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# Earl Says...

It's a huge understatement to say that hurricanes are a destructive and devastating force of Nature that can and has reshaped much of the Southeast for many years. This past storm, Florence, is no exception. Our prayers and support are with the good folks who have been affected.

I was thinking about the many landowners and land managers who put in so many hours of planning and labor for the upcoming hunting season only to see torrents of rain and flooding destroy all their hard work. It is a frustrating situation that will take a long time to fix for a lot of folks. I only hope everyone is safe and can recover as soon as possible.

Although I feel helpless by not being able to help anyone on a personal basis, I will be writing a couple of extra checks to help in the recovery for all those affected. There are many ways we can support this recovery effort but the two places I'll send my money to are my local church and The Salvation Army. My church because we send direct help through money and physical support and The Salvation Army because they have such low overhead and they are usually one of the first organizations to help at any disaster. God Bless.

Andy Whitaker Publisher/Editor





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# **Cover for Wildlife**



#### By: Joe Reams

Joe Reams is a native North Floridian and owns Southern Habitats, a full service native plant nursery and seed farm. Since it was founded in 2006 Southern Habitats has conducted dozens of native ground cover restoration projects throughout the Southeast on both public and private lands. To learn more, visit https://www. southernhabitats.com/. You can reach him directly by phone or email at: 850-879-7900 or joe@ southernhabitats.com.

Vaccinium darrowii (Darrow's blueberry) freshly planted.

Have you ever heard "Take Cover"? Or "Run for Cover"? How about "Keep Undercover"? These are song titles, which isn't surprising, since the concept of cover is one we can all relate to in life. Cover represents safety, immediate and reliable safety. Ideally, within the safety of cover there are also things needed for sustained safety. Habitat work is just that and cover means plants. I can remember when you heard older land managers refer to different types of "cover" (pronounced: 'cuh-va') rather than using the word "habitat". The way I see it, cover is not only one component of habitat, but rather, it is the umbrella under which all other components work. Managing habitat or cover is a constant process and I believe our God-given responsibility. As practitioners, we've seen effects of habitat fragmentation and how it directly impacts diversity in wildlife and plants. Therefore, we've become better sophisticated in our effort to restore and improve our techniques of managing wildlife habitat. These efforts result in measurable progress in species diversity and pay nice dividends to boot, not the least of which is better hunting. Hunters and hunting organizations have long been the champions of the outdoors and today they are leading the field in biology as it relates to natural systems. For the primary game species in the Southeast (deer, quail and turkey) to thrive, a healthy ecosystem is required so there is a big incentive for hunters to be involved. In all terrestrial systems of the southeastern US, regardless of elevation or soil type, cover is the key. A large focus today lies on plants of the understory and how they are used by animals.

Managing ground cover in "quail woods" has been a part of my life from a young age but it took on an entirely new meaning fifteen years ago when I began working with native seeds and began formal training in native plant identification and propagation. I left a lifetime of row crop farming and decided to pursue this dream of starting a full-service native seed and plant business. I wanted to focus exclusively on the native plants of the southeastern US. As an avid hunter, I wanted to find ways to enhance habitat for game species, so I began focusing on methods to propagate and produce herbaceous plants that these animals need. Most of my earlier projects (the ones that were keeping the lights on) were focused on things like threatened and endangered species, pollinators and erosion control, rather than game species. But each of these had an important role in my continuing education. These projects helped me better understand the interdependency that



Installing plants for escape cover thickets: blueberry, persimmon, plum, viburnum and more.



Indian grass & Switchgrass lining road (4-5 years post-planting).



More Indian grass & Switchgrass lining roads (4-5 yrs. post-planting).

exists between various animals, leading to a very fulfilling career in this business.

In 2013 I received a call from a large landowner in LA (Lower Alabama) who had read a recent magazine article I'd written titled "Plotting with Natives" and he wanted to know if I could ride out to take a look at his place. I had a site visit near Macon, so I decided to make the drive out to Alabama from there. My dad rode along with me and we met with the landowner the following morning on a gorgeous, several thousand-acre tract of loblolly timber with a basal area of ~40 and rolling hills covered with native grasses. It looked like a post card picture.

I immediately recognized this landowner as an authentic Southern gentleman. He was from the old school but was keenly interested in cutting edge habitat management and I was impressed with the knowledge he had accumulated through his studying. He had a saw mill on the place where they brought "lightning trees" to make rough cut lumber. His manager is a highly skilled carpenter who uses the lumber to build amazing structures around the property, everything from shooting houses to barns. After we became acquainted, the landowner drove us around to some of his favorite hunting spots. I always try to listen closely when riding and looking at the property with a landowner or manager. I've found that in conversation they often reveal ideas and thoughts that they may not have thought all the way through, but these ideas act as a piece of a puzzle. After all, my first priority is always to address the objectives of the landowner. Our conversation was relatively general at first. We discussed aesthetic treatments along several roadsides on the property. He wanted his place to have solid overall habitat value and quail were at the top of

the list.

As mentioned earlier, this property already had the look of a classic plantation, but he said he was having no success in establishing new coveys of quail. The open native grass understory was burned regularly and had a very good population of native legumes like Lespedeza and Desmodium. It wasn't immediately apparent what the issue was, so I began to ask about his predator control program. I always encourage landowners to stay after the predators continuously and if they don't have the time for it themselves, to develop relationships with someone in the area who can do it for them. Most of the really skilled trappers seem to be about all gone now but you may be surprised to know there are still quite a few around. I believe it is worth the effort to trap and kill every coyote you possibly can and keep the other varmints thinned out, feral housecats included. This is an

important part of any successful quail management program. This landowner was certain he didn't have a predator problem.

The more we rode the property and looked around, the more I noticed that there was very little in the way of escape or brood cover for quail. Nesting cover was abundant. When I asked the landowner where he usually found quail, he pointed and replied, "Over that rise there's a creek with some thick bushes and we seem to always find birds in there." It reminded me of a statistic I heard at a habitat workshop many years ago. The average distance a bobwhite quail is found from dense mid-story cover is 70 feet. It was clear that there was a need for frequent patches of escape cover and rank, weedy, bug-attracting brood cover. I returned home to North Florida and wrote a report with a proposed plan of action to address both of these issues as well

as some ideas for enhancing cover and aesthetics along the roadways and around the orchard pond. Our proposal was accepted and we set a date to return in early spring. In the lower Southeast, I think it's safe to say almost all of the undeveloped land that is not designated wetlands is either farmed, has been farmed, or is in



Escape cover thicket B (4-5 years post planting).



Escape cover thicket A (4-5 years post-planting).



Escape cover thicket C (4-5 years post planting).

pine production. Most of the highquality soil in pine production was farmed at some point in the past. This means there is likely a seed bank that is full of annual weed seed (i.e. sickle pod, hairy indigo, nutsedge, crabgrass and others). Places like these often have abundant hardwoods in adjacent areas, along with a history of agriculture on the site. Land planted in pine rotation or left fallow, over time, will inevitably end up with acorns and other tree seeds in the seed bank having been dispersed by animals, in addition to the weed seed. In order to create quail escape cover in these cases we simply make what we call "ring arounds" wherein we disk circular fire lines every few acres throughout the open pine woods to exclude fire and allow woody brush and saplings to fill in. The fire lines double as brood cover areas

since there is already a seed bank full of weed seed from the years of farming.

What I found interesting about this particular tract of land is that although it was good ground that looked like it would easily grow 120-bushel corn, to the landowner's knowledge it had never been farmed. He thought because it was so perfect for growing loblolly pines nobody ever saw a reason to change. He had tried releasing weedy cover by disking and reported he rarely had anything come up. Hardwood competition within the pines was virtually non-existent due to the years of regular burning. We had no seed bank working for us so we had to build our cover from scratch.

To provide escape cover, we planted thickets of plum, blueberry, persimmon and viburnum on threefoot centers, averaging one thicket to every five to ten acres, and ranging in size from 2,000 to 5,000 square feet each. To protect these thickets from fire we plowed a fire line around each one and planted it with partridge pea and ragweed seed. These annuals provided the weed cover needed to attract insects for chicks in the closest proximity to escape cover. Fall/Winter disking releases the annuals each spring.

Background is helpful in understanding why fire is essential to this system. As most readers here know, before the land was settled in the southeastern coastal plain there were ancient long leaf pine forests that covered millions of acres. Underneath was a ground cover composed of native grasses and herbaceous broadleaf plants. In summer when thunderstorms erupted, an old longleaf pine, full of

sap, would catch fire and burn for days, even weeks. When the wind blew and caused the fire to spot out into the grass it would burn freely across the landscape. Some areas would burn hot while others may not due to running into water or into a shady hardwood swamp, which didn't contain fine fuels sufficient to carry the fire. Eons of this continuous process resulted in the plants that occupied these open pine forest areas which were frequently burned in summer to be highly adapted to fire and even reliant on it. Shallow, open ephemeral wetlands also burned often, therefore supporting a wide array of fire adapted grasses and plants. Fire exclusion has been detrimental to this original southern groundcover.

As it turns out, fire is the most important tool in managing quail woods. I encourage managers to break up the property as much as possible into burn units that are burned on different rotations and different times of year. This increases the diversity of plant species, sizes and growth stages. The burns that benefit native grasses, perennial legumes and other forbs are late Spring and Summer burns. These burns can conflict with quail nesting times, which is another reason for breaking the area up into burn units and pushing fire later into the growing season.

I encourage managers to try to start fires around the rim of escape cover thickets when they burn if conditions permit and let the fire burn away from them. This will help prevent a head fire from running up into the thicket and killing the shrubs. It's very common to lose thickets while burning, especially if the fire breaks are allowed to become covered with pine straw or grass. Several of the thickets planted on this Alabama project were lost to fire. It's a good idea to send someone to scout before starting the fire. It may mean harrowing around the outside edge of the fire line (which should have weeds growing in it) to protect the woody shrubs within.

It takes time to acclimate pines to growing season burns to prevent stressing them too much. Since I am not a forester, I always recommend managers consult with someone who is when considering growing season burns. In my experience, when fuels are reduced adequately through winter burns, and pines have been burned for a few years, then the burns can be pushed further into the spring and eventually summer. This will control hardwood and brush infestations and will favor the development of native grasses



Digging up switchgrass to replant.



and many important fire-adapted forbs. Longleaf pines are much more tolerant of growing season fire than slash or loblolly, but can still be injured or killed if burned too hot in summer. Always consider fuel loads, as well as other stressors, such as thinning, high temperatures and low moisture before conducting a summer burn. It's always a good idea to save at least some areas to burn late in the growing season, even small areas (typically where hardwoods or other woody brush need to be reduced) to increase diversity. Increasing the diversity of the groundcover plants by mixing up burn times in turn increases animal species diversity, leading to a healthy forest system.

The last couple of days on this project we planted live native grasses along several roadsides. We Scenic pines.

brought a load of bare root yellow Indian grass and a few other species with us. The switchgrass growing wild on the place was so nice we decided to harvest some of it as well, to transplant along with the Indian grass. We dibbled these bare root plugs on three-foot centers along both sides of three stretches of road that needed cover. Live plant material is more expensive than seed but obviously matures and fills in twice as fast. Using live material allows us to achieve a consistent coverage with proper plant spacing allowing plants to fill out and reach their potential without being crowded and having to selfthin. Some species develop faster from seeds than others, so some species end up not being well represented in mixes while "weed windows" present their own set of challenges. Often times we use a

two-prong approach by directly seeding some and going over top with live plugs of certain grass and/ or wildflower species.

Afterwards, we moved to the beautiful orchard pond. There was a big dock with a two-story gazebo, a wooden bridge and a windmill that pumped water into the 12-acre pond. The pond was in a bottom surrounded by a pecan orchard. The perimeter of the pond was Bahia grass that was kept mowed down to the water. When we first saw the pond, I knew it needed some vegetation so we brought along some Virginia iris, Duck potato, Swamp Sunflower and Sugarcane plume grass to plant in groups around the edge of the pond.

We plan to visit the site in October to take pictures and evaluate the different species we planted. The



2-Story gazebo on orchard pond with windmill.

landowner shared a few pictures which are shown here. While several of the thickets we planted were lost to fire, he reported that the escape cover thickets that remain are being used regularly by quail and the other plantings had filled in nicely.

This is one of many similar projects we've conducted in the lower Southeast and each one is special to me. Selecting native plants that match the target site and will most likely thrive in the long-term is key. It ends up being a futile effort to try to force something to grow in an area that it doesn't prefer. Often, plantings like these will linger along for years, never really reaching their potential. Improving wildlife habitat is a very rewarding experience for me. Learning to grow these plants in the nursery and field is challenging but reassembling them into plant communities and watching a project mature makes it all worth it.



Planting Iris around the orchard pond.

# The Catfishes



There are many native catfish species (Family Ictaluridae) identified throughout the United States. Many of us, as a beginning angler, caught them in rivers, creeks or ponds, or maybe even the first fish we caught was a member of the catfish family. Within the catfish species there are three Genus Ictalurus (traditionally thought of catfish), Ameiurus (bullheads) and Nuturus (madtoms). There are also currently seven exotic catfish documented in the United States. For the purpose of this article I will be providing most information regarding the common catfish and bullheads that

#### By Scott Brown

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For generations catching big catfish for sport and food has always been part of the American Sportsman's history. Here, the author's Great Grandfather (right) and his Grandmother (left) pose with a big Missouri River catfish in their homemade boat around 1930. occur in your rivers, creeks and ponds. Madtoms are generally small and I have never heard of someone targeting them in management or as a fish to catch for sport or table fare. Exotic catfish species are mostly in the South and not a management species, unless it is on your management radar to eradicate them.

Most freshwater anglers and managers have heard of or caught the channel (Ictalurus punctatus) and blue catfish (Ictalurus furcatus), along with the brown (Ameiurus nebulosus), black (Ameiurus melus) and yellow bullhead (Ameiurus natalis), and the flathead catfish (Pylodicitis olivaris). There are others in various water sheds around the country, but those are the most common. Other species that you may encounter, but are not usually associated with pond management, are the white catfish (Ameiurus catus), snail bullhead (Ameiurus brunneus) and most exotics are of the armored catfish type, and the walking catfish (Clarias batrachus).

For decades lake owners wanted catfish in their lakes and ponds to catch and eat. Over time, they have been stocked less as management goals have changed and fishing for table fare becomes less popular and sport fishing more desired. The channel or blue catfish are less likely to naturally establish and reproduce in a small waterbody situation, but provided the right habitat they will. Many of these species have been moved around so much over the last century, it is hard to identify where they occur, as now they may occur almost anywhere from stocking of public and private waters. The flathead catfish is a story of trying to improve the fishery in areas it was not originally located, and now it is an invasive nuisance to native fish

populations and aquatic ecosystems in some areas of the country. The lure that flathead catfish grow quickly and reach large sizes overshadowed the fact that it has a ravenous appetite, ability to adapt to adverse conditions, may outcompete other fish species for food, spawning area and reduce other species numbers because the flathead preys on them. Most if not all exotic catfish species were a result of aquaculture and the aquarium industries.

Various species are found in a variety of water quality scenarios and habitat types. Some catfish species prefer clean flowing water, while others want more swamp-like conditions and others thrive in turbid (muddy water) conditions like the Mississippi and Missouri Rivers. Catfish can feed by site, and also by taste buds located all over their bodies, particularly on their chin and barbels.



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As a child nothing satisfies the fishing desire like catfishing in a well-stocked lake or pond with your parents and friends.

With private lake management shifting to trophy largemouth bass management, the catfish is not stocked to assure all possible forage for the bass. Up until about 18 inches, the channel catfish will feed on insects, algae and a few small fish. Once above 18 inches their diet changes in the wild to 75% fish. They particularly like bream and golden shiners, which are great bait when fishing for larger channel, blue and flathead catfish. Large catfish will also feed on insects, snakes, turtles, clams, and small birds (baby ducks). Even in a pond situation with a feeding program larger catfish

will eat some fish in addition to eating fish feed.

#### Bullheads

Many ponds have some species of bullheads in them. These are usually in the local waters that either get stocked through anglers moving them wanting to start a population at home or in a pond they frequent because that individual still desires catfish for dinner, or they are introduced by a flood event. Once bullheads become established, they are hard to get rid of without killing the pond out with Rotenone or

draining and starting over. Bullheads are prolific spawners and have no difficulty over-populating a waterbody, particularly if there are few or no predators. My catfish research in Florida revealed that white catfish (included in the bullheads) were actively spawning from March through October. Bullheads found in lakes and ponds like still waterbodies, usually high organics on bottom and tolerate low dissolved oxygen levels. Many people misidentify the catfish species and mistakenly move bullheads thinking they are something they want. The brown

bullhead and channel catfish both have spots, but there are many other distinguishing traits to properly identify one from the other. Head shape, tail shape, anal or pectoral fin rays, adipose fin shape or location and number and/or color of barbels (whiskers) all play a role in identification of various catfishes. Some people like the taste of bullheads, and others do not. When working for the state fish and game agency in Florida while running a creel survey, I had a gentleman tell me the yellow bullhead was the best eating catfish, because the butter



This 22-pound blue catfish was sampled while electrofishing in a 17-acre lake in East Texas.

was already on them, hence their name by many locals is the Butter Cat.

The common bullheads like the brown, yellow, black, etc. normally are observed between 10 and 17 inches, but a few individuals reach extremely large status for their species. According to the International Game Fish Association (IGFA) records the World Record brown bullhead was caught in New York, 2009, that was 22.2 inches long and weighed 7 lbs. 6 oz. The World Record yellow bullhead was caught in Missouri, 2006, 21 inches long and weighed 6 lbs. 6 oz. The World Record black bullhead was caught in New York, 2015, 26.5 inches long, and weighed 8 lbs. 2 oz. The flathead catfish, although not considered a bullhead by most, are in the bullhead genus/group and the World Record was caught in Kansas, 1998, no length, weighing 123 lbs. 0 oz.

It doesn't take much to successfully manage bullhead populations and under most situations they are undesirable to the management mission. Once you have them, they are there to stay, unless a total kill is performed. A quality largemouth bass population will keep the bullhead numbers lower. All the catfish species are susceptible to largemouth bass predation throughout their young life. When young, catfish stay in large schools/balls along the shoreline and bass will consume large amounts by swimming through the school. As catfish get older, bass continue to feed on them as they are much slower swimmers than bass, and birds such as cormorants will prey on them in open water as large as 10 inches. I killed out a 1/8-acre pond where we hauled away three, 55-gallon drums of bullheads to start



This nice channel catfish was sampled with electrofishing gear from a two-acre pond in South Georgia.

the pond over. Of all the fish we hauled away, maybe 1-2% of the total weight was made up of desirable species. The pond was isolated from any other waterbody, but a kid in the neighborhood, who was allowed to fish it, decided to go to a nearby creek and catch a bunch of "catfish" and stock them, thinking he was helping his neighbor, but he did the opposite.

The flathead catfish for a few decades was introduced by various state agencies wanting to add a large sportfish to their species list. Many also feel the flathead catfish, no matter the size, is the best tasting catfish of all the species. However, in areas it has been introduced, it has decimated native fish populations and become a mistake in trying to move it from its original home range.



A largemouth bass that's been feeding on juvenile catfish from the lake it resides. Under small lake and pond conditions, juvenile catfish species have a high mortality rate from other fish and birds.

#### Catfish

The most common catfish stocked in both public and private waterbodies and raised for food fish, is the channel catfish. The channel catfish grows quickly in a pond with supplemental feeding and under most situations will not reproduce in small, manmade waterbodies. According to IGFA records the World Record channel catfish was caught in South Carolina, 1964, that measured 47.25 in. and weighed 58 lbs. 0 oz. It is easy to control numbers when channel catfish are stocked in most private lakes and ponds, and occasionally need to be restocked when numbers become depleted. Historically, every lake and pond owner wanted channel catfish stocked so they had a fish to eat. They are relatively easy to catch, which makes it appealing for novice and youth anglers. I have seen them caught on anything from artificial lures, stink bait, liver, hotdogs and live bait (worms,

nightcrawlers, minnows, crayfish, bream, golden shiners and threadfin shad). Their growth can be accelerated by supplemental feeding commercial fish feed. Routine feeding also concentrates them to increase angling success.

The blue catfish was started to be used for pond stocking a few decades back in Texas and the central part of the country and now that has expanded. By World Record statistics one can see the blue catfish gets larger than all others in the United States, which is why some pond owners find it appealing. The World Record blue catfish was caught in Virginia, 2011, no length, and weighed 143 lbs. 0 oz. Catching a 100-pound fish in your private lake does sound appealing. However, to achieve that you need to supply years (decades) of unlimited forage for those fish throughout their life cycle. Fifty plus pound catfish do not continue to grow on 2-4-inch bluegill. They need 6-8 in. bream,

1-2 lbs. gizzard shad and anything else they can swallow that provides protein to continue to grow. My Great Grandfather used to run trotlines in the Missouri River from the 1920's to 70's and frequently caught flatheads between 50 and 100 pounds, using 2-5 lbs. suckers for bait. Any fish manager knows big fish require big forage, and lots of it.

Depending on where in the country you are, and how long your growing season is dictates how fast or big your catfish may get. Generally, the farther north you are, the slower catfish will grow, but they will live longer, and may get to bigger sizes than fish in the South. My catfish research in Central Florida revealed most channel catfish died by age 15 and none of the thousands sampled were older than 18 or reached 30 lbs. in weight. Northern states have recorded channel catfish near 40 years old above 40 lbs.

Stocking rates range from 25 to 100

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catfish per acre for recreational fishing. Commercial aquaculture rates of 1,000/acre or higher are recommended. I recommend when stocking catfish to use a low stocking rate in the beginning, for a couple reasons. First, check to see if there is natural recruitment occurring. If all catfish are the same size at age three, then no reproduction took place and if more are desired, stocking more can be performed. Another reason to start with a low stocking rate, will you eat as many catfish as you predict? In today's world we find many lake owners are not keeping as many fish to eat as they originally thought. They don't have time to fish, clean and cook. If you originally stock 25 per acre and no natural reproduction is discovered, on year three stock another 25 per acre. Instead of having to harvest most of your

catfish in one or two years, every three years, there are more desirable sizes available every year. Keep records of catfish harvest. If you originally stocked a two-acre pond with 25/acre and you removed 45 to date, you need to restock sooner. It is critical to keep track of catfish harvest if it is an important part of your management strategy. The objective is to spread out the stockings so there are always quality catfish to keep, as opposed to boom/ bust years. If quality largemouth bass or other large predator fish are present, stock catfish eight inches long or larger if available or you can afford. As stated earlier, catfish under eight inches have a very high mortality rate due to predation from bass and cormorants. Depending on your management strategy, if you feel the catfish population is older and larger than you desire, start

catching and removing the bigger fish. Lake management is constant due to working with a living organism. Stop managing and the ecosystem and fish population will start to decline.

We still frequently have clients request channel catfish stocked for kids, grandkids and/or to catch as table fare. Today, hatcheries are offering a blue/channel catfish cross. According to the Southern Region Aquaculture Center, crossing the female channel catfish with the male blue catfish has proven to be a faster grower, tolerance of low dissolved oxygen levels, increased resistance to many fish diseases, and increased angling success. However, as with any crosses, the drawback is when they reproduce they will generate a much less superior year class than the original stocking. This fish is



There are several exotic catfish species in the country, most are in the South and most are of the armored catfish type. This brown hoplo (Hoplosternum littorale) was collected in Central Florida, which we have also documented when small, are preved upon by largemouth bass.

becoming very popular among commercial fish growers as they have all the listed above traits and have a higher meat-to-body ratio than the other unaltered catfish species. I still enjoy an afternoon of catching catfish, cleaning them, rolling in cornmeal and fry them up. As stated earlier, many feel the flathead is the best tasting catfish at any size, others feel the channel or blue catfish are the best tasting under certain sizes. But I feel the channel catfish, if harvested between 18 inches and three pounds, is as good as it gets. It has been my experience once channel catfish get larger the taste quality declines, but the pull on the end of the line sure doesn't get old.



# WOODLAND MULCHERS; AN ALTERNATIVE TO TRADITIONAL LAND CLEARING AND HABITAT RESTORATION



With the emphasis in wildlife management on managing for high quality understories in woodlands, also known as "quality vegetation management" (QVM), new equipment and technologies have been developed to more efficiently create and maintain these habitat conditions. The importance of lush understories composed of forbs, weeds, grasses, and legumes can not be understated for wildlife management. Pine woodlands are especially well suited to managing quality understory plants because once set up, they can be maintained indefinitely with regular burning. Although true bottomland hardwood stands are not prime candidates for QVM, some mid-slope and upland hardwood and pine/hardwood stands may benefit by clearing thick midstories of low quality, premerchantable hardwood stems which will allow weedy understories to flourish.

Degradation of these understories from a QVM perspective occurs when timber stands are left unmanaged by excluding timber thinnings and/or burnings. Unthinned stands can create tree canopies that completely shade out the understory plants that are dependent on sunlight. Stands that are open enough to allow sunlight but are not burned regularly become thick

#### Text & Photography By: Ted DeVos and Rod Bach

Ted DeVos and Rod Bach are coowners of Bach and DeVos Forestry and Wildlife Services, a land management consulting firm in Montgomery, Alabama. Ted is a Certified Wildlife Biologist and Registered Forester and Rod is a registered Forester. They are both licensed real estate agents licensed with National Land Realty. For information on their services or use of their mulchers, contact them at 334-269-2224. with low value hardwood saplings and shrubs that eventually shade out the understory plants as well. Traditionally, these habitats have been restored with some combination of thinning, growing season burning, herbicides and clearing with a bulldozer. Thinning, burning and herbicides may take lots of time and patience to achieve the desired goal and bulldozers can leave a mess with heavy soil disturbance and large piles of debris that may take years to decompose. While soil disturbance can often be beneficial, it is usually better to allow existing perennial weeds and grasses to re-vegetate the ground when clearing these sites. Perennial grasses have deeper root systems and hold soil in place better than the annual weeds that follow soil disturbance.

While there is often some dirt "sculpting" that can only be

accomplished with dirt moving equipment, cleaning out woody debris has been handled with a variety of equipment such as heavyduty bushhogs, backhoes, excavators, roll-drum choppers and dozers with shear blades. But more often since the early 2000's, woodland mulchers have been used as an alternative for clearing. Woodland mulchers remove woody debris and unwanted trees while leaving little impact on the soils and the remaining vegetation and without leaving piles of ugly, unwanted debris to be burned. With traditional clearing equipment, the surface layer of soil is disturbed which often changes the vegetation structure to tall, weedy, undesirable plants. The soil disturbance can also lead to erosion. By using a mulcher many of these problems are avoided. No piles are created, instead all material is ground into mulch on-site. The mulch also acts

as another defense against erosion and can even help the soil retain moisture. The lack of soil disturbance also allows native, perennial grasses like broomstraw, etc to grow on the site without competition from taller weeds. And lastly, the lack of ground disturbance does not interrupt your controlled burning regime.

In the real estate realm, having a lot choked up with sapling pine, hardwood and shrubs is not conducive to getting the highest dollar. It is our opinion that lots that are still wooded but open underneath and visible throughout usually get the best dollar value when sold. Having a lot that is pretty and looks undisturbed makes a buyer feel like they are getting a pristine, aesthetically pleasing building site. In addition, clearing trails through choked up woods so that a landowner can access more

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remote areas helps potential buyers see more of the whole property. Clearing pond sites, old fencerows, old house sites, etc. are all common to clearing residential lots and mulchers can be a great option for these tasks. Making a lot "pretty" often makes the sale.

In the wildlife management realm, landowners and managers are discovering the many uses for these

mulchers as well. They are using these machines to recapture sites that have "gotten away". As mentioned earlier in this article, lack of burning, and cutting practices often result in sites overgrown with low quality hardwood (gum, elm, maple, etc), or a "super abundance" of pine regeneration taking over. Landowners often purchase degraded or unmanaged properties and would like to convert these sites to productive habitat in short order and mulchers often yield the best results. Understory clearing is popular in pine, pine/ hardwood, and hardwood stands. While commercial thinning is the preferred method to opening up a stand, often the trees are so overcrowded and/or have so few commercially valuable stems that waiting for them to become "merchantable" may be unrealistic. Pine stand renovation (for both wildlife habitat creation and timber growth) has become popular in several forms including herbicide applications in conjunction with burning. This method is particularly useful when

the stand has been regularly burned and the hardwood stems are small. But in some cases the low-quality hardwoods become too big to spray with ground equipment. When this happens the larger diameter stems can be removed with a mulcher and allowed to resprout. After they have resprouted, chemicals can be applied and the turnaround time for the stand is reduced drastically. With a trained operator, desirable species such as dogwood, blueberry, persimmon, etc. can be easily avoided and unharmed. Mulchers can be used to clean up following commercial logging operations. There is often a "mess" left once loggers have finished thinning a site. Pre-merchantable (and sometimes merchantable) stems are usually scattered around the site and are often leaned over, bent, broken off, tipped up or damaged somehow. We have used these machines extensively on both thinned and clearcut ground to clean up following loggers. The difference in aesthetic value between recently thinned woods that have been "cleaned up" with a mulcher and those that haven't is drastic. Although, eventually, most





thinned sites will look nice with a followup burn and some herbicide, this often takes years. Using a mulcher shortens the cleanup window considerably.

These machines can be used to help

control southern pine beetle outbreaks, for fuel reduction in areas that prescribed burning cannot be used and for pre-commercial thinning. While most precommercial thinning is done to prevent beetle infestations in pine stands, mulchers can be used to cut corridors through the stand to provide access for the hand thinning crew to get to the remaining wooded corridors and cut unwanted stems.

Another application we have used mulchers for is green field clearing.

The fields are cleared, and the unwanted stems are ground into the first couple inches of soil leaving the site ready to plant. This method is somewhat time consuming (and dollar consuming) but it is a good method to clear a site and incorporate organic material into the soil. This "humus" or "mulch" will add nutrients and increase water retention of the soil. Fields created this way are not perfect in year one but once the stumps are ground flush with the ground they will start to rot faster and will





get better and better in the following years. The cost is often less than using an excavator and/ or dozer. However, it is not as good for true ag type plantings if you really need to plow the fields deep in the first couple of years.

These machines have become fairly common in parts of the Southeast and range in size from smaller PTO mounted mulchers that attach to the back of a tractor to huge track machines





with 10' grinding heads and 300+ horsepower. The larger machines are, obviously, well suited to large clearing jobs. They can clear a lot of ground fast but carry a high per hour cost. Using large machines to clear woodlots with lots of remaining trees can also lead to damage in the residual stand if the operator is not careful. The smaller units are very nimble and work easily through wooded areas but are limited to light duty jobs. The smaller PTO driven and "skid steer – bobcat" type machines can be slow and may get stopped up with small debris often but are great for a landowner who has time and wants to do it himself. They can handle material up to 4-5" diameter. Tracked machines hold up well on





moist ground and self-leveling units do well in steeper terrain. Rubber tired units are a little faster and more nimble in the woods and can speed up the operation where saplings and brush to be removed is scattered and a reasonably wellstocked stand of timber is to be left on the site.

Mid-sized, rubber-tired units based on feller-buncher bodies in the 180-300 hp range combine some of both the smaller and larger units. Although they can take down merchantable timber, machines in this size range are not designed to mulch up a steady diet of bigger timber. The merchantable trees should be logged if at all possible but in certain instances you may not have another option. When this is the case they can mulch up large trees but it is time consuming. These types of machines are also very nimble as they are articulated in the middle and they can get in

very tight spots with skilled operators. They are also very fast over the ground compared to tract machines but they definitely need dry/solid ground. Mid-sized machines handle trees up to 8-10" in diameter relatively easily. Land clearing with a machine like the larger machine pictured in this article can run from 3 acres an hour (very few or very small stems per acre) to 3 or more hours per acre (lots of larger stems per acre). The mulcher work depicted in many of the photos in this article ran around 1-2 hours per acre. There were quite a few stems in the smaller diameters throughout these tracts. In many photos you can see un-cleared acres behind or beside the machine.

Hourly costs for these machines vary with the size of the head and carrier. Large machines in the 300+ HP may cost as much as \$3-400/ hour. Smaller bobcat style machines usually run in the \$100-150/hour range. Obviously, midsized machines would fall between these ranges. Mid-size 185 – 300 HP machines run \$225 - 275/hour on most jobs. There is obviously higher productivity and more efficient handling of material with more horsepower, but there is also more maneuverability and nimbleness with the smaller machine when working in heavily wooded stands.

So, if you are looking at acres of impenetrable thickets and hardwood brush choking out your hunting land and competing with your merchantable trees, look into one of the many types of mulchers available. Visit our website for many "before and after" photo series, photos and videos of these machines and their use at www.bachanddevos. com.



# Lessons Learned from Wild Pig Trapping



#### By Jeremy Meares

Jeremy Meares is a Certified Wildlife Biologist and Manager of Westervelt Wildlife Services. Jeremy received both his B.S. and M.S. degrees from the University of Georgia specializing in deer management.

Food plot damage from wild hog rooting.

#### Background

Wild pigs have quickly become arguably the most destructive invasive species land managers face. Wild pigs are not native to the United States but were introduced during the 1500's by explorers and settlers as a food source. Escapes from enclosures and free-range livestock management were responsible for the first wild hog populations here in the U.S. The Eurasian or Russian wild boar was introduced in the 1900's for sport hunting purposes. This combined with escapees/releases from failed livestock practices have resulted in today's population which is a combination of escaped domestic pigs, Eurasian wild boars, and hybrids of the two. Wild hogs have now been reported in 35 states across the country with an estimated population of over 6 million. The rapid population expansion can be attributed to their adaptability, translocation by humans, and a lack of natural predators

Unfortunately for property owners, wild pigs have very high reproductive potential. When you combine reaching sexual maturity at six months of age,

litter sizes of 6-8, the ability to have more than one litter per year, and low natural mortality, it is not hard to see how numbers can increase rapidly. The highest rate of pig mortality results from human activities like trapping, hunting, and vehicle collisions.

#### Damage

Wild pigs cause significant damage to agricultural crops, livestock, forests, and are now threatening native wildlife populations and environmental quality in some areas. In 2015, nationwide damage estimates resulting from wild pigs was \$1.5 billion. On the agriculture side, common damage includes trampling crops, wallowing in the fields (damages fields and equipment), and on occasion preying on livestock (mainly newborn lambs, goats, and calves). In the woods the story is not any better. Wild pigs impact hardwood

forests by targeting mast as a major food source, thus limiting regeneration and acorn availability for other wildlife species. In addition, rooting can pull up seedlings in areas where mast was able to germinate. Pine plantations are not immune to damage either. Wild pigs can impact plantations through trampling, rooting, and feeding on the seedlings (especially longleaf).

#### Disease Risk

Whether it's the health of the wildlife that inhabits your personal property or the health of you and your domestic livestock or pets; wild hogs pose a serious threat. At least 45 different diseases and parasites have been documented in feral swine. Most human infections are transmitted by contact with bodily fluids and handling infected organs while cleaning harvested hogs. Out of this long list of transmissible diseases, the two most significant are swine brucellosis and pseudorabies.

Swine brucellosis in humans is also known as undulant fever and bangs disease in livestock. Human symptoms include a recurrent fever, chills, night sweats, weakness, headaches, back pain, swollen joints, loss of appetite, weight loss and sometimes can be fatal. Brucellosis can also cause abortions, infertility, inflammation of testicles, reduced milk production and lameness in livestock. Dogs that have been fed or exposed to infected raw meat or the entrails of an infected animal, are also at high risk for contamination. Infected dogs not only may develop swine brucellosis but can also pass the disease on to humans. There is no known cure for this disease in animals, but humans can be treated with a six week application of



antibiotics. If the illness is not treated or comes back, you could have serious lifelong health issues.

Pseudorabies is a viral disease that infects the central nervous system of wildlife, livestock and domesticated animals. For most species, infection will often lead to death. Only pigs are able to survive an acute infection and become a lifetime carrier of the virus. Fortunately humans cannot contract the virus, but if infected fluids saturate your clothing and your pet dog happens to chew on it or a piece of contaminated raw meat, it will likely be fatal. This disease can be spread through direct contact or consumption, contaminated feed and water, or from the ingestion of any infected tissues.

#### **Prevention and Protection**

The best way to avoid disease issues from wild hogs is to simply bury or incinerate any carcasses in a suitable location on your property. However, prior to doing so, you would want to check with your state wildlife agency to be sure that consumption of any harvested pigs is not required by law. If you must do so or want to consume harvested wild hogs, please be sure to protect yourself using the following tips: • Always use latex or rubber gloves

and eye protection when handling the carcass or raw meat.

• Avoid direct contact (bare skin) with blood, fluids, reproductive organs and fecal matter. Wear long sleeves covering any scratches, open wounds or lesions on your arms.

• Use clean, sharp knives for field dressing or butchering. Be sure to disinfect knives, cleaning area, clothing and any other exposed surfaces when finished.

• Burn or bury used disposable gloves and any parts of the carcass that will not be eaten.



Wild hog distribution across the United States (aphis.usda.gov).

• Wash your hands frequently during butchering with soap and water.

• Avoid eating, drinking or using tobacco when field-dressing or handling carcasses.

- Do not feed raw meat or other parts of the carcass to dogs.
- Thoroughly cook all meat to 170 degrees. Freezing, smoking, drying and pickling will not kill the bacteria that will cause brucellosis.

#### "Control" Options

So once you realize you have wild pigs, what can you do about it? While success will likely be determined by the number of pigs you are dealing with, landowners have a few options for tackling wild pigs. There are nonlethal and lethal methods for attempting to control pig numbers. Nonlethal approaches are almost more of a preventative stance. Typically these methods will include exclusion fencing, use of protective animals for livestock, and vaccinations to prevent disease transmission and spread. While nonlethal options may prove effective in some instances, they can become costly and high pig

populations require more aggressive tactics. Lethal control options include shooting, trapping, and hunting them with dogs.

#### Our Lessons...

In early 2014, we purchased a Jager Pro<sup>™</sup> hog trapping system. For those that may not be familiar with this system, this trademarked system uses cellular technology to facilitate targeted trapping efforts remotely. Basically, the Jager Pro<sup>™</sup> system uses a M.I.N.E (Manually Initiated Nuisance Elimination) camera and gate setup allowing users to interact with the trap using a cell phone. Aside from the camera and gate, the remainder of the setup includes 16 ft. long metal fencing panels (60 inches tall), metal t-posts, t-post camera mount, and signal booster (if needed). To make the setup process more efficient, rigid fence panels are now commercially available or can be fabricated by welding fence panels to square steel tubing. This option allows one person the ability to assemble and disassemble the trap. The main objective for this type of system is entire sounder group

removal. A sounder is simply a group of pigs made up of sows (typically related) and their piglets. Young males tend to disperse from the sounder around 16-18 months of age. One of the benefits of this system is that it allows the flexibility for users to manage camera settings and drop the gate without having to travel to the site. There's a lot to be said for the ability to drop the gate on a sounder of pigs from the comforts of my living room.

Our first lesson (learned the hard way of course) was to first take the camera to the area we wanted to trap. When we started trapping in 2014, we had an area with an extremely high pig activity so we went in and built the corral and baited the trap. With this being our first setup and it being prior to us switching to the rigid fence panels, it took about two hours to build the trap. At this point, we sat back and waited for the pictures to start rolling in but they never did. After a

There is emerging research on the effectiveness of utilizing poisons to control/reduce wild hog populations. One commercially available product is called Kaput ®, which is a warfarin-based anticoagulant product. Kaput® has been registered at the Federal level by the EPA but to date no states have registered this product for use for controlling wild hogs. States seem to be waiting for more data to emerge on the humaneness and efficacy of Kaput®. According to Kurt VerCauteren (USDA Feral Swine and Ungulate Project Leader), the USDA plans to conduct research that may help provide states with the data needed

few days of investigation and consulting with technical support staff for Jager Pro<sup>TM</sup>, we determined the cell service at that specific location was not sufficient to operate the camera despite having service on our cell phones. With our newly discovered intel in hand, we quickly regrouped and eventually found success trapping and removing pigs from this property.

In the fall and winter of 2015, several pigs began showing up on a piece of land that previously had little to no evidence of pigs. We saw significant rooting damage to roads and food plots. This tract of land was large enough where we could effectively trap without impacting deer hunters. Our first step again was to take the camera to the sites where pigs had been observed and where the freshest sign was. We chased fresh sign and observations until we were able to focus in on a couple of areas they seemed to be frequenting. By the end of February, we had trapped and removed 38

#### Hope on the Horizon

to make decisions regarding the use of this product.

The other option currently being researched is the use of sodium nitrite, which may produce a quicker and more humane death for the pig. Within three hours after ingesting the bait, the pig falls asleep and does not wake up. To reduce the likelihood of non-target exposure, the bait is delivered via "bait boxes" with magnetic lids that pigs root open with their noses. The magnet strength is greater than what a raccoon could open (approximately 30 lbs. magnet pressure). However, in field trials it was discovered that non-targets could still be impacted due to "bait

pigs. Since then, we have seen significantly reduced pig activity on the property and typically trap between 6-10 pigs annually that seem to be transients rather than residents.

Our next trapping opportunities came during the summer of 2015. We decided to add a couple more corrals to give us the flexibility of having setups in multiple locations where all we had to do was move the gate depending on pig activity. Initially we found success but this success was short lived. We began seeing a small sounder group frequenting one of our setups. However, as soon as the entire group was comfortable coming into the corral, the pigs disappeared. The following night it became evident why, a 300-pound boar paid us a visit in the middle of the night. It was obvious this large boar was dominating the bait and keeping other pigs away. While we typically do not like to drop the gate on a single pig, it was imperative that we

crumbs" being left by the pigs around the boxes. The USDA is now trying to develop a bait that doesn't crumble as a pig is consuming it, VerCauteren mentioned. Based on the work left to be done, we are still likely a couple of years out depending on the regulatory process once a new bait is developed. If an option can be developed that clears the hurdles of being effective, humane, and financially feasible to deliver, wildlife managers would have a potentially game changing tool for battling this incredibly adaptive species.



with rebar streamlined our setup/take down time.

After a record catch of 21 pigs, our interns wanted to memorialize the achievement. A sense of humor is helpful when trying to trap pigs.

remove this large boar to have any hopes of future success at this trap site. After we removed this boar, other pigs began coming back into the setup and we were able to remove several more individuals.

For the rest of the summer we experienced extremely variable pig movements. We were seeing most of the sounder group come into the corrals but when we waited for the entire group to come in the following night, the pigs would vanish for a week or so. This trend was occurring on most of our trapping locations. To combat this we decided to change our strategy to be more opportunistic. In other words, if we had the gate set and most of the sounder group was in the trap we went ahead and dropped the gate. This change in strategy seemed to work as it would take

about a week for pigs to come back to the bait once we removed a group. By the end of the summer we removed 50 pigs from a couple of different sites. While our approach differed from what we had read and heard, sometimes you have to change tactics to find success. While we may not have removed entire sounders, our goal was to remove as many pigs as possible. However, we had some pigs that were unique (color, size, "no ears") that we could track so we knew they were still around and we eventually caught them. Each situation will likely be different in how pigs use bait sites but do not be afraid to change tactics when their behavior changes.

Our main trapping opportunities are during the summer months while we have help from student interns. During the summer of 2016, we selected four properties on which to focus our trapping efforts. While we found success on three of the

properties, our struggles on the fourth were initially a mystery. Pigs were coming to bait but once again their movements became erratic. It was not until our intern ran into a member of the hunting club leasing the property did things start making sense. The club member mentioned to our intern that he had been "trying to trap" as well and had several bait sites across the property. This explained the "here today gone tomorrow" behavior we were seeing. In addition, this member and some buddies were riding the property taking shots at pigs if they saw them. Despite explaining to the club why this wasn't a good idea, it became evident our efforts would be better spent elsewhere. Having several bait sites in close proximity to each other makes it extremely difficult to condition pigs to consistently come to a trap site. Putting additional hunting pressure on pigs while also trying to trap makes them more difficult to catch based on our experiences. We

finished out the summer removing nearly 60 pigs from the three remaining properties.

We tried to streamline the process of setting up and moving traps in 2017 by fabricating new panels by welding our old metal fencing to square steel tubing. We added loops to connect the panels with rebar instead of wire. This resulted in decreasing our setup time from 1.5-2 hours per trap to about 30 minutes. This is not only significant from an efficiency standpoint but also when it comes to safety. Only having to spend 30 minutes setting up a trap during an Alabama summer versus nearly two hours significantly reduces risk for heatrelated illnesses. Also, Jager Pro™ developed an app for your smartphone that allows for easy camera management and trap monitoring. Camera settings can be adjusted from the app along with sending commands for taking a picture and closing the gate.

With our new panels ready to go, we identified an area of high

recreational value with a historically high hog population. We followed our process of identifying where we had service with our cameras and prepared to begin baiting a few sites where we had sufficient service. No trapping had taken place on this property and hogs had only been killed opportunistically mainly during the deer season. With our new panels, we did see that initially pigs did not come into the sites, presumably because we painted all the panels to prevent them from rusting. If you have panels fabricated and painted be sure to keep in mind the paint smell may initially deter pigs from coming in. After about a week, pigs began to freely come into the traps.

Over the course of the summer, we were able to drop the gate 11 times removing nearly 100 pigs from 2,400 acres. The group sizes ranged from as small as 3 to as many as 21 (which was a record catch for us) from only four trap locations. Nearly 40 of the pigs we trapped came from a single trap site. New sounder groups would show up at this location every 7-10 days on average. This was highly advantageous given the time invested in moving traps and baiting new sites. We discovered neighboring landowners were also trapping and based on what we were told, there were over 300 pigs removed from this general area over the course of a few months. This level of removal had landscape level impacts as pig observations and damage to roads and food plots were significantly reduced.

#### Summary

Hopefully landowners and managers can take what we have learned over the last few years and apply it to their battles with wild pigs. Each property is different and pig behavior will definitely vary. However, keeping pressure low and congregating pigs to as few bait sites as possible has shown to produce the best results in our experiences. Eradication would be fantastic but we also need to be realists. Changing to more of an opportunistic approach may be required to avoid some of the variability in seasonal pig movements. Most of our trapping

> efforts have focused on the summer months so pig behavior and movements may be more stable during other times of the year. Landowners cooperating with trapping efforts can have the most impact on a landscape level. Until there is a poison developed that is cost- effective and limits non-target exposure, landowner cooperation may be our best bet for battling this non-native, invasive species.

We utilize a Jager Pro<sup>™</sup> to facilitate targeted trapping efforts and be able to manage our traps remotely.



# *Wildlife Trends Journal* Management Calendar



#### By Dave Edwards

#### October/November 2018

Dave Edwards is a certified wildlife biologist and regular contributor to *Wildlife Trends Journal* and other hunting/wildlife publications. Dave was honored as QDMA's 2007 Deer Manager of the Year and nominated in 2011 as Alabama Wildlife Federation's Wildlife Conservationist of the Year. Dave is General Manager for Cabin Bluff Lodge and President of Tall Tines Wildlife & Hunting Consultants, Inc. Contact him at Dave.Edwards@ CabinBluff.com or 912-464-9328.

# Early fall is a good time to fertilize perennial clover plots.

#### Make final preparations to deer stands

When deer stands are being properly managed most of the work is done well ahead of the opening day of deer season. There is no mad rush to get things ready. There is no scouting needed just before or during the season that sets the alarm off to every deer in the woods (because you did all the scouting last winter). The only things left to prepare stands for the season should be making a final visit to each stand to tighten and/or replace straps, ensure everything is secure and safe, shooting lanes are clear, pull up ropes, cushions and other accessories such as life-lines are in place, and access trails are cleared of obstacles and trimmed where needed. If possible, tie these final trips to hunting stands in with food plot work. While you and others are already in the area and making lots of noise plowing and planting the plots, slip in and make final adjustments and checks. As a tip, use colored flagging to mark stands that have had their "final check" and are ready to hunt. If you do this, simply use a different color each year. That is, if you used blue tape last year remove it during final inspection and use orange flagging this year. When a hunter sees the orange flagging at the base of the stand, they know it has been checked and is ready to hunt.

# Prune and clear hunter access trail to deer stands

Hunters that consistently experience successful hunts "micromanage" their access trails. That is, these trails are pruned and established during the initial set up (which often takes place right after hunting season), but as the season approaches they take time to prune and completely clear the path of all debris including leaves. The goal of clearing the path is to remove vegetation that may rub against a hunter walking in or out on the trail (scent management) and provide a silent walking path. Clearing the trail is done with a leaf rake or even a leaf blower. The result is often a bare dirt trail that allows hunters to silently sneak to and from stands. Clearing access trails, particularly to food plot stands, is something that needs to be done periodically throughout the season. When providing hunting guidance to clients I often describe it this way - if there were 8 deer already on the food plot when you arrived, you should be able to sneak in and slip into the stand undetected. If you



Removing undesirable trees is easily done through the hack and squirt method. Read herbicide label carefully before implementing this technique to ensure you only kill target trees.

can do this, you will apply significantly less disturbance (particularly when leaving a stand at dark with a field full of deer) and will have better hunts throughout the season.

#### Mow and fertilize perennial clover food plots

While preparing fall annual food plots, do not neglect perennial plots that you have managed through the summer. Early fall is a good time to give them their final mowing and a boost of fertilizer. With cooler temperatures and fall rains, 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). If you will be tackling this project 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. While a blower is more effective, keep a small broom on your tractor. 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 is a nitrogen fixer meaning it makes its own nitrogen. Adding nitrogen will only feed undesirable weeds; particularly grasses. As a rule, 200 lbs. of 0-20-20 per acre is a good dose. However, it is always best to test the soil fertility and apply recommended rates. If lime is needed, apply this as well.

#### Harvest deer

Although biologists provide guidance on how many and what kind of deer to harvest, the hunter is the real deer



Harvesting deer is an important management practice to maintain the deer density at a level that promotes a healthy herd.

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. In addition to maintaining a desirable deer density, doe harvest is the primary tool used to manage the adult sex ratio of a herd. Maintaining a balanced sex ratio will result in a much healthier deer herd, better quality bucks, increased fawn survival, and exciting hunting. Balancing the adult sex ratio is also one of the tools I use to increase breeding competition and get mature bucks on their feet so that my clients can see or harvest them - which is always more challenging than growing them!

# Keep notes from deer hunting experiences

Consistently successful deer hunters keep good notes and apply what they

have observed to enhance future hunting experiences. Whether they keep a personal journal of hunting observations or formally fill out hunter observation cards, they have records to reflect on and analyze after the season to help adjust hunting strategies and stand management. That is, observations made this season help these hunters prepare for a successful season next year. Keeping notes is particularly useful on properties with multiple hunters where some of the seemingly less important information may not be shared around the fire at night, but when combined with other observations at the end of the season may provide great insights for adjusting a setup for more successful hunts. An example of a seemingly unimportant observation may be "bumped 3 deer in oaks on the way in". If this was observed by only one hunter on one hunt, it may not be meaningful. However, if "bumping deer" was noted on 6 hunts to this stand it deems further investigation. Should the access trail to this stand be moved to avoid bumping deer? Deer are there for a reason. Do we need a stand in the area we keep bumping deer? Another example may be that at a particular ladder stand many mature bucks were seen, but most bucks seemed to skirt the edge of a slough that was 150 yards to the west. Rather than writing this off as bad luck, this stand would be moved closer to the action with careful consideration of hunter access, winds required to hunt it, etc. Moving this stand may happen during the season or during postseason efforts depending on the situation. Although deer movement varies, numerous hunter observations on a stand without much action calls for removing and relocated that stand.

#### Use the time lapse feature of trail cameras to scout food plots

Using the time lapse may be the most overlooked feature of modern trail

front window ladder clear lane behind fix door LADJER ALROSS SLOUGH PATTLE SNAKE CADDER - 1015 Pond Dam house dree moving along small Pines - saw same 12/02 GRO . but limb on left side field - blocks were of field - blocks wamp eer trace from swamp Great bow stand created by a blow down in white balder in front of smiddys ladder 12/02

Consistently successful deer hunters keep good notes and apply what they have observed to enhance future hunting experiences.

cameras. If you have not used it before, it essentially triggers the camera to take photos at set intervals. For example, you may set the time lapse to trigger the camera every 30 seconds during a specified time period. That is, photos are triggered by a time interval verses animal movement across the infrared sensor. This feature has opened up a whole new way to effectively scout fields, food plots or other openings. In the not so distant past, the only way to scout these areas was physically watching these areas either from a hunting stand or another vantage point. This not only took time, but was done at the risk of alerting deer or turkeys and adding "hunting pressure". However, using trail cameras set to operate on time lapse feature only requires two quick visits

to the area (ideally during mid-day to reduce chances of disturbing deer or turkeys) – one to set the camera up, and after a period of time, one to pull the SD card. Installing a trail camera to monitor a field or food plot requires a different set up than the standard set used to monitor trails. scrapes, or bait. For best results, I have found that installing cameras 10-12 feet high and slightly angled down towards the field works well. Although you could use a small ladder (which is the safest method), I normally pull the ATV, tractor, or cart (whatever I'm driving) up to the tree then stand on top of it to install the camera. Depending on the make of the camera, there are many "delay"/or interval options for the time lapse. Obviously, shorter delays will result in more photos, but will consume

batteries quicker. I have found that setting the time lapse to operate the first couple of hours after daylight and the last couple before sunset at intervals of 1 to 2 minutes work well. At this setting, you will get enough photos to identify where and when deer enter the field over a week or so. Although the time lapse feature is great to determine when and where deer enter and use a field, it is generally not good for identifying details of a particular animal unless they are relatively close to the camera. If I see a specific animal I am interested in (like a buck that is a potential "shooter"), I use the time lapse to identify where he is entering the field, then find the trail and install a trail camera in the normal fashion.

#### Implement timber stand improvements - kill undesirable tree species

Removing undesirable trees is an effective habitat management strategy to enhance wildlife and/or timber value. Killing undesirable trees is commonly used to remove non-native invasive species or to "release" desirable tree species like oaks (often referred to as timber stand improvement or TSI). Removing undesirable trees reduces competition for resources such as sunlight, nutrients, and water resulting in better health and growth of remaining desirable trees. In some cases, removing undesirable trees stimulates natural understory vegetation growth providing quality food and cover for wildlife. One of the simplest and most effective techniques for removing select trees without cutting them down is called the "hack-andsquirt" method. Implementing the hack-and-squirt method is as simple as it sounds. You simply hack small cuts in the trunk of target trees and squirt an herbicide solution into the cut. One advantage of this method is that you can target trees you want to remove and leave those you want to promote or encourage. Using a sharp

machete, brush axe or hatchet, chop into the trunk being sure to penetrate the cambium layer below the bark. With the blade still in the cut, twist the blade downward to open the cut and spray herbicide into the cut. The cut should form a "cup" that will hold the herbicide. If the cut is too shallow, herbicide will leak out reducing the effectiveness of the application. A common plastic utility spray bottle works well and generally delivers 1 milliliter of herbicide mixture per trigger pull. The number of cuts made in the tree will vary depending on the herbicide used and size of the tree. Although there are several effective herbicides available, I normally use Arsenol AC (imazapyr) because it controls a wide range of species. Arsenal AC's label recommends one cut per 3 to 4 inches of tree diameter at breast height (DBH). The mixing rate for Arsenal AC is 10 percent, or one part herbicide to nine parts water. Regardless of which herbicide you choose, always read the label for appropriate dosages, cut spacing, and mixing instructions. Also be sure to wear appropriate clothing and protective equipment as recommended by the label. It may be worth noting that the "hack & squirt" method is effective almost any season except early spring when trees are experiencing heavy sap flow/sap rise.

Conduct a camera survey to assess the status of your deer herd 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 provide 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. The best times of the year to conduct a deer survey is when natural food availability is at its lowest which is generally late summer/early fall and late winter before spring green up. Most managers conduct fall surveys (September through early November) because they also use the photographs to make buck harvest decisions before hunting season. The ideal period to conduct a fall survey is soon after bucks shed velvet but before the majority of acorns start to drop.

Regardless of whether you conduct a full scale survey or simply use cameras to scout, photographs from trail cameras are a great tool to assess buck quality and make buck harvest decisions before the moment of truth in a deer stand. I have seen many young bucks with great potential make it another year because they were placed on a "do not shoot" list. If you are using the trail camera photographs to make buck harvest decisions, late summer or early fall is when you need to deploy them.



Conducting a camera survey is the best tool available to assess the status of a deer herd and make buck harvest decisions.





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