant. There is also great information available from most land grant universities and cooperative extension services – much of this is easily accessed via the internet. Dr. Craig Harper recently completed a

fantastic book called "A Guide to Successful Food Plots – Blending Science with Common Sense" and is based on years of food plot research. This book has become my "food plot bible" and I recommend it to anyone planting food plots. It can be downloaded or purchased from www.utextension. utk.edu/publications/wildlife. Again, vou will find lots of false information out there so take it with a grain of salt and stay focused on factual information versus advertisements. As you experiment with your own blends, you will end up with your own favorite "go-to" food plot blend that works well on your property.

Preparing for Success

Before rushing off to the farmers cooperative to buy seeds to plant, be sure you are properly preparing your food plots to ensure success. **Your food plots will probably fail if you simply plow ground and spread the seed**. The process for successfully growing food plots is really no different than successful farming, which takes preparation.

A successful food plot program is well thought out and planned ahead of time. It is difficult, if not impossible, to establish successful food plots without preparation. Planting food plots is a process that may span over several months, not a weekend. Determining what to plant, taking soil samples to determine soil conditions in each plot, applying required amounts of lime and fertilizer, preparing the seed bed well ahead of planting dates, and managing weed competition takes time. These are all vital steps for success. Poor preparation not only results in wasted time and money, but also results in poor food plots that do little in the way of providing benefit to wildlife.

A Few Key Preparations: Soil pH

Without proper soil pH and fertility, food plot failure is inevitable. Without question, ensuring proper soil pH and fertility is more important than what you plant. Determining the current soil pH and how much lime to apply is easy and one of the cheapest, but most important things you will do. To do so, obtain soil sample bags from your local farmers cooperative, collect soil samples from your food plots, and send to a soil testing laboratory. There are several commercial soil testing labs you can use or check with the closest land grant university.

Soil pH is more important than fertilizer because proper soil pH is required to transfer nutrients (fertilizer) to food plot plants. You can spread 50 tons of fertilizer per acre on a plot, but without proper soil pH, it will be of little use to the plants and is going to remain in the soil, or be leached out by rain. To effectively change soil pH, granular lime must be applied at least one month, preferably several months, before the planting date. Lime must have time to complete the chemical process of changing the soil pH. In some cases, the full benefits of applying lime may not be realized for up to 12 months. Lime can be applied anytime of the year, even under dry spreading conditions and on unbroken land. Because lime does not move quickly downward in the soil profile, it is important to incorporate it into the top 4-6 inches of the soil where it is available in the growing zone. That is, apply lime and fertilizer and disk it in when preparing the seed bed.

Besides supplying calcium and magnesium which neutralizes soil acidity (increases soil pH), lime also promotes desirable bacterial activity in the soil, improves organic matter decomposition and increases plant's ability to efficiently use fertilizer elements. Fertilizer without lime is about as effective as a deer rifle without bullets. In summary, to get the most out of your expensive seed and fertilizer, or even to get forages to grow at all in some cases, apply lime according to a soil test or even higher than recommended. It will contribute to higher protein levels, higher production, better digestibility and ultimately high quality food plots. Lime is calcium, a major component of deer

antlers. Take home message: Ensuring soil pH is in the desired range for optimal plant growth is often overlooked or skipped, but is more important than what you plant and will result in successful, healthy food plots for wildlife on your property.

Soil Preparation

Proper soil preparation is essential for successful food plots. Seed bed preparation is more than simply breaking ground. Soil preparation is a process. The basic steps in seed bed preparation include spreading lime and fertilizer, breaking the ground, harrowing the field to eliminate grasses and weeds (herbicide is often used), and cultivating or smoothing the field (leveling). A cultipacker is an excellent tool to use for final smoothing and packing in seed. The end result should be a smooth, firm seed bed free of clods and debris and ready to plant. A smooth planting surface ensures that seed planting depth is consistent on the plot which promotes optimal germination and growth. Without a smooth surface, many seeds are covered too deep and will not germinate. Again, the process of preparing the seed bed should start well in advance of the planting date.

With just a little more effort and cost (minimal tractor fuel), properly preparing the soil over time is a much more cost-effective method and will certainly provide more benefit to wildlife and help you reach your goal. I have seen many unsuccessful food plots that were a result of poor seed bed preparation. While some germination will occur and provide a "huntable" food plot, the "plow and plant in the same weekend" method simply does not result in quality food plots.

Timing of Planting

Nearly all food plot seed blends come with a mini planting guide describing how and when to plant. This is important information that will help you succeed. Most fall food plot species should be planted from September through



Properly preparing the soil and seedbed are more important than what you plant.

Most Common Mistakes Made:

- Not properly amending soil with required lime and fertilizer. This step is more important than what you plant. Of these, managing the soil pH is most important. Without proper soil pH, nutrients (fertilizer) are not available for the plants.
- Planting more seed than needed. The philosophy of "more is better" will hurt you when planting food plots. Stick with recommended rates. Too much seed will result in crowding and stunted growth, or plant mortality.
- Planting seed too deep. This is primarily caused by planting on rough fields that have not been properly smoothed and prepared or by disking too when covering seed. Seeds planted too deep will not germinate.
- Planting under unfavorable soil moisture conditions. Successful food plot farmers monitor soil conditions prior to planting dates, watch the weather and plant accordingly.
- Planting too early. Many food plot farmers get fooled into planting too early by an early cold front or rain event. Early fall is generally dry throughout most of the Southeast. Plots that are planted early either experience a mini-drought before consistent cold fronts begin bringing needed rain, or if the plots get adequate rain, food plots grow quickly and are knee-high and less attractive to deer by the time hunting season arrives (your food plots are also competing with acorns in early fall). In Alabama, I generally try to plant in late October or early November.
- Not inoculating legumes (e.g., clovers). Inoculants contain nitrogen-fixing bacteria that are needed by legumes. Legumes will germinate without an inoculant, but in most cases will not do well. Some legumes come pre-inoculated.
- Not controlling weed competition after crops are planted.

November depending on your particular growing zone and soil temperatures. However, it is up to you to determine the best time to actually plant within this range of dates. That is, just because it is September, it does not mean it is a good time to plant. Ideal planting conditions occur when the soil has adequate moisture to initiate germination of seed and forecasted rain within the next week or so after planting to feed germinated plants. One rain is not enough and be cautious about planting too early in the fall. For fall food plot success, we generally count on consistent cold fronts to deliver needed rain. In the Southeast, we generally get our first cool snap in early or mid-September. This generally gets hunters fired up and thinking about planting their food plots. If you pay attention, you will see many trucks pulling tractors on the highway headed to plant food plots after the first rain in September. Unfortunately, September is generally a dry month in the Southeast and these food plotters have been suckered into putting seed in the ground that will probably struggle until frequent fall rains begin in mid-October. Even if these plots receive adequate rainfall, the crops will be knee high and less palatable by the time gun deer season starts. We get many calls from hunters in early November that want to know if it is ok to mow their food plots because they have gotten mature and/or wonder why deer are not using them. You also run a higher risk of army worm infestation or disease if you plant too early. The key in timing your fall plantings for optimal success is to monitor the soil moisture, watch the weather, and know a little about your local annual weather patterns. It is always a guessing game. No one can predict weather with 100% certainty. There is actually an 80% chance that your local weatherman will be wrong! Ha. But if you do your homework and time your planting date to occur during good planting conditions, your chances of not only being successful, but growing great food plots increases significantly.

Conclusion

Planting quality food plots will attract, hold, and benefit wildlife on your property. Anyone can plow the ground, toss out seed, and grow something green. However, if you want to get the most out of your food plot dollars and efforts, and actually do something that will benefit wildlife on your property, take the time to plan, prepare, and plant quality food plots. Rather than being primarily focused on *what to plant*, concentrate on the basics of successful farming, which are amending the soil to ensure proper soil pH, creating a clean/ smooth seed bed, monitoring soil conditions and weather forecasts, and planting a combination of food plot species that compliment each other and are well adapted to the site you are putting them. Planting quality food plots will not only benefit wildlife and help you reach your management goals, but will save you time and money in the long run.

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Lesser Known Native Plants Used by Quail for Food in the Southeast



Most land managers are familiar with the typical native and commercial crop plants touted for their importance to Bobwhite quail as food. These include the native lespedeza species, partridge pea, beggarweed, ragweed, black cherry, clovers, and sesame. In addition, several other species, including many of the above, are also good for cover such as wild plum thickets, sumac, and beautyberry. Of course there are the native warm season grasses which are high-quality nest sites. It is great to familiarize yourself with these and other important plant species, but a whole suite of other plants are often overlooked when evaluating a property's quail potential. Most landowners understand the importance of insects in a quail's diet, but since 60-65% of a quail's annual diet is also seeds and another 5% is green vegetative material, it is important to know what additional resources are available and at what times of the year.

Many of these underappreciated species include some of our native flowering

By Anna Huckabee Smith

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American basketflower (Centaurea americana) Credit: Clarence A. Rechenthin @ USDA-NRCS PLANTS Database plants, often commonly classified as "wildflowers." For example,

Pennsylvania smartweed (Polygonum pensylvanicum) is an annual that produces a cluster of white to pale pinkishpurple flowers from mid-summer to frost. Inside each tiny flower, a black seed is produced that ripens and is available to both quail and waterfowl during the winter months. Smartweed can withstand flooding and can be burned during winter, making it a great choice for both quail plots and duck impoundments. Wild geranium (Geranium carolinianum) is another food source often available in old fields. In fact, many farmers fight to eradicate it on agricultural fields because it spreads so easily. Its seeds are available in the Spring. Another bane of farmers is the maypop (Passiflora incarnate), but it too is considered an important wildlife food. Many species, including quail, will utilize its fruit and seeds to various degrees in the summer and fall while the plant itself is the larval host for at least five butterfly species. Doveweed (Croton sp.) is important to both doves and quail in the summer, but again, it is one of those plants you don't have to encourage as it spreads well by itself!

Possibly the most overlooked wildflower species that is important to a wide variety of wildlife species is the violet (Viola sp.). There are over 30 different species of violets, or wild pansies, and their seeds are important to quail during the summer months. In addition, several species of ants eat the seeds and wild turkeys are fond of the tuberous roots. Vetches (Vicia sp.) are ubiquitous weeds in the Southeast with many being non-native and invasive. Quail do not make a distinction, but for the sake of promoting native vegetation over exotics, the landowner should perpetuate only those that are of local origin. Vetch is an annual that produces seeds in late Spring. In addition, the foliage is eaten by quail, deer, rabbit, and turkey, and larval forms of at least

two butterfly species. Although the wild peas and beans contain many members that are important to wildlife, several species such as Atlantic pidgeonwings (*Clitoria mariana*) are not because the seeds are sticky and not very palatable. Those species that should be encouraged are erect milk pea (*Galactia volubilis*), spurred butterfly pea (*Centrosema virginianum*), and trailing wild bean (*Strophostyles umbellatus*).

As with these and many other annuals, disking and light burning can be beneficial in maintaining or enlarging patches of plants. One of the best wildflower genera to promote are the sunflowers (Helianthus sp.). There are over 40 different species in the genus and they persist as either annuals or perennials, depending on species and site. Two of particular importance to wildlife are Maximilian sunflower (Helianthus maximiliani) and annual or common sunflower (Helianthus annuus). A wide variety of birds eat the seeds-cardinals, chickadees, grosbeaks, and titmice while it is still on the plant-and quail, doves, sparrows, and finches when the seeds fall to the ground. (Quail rely on sight to locate the seeds and insects and so they cannot be buried under leaf litter.) One other plant species often overlooked is the diminutive partridge-berry (*Mitchella repens*) with its tiny white flowers in spring and summer followed by red berries in the fall. In the Southern Appalachians, the berries and leaves of this perennial are eaten by ruffed grouse while region-wide, quail, turkeys, squirrels, and raccoons consume the berries. Do not disk or burn colonies of this species as it is a ground cover that spreads by stem growth.

Still other wildflowers appear in the diet of quail according to availability during any given year. These include: bundleflower (Desmanthus sp.), pucoon or stoneseed (Lithospermum sp.), American basketflower (Centaurea americana), buffalobur (Solanum rostratum), prickleypoppy (Argemone sp.), lambsquarter (Chenopodium album), pencilflower (Stylosanthes biflora), primroses (Oenothera sp.), snow-onthe-mountain (Euphorbia marginata) and other spurges. The exciting thing is that many of the more showy native wildflowers are becoming commercially available, even to the level of local ecotypes are being offered. This can serve a two-fold purpose for the landowner: planting for quail and for aesthetically pleasing vistas of wildflower meadows, something in which our business has recently become involved. The nectar these flowering plants produce benefit



Partridge-berry (Mitchella repens) Credit: Becka Wakins, Young Harris College Plant Image Database



Smilax species Credit: Anna H. Smith, 1999



Common sunflower (Helianthus annuus) Credit: Clarence A. Rechenthin @ USDA-NRCS PLANTS Database

pollinators such as hummingbirds, butterflies, moths, honeybees, and other insects that are in decline and in desperate need of this resource.

Seeds of still other species of flowering plants have been found in the crops of quail, but to a lesser extent. These include St. Andrew's cross (*Hypericum hypercoides*), indigo bush (*Amorpha* fruticosa), Carolina indigo (Indigofera caroliniana) whitemouth dayflower (Setaria geniculata), erect dayflower (Commelina erecta), goat's rue (Tephrosia virginiana), milkweed (Asclepias sp.), and even some of the nightshades (Solanum sp.) which are utilized by several different gamebirds. The shrub species like St. Andrew's cross, indigo bush, and wild indigo cannot tolerate disking because the root system will be destroyed. In addition, burning is not advised. Goat's rue, however, is often naturally found in pine stands used to disturbance so light disking and prescribed fire should not harm it. Dayflowers are also not harmed by fire or light disking.

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Small white violet seeds (Viola macloskeyi) Credit: Steve Hurst @ USDA-NRCS PLANTS Database



Birdfoot violet (Viola pedata) Credit: Clarence A. Rechenthin - USDA NRCS Texas State Office

There are even a few trees that may surprise you in their importance to quail and other wildlife species. Hollies (*Ilex sp.*), waxmyrtle, (*Myrica cerifera*), sassafras (Sassafras albidum), redbud (*Cercis canadensis*), Eastern red cedar (*Juniperus virginiana*), and even sweetgum (*Liquidambar styraciflua*)! Seeds and berries are often available from fall through winter and nourish quail during these lean times. All of these species are commercially available or can be transplanted from the wild, but most are usually already present in considerable numbers on a given property. Also, the waxmyrtle and sweetgum can become invasive. Often found in association with trees and shrubs is the climbing catbriers (*Smilax sp.*) which provide turkey, squirrel, raccoon, and over 40 species of songbirds with berries during the fall. Most likely quail utilize fallen berries as well. The vegetation is eaten by deer (foliage), rabbits (foliage and shoots) and beaver (tubers) and is also used as a nesting substrate for Northern cardinals and other birds.







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One final tree species that has importance in the sandy soil regions of the Coastal Plain is the dwarf species known as running oak (*Quercus pumila*). At only 18 inches tall, colonies of this tree spread out over the ground, providing some of the first acorns of the season for deer, turkey, squirrel, bear, and quail. It cannot be burned frequently or it will fail to produce acorns. Therefore, wherever this species is found, take care to rake around it before using a prescribed burn.

More research is needed to determine what other species may be regionally important in a quail's diet and the crop contents deciphered as to whether the seed is truly preferred versus being the only thing available or is simply in abundance that year. There are many other common wildflowers that are utilized by songbirds but it is still unclear if quail use them as well. For example, black-eyed Susans (*Rudbeckia sp.*) and coneflowers (*Echinacea sp.*) are known to be important to the American goldfinch.

If you are beginning to think that there are more Latin words than English in this article, then you have probably caught on to the fact that a good wildflower identification manual would be a great asset to your personal library. There is no one book that tells all, so I suggest that you find several for your state plus the farther-reaching Forest Plants of the Southeast and Their Wildlife Uses by Miller and Miller (see references section below). These books and others will help you identify flowering plants as well as trees, shrubs, and grasses with potential wildlife benefits and how to encourage their spread. Also remember to check the crops of all quail harvested on your property to determine what foods are present.

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Crappie in Ponds: The Good, the Bad and the Ugly



A fter the largemouth bass, the crappie is arguably the most popular sportfish in the southeast; and for good reason. Crappies are considered by many to be the most delicious fish that swims in freshwater. And when it comes to angling enjoyment, it is awfully hard to beat the excitement of getting into a school of big, slab crappie. So what if crappies don't fight hard and leap out of the water to smash a top-water bait. There is just something about crappie fishing that is irresistible. But I digress. This is not an article about crappie fishing. This is an article about why crappies cause problems in ponds and what you can do as a pond owner to increase the likelihood of having crappies succeed in your pond.

Stocking crappies in ponds is generally discouraged by fisheries managers because they tend to upset the balance of a pond fishery; but not always. Crappies are also notorious for stunting at a size unacceptable to anglers in pond environ-

By Jeff Slipke

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Fig 1. Most fisheries managers discourage stocking crappies in ponds and small lakes due to a host of potential problems. But there are some things you can do to up your odds of growing crappies like this in your pond.

ments; but again, not always. Some ponds support quality crappie fisheries; most do not. In my experience, ponds where introduced crappies turn out to be a detriment far outnumber those ponds where crappies actually do well.

So why do so many pond owners shun conventional wisdom and stock crappies in their ponds? In my opinion, it is due in large part to a lack of information and understanding. There are major differences between large reservoir ecosystems and pond/small reservoir ecosystems that are not well understood by most anglers or pond owners. A classic example is the practice of catch-and-release for bass - a practice that can provide positive benefits to a large reservoir fishery, but can be extremely counter-productive to the management of a pond fishery. Similarly, crappie management in ponds is completely different than crappie management in large reservoirs.

Unpredictability

The problem with managing crappies in ponds is caused largely by their unpredictability. This creates management problems in large reservoirs, too, but in a different way. For the most part, you know what you can expect from a bass population in a pond. Bass display fairly steady annual recruitment in a pond – typically producing an annual surplus that must be removed each year to maintain a balanced fishery. Crappie, on the other hand, might go years without producing a successful year-class. Conversely, crappies might regularly produce strong year-classes. Or, crappie recruitment just might be relatively steady each year. It is difficult to predict. Most often though, crappie recruitment will display a cyclic pattern, where alternate weak and strong year-classes are produced.

This cyclic recruitment pattern takes place in large reservoirs too. In fact, that is why your favorite crappie lake has good years and bad years. About the third year after a strong year-class of



Fig 2. Crappie recruitment is erratic and unpredictable, a trait that ultimately leads to many ponds being ruined by an over-abundance of small, stunted crappie.



Fig 3. Structuring your bass population so that it supports mostly large fish will help keep crappie from stunting by thinning their numbers and reducing competition. Even bass as small as these 18-inchers can swallow an 8-inch crappie; a length at which crappie frequently stockpile.



Fig 4. Small crappie like this spend much of their time inhabiting the offshore areas of a pond, making them less vulnerable to predation by largemouth bass, but more vulnerable to hybrid striped bass.



Fig 6. This slab crappie was produced form a pond where hybrid striped bass are used to successfully limit crappie recruitment. It's hard to argue with results like this!

crappie is produced in a large reservoir, the crappie fishing can be fantastic. The great fishing might continue for a couple of years before the strong year-class is depleted via harvest and natural mortality. Where the fishery goes from there is dependent upon the relative strength of successive year-class production. If moderately strong year-classes are in line behind the strong year-class, then fishing will still be fairly good. However, if two or three weak yearclasses follow a strong year-class, the fishery will appear to have collapsed.

As the explanation above illustrates, the biggest problem facing crappie fisheries in large reservoirs is a lack of crappie recruitment. Quite the opposite is true in ponds and small lakes, where the production of a strong year-class is the problem, overwhelming the system with small crappie. This condition leads to a high level of intraspecific competition for food resources. The result: a pond full of slow-growing, stunted crappie.

That leads us back to the reason most fisheries managers recommend keeping crappie out of a pond to begin with. Nobody wants a pond full of small crappie that are two small to catch and eat, but too large to be eaten by the bass. A stunted crappie population simply ties up biomass in a pond and provides virtually no benefit to humans or other fish species. In fact, all those little crappie upset the balance of a pond by competing with bass and bluegill for limited resources and the entire fish community suffers.

Once a pond becomes chock-full of small crappie, there is no efficient way to remove them either. A complete rotenone renovation is often warranted. Although killing off the entire fishery and re-stocking is certainly a drastic measure, it may be the least expensive – sometimes the only – option a pond owner has to return a pond to a balanced state.

I just painted a pretty dire picture of the humble and loveable crappie, and I am sure some of you are reading this thinking "I've fished ponds before that had great crappie fishing in them." Well, I have too. "So crappies must not be all that bad for a pond, right?" Well, yes and no. At this point, I need to get back to the whole unpredictability thing. It is just plain difficult to predict with any degree of certainty what you will get once you introduce crappies into a pond. That, again, is why most managers recommend keeping them out altogether. Sometimes crappies work in a pond, but most times they do not.

There are ways to up your odds of successfully managing crappie in a pond. The first way – getting a bigger pond – might not be much of an option though. Crappies are less likely to stunt and become problematic in larger ponds and lakes. Notice I said less likely. There are no hard and fast rules on this, because crappies might grow well in a 5 acre pond, only to stunt in a 100 acre lake just down the road. Nonetheless, crappies tend to perform better in bigger water.

Other ways to increase your chances of growing big slab crappie in your pond – regardless of its size – involve ensuring that all the crappie in your pond have enough to eat. This can be done by increasing the food supply or controlling the number of crappies in the pond, or better yet, both.

Forage Supply

One way to help alleviate potential stunting and increase the growth rate of crappies in ponds is to increase and diversify the forage base. This starts with fertilization. Crappies are primarily plantivorous feeders until they reach about 7 to 9 inches in length. Therefore, a fertile pond that produces lots of zooplankton will help bolster the growth of small crappie. Once crappies grow large enough to become piscivorous, threadfin shad and/or golden shiners make ideal forage species. These species are slender enough that adult crappies can obtain a substantial meal without expending too much energy capturing prey; unlike similarly sized bluegills which are less elongate and thus more



Fig 5. Hybrid striped bass can be used to successfully control crappie recruitment in ponds and small lakes, with the added benefit of growing to monster sizes.

difficult for crappies to swallow.

Increasing the supply of forage, although helpful, may not be enough to overcome the forces of competition that result from a larger year-class of crappie. There may simply be too many mouths to feed. Therefore, the number of crappie must be reduced. Unfortunately, since stunting typically occurs at a size smaller than most anglers care to catch – or even can catch – physical removal via angling is not a viable option. Even electrofishing - a viable and efficient means of harvesting surplus bass - is largely ineffective for adequately thinning an overabundant crappie population. So what options are left you might ask. Well, predator fish of course.

Feed 'em to the Bass

What do largemouth bass do better than anything else? That's right; they eat other fish, and lots of them. If that's the case, why don't bass reduce crappie numbers via predation; thereby reducing competition and increasing crappie growth? Great question: but one that does not have a simple answer.

Bass are largely littoral, meaning they spend most of their time in near-shore areas in and around shoreline cover. Small crappies, on the other hand, are primarily pelagic, meaning they spend most of their time in open water away from shore in search of planktonic food. Therefore, bass and small crappies are spatially segregated much of the time. Sure, bass will consume some small

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crappie, but this spatial segregation limits the efficiency at which bass will predate on small crappie.

As crappie grow, they tend to become more littoral and are thus, more easily encountered by bass. However, if most of the bass in the pond are fairly small, they will have difficulty consuming a 7-inch or larger crappie. Therefore, the bass will not be able to efficiently reduce crappie numbers and the density dependent growth suppression will not be alleviated.

The key to reducing crappie abundance, and thereby increasing crappie growth, is to structure a bass population such that most of the bass are fairly large. A 16-inch bass can easily consume a 7-inch crappie. Likewise, larger bass can eat even larger crappie. Therefore, predation by big bass can reduce overall crappie density. Fewer crappie means less competition for resources and larger individual growth.

Hybrid Striped Bass

Hybrid striped bass are a cross between a female striped bass (*Morone saxatilis*) and a male white bass (*M. chrysops*). Unlike largemouth bass, hybrid stripers do not spend much time near the shoreline, nor do they typically relate to cover. Rather, hybrid stripers patrol the offshore areas of a pond in search of their favorite food, the threadfin shad. But the pelagic nature of these

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voracious predators also puts them in close proximity to larval and juvenile crappies during the spring and early summer. So theoretically, hybrid stripers should be much more efficient at controlling crappie recruitment than largemouth bass.

At Southeastern Pond Management, we decided to experiment with hybrid stripers in a few ponds and try to take advantage of their pelagic foraging habits. So far, the experimentation has been a resounding success. Ponds stocked with hybrid stripers, crappies, threadfin shad and golden shiners have resulted in outstanding fisheries for both crappies and hybrid stripers, without a single case of excessive crappie recruitment. Crappie growth has been excellent in these unique fisheries, with some crappie reaching 12 inches in two years and up to 14 inches in three years. In addition, hybrid striped bass in these ponds have grown to over eight pounds.

The key to the success of a hybrid striper/crappie fishery is the ability to

control the density of each species. Hybrid striped bass are infertile and thus unable to spawn. Crappie recruitment is controlled by the hybrid stripers, so their spawning results in few – if any – crappie recruiting to the fishery. As long as forage remains abundant – and this means maintaining robust threadfin shad and golden shiner populations – both predators are able to thrive. Be sure to keep the largemouths out, too.

As far as maintaining the density of each predator species, it is simply a matter of monitoring the fishery and periodically restocking to account for losses due to harvest and/or natural mortality. Consulting with an experienced pond manager can help you determine initial, as well as ongoing, stocking rates for creating and maintaining this unique fishery.

The Bottom Line

Crappies are a wildly popular sportfish. But in most recreational pond fisheries, crappies are a wild card. Most pond owners that have introduced crappies into their ponds regret having done so. Yet, there are a smattering of ponds throughout the southeast that support quality crappie fisheries.

My personal opinion is that crappies should not be stocking into a bass/bluegill pond, even though I know with proper management crappies can work in some ponds. As a manager, I want to control as many variables as I can to improve my odds of producing positive results. I do not want to gamble any more than necessary. Crappies are a gamble, even under the best of circumstances.

If you really want crappie in your pond, I recommend trying the hybrid striped bass option described above. If you already have a bass/bluegill fishery and want to add crappie to the mix, plan on reducing bass density, increasing the average size of the bass and having a good supply of forage to feed the crappie and bass. Hopefully, you will end up with a crappie experience that is good, and not one that is bad or ugly.

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Bucks with Malformed-antlers



By Stephen Ditchkoff

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Figure 1: Bucks such as these with one malformed antler are often considered to be genetically inferior, but genetics is not the cause of this type of antler malformation.

One of the biggest debates today amongst deer managers and hunters is how to deal with bucks that have an antler that is displaying normal antler development while the other is displaying less than desirable antler characteristics. In many cases these deer have a normal 4 points on one side and only a spike on the other. In other cases they have a malformed fork mirrored by a normally-developed 4- or 5-point frame. A common name for these deer is "Spike-On-One-Side" bucks...or SOOS bucks. Should these deer be culled? Should they be removed from the population to enhance the development of the population? Many deer enthusiasts believe that there is a genetic basis to deer with these antler conformations. However, published data suggest otherwise.

Antler development in white-tailed deer is genetically driven. As described in a previous issue of *Wildlife Trends* (Volume 7, Issue 1, 2007, Deer Management: Back

to the Basics), a buck's genetic makeup codes for antler size and physical characteristics. Spread, number of points, and angles of individual tines are all genetically-based. However, contrary to the belief of many, there is no such thing as a "right antler gene" or "left antler gene". While our understanding of the details of how genes control antler development is still far from complete, we do know that a single set of genes codes for development of antlers. What this means is that most cases where there is a malformed antler on one side is caused by some event that has occurred after birth. In short, a buck with malformed antlers does not have inferior genetics, and culling a buck with malformed antlers is not going to reduce the occurrence of this incident in other deer. In most cases, a brief assessment of the normal antler on the buck will give a good indication of the buck's genetic characteristics. If the buck had not experienced some event that had caused the other antler to grow in a distorted manner, most likely both antlers would have been similar in appearance. So...what is the cause of

these abnormalities?

The life of an adult, male white-tailed deer is filled with natural (and unnatural) events that can lead to development of antlers that may be described by many as malformed. During the period of antler development, the growing antler tissue can easily be damaged, and physical trauma during this period can lead to malformed development. Bucks often strike their growing antlers on trees and other solid objects, which can damage the growing antler. However, this damage normally does not cause the extent of malformation of which we are speaking and normally is only noticeable upon closer examination of a set of antlers. In addition, this form of damage is not normally expressed in subsequent sets of antlers: it is typically a one-year abnormality and subsequent antler sets will appear normal.

Many hunters are aware that a leg injury can lead to malformed development of antlers. Contralateral antler malformation is the technical term for antlers that exhibit abnormal development following an injury to a leg. An injury to the hind leg causes the antler on the opposite side to exhibit abnormal development, while an injury to the front leg causes the antler on the same side to exhibit the abnormal development. For example, if the left rear leg is injured, the right antler will grow abnormally. Gunshot wounds and broken legs are probably the leading causes of contralateral antler malformation cases. However, most hunters and landowners do not believe that this is the leading cause of malformed antlers. I hear all too often..."None of those deer we shot had broken legs or injuries." I guess most skeptics are operating under the assumption that previous injuries are going to be obvious, when in fact the opposite is probably true. Identification of healed leg fractures and gunshot wounds requires training in proper necropsy protocol. The point is...you probably won't be able to detect the injury in the majority of cases.

The seminal research on the frequency of contralateral antler malformation was published in 1972 and was conducted in Texas. Although these data have been available for over 35 years, biologists have done a poor job in educating



Figure 2: The pedicel is the bony projection that extends from the skull to the base of the antler. It cannot be seen through the fur, but is visible on the bare skull.



Figure 3: Notice the large section of skull at the base of the right pedicel that is missing in this buck with a malformed right antler. Pedicel damage in a previous year is the cause of the malformed antler.

hunters and managers regarding the frequency of this anomaly, and most hunters continue to believe that malformed antlers have a genetic basis. So....just how common are these leg injuries? In the Texas study they examined 32 hunter-harvested bucks that had deformed antlers. Twenty-two (69%) of these bucks had either healed leg fractures or old gunshot wounds on the expected leg, and identification of these old injuries required detailed necropsy procedures performed by trained examiners. So much for a genetic basis!!! It is generally believed that there is a neural link between the leg injuries and antler development. However, this is an area that still needs considerable research if our understanding is to improve.

Pedicel damage is another common cause of antler malformation in whitetailed deer. The pedicels are the bony projections on the upper surface of the skull of male deer. The antlers grow from the pedicels. In buck fawns, the pedicels are visible as bumps in the fur on the top of the skull, and they continue to grow in diameter as a buck ages. If the pedicel is damaged, this can lead to antler malformation. There are two primary time periods during which pedicel damage can occur. The first is during the breeding season while the antler is solidly fused to the pedicel. While uncommon, physical stress on the antler pedicel juncture during the breeding season (e.g., fighting) can cause damage. Depending upon the extent of injury, subsequent antler malformation may occur. The second and more common time period during which pedicel damage can occur is during the period of antler shedding. Following the breeding season, testosterone levels drop, which signals the body to begin to dissolve the interface between the pedicel

and antler base. When the antler-pedicel juncture is completely dissolved, the antler will drop of its own accord. However, any physical stress on the antlers during this period can cause damage to the pedicel. It is not uncommon to find shed antlers with a spur of bone attached...this is part of the pedicel and can cause permanent antler malformation in the future.

Pedicel injuries are most common during the period of antler shedding because the juncture between the antler and pedicel is weakened during this period. While trapping deer in Oklahoma during January 1995, we were frequently capturing bucks that had shed one or both antlers, as most antlers are shed in January in that part of the country. When trapping bucks with nets, the first thing you instinctively grab onto while trying to secure the animal is the antlers. In one case when



Figure 4: There is a damaged section of pedicel at the base of the right antler in this buck. An injury to the pedicel has caused the right antler to exhibit poor development.

we trapped a buck with two antlers, we accidentally pulled the antlers out of the skull. While one antler seemed to have detached from the skull normally, the other had a spur of bone approximately $\frac{1}{2}$ " in length and $\frac{1}{4}$ " in diameter. Undoubtedly this caused considerable damage to the pedicel, but unfortunately we never had the opportunity to examine antler development in subsequent years. In regions such as Alabama, where a late breeding season occurs just before the period of antler shedding, pedicel damage may be common. I hypothesize that in populations where bucks are still competing for breeding opportunities while the juncture between the antler and pedicel is weakening, there exists a high prevalence of antler deformities. If bucks are still fighting while the antler is close to shedding, there is a high probability that the antler will shed abnormally.

The physical stress from fighting may lead to increased numbers of antlers that are shed prematurely and that cause pedicel damage.

A possible confounding factor in this process is the role of intracranial abscessation, or brain abscess. Some naturallyoccurring bacteria that enter wounds caused by fighting, sparring, or antler shedding in the head region of deer, may cause damage to the pedicel. Brain abscesses have been found to be a significant cause of mortality in adult, male white-tailed deer. One study documented that 9.3% of natural mortality of male deer ≥ 2.5 years of age was due to brain abscess. Another study in Maryland found that 35% of radio-collared bucks that died due to natural causes had intracranial abscesses. What is not understood at this time is the effect that these bacteria have on skull/pedicel strength and integrity. We know that these bacteria

can weaken bone tissue, so it stands to reason that infection in the pedicel region could lead to pedicel weakening and possibly even abnormal antler shedding and subsequent abnormal antler development. It is also possible that abnormal antler shedding may lead to these bacterial infections. However, more studies are needed to fully understand the role of intracranial brain abscesses on abnormal antler shedding.

Suffice it to say that there are numerous causes of abnormal antler development in white-tailed deer. Physical injuries are the leading cause of these abnormalities, and genetics does not seem to play a role. The next question is...should these deer be removed from the herd? Shooting SOOS deer does nothing to reduce the prevalence of these occurrences, and I contend that there is nothing to be gained by removing these deer from the herd. In fact, I would argue that removing these deer is actually counter-productive to your management goals. The presence of mature bucks in a herd helps to stabilize social structure. Mature bucks are more efficient breeders, help to reduce the length of the breeding season, suppress breeding effort by younger males, and ensure that there are less late-bred does and late-born fawns. The more mature bucks in a population, the better the population. While a SOOS buck may never develop the antlers of a "trophy", SOOS bucks do aid in stabilizing social structure. However, regardless of antler size, shape, or conformation, if the deer that you see in the crosshairs is going to put a smile on your face...then shoot it. A mature buck, even if it has a spike on one side and a normally developed antler on the other, is a trophy in my book.

But shooting it just because it will never be a trophy is a waste of a beneficial animal in your herd. The only people that should be shooting these deer just to remove them from the herd are landowners that have an overabundance of bucks, and the only populations that I know of that have an overabundance of bucks are inside of a high fence.

In short, let these abnormally-antlered bucks walk unless they are a true trophy in your mind. They are not spreading bad genetics, and in fact, they are probably helping your herd.

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Figure 5: Compare these shed antlers. The antler on the right is a normal shed. The antler at the top did not shed normally, and a piece of the pedicel is attached. The antler at the left was shed from a deer that had pedicel damage in a previous year.



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Preserving Your Night Sky



By Keith Summerour

Keith Summerour, a graduate of Auburn University, founded Summerour Architects. Since 1991, the firm has been designing high end residential and commercial projects throughout the country but with a strong presence in the Southeast.

Painting by Keith Summerour



Treally love to wake up early and with a heavy frost on the fields, walk the land. There is a soft, silver cast to the tall grass and I can see the faint, white outline of the path. As I wander in the darkness, I can see the Milky Way overhead and pick out the Big Dipper. I ask myself if anyone else is so lucky to experience such a view. Alas, too many lights from human activity have dimmed our natural relationship with the night sky affecting not only our evening aesthetic experience but our biological rhythms.

Night time over lighting, from street lighting to residential porch lighting, affects wildlife too. The circadian rhythm¹ of animals is highly tuned to night light levels and can disrupt animal behavior such as bi-annual bird migrations, mating cycles, health and number of offspring just to name a few examples.

What can be done to minimize our impact on the night sky and improve the enjoy-

ment of your farm property? The first step is to be aware of the causes of over lighting or light pollution. Some cities have recognized the importance of the dark sky. Cashiers, North Carolina, Whitefish, Montana, Ketchum, Idaho and San Antonio, Texas have adopted outdoor lighting ordinances prescribing the type and acceptable methods of evening illumination. The simple solution is to cast all light down to the ground and not up into the sky. This reduces the amount of glare created by the light fixture.

To help prevent glare, there are a select few items that work quite well. These items are as simple as using a shield on a light to keep the light source in one area or block the light source from a side view, or as specialized as using a custom barreled shield to make the light beam tighter than a regular shield. A few other examples of glare reducing items are frosted lenses (to replicate using a lower wattage bulb), beveled lens (to tone down the lumens the light is producing), honey comb louver (to cut the glare of a light source in half), duck bill shields (to eliminate glare and light source when approaching from either side), and silk bulbs (silk wrapped bulbs can help hide the

filaments in outdoor lantern bulbs).2

Utility companies such as Georgia Power, Duke Power and local electric cooperatives have existing programs in place to assist in retro fitting your existing outdoor lighting as well.³

As we consider the effect our farm projects have on the land, whether constructing buildings, clearing timber land or adding security lighting, we should always evaluate the impact of our actions on the property (or region) as a whole. If one area, such as the barnyard, is over lit, that space reduces dramatically the flexibility of use of a much larger land area impacting wildlife habitat, hunting use, star gazing, or entertaining family and guests. We can, with proper awareness, design to enhance our interaction with nature without degrading what we seek.

Credits and Resources:

 ¹ Circadian Rhythm – Encyclopedia Britannica defines this as the cyclical
 24-hour period of human biological activity
 ² This paragraph of information was provided by Chris Wakefield, President of The Outdoor Lights, Inc. www.theoutdoorlights.com

³ The Southern Company website, www. southerncompany.com and Georgia Power,



Example of bad lighting (drop lens causes glare)



Example of good outdoor lighting (flat lens directs light downward)

www.georgiapower.com, provide a lot of valuable information on light pollution and over lighting

Other websites referenced for this article are: The International Dark Sky Association: www. darksky.org, www.starrynights.com

Map is from Google Earth



Photograph courtesy of The Outdoor Lights, Inc



Management Calendar



October/November 2009

of your food plots. Don't fall into the trap of planting too early. Unfortunately, many landowners and hunters plant in early-mid September. This is often a very dry period across the Southeast which will lead to food plot failure. However, if you receive adequate rain, food plots may grow rapidly which will result in very high food plots by the time hunting season arrives. There is also a higher chance of army worm problems if temperatures are still warm. Early-mid-October is the ideal period to plant fall food plots in most areas of the Southeast. This is when we start getting regular cold fronts that bring rain. Planting "later" (meaning in October) will also result in young, tender food plots that are very attractive to deer and other wildlife. Be sure to read the food plot management article in this issue for more detailed information that will help you grow better food plots.

Is Old Seed Really Old?

Have you ever had left over food plot seed from last season? Ever wonder if it is still good? In the current economy crush, we are all looking for ways to save money. In many cases, left over seed is viable and can be planted with success, particularly if it has been stored in a cool and dry place. You can conduct an easy germination test to determine if the seed is still good. Take 10 seeds and place them in a moist paper towel in a window sill. Monitor and keep the towel wet over the next week to 10 days. If 6 of the 10 seeds germinate then your germination rate is roughly 60%. Adjust planting rates accordingly

Most management activities in October and November are revolved around food plot work, general preparations for hunting season, and of course, hunting. This is also the time of year that most landowners and hunters enjoy being on the property to enjoy the fruits of their labor.

Food plot preparations

It is difficult, if not impossible, to establish successful food plots without

preparation. Planting quality food plots is a process that may span over several months, not a weekend. There are several factors that influence the success of a food plot program. Among the most important are establishing a well thought out food plot plan, ensuring proper soil fertility and pH, preparing a firm, smooth seed bed, only planting under favorable conditions, and controlling weeds. Each of these activities plays an important role in the success



to ensure adequate coverage is obtained. Don't toss that old seed out - planting old seed can save you money. always best to test the soil fertility and apply recommended rates. If lime is needed, apply this as well.

Mow and fertilize perennial clover food plots.

While preparing your fall annual food plots, do not neglect your perennial plots. Fall is a good time to give them their final mowing and a boost of fertilizer. With the cooler temperatures and fall rains, the clover will start recovering from the stress associated with the heat of summer. Do NOT mow the clover too low. Just above the clover plants is good (clipping the flowers and other weeds). After mowing roads, pond dams, and other areas on your property, be sure to clean weed seeds and thatch from your mower deck before mowing any food plots. Unwanted weed seeds have a sneaky way of collecting on mower decks then jumping off onto your well managed fertile food plots. Cleaning a mower deck is easy to do with a gas powered blower or a small broom. Taking 2 minutes to clear weed seeds from a mower deck is much easier than fighting the weed once it gets established in your food plots. Also, do not use a fertilizer with nitrogen. Clover makes its own nitrogen. Adding nitrogen will only feed undesirable weeds. As a rule 200 lbs of 0-20-20 per acre is a good dose. However, it is

Host a cookout with adjacent landowners and/or game wardens.

This is a great way to meet your neighbors and local game wardens. The cookout provides opportunities to exchange ideas on deer and habitat management as well as harvest strategies. If you are trying to convince an adjacent landowner or hunting club to practice quality deer management, this is a great time to show them some of the success you have had. Pictures of harvested bucks and/or scouting camera pictures are usually all it takes to convince others to join your efforts. These cookouts often result in long-term relationships between landowners or hunting clubs that is mutually beneficial. I have yet to meet a game warden that doesn't like BBQ – particularly free BBO! Making friends with your local game wardens has obvious benefits.

Conduct a camera survey to assess the status of your deer herd to make sound/educated deer harvest decisions before you start hunting.

Monitoring the status of your deer herd is the backbone to the success of your program. Collecting and recording harvest data (weights, measurements, ages, etc), hunter observation data (number, sex, and quality of deer you see while hunting), as well as population surveys (such as spotlight counts or camera surveys) is essential because it provides you information about the deer herd that will allow you to make sound deer management decisions and adjustments in strategies where needed to accomplish your goals. Without this information you are simply guessing. If you are like me, you spend way too much time, money, and energy managing your property to just guess on how many and which deer to harvest this season. I want to know. Conducting a camera survey is the best tool available to assess the status of your deer herd (number of deer, buck quality, fawn recruitment, etc) and make buck harvest decisions before you head to the woods. Pictures from a survey will help reduce "mistakes" when judging bucks in the woods while hunting (where judgments are often made in seconds while your heart is racing 200 beats per minute!) The best time to conduct a camera survey is early fall or late winter because natural food availability is often at its lowest during these periods. If you are using the survey to make buck harvest decisions in addition to determining all the other population information, early fall is when you need to conduct it. We generally try to conduct our surveys soon after bucks shed velvet but before the majority of acorns start to drop.

Conducting a camera survey is more than simply putting out a few trail cameras. A true camera survey, one that is used to determine population characteristics of a deer herd, requires a survey site (place that is baited and used to take pictures of deer) density of 1/100 acres (this may vary depending on habitat quality and diversity). These sites are systematically established across the property and within all habitat types present. Each site is pre-baited (baited before the cameras are activated – before the survey) for at least 2 weeks. Once deer are using the sites heavily, cameras are placed at each site and operated for 10-14 days or until no new bucks are being photographed. The photographs taken during this period are used to determine the population characteristics. Analyzing the pictures is not as easy as simply counting the number of bucks and does photographed, it is a somewhat complicated process that requires counting total does and bucks photographed, identifying the number of unique bucks photographed, their age, and plugging this information into mathematical formulas. Although some landowners conduct camera surveyes themselves, most consult with or use a wildlife biologist to complete a survey. For more help in understanding how to conduct a survey contact Wildlife Trends.

Mow lanes through CRP, grassy powerlines, or corn fields to provide additional hunting opportunities.

Growing mature bucks is relatively easy to do if you stick with a sound deer management program geared towards QDM. However, harvesting mature bucks is another story. Through my experience, there is no better place to observe and/or harvest mature bucks than in a long mowed lane that runs through thick cover (e.g., clearcuts, young pine stands, chest high grassy areas, corn fields, etc). This thick cover is where the mature bucks live. These lanes offer bucks a sense of security which makes them more apt to use these areas during daylight. They know that with a quick bounce, they are in heavy cover and safe. Mowed or disked lanes through thick cover also provides great travel corridors to connect woodlots or mature timber. Deer will often take the path of least resistance and will use these lanes to travel which can make for some exceptional bow hunting opportunities. Mowing a wagon wheel pattern or hub & spoke design works well if the situation allows for it and will make for some great hunting.

Harvest deer.

Although biologists provide guidance on how many and what kind of deer to harvest, the hunter is the real deer manager. Remember that each time you pull the trigger you are making a deer management decision. In fact, not harvesting deer is a management decision. Unfortunately, I see many landowners with goals of producing trophy bucks that are allowing the deer herd to overpopulate because they like to see 20+ deer when they go to a stand. This situation often results in a poor quality deer





herd with significant dispersal of deer to surrounding properties, less reproduction and fawn recruitment, and ultimately poor quality antlers. If your goal is to manage for a quality or trophy deer herd, harvesting an adequate number of deer each year is essential to keep your deer herd and habitat healthy. A true camera survey (not simply scouting with cameras) is a great way to assess the status of your deer herd to make educated deer management decisions. A camera survey will provide insight to the deer population size, buck age structure and quality, adult sex ratio, and fawn recruitment. Knowing this information will put you on the fast track to achieving your goals. With the right information, deer management is easy. Photographs from a camera survey are also an excellent tool to make buck harvest decisions before you head to the woods.

Collect data from harvested deer.

This information is the "backbone" of







your deer program and allows you to monitor/assess its success and make sound management decisions/adjustments if needed to reach your deer management goals. Collecting this information each year is important because it will allow you to assess trends in the harvest and observation data which will help you determine if your program is working and make adjustments where needed. Without this information, you are simply guessing and are less likely to achieve your goals. Contact your local state wildlife biologist or a wildlife consultant to determine what information/data you need to collect. You can also visit the Westervelt Wildlife Services website to download a deer harvest data sheet (www.westerveltwildlife.com) under "wildlife consulting" then "deer management forms". Be sure to stock your skinning shed with the needed data sheets and tools needed to record data before the season starts. Other preparations include calibrating scales, inspecting/repairing and oiling the winch used to hoist deer, checking water hoses and nozzles, cleaning walk in coolers if needed.

Flood duck ponds to "full pool" by early-mid November.

Monitor water levels in duck ponds as fall arrives. Many of us in the Southeast have been fortunate and have gotten abundant rains so far (some of us got too much!). However, too much water too early can be bad for growing duck pond crops/plants. Water control structures allow managers to regulate water levels and are valuable tools when a rain event such as a tropical storm comes through. Once your crop matures, allow ponds to slowly flood to "full pool" as November approaches. Ideal water depths for dabbling ducks such as mallards, gadwalls, wood ducks, etc is 12-18" with pockets of 4"-6" depths. The reason to have your ponds flooded 2-4 weeks before the hunting season opens is to give ducks a chance to find your ponds and get used to using

Favorable Winds for Food Plot Stands



	NW	Ν	NE	E	SE	S	SW	W
RR								
Super Cross	\oplus		X	Χ	\oplus	\oplus	\oplus	\oplus
Upper Powerline	X	X	X		\oplus	\oplus	\oplus	
Upper Duck Pond	X			X	\oplus	\oplus		X
Dove Field ladder	X	X	X		\oplus	\oplus	\oplus	X
Corn	\oplus			X	Χ		\oplus	\oplus
Robs Corner	Θ	X	X	X	Χ	\oplus	\oplus	\oplus
Hidden	Θ		X	X	X		\oplus	\oplus
Turkey Trot	X	X	X		\oplus	\oplus	\oplus	
Trot Line		\oplus	\oplus		X	\oplus		X
Pine Flat	X	X	X	\oplus	\oplus	\oplus	\oplus	
Pop Knot	X	X	X		\oplus	\oplus	\oplus	
Middle	Θ	\oplus	\oplus		X	X	X	
Lost Pond	\oplus			X	Χ		\oplus	\oplus
Backbone	X	X	X		\oplus	\oplus	\oplus	\oplus
Pond Dam	X	X	X		\oplus	\oplus	\oplus	\oplus
Lower Powerline	\oplus	\oplus			Χ	X		\oplus
Cemetary Spoke	Θ	\oplus	\oplus		X	X	X	X
Cadillac	Θ	\oplus	\oplus		X	X	X	\oplus
Funnel Spoke	X	X	X		\oplus	\oplus	Θ	
Funnel	X	X	X		\oplus	\oplus	\oplus	

them. Flooding too early (more than a month before the season) may result in seed deterioration resulting in less food later during hunting season. For best hunting, do not over-hunt your duck pond and allow a "rest" period between hunts. If you have several duck ponds, designate one as a "no hunt area" to provide a place for ducks to loaf. This will keep them on your property.

Conduct pre-season projects that will help reduce or minimize hunting pressure and disturbance.

Hunting pressure and disturbance on a property significantly impacts the hunting quality or number of deer you will see. We have lots of hunter observation data that shows as more pressure is applied, fewer deer (particularly mature bucks) are seen. Here are a few things that will help minimize hunting pressure: 1) Position stands around food plots so that hunters can enter and exit them without spooking deer. By this I mean place stands slightly inside the woods and/or plant a "screen" that will protect the hunter from being seen by deer in the field. Good screens include the remains of standing summer crops such as corn, Egyptian wheat, Sorghum Sudan. Other more permanent screens (which I prefer) include switchgrass, or evergreen type shrubs or conifers. Once stands are placed inside the woods, simply cut shooting lanes for hunters to see and harvest deer on the food plot. 2) Inspect stands to make sure they are safe, but from a disturbance standpoint, check for noises. Oil squeaky chairs, windows, doors, etc. Move around in the stand. Does it creak? Find the source and fix it.

Ladders may simply need to be tightened. These little noises can ruin a hunt and disturb deer for future hunts. 3) Cut and clear trails for hunters to get to and from the stand without making a lot of noise. 4) Determine favorable wind directions for each stand and do not hunt the stand unless the wind is right. At my camp, we have a list of stands for each wind direction. We check the wind, review the list, and hunt accordingly. 5) Look at a map of your property and determine which roads will impact or disturb deer or other wildlife. Close these roads down before and during hunting season and only travel them on a "need to" basis. Besides properly managing the deer herd, the key to having high quality hunting experiences it to keep disturbance on the property to a minimum.



Other services include timber sales, forestry/wildlife plans, burning, site preparation and planting, GPS and mapping, land sales.



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