PRACTICAL WILDLIFE MANAGEMENT INFORMATION

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INSIDE THIS ISSUE

Earl Says...

Yesterday I was faced with a management dilemma I'm sure we've all had over the years. There I was in the deer stand with the rut going strong and waiting on Mr. Big. With an hour left of daylight, I suddenly see a deer in the clover patch about 150 yards away with its head down. When he looked up I could see it was a buck! He was consumed with that clover, I guess deciding to grab a quick snack before a night out chasing girls, and I had a good 15 to 20 minutes to check out his head gear. He was an eight point about 16 inches wide with tall tines and really good mass. I guessed him to be 2 ½ to 3 ½ years old with lots of potential for next year. I raised my gun at least three times before deciding to let him walk. When the wind changed and he sensed I was near, he decided he could do without that clover and tiptoed into the woods behind him.

I've been deer hunting almost three decades and have taken only a couple of decent deer over the years so you can imagine how hard it was to let him go. But the words of a hunting guide friend of mine kept ringing in my head, "If you don't immediately know when you first see a buck whether he is a trophy or not, don't shoot". I know everybody has different standards as to what is a trophy to them, but as wildlife managers, we have to make those decisions every day when it comes to harvesting animals so they can grow. I only hope the folks around us give him the same chance.

And just a reminder, tree planting time is here! Check out Ryan Basinger's excellent article in this issue on planting fruit trees. My sources at several nurseries say their sales are brisk but they still have plenty of inventory available.

Andy Whitaker
Publisher/Editor

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Cover photo by Dave Edwards

The Affordable Farm Cabin

By Keith Summerour

Boulder foundation copied from historic cabins

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.

In an effort to build a home for the farm that is sympathetic to the landscape, yet is affordable to construct, I have found that using building materials from your land achieves both economy and aesthetics. If you also employ historic structures as a guide you can find ingenious yet frugal use of materials and building methods to help achieve a harmonious result.

Containing Cost

One of the most costly materials in building remote structures is concrete. This "modern" material can be avoided by using large boulders as your foundation (see photo above) and supporting floor framing timbers upon these massive rocks. Two additional expenses that can be cut from the house are the tile mason and the dry-wall installer. The use of wood for the floors in baths and kitchens is an acceptable

substitute for tile floors in a cabin. Additionally, one piece fiberglass tub/showers in lieu of tile and ceramic tub fixtures are easy to keep clean and can readily be disguised by attractive fabric shower curtains.

The walls of the interiors should be wood of some sort, salvaged or new, as it is better to employ the carpenter rather than the drywall installer because the fewer people under your employ the faster and simpler the job will be. Wood is also a timeless material that I have found saves cost and produces a better, lower maintenance finish.

The exterior windows and doors can be an area to save a large part of your overall budget by using salvaged product. The random nature of reclaimed or "reject" windows can give the building a remarkable appeal. To find this material, call local manufactures and/or house demolition companies. Often, windows and doors will have been saved in a warehouse for a future use (which seldom comes) and the millwork company owner is happy to make space for paying jobs by selling (or giving) the stored windows away.

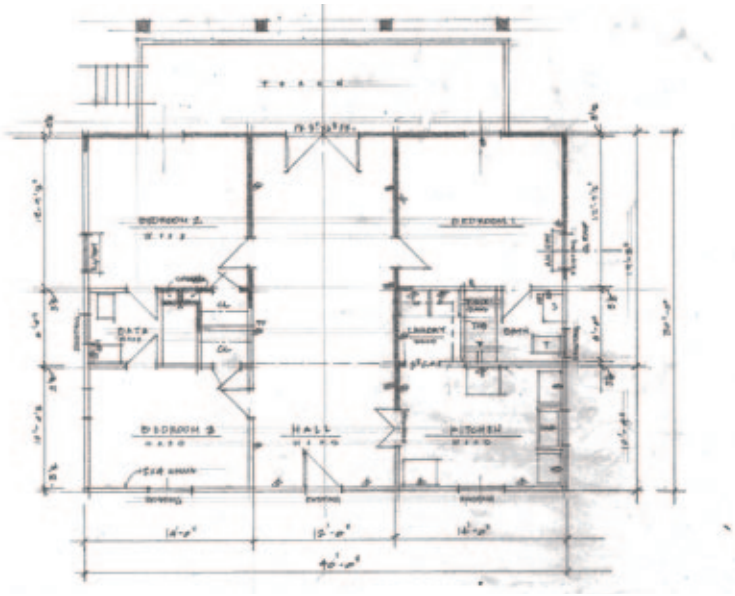
Another trade you can avoid employing on a cabin project is the painter. The exterior wood does not need painting and will weather a nice dark grey-brown in a short time. Interior painting can be achieved by pre-painting your individual interior finish boards in a field using day labor, then after drying, installed by the carpenter. If possible, use no VOC lime paints (Available through www.san-marcousa.com) by placing the boards flat in an outside

Reclaimed fallen cedar trees from the farm used as porch columns.

Note the use of "reject" windows, giving the cabin a built over time ambiance.

Reclaimed Heart Pine floors, Sinker Cypress Wainscot and lime painted 1x6, 1x8 New Pine wall board and ceiling. Please note wood burning stove in lieu of masonry fireplace.

The Ad Hock Kitchen; no upper cabinets, no lower cabinets can work well



space, and rapidly brushing on the lime paint. The paint will dry in minutes and be ready to install which saves times as well. Each individual board will create a soft and slightly rustic random worn look which will achieve an aged look to the interior rooms. (see interior photos)

Some materials should be used that cost the market rate due to the long lasting and rich appeal their use will achieve. My general rule of thumb is to spend money where you touch. So floors and hardware are important where as ceilings are less important. Good material use in these locations will radiate quality throughout your less expensive spaces. As an example, if you install wide plank heart pine floorings in the living room, bedrooms can be a mountain grass carpet. Stained wood paneling in the living room can give way to painted boards in the bedrooms and baths.

The Kitchen is the most expensive part of a functional house, but does not have to be. A Kitchen can consist of a stand alone refrigerator, (a great opportunity for creating style is to use a refurbished fridge see www.antiqueappliances.com) a stand alone stove, Utility sink, (I have even seen an old claw foot tub used as a sink) and various tables to create counter space for a work area. This ad-hock style can be a real visual treat for your guests that offers a relaxed sense of country living with eliminating most of the expense in a kitchen. (see photo)

The cabin illustrated in this article used construction methods described for a cost of sixty five dollars a foot for a 1200 square foot thirty by forty building with three bedrooms and two baths. Costs will vary by location, but illustrates the affordable aesthetic that can be created using clever resources and a forgiving, simple plan.

Note: The plan is based on a traditional "Dogtrot" design. There are no halls or wasted space and each room borrows light and space from the other. This plan allows for great cross air circulation too therefore minimizing the need for A/C.

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Fruit Trees – Improve Your Property for Wildlife, Aesthetics, and Hunting

By Ryan Basinger

Ryan Basinger is a wildlife biologist and manager of Westervelt Wildlife Service's wildlife consulting business where he assists private, industrial, and corporate landowners throughout the Southeast in reaching their property management goals. Ryan holds a bachelor's degree in wildlife science from Mississippi State University and a master's degree in wildlife science from The University of Tennessee.

A 1-acre pear orchard established in the corner of a large field.

It's hard to believe another deer season has come and gone. It seems like only yesterday when I (along with fellow hunters) was sorting through our pre-season trail camera photographs developing our "hit list" of bucks to target during the season.

Outside of population management, I often refer to deer season as "down time." For me, this is the time when my phone stops ringing and emails slow down to a manageable level because my clients (myself included) are in the woods enjoying the fruits of their labor…and doing a little "population management" in the process! However, once deer season ends, it's time to begin preparing for the next season.

Today's hunters apply year-round management strategies, understanding that it takes this type of approach to achieve certain goals, as well as satisfy our inherent urge to be involved with the land and wildlife until the next hunting season rolls around. Under this approach, there is always something to be done on the property,

no matter the time of year.

Indeed, late winter is generally a slow period from a habitat management standpoint relative to other months. With the exception of prescribed burning and other small-scale activities (e.g., strip disking, consolidating deer harvest and observation data, storing tree stands, shed hunting, etc.), there aren't a lot of habitat management options available during the late winter months. One option that is often overlooked is planting and managing fruit trees (e.g., apples, pears, crabapples, persimmon, oaks, etc.). With modern advances in fruit tree varieties and commercial tree nurseries fully committed to wildlife plantings and staffed with experienced and dedicated growers, establishing fruit trees and orchards has never been easier. It's a great way to increase the wildlife and aesthetic value of your property.

When to Plant

Because it is best to plant fruit trees during the dormant season (winter), this project can easily be worked into midday activities during a weekend of deer hunting or across several weekends after the season concludes, depending on how many trees you plant. I prefer to begin planting trees as soon as deer season ends so it doesn't take away from critical time that could be spent in a tree stand. Trees can be planted earlier in the fall if desired. However, if your property has a tendency to get wet/soggy or flood during winter, planting in the fall when working conditions are typically drier is advised.

What to Plant

Johnny doesn't need to plant apple seeds anymore! With new and improved varieties on the market, it doesn't take long for trees to produce fruit and improve property aesthetics if properly managed. In fact, this past summer one of our biologists pulled 67 apples off a single 15-gallon apple tree we planted last February! The reason we pulled them off is because the apples were literally breaking the young branches. While all trees do not typically produce at this rate, the take home message is that the improved varieties of fruit trees available today can produce instant results.

Some of my favorite trees to plant include varieties of pear, apple, crabapple, plum, persimmon, and various oaks. Some of these species require cross pollination (e.g., apple, persimmon) for fruit production. Thus, be sure to plant a minimum of 3-4 trees in close proximity to each other to ensure pollination. Fruit trees come in all different shapes and sizes (seedlings, 3-gal, 7-gal, 15-gal, etc.). In my experience, large trees (7+ gallon pots) tend to survive better and will produce fruit earlier.

Tree survival and performance depends on the site. That is, some fruit trees will perform better in certain geographic regions or soil types than others. Fortunately, many of the species and varieties have been developed to thrive in a wide range of climatic and soil conditions and are more disease resistant. Nonetheless, it is important to consult with your tree supplier to determine which species/varieties are best suited for your property.

Lastly, if you are concerned with only planting native species on your property, be sure to check with your tree supplier as some of the species they carry are not (e.g., sawtooth oak, Chinese

A good auger saves time and makes short work out of digging holes for fruit trees.

A small apple and crabapple orchard near completion

chestnut, Japanese persimmon, etc.). It is also important to note that some of the commonly planted fruit trees and shrubs (e.g., autumn olive, bicolor lespedeza) can be invasive and spread aggressively in some cases, making them difficult and costly to control. Thus, if you wish to avoid this potential threat, be sure to do your homework and consult with your tree supplier and other experts prior to purchasing and planting trees.

Mix it Up

Planting a variety of species (and varieties of each species) is recommended because it staggers the availability of fruit from late summer through winter for increased attraction and nutrition. For example, one particular orchard we planted in Mississippi last year contained approximately 60 pear trees. Included within this orchard were six different varieties designed to stagger fruit maturation rates. With such a diversity of pear varieties, mature pears will be available from August through December, providing a consistent, attractive food source over a period of at least five months. This can be a great advantage from a hunting standpoint as you can attract and hold deer and other wildlife on your property for a longer period, which increases hunting opportunities. Fruit trees also provide an attractive food source that your neighbors may not have, which helps set your property apart from others.

How to Plant

Before I dive into techniques for planting and managing fruit tree orchards, it is important to note that the size of your fruit tree orchards is typically proportional to the benefit they will provide. That is, the more trees (and varieties of species) you plant, the more benefit they will provide. Similar to food plots, small plots will feed and attract a few deer while large plots have the ability to feed and attract lots of deer. I'm not suggesting you convert a 50-acre clearcut to a crabapple plantation, however, most properties I've assessed do not plant enough trees or orchards to provide a significant impact on deer and other wildlife on their property. That is, although most of these properties have established fruit trees and orchards, they typically consist of only a few trees "here and there" that are scattered along the edge of a couple of their larger food plots or align the property entrance road.

In most cases, the size of a particular opening dictates how many trees can be planted there, unless the opening is enlarged. Most properties have considerable acreage that isn't being managed for something else (e.g., agriculture, timber, food plots, etc.) and could easily be converted to productive fruit tree

orchards. For example, if your deer herd is in balance with the habitat, and you have several large food plots on your property (e.g., 3+ acres) that don't receive excessive browsing pressure, consider devoting one acre of each plot to fruit trees to diversify food availability. Although orchards are planted in many shapes and sizes, I prefer planting orchards that contain at least 20-50 trees (different species and varieties), depending on available space and other property attributes. This ensures a respectable amount of food is available once trees mature and begin producing a large amount of fruit.

The first step in establishing fruit tree orchards on your property is to determine where to plant them. Good places to start include the corners/edges of large fields and food plots, along roadsides and intersections (primarily for aesthetics), and fallow openings. A current aerial photo of your property can be a very helpful tool during this stage. Once you've located areas to plant, lay out the orchard and determine tree spacing. A helpful tip is to use a long rope (100-200+ feet) marked with the desired tree spacing along the rope (e.g., every 25 feet) with a piece of duct tape, flagging, or some other type of marker. While the rope is stretched along the ground, use bright-colored spray paint to mark the tree locations on the ground. This ensures trees are spaced evenly along rows for a clean look. A common mistake is planting trees too close. Depending on your goals and tree species, most trees should be planted at least 25-45 feet apart to give them plenty of growing space for optimum crown development and fruit production (check with your supplier for specific recommendations).

Once you've marked all of your tree locations, then comes the fun part – digging holes! If you're not planting many trees, post-hole diggers and shovels work fine. However, if planting lots of trees (50+), consider borrowing or renting an auger. Hand-held augers work fine but I prefer tractor-mounted augers, or even better, a small skid-steer with an auger attachment. These machines are inexpensive to rent (~$200/day) and make digging holes a breeze, especially when all the tree locations are pre-marked with spray paint. Believe me, unless you plant hundreds of fruit trees, you'll only need a day with one of these machines – your joints and back will thank you. Nonetheless, whatever method you chose, be sure to dig the holes a little deeper and wider than the root ball. This provides loose soil around the root mass for better growth.

Before placing trees into the holes, it's a good idea to loosen/lightly break up the root mass to free feeder roots (i.e., fine roots that may be wrapped around the root ball as a result of growing in a pot). This will help them establish and grow better in their new environment. Next, apply a slow-release fertilizer into the hole (available from your supplier) and work it into the loose soil in the bottom of the hole, then drop the tree in.

Be sure not to plant trees too deep – flush with the top of the root mass is a good rule of thumb. Next, pack dirt firmly around the root mass to ensure a steady hold and good soil-to-root contact avoiding air pockets around the roots. Finally, it's a good idea to install a tree protector if possible for added protection – especially if you have a lot of mature bucks on your property! Bucks have a knack for decorating fruit trees with a nice shiny rub.

Follow Up

During their first growing season, fruit trees will need a little TLC to ensure they get established well, or in some cases survive. If droughty conditions occur, young trees may need to be watered (if practical). Once fruit trees are established, there are a few minor

Notice the amount of fruit produced on this apple tree the first summer after planting (at least 70 apples). Imagine the amount that will be available within this orchard in 5 years!

Pears are very productive and survive well in a wide range of conditions, providing a nutritious and attractive food source for deer and other wildlife.

maintenance activities that can keep them healthy and growing strong. During summer, be sure to keep competing weeds knocked back by spraying glyphosate (Roundup or other brands) around the base of the tree. However, be sure to keep the herbicide from contacting the tree. Having tree protectors in place makes this step much easier.

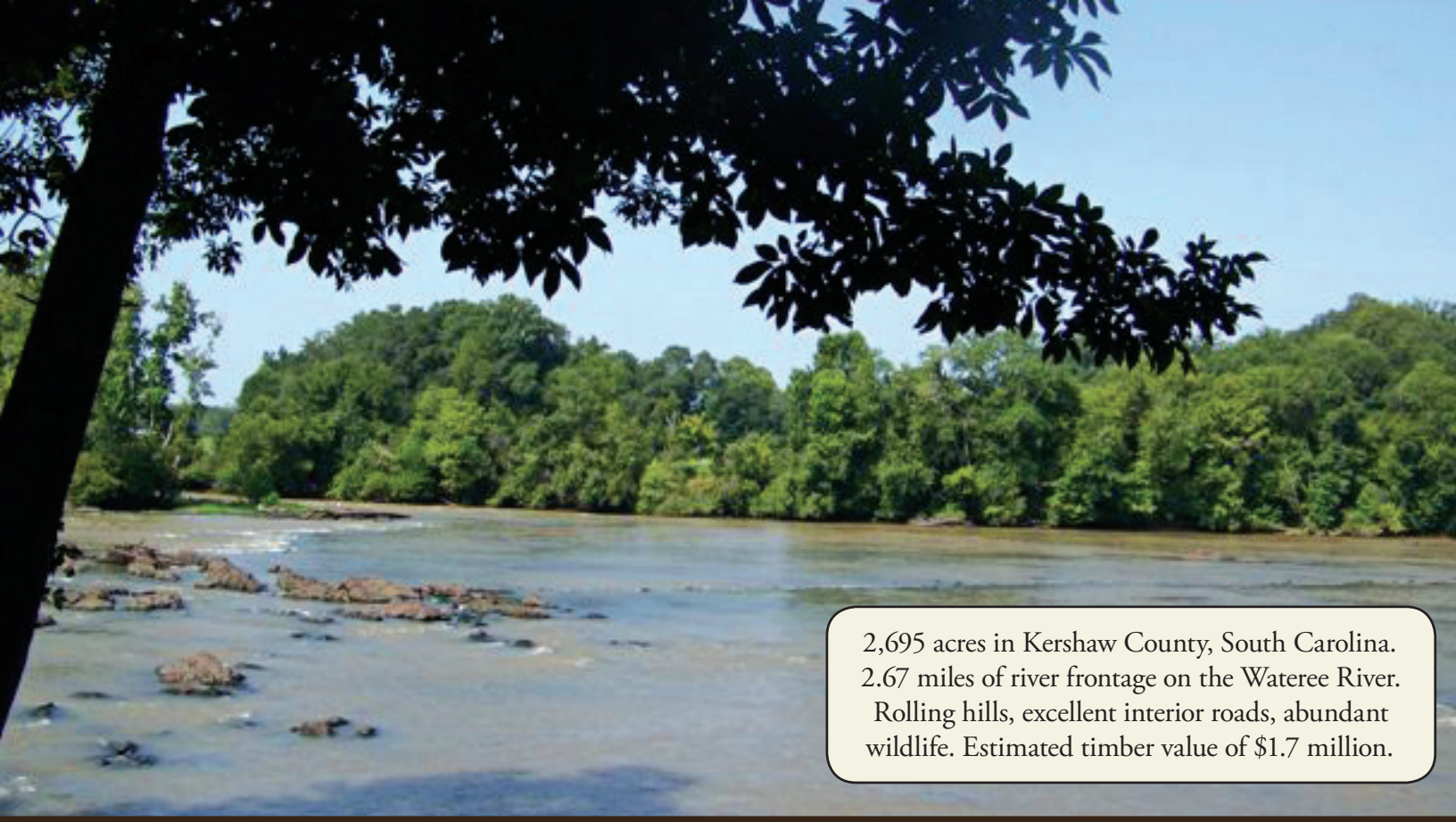
Some young trees tend to produce more fruit than they need to. Thus, if limbs are sagging and about to break, pick some of the fruit to relieve pressure. Although it might be hard for you to swallow, it is actually best to remove the fruit (or at least most of it) during the first couple years. This allows trees to devote energy toward growth, which will benefit long-term development and fruit production.

Lastly, be sure to prune the lower limbs during winter when the tree is dormant. This helps trees develop a nice, rounded crown and devote energy toward new growth for increased growth and fruit production the following year.

Invite the Family

In conclusion, whether your family is your spouse and kids or simply your circle of hunting companions, planting fruit trees is a great way to spend time outdoors improving your property for future rewards. In addition to benefiting wildlife, fruit trees will enhance the look of your property and provide recreational opportunities for generations to come.

Planting fruit trees alone will not produce that trophy buck we all dream about. It is simply a small part of a larger plan and should be used in conjunction with other habitat management practices (thinning, burning, food plots, etc.) to provide the most benefit to deer and other wildlife. Actively managing all aspects of your property (wildlife populations, habitat, and hunters) is the most effective strategy for reaching your long-term goals.



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EQUAL HOUSING LENDER

Steady Under Pressure: Tips to Reduce Deer Hunting Pressure & Improve Hunting Experiences

By Dave Edwards

Dave Edwards is a consulting wildlife biologist with Westervelt Wildlife Services. Contact him at 800-281-7991.

Shooting house in back corner is concealed with fallow field and tin.

It's like clockwork. Around mid-December each year our biologists at Westervelt begin receiving calls from frustrated hunters that are not seeing deer and most want to know "what happened to the deer?" We commonly hear statements such as "We must have shot too many deer last season", "There are tracks everywhere - the deer have gone nocturnal", "Coyotes must be getting them", "must be the moon…weather related", or "We had plenty of deer early in the fall, but they have vanished now – our neighbors must be baiting them". Once we have heard them out and given them time to vent their frustrations, we begin asking questions about how much rainfall they have had through the summer and fall, what kind of acorn production they are seeing, and how they hunt the property because all of these things can affect deer movement.

In years of abundant rainfall and/or acorn production (like 2009), deer movement, and thus deer sightings, are going to be lower due to the amount of natural foods

available to deer. With lots of food in the woods, deer simply do not have to move far to meet their daily needs which results in less movement, fewer deer seen by hunters, and overall tougher hunting. However, regardless of how much food is available, reduced deer movement and fewer deer sightings by hunters is often associated with how the property is hunted and the amount of hunting pressure being applied. That is, hunting strategies and pressure play a significant role in deer movement, the number of deer hunters see, and ultimately hunter success and satisfaction.

While hunting pressure affects deer movement regardless of age or sex, it is particularly evident in buck movement. As a consulting wildlife biologist who assists landowners, managers, and hunting clubs across the Southeast, I see a similar scenario play out over and over. First, hunters recognize that they want to "grow bigger or better deer", then they incorporate QDM strategies where they allow younger bucks to mature and initiate a more aggressive doe harvest to manage the overall deer density and balance the adult sex ratio, they put more effort into habitat and food plot management to boost the nutritional value of their property, then after about 3 years they become frustrated because they are seeing fewer deer and the mature bucks they have worked so hard to grow are not making it to the skinning shed. There are usually two primary reasons for hunters practicing QDM to see fewer deer leading to frustration – 1) chances are that they started with an overpopulated deer herd where they were used to seeing lots of deer (in fair-to-poor health and few mature bucks) and through QDM strategies that improve the health of the herd (balancing the sex ratio and maintaining a desirable deer density for the habitat) have effectively reduced the number of deer on the property – leading to seeing fewer deer while hunting; and 2)hunters have not adjusted their hunting strategies to increase opportunities to see and harvest mature bucks. Generally speaking, "growing big bucks" is the easiest thing we do as biologists; getting them in front of hunters is the challenge.

Some hunters build permanent screens that allow them to enter/exit a stand without spooking deer.

It is nearly impossible to hunt this stand without adding pressure to deer and reduce sightings for future hunts

As bucks mature, they become smarter, more cautious and research has shown that they generally move less, particularly during daylight hours, than young bucks. To see and harvest mature bucks, hunters must hunt smarter and adjust hunting strategies. On properties that experience heavy hunting pressure, it is common for mature bucks, and other deer for that matter, to "disappear" once hunting season opens and hunter activity increases. By disappear I do not mean they pack their bags and leave; they simply become educated

Egyptian wheat makes a great screen to hide hunters as they enter/exit stands.

and learn how to avoid hunters. While the focus always seems to be on bucks, deer in general learn to avoid hunters once hunting pressure is applied to a property.

Addressing a "hunting pressure problem" with a client or hunting club group has to be done delicately. Hunters are easily offended when you tell them they need to reduce hunting pressure if they want to improve their hunting experiences and success. Some tune out of the conversation pretty quickly because the first thing that goes through their mind is "you're telling me I have to hunt less" – which is something they do not want to hear. Where in fact, reducing hunting pressure does not necessarily mean that you have to hunt less, you simply need to hunt smarter. Once I explain this, they are all ears and are anxious to learn more about how to hunt smart.

Ways to Reduce Pressure

Understand how deer use your property

The first step in learning to hunt smart is to understand how deer use the property you are hunting.

Where do deer bed? Where do they feed and when? How do they use the property to travel? These are obviously questions that every deer hunter seeks to find answers to when they begin hunting a property. I can't tell you how many countless hours I have spent studying aerial photographs of properties I have hunted trying to figure out what the deer were doing and how I could position myself in a location to cross paths with them as they move from one place to another. Understanding how deer use a property will make you a better and more successful hunter – period. However, knowing this will also help you hunt smarter and have less impact on deer thereby reducing your hunting pressure and improving the quality of your hunts over the season.

One of the best ways to understand how deer use a property is to study aerial maps to determine logical bedding areas, feeding areas, and travel areas. Once you have identified these areas on the map, you will need to get in the woods to ground check the property (scout for deer sign) to confirm your speculations. In my experience, the best time (and "smart" time) to perform full-scale scouting missions to learn a property is right after the hunting season ends. Because deer have been exposed to a great deal of hunting pressure over the hunting season, they are using areas that they are most comfortable in and feel safe. If you find out where they are now, you will know where to find them next season once the hunting pressure builds and deer seem to disappear. During this time of year the weather is also still cool (or cold), leaves are off the trees, and buck sign such as rubs and scrapes is still fresh. Remember, your goal is to determine how deer are using the property which will help you hunt smarter next season. As such, walk trails out to see where they go, be aware of potential food sources (such as a large oak tree, honey suckle thicket, food plot, or agriculture field), pay attention to which direction deer travel various trails and why, and look for potential hunting stand locations that will allow undetected access and scent management. Again, to reduce pressure or disturbance to deer, full scale scouting missions should not be done right before or during the hunting season, particularly on small properties. This only adds to the already increased hunter activity on the property and will result in increased pressure.

Keep in mind that how deer use a property can not only change from year to year as habitats change, but can change from month to month or even week to week during hunting season as food sources change. However, once you get an overall understanding of how deer use the property you will be on your way to hunting smarter and having better hunts throughout the season.

The following tips and strategies to minimize hunting pressure and improve your hunting experiences and success are based on my personal and professional experiences over the past 25 years; particularly experiences over the past 10 years as I have become consumed with the challenge of bow hunting specific mature bucks each season and as my role as a deer biologist has been to not only produce a healthy deer herd with many mature bucks, but to ensure my clients have exciting and successful hunts.

Fly under the radar

Many factors should be considered when determining where a deer stand should be placed. Obviously, the location should conceal the hunter and provide relatively easy shots to harvest deer. However, I am talking about much more than making sure you are hidden. This is what most hunters try to do, even those that don't hunt smart and apply excessive hunting pressure. Besides concealment, important things to consider include deer movement (i.e.,

where will the deer be coming from and where are they going?), where will the sun be during most hunts (i.e., will this be a better morning stand or afternoon stand?), how will hunters access the stand, how will the topography or landscape affect wind direction, and which wind direction will you be able to hunt the stand. Remember, in most cases, the goal is not to set a stand up for a one-time ambush, rather it is to place stands in locations that will allow hunters to see and harvest deer with minimal impact throughout the season.

Many hunters do not realize the negative impacts they have on deer movement simply by the way they enter or exit a stand. Most hunters feel that if they do not shoot, or a deer does not "bust" them in the stand that they did not bother the deer in the area. Nothing could be further from the truth. In fact, hunters spooking deer (either by sight or scent) accounts for over 80% of the "we're not seeing any deer" problems reported by hunters I described earlier. When visiting properties of hunters who report "not seeing any deer" problems, it is common to see hunting stands placed directly on food plots or over feeders (where baiting is legal) in which hunters spook deer feeding on the plot or feeder each time they access or leave the stand. In some cases, hunters even have to walk across a food plot to get in or out of a shooting house! Getting to a stand is not usually a problem because hunters generally enter the area before peak deer movements, but climbing down and walking through a food plot full of deer right at dark has significant impacts. Whether you shoot or not, if deer run out of a food plot when you get down, or you constantly hear deer blowing at you in the woods (because they smelled you) you have impacted them. If this continues over the season, deer will enter the field later and later resulting in fewer deer seen by hunters during daylight. Westervelt collects thousands of hunter observations each year from our hunting clubs and clients. When analyzed, it is quite obvious when a club or client does a poor job with stand placement and/or wind management because fewer and fewer deer, particularly mature bucks, are reported with each consecutive hunt from a particular stand. Until they see this information on paper, some hunters just don't understand the impacts they are having on deer movement and tend to blame poor hunts on other things.

To minimize hunting pressure on food plots, be very conscious about how a hunter will access the stand without impacting deer. At my hunting club, we try to locate every stand in a manner that a hunter could get in or out of a stand 30 minutes before dark with the food plot full of deer. So how do you do this? Besides considering the wind direction (which I will discuss later), the key is to locate stands at least 20 yards off of food plot edges and in the woods or cover. To get hunters into and out of the stand, an access trail is needed. These trails allow hunters to step off of a main road or trail leading to the food plot to access the stand undetected. To really fly under the radar, we often trim and rake out access trails that lead to a stand. This allows a hunter to walk silently on bare dirt. If existing vegetation in front of a stand does not provide adequate cover to conceal an approaching hunter, some type of screen is needed. By screen I mean something that will provide enough cover to hide hunters as they walk up to and enter a stand. Screens can be made of many things. We often plant a 20 ft. wide strip of Egyptian wheat, corn, or sorghum Sudan in the food plot along the edge where a stand is located. Switch grass makes an exceptional screen that does not have to be planted each year. Other screens I have used include dirt mounds, slash piles, pines, cedars, Leyland cypress or sheets of tin attached to the stand itself. The goal is to provide something between the deer and the hunter to allow the hunter to go undetected.

Stands in the woods, such as a ladder stand in a hardwood hammock, are treated a bit differently. The primary considerations in placing these stands are wind direction and where deer are expected to be bedded, traveling or feeding. Access trails should be trimmed and noisy obstacles removed (e.g, limbs or dead sticks from a fallen tree). Ideally, access trails can be raked to bare ground but this is not always an option. Stands in the woods generally do not require a screen, but concealment in the stand is desired. Try to place these stands in an evergreen tree if possible. Obviously pine and cedar trees are a good choice, but in hardwood areas choices may be limited. Water oaks are a good choice if available. They are deciduous (loose their leaves), but generally hold them until late in hunting season. The lowest impact will be made by hunters who ensure the wind is not carrying their scent to where deer should be (such as bedding or feeding areas) and can slip in and out of a woods stand quietly.

Keep your head in the wind

As we all know, deer have an exceptional sense of smell. Once a deer's nose detects one hint of danger, the game is often over for a hunter. Producers of consumer deer scents and human odor eliminators have capitalized on this and have become a multi-million dollar industry. There's probably not a deer hunter out there that hasn't bought at least one bottle of doe-in-heat urine! The reason is simple – deer constantly use scents to communicate, and their sense of smell is one of their primary defenses in detecting trouble and food. My point is that deer rely heavily on their sense of smell to survive. If your scent is blowing towards an area that deer are using, you can rest assured that they have smelled you and that you have impacted them. In many cases you will never hear or see the deer you have impacted. I once bow hunted a food plot with a friend where he sat on the opposite side of the food plot than me. The

wind was carrying his scent across the plot and to my left. As deer thirty rolled around I saw a very nice mature buck walking through the woods towards the plot. He was on a mission and walking rather briskly. When he hit my friends scent line coming from across the plot, he hit the brakes, stood there for about 15 seconds with his nose in the air, then immediately and without hesitation turned around and silently walked right back where he came from. If I had not seen this buck, my friend would not have even known he impacted a deer. That buck gained experience that he will use next time he visits the plots – which was probably under the cover of darkness! I often feel that deer smell us like we can smell a cigar. That's probably how alarming human scent is to a deer.

Unfortunately, there are many hunters out there that think if they spray down with human odor remover, dab on some deer urine, and wear their "scent concealment suit" that they do not need to pay attention to the wind. Regardless of scent free efforts, my experience has been that if a deer gets downwind chances are very high that it will detect me. This is not to say that these efforts are fruitless. I wash everything I own in scent free detergent, wear rubber boots, often spray down with odor neutralizing sprays, and even wear Scent Lok clothing when I can. Being as scent free as possible will certainly reduce your chances of being detected, even by deer you don't see, which help keep overall hunting pressure being applied to a property to a minimum.

As it relates to reducing hunting pressure, rambling haphazardly through the woods or hunting a stand or area with no regard to the wind direction is the quickest way to put deer on alert and reduce deer sightings. This is particularly true for stands on food plots. Hunters must be conscious of the wind direction at all times and use it to their favor. That is, always hunt the wind. By this I mean to always have the wind in your face and not blowing your scent to where you expect deer to be. I have been fortunate to have had the opportunity to work and hunt with some great hunters over the years. I mean the type of hunters you often see in magazines standing in front of a barn wall full of their trophies. Besides being great woodsmen and understanding deer, they all have a single common denominator – they religiously hunt the wind and the wind dictates where they hunt and maybe more importantly where they don't hunt.

One of the best ways that I have found to assist in "scent management" and help minimize hunting pressure on a property is to create a wind chart for all hunting stands to help hunters make good decisions on where to hunt. This is simply a table that lists wind directions across the top (e.g., N, NW, NE, S, SE, etc) then lists the stands along the left column. In the row for each stand a checkmark is placed in each of the winds this stand can be hunted (see example). For example, if the wind was SW you would look down the column labeled SW for check-

marks, then choose one of the stands that could be hunted with a SW wind. A wind chart is very helpful for a hunting club with several members, particularly if some of the members are not experienced hunters. It is actually a rule at my club that members are not allowed to hunt a stand with the wrong wind direction – it's that important.

Buddy Hunting

Invariably you will have some hunting stands that will not lend themselves to allowing hunters to get in and out of the stand undetected. Many of these will be located on food plots where the stand needs to be on the other end of the field due to the wind, bedding areas, etc. If this is the case, the best way to hunt these stands is to "buddy hunt". That is, only hunt these stands when you have someone else hunting with you that can pick you up at dark. Rather than climbing down from the stand and spooking deer, allow your partner to drive up to the food plot and spook the deer out of the area. Although this certainly impacts the deer and adds hunting pressure, they associate the negative event with the vehicle that pulled up not the hunter that was in the stand. How many times have you hunted a stand where every deer that stepped out froze and stared at you in the stand for 5 minutes before going about their way? They don't just stare at a deer stand that has been there for years for no reason. A hunter(s) has spooked them from that stand before.

Three is a crowd

This will come at no surprise but hunting pressure increases as the number of people hunting the property increases. Even with the most cautious hunting strategies to reduce pressure, more people simply add more pressure and ultimately result in fewer deer seen while hunting. One of the reasons I include this is that I am often asked by hunting clubs how many members should they have. My answer is simple - as few as you can afford. Have you ever hunted a popular public wildlife management area (WMA)? When I worked for the Florida Fish & Wildlife Commission I managed several public WMA's. It was amazing how fast deer reacted to the intense pressure hunters put on them during the opening weekend. On opening morning, normally on a Saturday, there would be shots ringing out every 5 minutes and hunters reporting lots of action and sightings. Although there were still plenty of deer left, by Sunday morning and over the next month few deer would be seen despite deer tracks everywhere and food plots being eaten down to the ground. This is an extreme case of applying hunting pressure and the effect of lots of hunters in the woods, but you get my point. It is also worth noting that a single hunter can overhunt a property and curtail deer sightings. However, as a rule of thumb, fewer hunters are better and will result in less pressure and better hunts.

Does and food plots

Harvesting an adequate number of does each year is essential to successfully manage a quality deer herd. It is the tool by which hunters/managers control or maintain a desirable deer density and balance the sex ratio of a herd to promote a healthy population and quality hunts. As such I am often asked my opinion regarding shooting does on food plots. My answer is always "it depends". It depends on where you are in your deer management program. If you are just starting out and have an overpopulated herd that will require aggressive doe harvest to regain control, then my answer is yes shoot does wherever the opportunity presents itself. Your goal at that point is to harvest deer - not worry about hunting quality. However, if your deer herd is in relatively good shape and you are simply maintaining the current population size and/or sex ratio, then no, do not harvest does on food plots. In my experience, shooting does on food plots applies significant hunting pressure and will reduce deer sightings. Let's walk through an example. Let's say you are hunting over a food plot and 4-5 deer including 2 mature does enter the field. You shoot one and it runs into the woods. Unbeknownst to you there were also 5-10 other deer in the woods around the plot that you spooked. You walk out on the plot, search for blood, and begin tracking. It is getting darker now and more deer are approaching the plot as normal but hear or smell you sending them back in cover. You've impacted them without even knowing it. You continue tracking the wounded doe through a young pine plantation that is littered with beat down deer trails, rubs, and deer droppings. You think you have just found the ultimate deer spot and you have. It is called a bedding area; a place where deer spend much of their time before entering the food plot and you have just "contaminated" it with human scent! You finally find the deer and begin dragging her out. In the process you are rubbing against many bushes and dripping sweat leaving scent behind. By the time you get her loaded in the truck and leave the food plot it is an hour and a half after dark. You have essentially disturbed every deer trying to feed in that food plot that evening. At 5 a.m. a mature buck using the pine plantation catches wind of your scent from the night before, blows 3 times and bounces off through the plantation. Wow! I really got into that, but my point is yes, harvesting does on food plots increases hunting pressure. The landscape on most properties offers plenty of places and opportunities to harvest does rather than on a food plot.

Sanctuaries

Sanctuaries are areas where no access or hunting is allowed to provide deer with a safe haven. Creating these areas will obviously eliminate hunting pressure on a portion of your property. With the exception minimal habitat and food plot management activities, human activities are off limits which provide a place for deer to avoid pressure and

relax. Deer learn about these areas quickly and will gravitate to sanctuaries once hunting pressure builds on surrounding areas. Establishing sanctuaries can be particularly helpful in reducing hunting pressure and holding deer on small properties; say less than 1,000 acres but particularly on properties less than 300 acres. Obviously bigger is better, but sanctuaries are commonly 50-100 acres. I've even seen hunters on small properties not hunt at all during early season to completely avoid disturbance and pressure. As pressure from surrounding properties increased, deer would stack up on their small property. When they did start hunting, it was low impact and only on the edges maintaining sanctuary in the core of their property. I generally do not even bring up the word "sanctuary" when working with a client unless the property is very small, being overhunted, or there are many people that hunt the property such as a large club. The reason for this is that hunters are generally lazy (no offense) and rarely walk/hunt far from a road. They are also creatures of habitat and generally hunt the same stands throughout the year. In most cases, every property will have several unofficial sanctuaries where no hunting takes place and few people ever venture into. I am confident that if you think about the property you hunt, you can think of a few areas that no one ever goes.

To maximize the effectiveness of sanctuaries, hunters must use restraint and never enter the designated area. Hunting the edges, however, will generally result in fun and successful hunts if hunters apply low impact/smart strategies. Again, hunting smart means using the wind to your favor and avoiding setups that allow your scent to drift through the sanctuary area.

Conclusion

Although Mother Nature can be blamed for poor deer movement in some cases, reduced deer sightings and poor hunting is often the result of high hunting pressure and deer learning to avoid hunters. Reducing hunting pressure takes effort, but is not hard to do and will significantly improve hunting experiences and success on your property. Keep in mind that reducing hunting pressure does not mean you have to hunt less, you simply need to hunt smarter. Hunting smart means that you pay attention to the wind, consider it when deciding which stand you hunt, create hunting setups that allow hunters to access and leave stands without disturbing deer, avoid disturbances on food plots and surrounding bedding cover, avoid full-scale scouting missions during the season, and set up or recognize "sanctuaries" on your property that will help reduce pressure and hold deer on your property, particularly as pressure builds on surrounding properties. Many of you have heard me say before that "great hunting doesn't happen by accident". I say this meaning that rarely does consistent great hunting happen without management of the habitat and herd. While you must have good habitat and a well managed deer herd to have great hunting, hunting pressure plays a significant role in just how "great" your hunting really is.

Providing Habitat for Pollinators (part 2): Creating Native Wildflower Meadows

By Anna Huckabee Smith

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This is the second article in a two part series on how to attract and keep pollinators on your land for the ecological benefits they provide. Part I introduced the common pollinator species and their importance to native flowering plants, trees, and crops. Other topics included pollinator habitat requirements and how the landowner can better accommodate these species. Part II specifically documents the creation of a native wildflower meadow and its continued maintenance for pollinators and other wildlife. This article focuses on Southeastern meadows but the recommendations can be applied to all types of wildflower fields.

Morning sun on a wildflower patch. IWMS, 2010

What could be more beautiful than a colorful carpet of wildflowers across a meadow? Not only is it aesthetically pleasing, but knowing that pollinators and a myriad of other wildlife species are using it brings a smile to a landowner's face. Besides the benefits to wildlife, native wildflower meadows can provide a reduction in maintenance costs for large areas that are left to naturally progress through the growing season. Meadows are only mowed once a year, and supplemental watering and fertilizer applications are also rarely necessary once the wildflowers have become established. Obviously, this is not the typical flower garden!

That is because wildflower meadows are made up of just that, *wild* flowers. Plants that are native to a site are the best to use when creating a wildflower meadow. They don't usually need pampering because they are already used to that region's climate and local conditions such as drought and heat. Natives are also less likely to become

invasive and spread to areas where they are not wanted. Another plus is that studies show native bees and butterflies are more abundant in native wildflower patches than in non-natives. Also, since butterflies and birds share a lot of the same resource requirements, butterfly diversity can be used to predict bird diversity and abundance.

In theory, the typical wildflower meadow is created by planting a mix of native annuals and perennials (Year 0) and then maintaining the field for the next three to five years until a replant is required. However, this depends on site characteristics such as microclimate and competition from other plant species. The first growing season (Year 1), annuals bloom along with some fast growing perennials. Other perennials use this first season to get established by putting down roots. Year 2 has a marked reduction in annuals because this next generation is dependant upon the success of the seed crop from Year 1. If there is no bare ground for the seeds, no plants can grow. In contrast, more of the perennials may begin blooming now, and the fast bloomers from last year will be bigger and better. Years 3 and 4 see a dramatic decline in species diversity as the hardiest perennials become established and spread but the annuals, biennials, and tender perennials die out. Woody species tend to invade as the early successional habitat naturally progresses to shrub/scrub. Selective herbicide treatments, overseeding with annuals, and disking strips to rejuvenate growth may help throughout the years and extend the life of the meadow even further, but usually a total replant is in order by at least Year 5.

That is the *theoretical* version of how the meadow should progress, and it may in some parts of the country. However, in my experience in the Southeast, the competition from non-target species degrades the meadow so quickly that replanting is often necessary after two years. It also depends on the landowner's expectations for the field—the amount of blooms he/she wants to see on a year-to-year basis. Sometimes landowners do not have realistic expectations of what a "natural" wildflower meadow should look like and feel that they need non-native species to make the field "showy." However, many native species are just as "showy" and can often out-perform the non-natives. Most natural wildflower meadows are modestly populated with a few dominant species of flowering plants interspersed with native warm season grasses.

The first step in recreating a wildflower meadow is to determine the best site for planting. The vast majority of wildflowers need part shade to full sun to thrive. Therefore, the best sites are in old agricultural fields, in large clearings within woodlands, and in recent clearcuts where debris has been removed or pushed into windrows. Avoid areas where disking could be hindered by tree roots and damage to the trees could occur. A soil sample will help determine soil pH and fertility. Most wildflowers do not need additional fertilization as long as the right plant species are matched to the existing soil type. Excess fertilizer succeeds in stimulating the growth of competing vegetation. To the wildflowers, fertilizers encourage lush foliage growth over flower production. Other soil considerations include drainage and—in coastal regions—salt tolerance.

Next, weed control options must be addressed. Initially, competing vegetation must be removed using herbicides such as Round Up® (glyphosate) which has a low toxicity to bees. Afterwards, a pre-emergent herbicide such as Plateau® (imazypic) must be used to reduce competition and allow the wildflowers to get a good head start. A herbicide should be selected based on the intended wildflower species' tolerance to the chemical. Herbicide labels often list flower species that are not affected by the chemical. Still other wildflowers may survive but experience stunting or a percent loss. In these cases, a heavier seeding rate for those species is advisable if the use of the offending herbicide is unavoidable. Herbicide options are limited by whether a mix consists of forbs only or forbs and native warm season grasses. One chemical controls for grasses while another controls for forbs. However, if the new meadow has a mixture of both flowering plants and grasses, one will suffer to the benefit of the other. For ease of maintenance, the all-forb (wildflower) meadow is preferred. There may be enough volunteer grasses to make up the deficit. Encouraging adjacent strips of native warm season grasses such as big bluestem and Indiangrass for bumblebee nest sites is a way to introduce the grass component without mixing it with the wildflowers.

Preparing the bed and planting the seeds. IWMS, 2009

A wildflower meadow for aesthetic value and quail habitat (South Carolina). IWMS, 2010

Besides forb/grass combinations to consider when selecting a mix, knowledge of the individual species' survivability in the region is critical. The best way to avoid planting failures is to choose local ecotypes. Some landowners are adept at harvesting seeds from local populations of a preferred plant for inclusion in a newly created meadow. Roadsides and powerline rights-of-way are good sources. For the vast majority of landowners, though, seed companies that sell in bulk are the answer. Some companies are able to provide seed from genetically distinct populations such as those from a specific ecoregion, state, or even county. Using local ecotypes is extremely beneficial because they are obviously already adapted to conditions at similar sites in the region, increasing the chance that they will germinate and survive. Also, many botanists are concerned that a sudden influx of foreign DNA will swamp local genes, effectively driving remnant patches of genetically distinct populations of native wildflowers to extinction in that area. For example, if there already exist nice patches of *Rudbeckia* (Black-eyed Susan) on the property, bringing in a common commercial variety to plant would not be recommended. Try to harvest the local seeds and plant them instead so their numbers can increase. Besides, they obviously will grow in the area. In the end, though, planting something is better than nothing to help pollinators and other wildlife.

One of the best ways to determine if a plant grows in the area is to browse through a native wildflower book and then see if seeds for those plants are available commercially. The USDA has a wonderful Plants Database (http://plants.usda.gov/index.html) that shows native versus introduced status of any plant being considered. There are also links from the Database to research and planting guides. Some species have naturally expanded their range into an area and become naturalized. If there is any difficulty in determining if a species is historically native or a relatively new introduction/migrant, make a decision based on whether it is a detriment to ecosystem functioning (e.g. invasive or not digestible by native insects).

An important step in choosing the right combination of species for the mix is plant duration: annual, perennial, or biennial. Some species that are annuals in colder climates can behave as tender perennials in milder climates. The best mixes have all three durations in some combination but slightly more perennials as they are more reliable and therefore encourage re-nesting by bees in successive years. Perennials are also richer in nectar. The more flower species provided, the greater variety of nutrients are available to insects. Providing a selection of flowering plants with different shapes and sizes will benefit the greatest number of pollinators. In general, bees and beetles tend to visit simple, open-faced flowers or bowl-shaped blooms and prefer the colors blue, purple, yellow, and white. Butterflies use their long tongues to extract food from deep tubules in pink and purple flowers.

A colorful display of Southeastern native wildflowers planted by IWMS. Pictured here are plains coreopsis, annual phlox, firewheel, and common yarrow. IWMS, 2010

Moths and bats are typically nocturnal and prefer strongly scented white flowers. Flies can visit any shape flower but often find the colors white, yellow, orange, or brown (meat color) appealing. Hummingbirds are attracted to tubular blooms in shades of bright red and orange. Also consider specific host plants for butterfly and moth larvae (e.g. milkweed for monarchs).

In the wildflower mix, there should be at least three plant species for each season. For example, early spring bloomers for a sunny, dry meadow in the Southeast may include Drummond phlox, California poppies, and lanceleaf coreopsis. This may be followed in the summer by black-eyed Susan, plains coreopsis, firewheel, scarlet sage, common yarrow, and purple coneflower. Fall bloomers may include blue mistflower, blazing stars, native sunflowers (*Helianthus*), and goldenrods. Good mixes contain at least 10 to12 species but having up to 20 is great. Planting at a rate of 5 to 10 pounds per acre should be adequate. Use less seed of a certain species if it is aggressive and prone to dominate a stand. A thicker planting can help control weeds but it also can quickly fill in bare ground limiting reseeding potential.

Be aware that preparing a lush field of blooms may encourage the local deer to sample the buffet! To offset this possibility, utilize as many deer-resistant wildflower species as possible in the

A monarch feeding on New England aster. USFWS, 2010, public domain

mix. If the deer population is too high in the area, even unpalatable plants may be browsed. In such a case, deer repellants such as garlic and mill organite may be used to help deer browsing.

There are two seasons that native wildflowers may be planted—spring and fall. However, in the mild climate of the South, it is best to plant in late fall. This is because most seeds would naturally mature and fall to the ground during the growing season, lay dormant over the winter, and then germinate in the spring. A fall planting mimics this process by allowing the seeds to undergo cold stratification, increasing their chances of breaking dormancy when the ground does warm up. It also gives them time to become scarified by the soil. This is when the seed coat is scratched thereby improving germination (the seedling can more easily break through the seed coat). Not all seeds need cold stratification or scarification, and some may germinate early. Pay attention to the percent dormancy and the germination rates of the seed batches ordered for the wildflower mix. A high dormancy rate may mean it will take two or more growing seasons to see results or special conditions may be required to break dormancy. A low germination rate may result in a planting failure if the seeds do not sprout well. Choose a mix in which all of the species require similar conditions to grow.

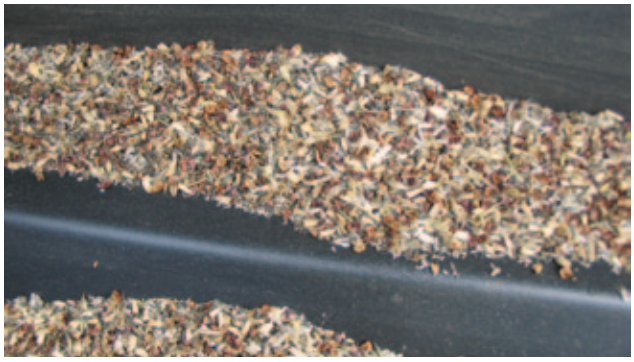
To prepare the seed bed for planting after all competing vegetation has been previously removed, disk to a depth of four to six inches. [Note: If there is a concern that tilling will release more weed species, a no-till drill may be used.] Prepare a firm seed bed and plant the wildflower mix using a drop seeder or spreader. (Obviously, the method used depends on the size of the area to plant). Cover to a depth of ¼ of an inch deep. Most wildflower seeds perform best when planted very shallow. (Some species such as yarrow and blue mistflower require sunlight for germination and may need to be topsown.) At the same time, a pre-emergent herbicide such as Plateau® can be sprayed to keep winter weed pressure down. Follow all label instructions.

Even though native plants do not usually need to be watered, they will need periodic rain events to encourage germination, get the plants established, and sustain them through the growing season. The first 4 to 6 weeks after planting are critical for providing mois-

Turkeys in a field of poppies. IWMS, 2010

ture to the seeds. Other maintenance requirements during the life of the meadow may include follow-up herbicide treatments for grass encroachment. Segment® (sethoxydim) is one post-emergent herbicide tolerated by some wildflower species but is moderately toxic to bees and should therefore be sprayed in the evenings when bees are less active. Do not mow or disk the meadow during the growing season as this will directly kill insect larvae on the plants, destroy forming seeds, and disrupt the bloom schedule. Disturbing the soil will kill nesting bees.

After the end of the growing season, allow the wildflowers to go to seed. Leave the standing dead plants as cover and a seed source for wildlife. In late winter, the field can be mowed to a height of six inches but not



A custom blend of native wildflower seeds. IWMS, 2008

lower as this would kill dormant perennials in their vegetative forms. Remove heavy thatch so that next year's seeds can germinate. Sometimes a prescribed burn can be used to clear the meadow, but make sure the wildflower species can tolerate fire, especially the perennials in their dormant vegetative state.

Above all else, when planting a wildflower meadow, have patience! It may take a while for plants to get established. It is also a learning experience. Determining what combination of plants grows best and produces the best show takes time to discover. Starting with a good site, the right tools, and an appropriate wildflower mix will lead to an end result worthy of a postcard!

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Pond Construction: Part 1 Where to Start! A Close Look at Lake Building Before Ground is Broken.

By Matt Euten

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What does it take to create the lake of your dreams?

So you have finally found that majestic "get away" where you can leave all your cares and worries of the office behind and chase the old long beard or double drop tine. You've got all the stands hung and the green fields planted. The cabin is cozy and set up just right to house the lies of each encounter with the old "ghost buck" that no one can seem to lay to rest. Everything is perfect, except you have no water to catch a trophy largemouth bass. Or maybe you do have the water, it just doesn't seem to hang around all year and you don't know how to make it stay. I may not build ponds and lakes but I do manage them and in doing so I have picked up a couple of helpful tips to get you on your way to completing the ultimate trio as a land owner, long beards, whitetails, and largemouths! In the next two articles I am going to address some of the many questions like deciding on a pond builder and options for fixing a leaking pond that I have been asked over the years.

Most every land broker agrees that having a water feature on your property can help increase its monetary value. Almost every land owner agrees that having a water feature can increase its enjoyment value. But does every tract of land have the potential to house some of the fattest bass in the southeast? With the right planning, just about any piece of property can have the potential to grow a trophy. So, where do you start?

The first place to start is with a notepad and pen on the kitchen table of the cabin. The best advice for a landowner wanting to build a pond is to have a plan. This plan should start with the goals you as the land owner want for the pond or lake and the fish population it supports. Do you want a trophy bass fishery or just a nice place where the grandkids can learn to fish? A major goal of this plan should be where to build the lake. Most land owners have an idea as to where they want to build a lake on their property. If you have no idea or you just bought the property, a quick glance at a topographical map will reveal some possible locations. The final goal in the brainstorming process is deciding how much you want to invest in your new lake. Lake construction ain't cheap! Your budget will likely determine the size of lake, but remember, throughout this process have flexibility because there are always unexpected occurrences that cost.

Once you have an idea of the type of lake or pond you want, the next step is to call someone like me! A good fisheries biologist will have the answers to the questions you had while brainstorming at the cabin. I can point you in the right direction regarding contacting a good pond builder and/or engineer and eventually you are going to need a good place to get fish. Having an expert in that field like me during the starting phases of the lake can help prevent you from making mistakes that pond builders know nothing about. During the beginning phases, I prefer to meet with you, the land owner rather than just talk on the phone or through email. Many times I have met with the land owner and either an engineer or land surveyor during this phase and we physically laid out the pond. We flag the shoreline and can estimate the size and placement of the dam. I can also get a feel for the type of fishery you want and based on the estimated size of the lake we can start planning the stocking regime.

You and I have talked and hopefully we have had a chance to meet. I have given you the names of some good pond builders in your area and you know the estimated size and location of your dream lake. Now it is time for you to do a little homework! Your first assignment would be to interview at least three different pond builders.

Finding a suitable spot on your property is step one to creating a world class fishery. Aerial photos and topographical maps can help you decide where and how to start.

Surveying the land and flagging the shoreline can give you an idea of the size and how the lake will lay out.

Don't just settle on the first one because he seems good! Ask a ton of questions and compare quotes they give you for the scope of work needed to create the lake. Always, let me stress, *always* ask for references and visit a few of the other ponds that builder has completed. Nothing speaks volumes like actually seeing a completed lake that has consistently held water for several years. For those of you dealing with a pond builder for the first and you don't know what type of questions to ask, here are a few to get you started.

How many ponds have you built in the past and are they still holding water?

This is a good first question because if he has built a few ponds, then that gives you the opportunity to examine his work. A visit to one of his clients will not only let you see this pond builder's work, but possibly get you an interview with someone else (the property owner) who has worked with this individual. Talking with the property owner can give you insight as to the duration of the process, the builder's promptness and perseverance and whether or not the pond owner was satisfied. This can help you decide which pond builder is best for you and your time frame

What type of equipment do you plan to use to build my pond?

This may sound stupid, but if someone tells you they are going build your pond with a backhoe and a bobcat, then you need to run for the hills. Most good pond builders are going to use a number of different types of heavy equipment to correctly build a pond. They should show up to your property with a trackhoe or excavator, bulldozer, dump truck and either a sheepsfoot roller or some other heavy piece of equipment to pack the dam core. You have to remember, you're not just digging a hole in the back yard; you are creating a world class fishery and it must be built correctly and hold water for many years!

Can you guarantee this lake will hold water?

This is a trick question, but it will let you weed out the really bad pond builders. If someone ever guarantees a lake will hold water then they have either

never built one before or they are just full of bologna. Ponds and lakes are pretty simple on paper, dig a hole and put up a dam. But there is more to it than that if you are going to build a lake that holds water. You have to have a suitable location, an ample watershed and some good clay material to build the dam. Once you have all those, you then have to have the right weather conditions to make the clay material to work. If it is too dry, like in the dead of summer, the clay won't pack and the lake will leak. If it is too wet, like during the rainy winter months, nothing packs well and the lake will leak. For someone to guarantee no leaks, they are either crazy or have enough money that they can come back and rebuild your lake for free after the dam blows out. Either way, that is just stupid and I would advise not dealing with someone like that. The correct answer would be, "I can only guarantee that we are going to wisely use our resources to build the best lake possible for this particular lake site."

Heavy equipment such as an excavator and a bulldozer should be used to correctly build the lake of your dreams.

What type of water control structure do you plan to use for my lake?

This question is mainly to see if the

Siphon systems, such as this multiple pipe system, work great as the main water control structure.

With the right planning and patience, a trophy fishery can be just a few dirt loads away.

pond builder is flexible and open to suggestion. Almost every pond builder is going to tell you they prefer using a steel pipe riser and 90 degree fitting with a valve that connects to a smaller pipe which goes through the dam's core and out at the bottom of the backside of the dam. This particular structure works, however, because it goes through the core of the dam, there is the potential for leaking issues which can become very costly. I will discuss some of these problems and some remedies in part two of this series on pond construction. I prefer a self priming siphon system as the major water control structure and if a pond builder is willing to change then he will probably be a good one to work with.

What type of soil/material do you plan to use for building the dam?

The only material that should ever be used in a pond's dam is good packable clay or clay/benetonite mixture. If anyone ever tells you differently then you do not want them building your lake because it will not hold water! Many times this type of material can be found on the property, however if you don't have a good clay material you can always bring it in from another source. A good packing material is one that will stick together when compacted.

Now that you have chosen the pond builder and all the details have been planned out, it is time to start digging, right? Well, there are a few other things to consider just before ground is broken on your dream lake. A major mistake I see a lot is when a pond builder leaves too much shallow water along the edges or in the upper end of the lake. Too much shallow water can lead to aquatic vegetation growth that can impact the lake's fertilization program once the valve is closed and the lake is full of water. The fertilization program is designed not only to provide nutrients for the base of the food chain, but also shade the water column to help prevent aquatic weed growth. When a lake has been built with several acres of water less than three feet deep, the potential for aquatic plant growth is increased. It is far too dangerous to try and keep a phytoplankton bloom dense enough to shade out water less than three feet. So always have the pond builder dig to at least three feet in depth everywhere in the lake. The banks should slope fairly quickly and reach three feet at no less than a foot from the shoreline.

One question that is asked quite regularly is, "Can a pond be too deep?" The answer to this question is yes, ponds can be too deep. The fish we stock in the southeast, largemouth bass, bluegill, and redear sunfish, are mostly shallow water dwelling fish. They spawn in shallow water and for the most part live their entire lives in water less than six

or eight feet deep. Also, the deeper water, those depths greater than 12 to 15 feet, becomes stratified in the summer which is unsuitable for fish. By adding more depth to your pond, you are just limiting the amount of real estate for your fish in the summertime. I always recommend having no less than three feet of depth in the shallower areas of the lake and no more than 15 to 20 feet of depth near the dam. Lakes with average depths of 6 to 8 feet seem to respond better to intensive trophy bass and bluegill management. If in the building process, creating a relatively deeper lake is inevitable based on the natural terrain, there are management techniques that can be implemented to benefit the management program. Installing a destratification system can help keep the pond mixed during those periods in the summer when lakes stratify and the deeper water becomes anoxic. This system is designed to enable you to pump compressed air through weighted hoses to stones placed in the deeper parts of the lake. The stones release millions of bubbles that will push the colder anoxic water to the surface where oxygen transfer can occur. A natural current is created and the entire lake is now useable to the fish population. By preventing stratification, you also lower the risks of a pond turnover, which is common during the dog days of summer.

A few other things that should be considered before building a lake are accessibility, applying agricultural limestone, and adding structure. Having a suitable road system to and from the lake and a having a boat ramp, either natural or concrete, is helpful when management activities such as liming, fertilizing and electrofishing need to be implemented. It also gives you access for your jon boat or even the Bass Cat when the trophies are biting. Most ponds throughout the southeast require regular applications of agricultural limestone to ensure a successful fertilization program. It is more expensive to apply lime once the lake has filled; therefore I always recommend adding lime, at least 4 to 5 tons per acre, just before the valve is closed. Structure is important to the fish population, however too much structure can be detrimental. I usually recommend adding one to two big piles of whatever you can find per surface acre of the lake. This will congregate the fish in certain areas and you don't spend all day flipping a jig into every tree top in the lake.

The most important thing to remember when considering a project like building a pond or lake is to have a plan. There will be some deviations from this plan, but being prepared will save you money in the long run. Getting me involved in the lake's construction from the ground up is helpful because I can provide tips that can benefit the management program before the fish are even stocked. Remember, you are creating a world class fishery, not a farm pond and cutting corners will only prolong the jerk of that "ten pounder."

Management Calendar

By Dave Edwards
Westervelt Wildlife Services

February/March 2011

Obtain an updated aerial photograph of your property.

Updated aerial photographs are an invaluable tool in land/wildlife management. In fact, it is the first thing I want to see when someone asks me to help them improve their property for wildlife or create a management plan. In my opinion, aerial photographs are best if taken during the dormant season when deciduous trees have lost their leaves (i.e., late winter or early spring before green up). This allows you to distinctly see differences in pine or evergreen habitats and hardwoods. Infrared images taken during the growing season can do this as well, but I prefer color photos taken during winter. They are simply what I have gotten use to and comfortable with. An aerial photo puts everything into perspective by allowing you to see the various habitats and how they lay across a property. While this may sound odd, it also allows you to see habitat diversity and layout of your neighbor's land which may play a role in how you manage your property. For example, if your goal was to manage for turkeys and you see on an aerial that your neighbor's property is primarily mature timber, increasing nesting habitat on your property will likely attract nesting hens (and gobblers) from the surrounding property in the spring (not that you want to "steal" turkeys from your neighbor! Ha). Also, aerial photographs often become my "drawing board" when devising plans to improve a property. That is, having a map of the entire property in front of me, I can see everything, where various habitats are on the property, where food plots are located, etc. Having this, I can visualize how deer or other wildlife use the property and/or how we can improve the property to not only ensure quality habitat is provided across the landscape, but where habitat management can be used to direct wildlife to areas for improved hunting. There are many companies that specialize in taking aerial photographs, adding geographic features (roads, property lines, habitats, etc), and providing a custom aerial map to the customer's specifications. While using these companies is obviously more expensive that pulling your property up on something like GoogleEarth, the resulting map/photo will be of high quality, up-to-date, customized to your liking, and can be uploaded into GIS type programs that allow you to pull useful information about your property (e.g, number of acres of each habitat type) and create detailed habitat man-

agement plans. While I prefer professionally flown custom maps to work with, I often use free online satellite imagery, such as GoogleEarth, Bing Maps, etc. if needed. The downside of these images is that they are often outdated and harder to work with in professional mapping programs which can handicap your map building/management planning process.

Spring is a good time to check soil pH and apply lime to food plots if needed.

To check the soil pH, simply collect soil samples and send them to a soil laboratory (see previous *Wildlife Trends* articles on how to properly collect soil samples). Your local farmers cooperative will often have soil collection bags (which normally have directions on how to collect soil samples) and will also know where you can send the soil to be tested. Although there are exceptions, most crops grow best in a relatively neutral soil pH of 6.5 – 7.0. Thus, lime is often needed to enhance the soil (this is particularly true in sandy soils). Because it can take several months for lime to effectively change the soil pH, checking the soil in the spring will give you ample time to enhance the soil before the fall planting period. Remember, ensuring proper soil pH is often more important than what you plant or how much you fertilize. In fact, proper soil pH is essential for fertilizer to be available to the plants. Although lime can be spread any time of year, applying it at least 6 months before planting will allow time for it to enhance the soil. Lime can be broadcast directly on top of the soil where rain can work it into the growing zone of the soil, but disking it into the soil will speed the process and is recommended.

Learn your property.

Late winter/early spring is a great time to be outdoors and the perfect time to learn more about your property, find areas that could be improved, and figure out how deer or other wildlife use your property. Learning these things will help you maximize the value and use of your property. I often use squirrel hunting as an excuse to be in the woods learning a property and scouting for deer sign. Squirrel season runs through February in many states and can offer some great excitement. While it can still be pretty cold in many parts of the south, this is a great time to wander around and learn your property. As I have mentioned in past calendars, February and March are also great times to learn how deer use your property and strategize on new stand locations. Because deer have been exposed to a great deal of hunting pressure over the past few months, they are using areas that they are most comfortable in and feel safe. If you find out where they are "hiding" now, you will know where to find them next season once the hunting pressure builds and deer seem to disappear. During this time of year, buck sign such as trails, rubs and scrapes is still fresh.

Mow early or wait until early summer.

If you have areas that need to be mowed, mow them before turkey nesting season (which is generally March-May in most of the southeast) to prevent destroying nests. Unless necessary, I recommend leaving as much of your roadsides, fields and other openings un-mowed to provide additional nesting habitat for turkeys and other birds. Much turkey nesting research shows that these areas are valuable and heavily used for nesting by hen turkeys. Even if turkeys do not use all of the unmowed areas, these areas will host an alternate food source (small mammals – rats, mice, and rabbits) for potential turkey nest predators. Having this "extra habitat" also increases the "search area" and reduces predator success in finding turkeys and their nests giving turkeys of a better chance of producing a clutch and surviving. This strategy is more valuable for landowners whose property has limited nesting habitat.

Make preparations for spring turkey season.

One of the best ways to ensure you have gobblers in the spring is to manage your property throughout the year to promote quality nesting cover (see turkey habitat management article in the January-February 2009 issue for more detail on creating nesting habitat). I have worked with many landowners who had gobblers on their property all year, but they disappeared during the spring. After closer inspection, their property didn't have good nesting habitat and the hens had moved to adjacent properties, carrying the gobblers with them. Quality nesting habitat is created by maintaining a patch work of early successional habitat throughout your property. Burning, herbicide applications, strip disking, timber harvest, and roadside management strategies are all tools that can help you create quality nesting habitat for turkeys. Besides the key element of creating nesting habitat, creating strutting zones in strategic areas around your property will help put turkeys where you want them to be. A mower, disk, or fire or combination of these are the tools of choice for this task. Fire is my preferred tool if it can be used. Strutting areas are simply areas that have relatively little or open

ground cover that will be attractive to turkeys for breeding courtships. I often create these areas between roosting and nesting areas and preferably near a food source such as an old field, chufa patch, or food plot. Areas that often lend themselves well to creating strutting areas are powerlines, old fields, food plots and roadsides. Lastly, mowing hunter access trails will help you slip into areas to hunt without making a bunch of noise. If these trails go through thick habitat, don't be surprised if turkeys use the same trails.

Assess management strategies, review or develop a plan, & prepare for upcoming projects.

Good planning and preparation ensures you will have everything needed and be ready to initiate projects this summer. I heard a saying that has stuck with me over the years that always reminds me to plan – "People don't plan to fail, but often fail to plan". Planning also allows you to prioritize projects, create a budget for the upcoming year, and develop timelines for completion to help you stay on track. Many landowners simply tackle projects as they come up or as they think of them. This strategy can work, but without planning they may overlook or run out of money before addressing a more needed project. Spring is a busy time for us at Westervelt helping landowners determine their property's needs. We conduct what we call "property management assessments/reviews". During this consultation, we review projects that had been completed the previous year, review harvest data or other information that provides insight to how the wildlife we are trying to manage is responding to management, re-assess progress towards goals, assess the habitat and property in general to determine its limiting factors, and develop a prioritized list of activities that need to happen to help the landowner achieve their goals. While this is a professional service we provide, it is a process that I feel all landowners should go through each year, whether they hire a professional biologist or not, to keep them on track.

Prune fruit trees.

Pruning is a management strategy that will improve the health of fruit trees as well as enhance fruit production. Moderate pruning is usually best. Heavy pruning dwarfs trees and may delay fruit bearing, and is especially undesirable for young trees. Proper pruning shapes the tree's structure for life. Prune young trees to establish a strong scaffold system with wide-angled, well-spaced branches that will not split from high

winds or heavy crops. A well-trained young tree bears heavy crops early and continues to bear efficiently. The dormant season is the best time to prune fruit trees, although dead or diseased branches may be removed any time. Prune bearing fruit trees regularly, preferably every year; it is a mistake to neglect trees for years and then prune them severely. Old trees, however, can sometimes be rejuvenated with heavier pruning than younger trees require.

Fertilize perennial clover plots

Although I am a fan of planting annual summer crops to provide maximum nutrition through the summer months, I also like to include perennial clover plots in my food plot strategies for diversity and as a year-round crop that will be available when other crops fade out or are being planted. Perennial clover plots will start growing rapidly once spring green up begins and daily temperatures exceed 65 degrees. Fertilizing clover can add a significant growth/nutritional boost to clover and other perennials. Because clover produces its own nitrogen, apply a fertilizer that does not contain nitrogen, such as 0-20-20, during early-mid spring to provide adequate nutrients for clover growth. If you add nitrogen, you are simply feeding competing grasses. Although I strongly recommend pulling soil samples and applying fertilizer accordingly, a "normal" fertilizer application rate for clover in the spring is 200 lbs./acre. Once the growing season begins, monitor the plot for undesirable weeds and grass. Pre-emergent herbicides are a fantastic tool that will kill weeds before they have a chance to become a problem. If you are unable to apply pre-emergent herbicide, mowing will help reduce undesirable weeds (do not mow too low…your mower should be set to cut just over the clover). However, if weeds and grasses persist, apply selective post-emergent herbicides for control. Although herbicides are more expensive than mowing, they are often the most effective. Mowing is used to give the clover a better chance to out-compete the weeds while herbicide kills the weeds.

Manage water in duck ponds.

Although duck season may be over, leaving your duck ponds flooded will benefit migrating waterfowl by providing energy rich foods for their flight back north. Pond drawdown rate and timing is important and will vary depending on your management strategy (natural moist soil management or agricultural plantings). If you are planting agricultural crops for waterfowl, leaving the pond flooded through early summer will help control weeds. Just be sure to drain the pond early enough to allow adequate drying time before planting time. However, if you are managing for natural moist soil plants, such as in a beaver pond, you will need to start pond drawdown in the spring to allow desirable native moist soil plants to germinate and grow. Slow draw downs (over a 2-3 week period) are often desired because they will result in diverse emergent wetland species composition. Quick draw downs result in decreased plant species diversity and are often composed of undesirable species. If you are managing a GTR (Green Tree Reservoir or flooded hardwood area), use a slow draw down process but ensure water is off the area before spring green up to protect/enhance the growth of oaks in the GTR. Some oaks, particularly the more desirable ones for generating duck food, do not do well if left flooded after they begin growing leaves in the spring.

Collect shed antlers.

By mid-March, whitetail bucks across the country have shed their antlers. Collecting antler sheds can be a fun spring activity for the whole family. Shed collecting not only provides a great opportunity to spend time with your family, but also provides some insight to the quality of your deer herd. After a few seasons, compare the quality of sheds found from different years. If your program is moving in a positive direction, you will notice that the antlers are getting larger each year. Key areas to concentrate your searches include food plots, fields, around feeders, and along trails where deer must jump (over fences, ditches, etc). Training Labrador retrievers to find sheds has become relatively common and may offer additional outdoor adventures for you and your best friend.

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