PRACTICAL WILDLIFE MANAGEMENT INFORMATION

Wildlife Trends JOURNAL

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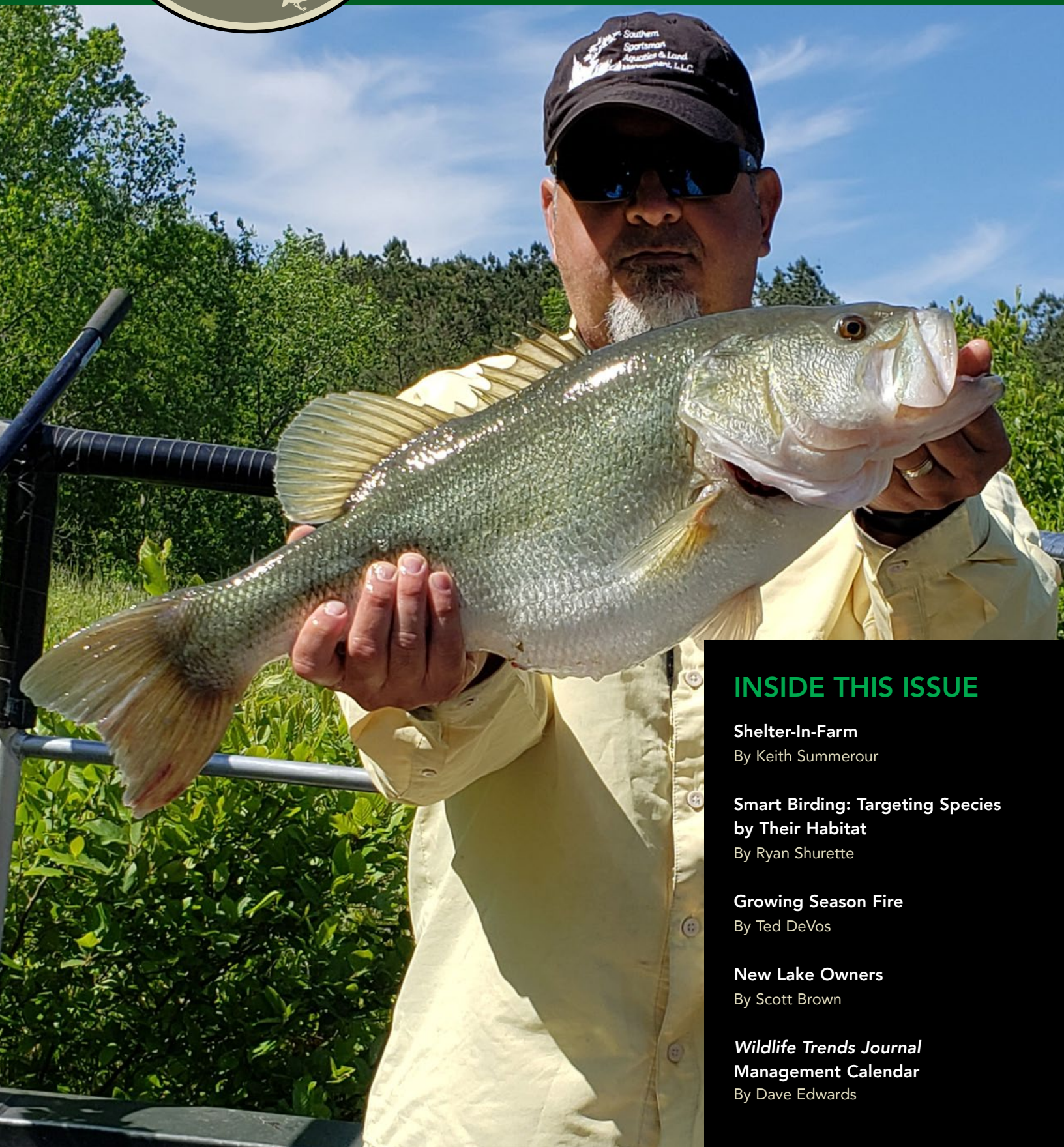

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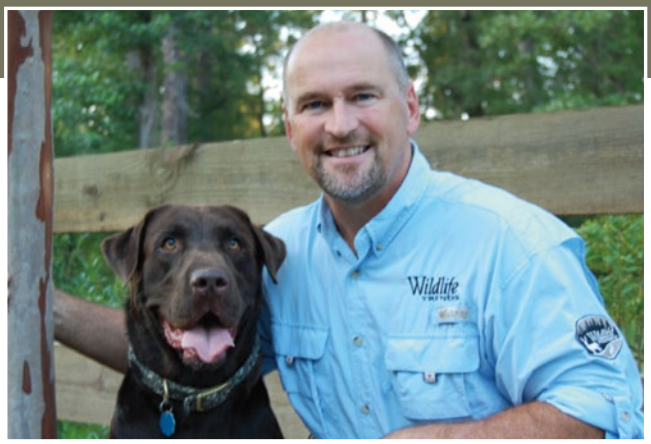

Earl Says…

Have you gone as stir crazy as many of the folks I've talked to lately? Many states are starting to open back up and I know you are probably like me and ready to get life back to somewhat normal. In this issue you'll find a great article by our architect friend, Keith Summerour, on sheltering on his farm in Georgia. I hope you all have had the same experience he and his family has. Land ownership definitely has its advantages.

Also in this issue, Ted DeVos gives us a new perspective on prescribed fire in the growing season. This has been somewhat controversial to some but Ted has been very successful with his methods. If you have other views on the subject, we would love to hear from you.

Good luck to everyone during these trying times and please know we are here to help you with any of your wildlife management questions. I hope to see many of you at the various hunting shows this summer but at this time we're just not sure that they will happen. Let's hope for the best and pray for each other.

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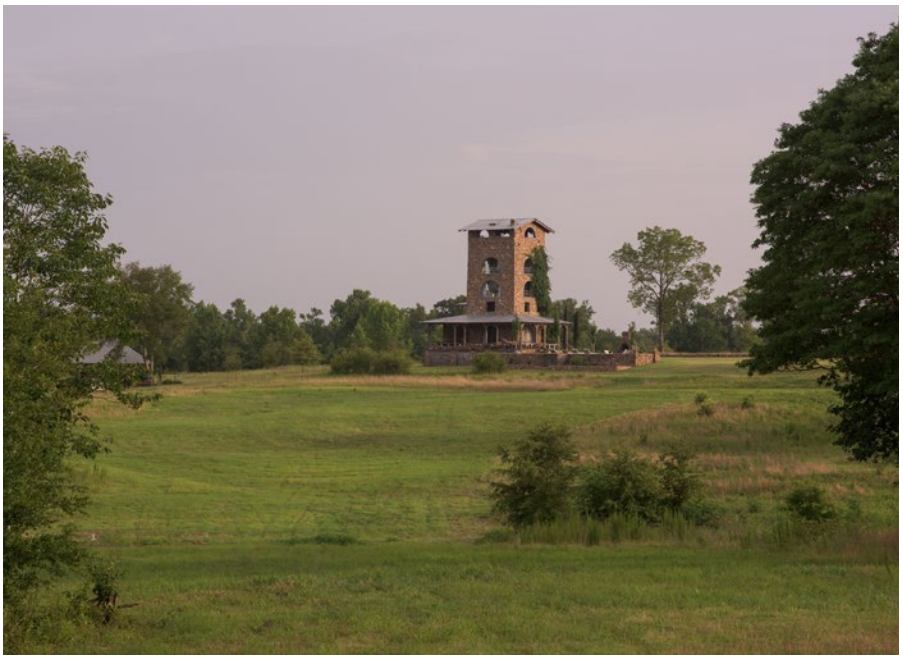
Cover Photo by Scott Brown

Shelter-In-Farm

By Keith Summerour



For those of us who have led a double life between the town and the country, our appreciation of either has been dampened by the frantic pace of life and business that created the opportunity – no matter how far off in the future – for a dream fulfilled of family, fresh air, and a more measured day on the opened range. Along comes a pandemic creating a spring like no other … a built-in excuse and perhaps necessity to take a break from the routine of daily American life and come together as citizens and family in a way perhaps never seen since the second world war. The selfless duty to fellow Americans, and to the world, is enhanced by the effect this time away from work has had on family and friends.

Though initially our retreat to the farm was tainted with fear and uncertainty for the unknown, very quickly we fell into a new rhythm that revealed the far off dream of life in the country today, now, not pushed into the distant reaches when children are off to college, but now, with classes online and homework in the barn, and shared Wi-Fi and work calling into an opportunity for fulfilling modern farm living. To this point, who could have predicted that Wi-Fi would be the primary daily divider of time and best desk location. Though we have learned that rural Wi-Fi has its limitations, we have also learned to work around the quirks of the system such as downloading movies or class homework early in the morning before the rest of the world gets on their devices (early bird gets the worm). Lack of enough refrigeration space was another surprise as we have four boys, age 18 to 24, girlfriends, a cousin or so,

Keith Summerour was born and raised in Alabama and graduated from Auburn University with a Bachelor of Architecture in 1987. Included in that five - year program was a year abroad studying the classical architecture in London, Paris, and Florence. Florence clearly made a huge impact on Summerour as he took an apartment and established a studio there in 2004 and spent numerous months in the city for years to come. Today he still visits Italy frequently, immersing himself in the architecture, food and with the people he has met along the way. He also serves on the Board of The Florence Academy of Art.

Summerour and Associates Architects was established in 1997. The firm's work can be found across the United States with a large concentration in the Southeast. There is a balance of residential and commercial work in the firm's portfolio including The Old Edwards Inn in Highlands, NC and Blackberry Farm in Walland, TN, both Relais and Chateaux properties, Institutional work for the likes of Wofford College and The University of Alabama and event venues such as the Summerour event space in Atlanta, GA and The Avenue event center in Greenville, SC.

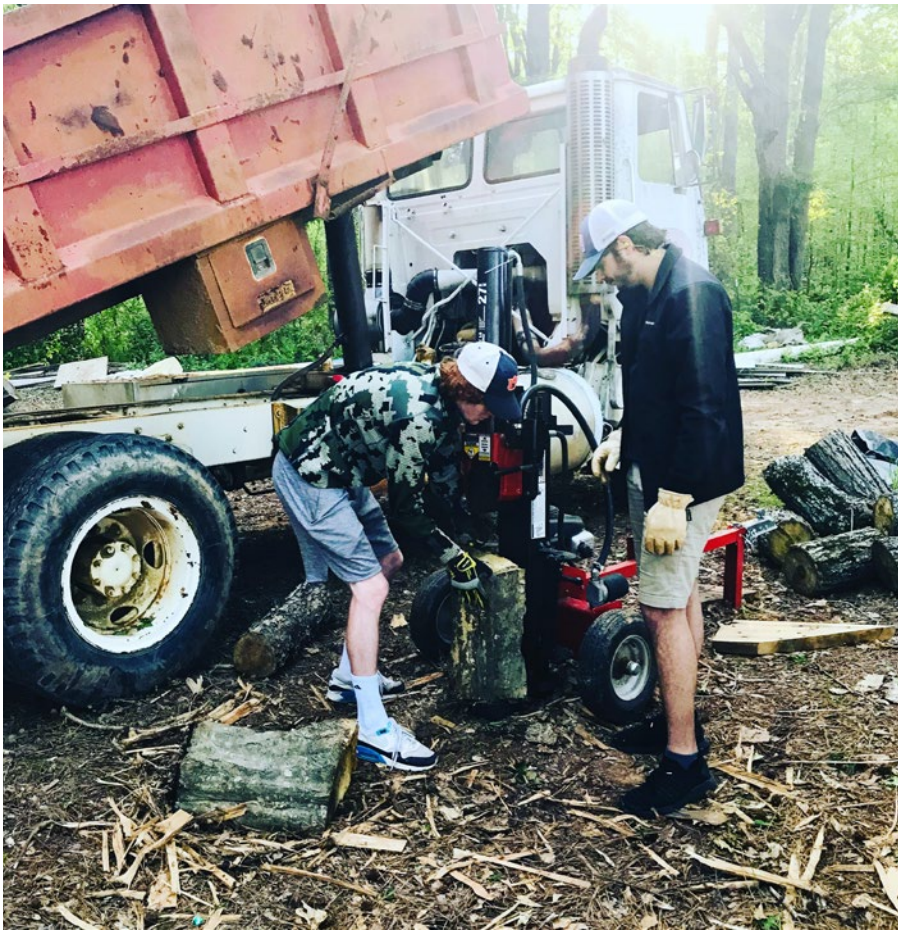
Keith spends most of his free time on his farm in Gay, GA, Towerhouse Farm, where he keeps chickens and bees, raises sheep and grows his own vegetables. His focus has turned to a healthier, mindful way of living which extends into the firm's culture.

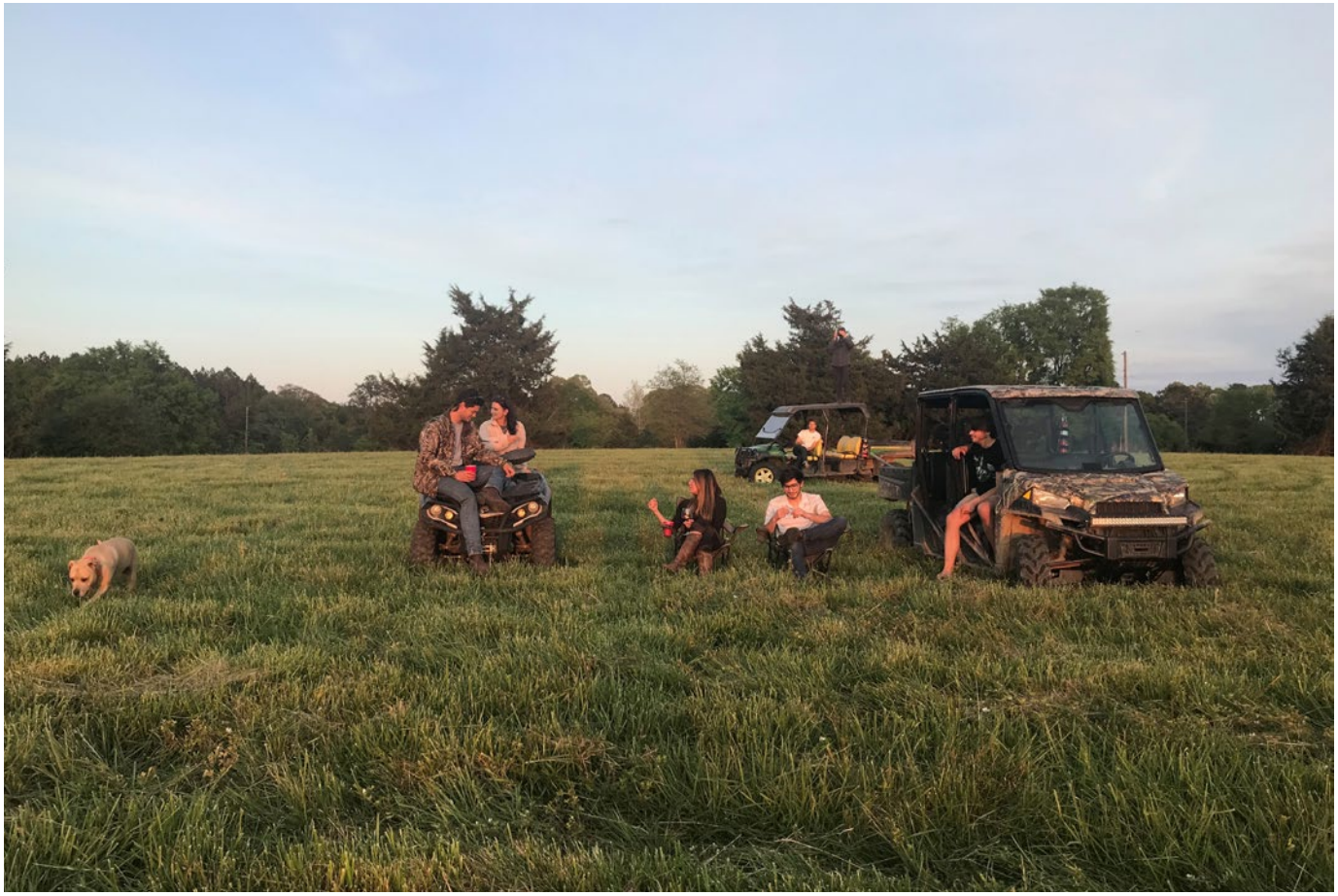
The firm currently has two monographs, Summerour, Architecture of Permanence, Scale and Proportion and Creating Home, Design for Living.

and ourselves to feed each night. So, for those contemplating a walk-in cooler for big game, there now is another good reason to invest in cooler space, feeding the shelter in place extended family!

Firewood preparation this year was ahead of schedule but due to the cooler spring we have had it become clear that more splitting was required. Turns out, this activity was a very good outlet for teenage energy and a great in between online class occupation that would have been a "game boy" or video game option in Wi-Fi friendly city life.

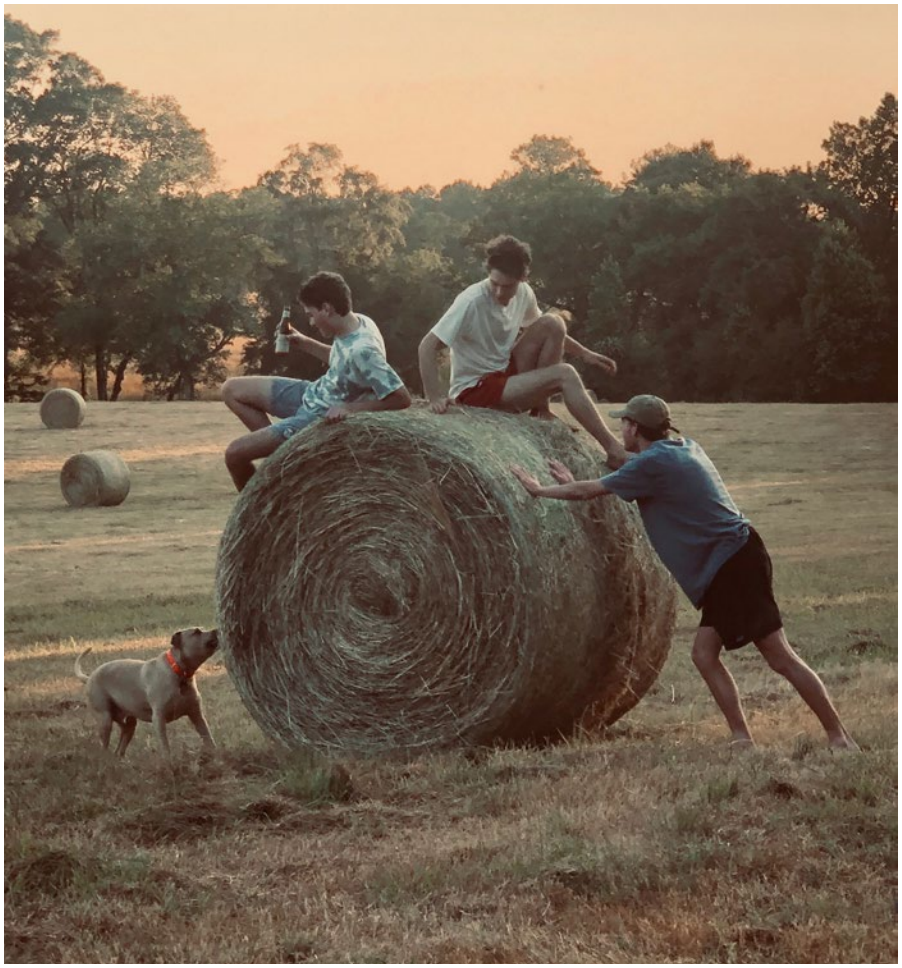
We normally keep two large off road fuel tanks at the pole barn for the tractor, gators, and skid loader, so this Corona experience was little different than normal farming weekly operation with the exception of the feeling of being well





prepared despite our predicament. And this is really to the point of it all – having a farm is automatically a buffer and a refuge from the "just in time" urban world from which we have escaped. Very little additional preparation was required by the family as this farm life has been part of our routine so long it is as if little is different. But we know through friends and news channels that we are the exception, and our heart goes out to the folks making the sacrifice that allows others to live well.

We are thankful and grateful for our time together as a family. I want to impart to all of us with both feet planted in the soul of our country that the life we lead in the country no longer goes unappreciated as a place to be. It is instead a way to be, a way to appreciate our blessings of time, family, and good work in the open air.



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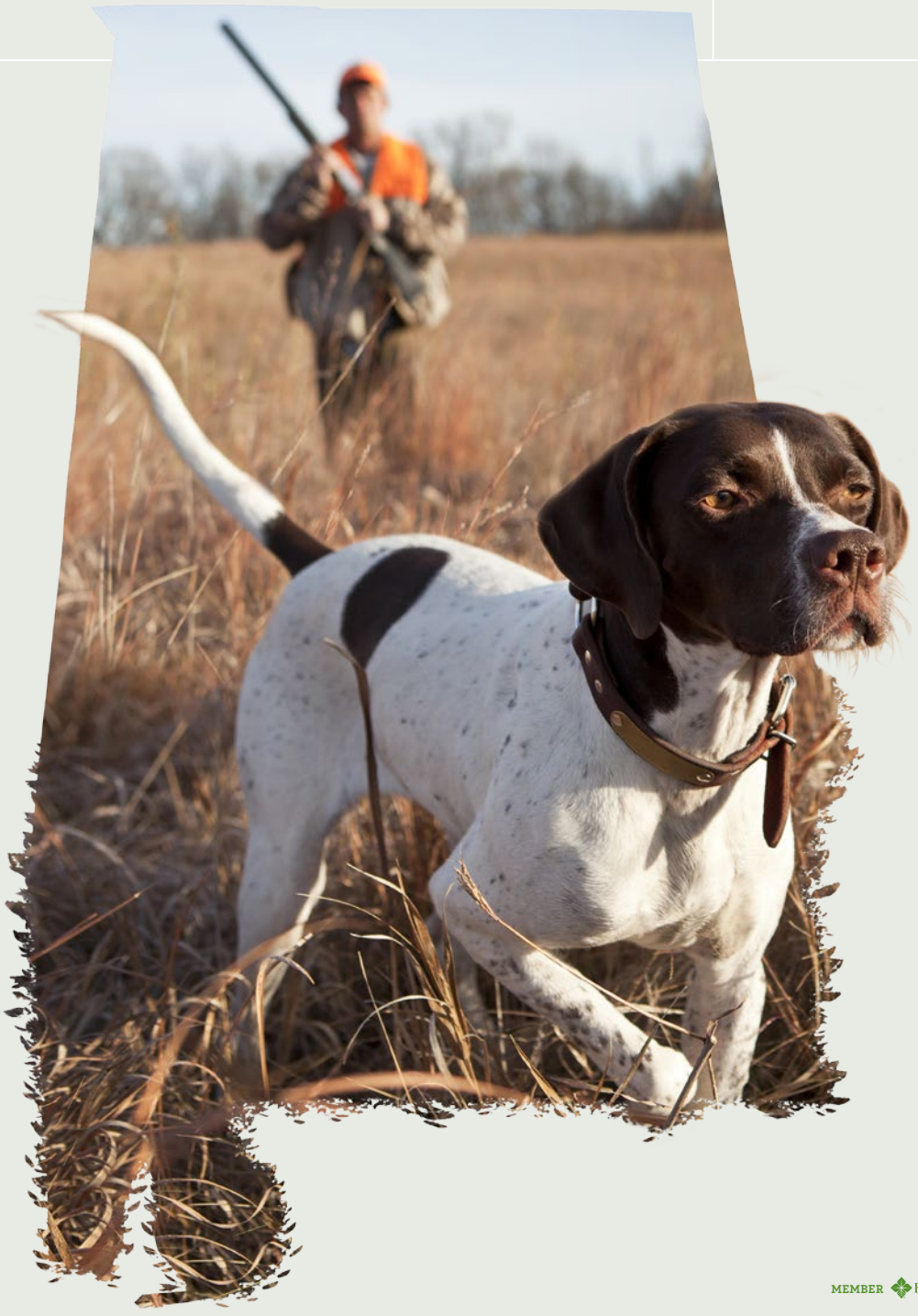
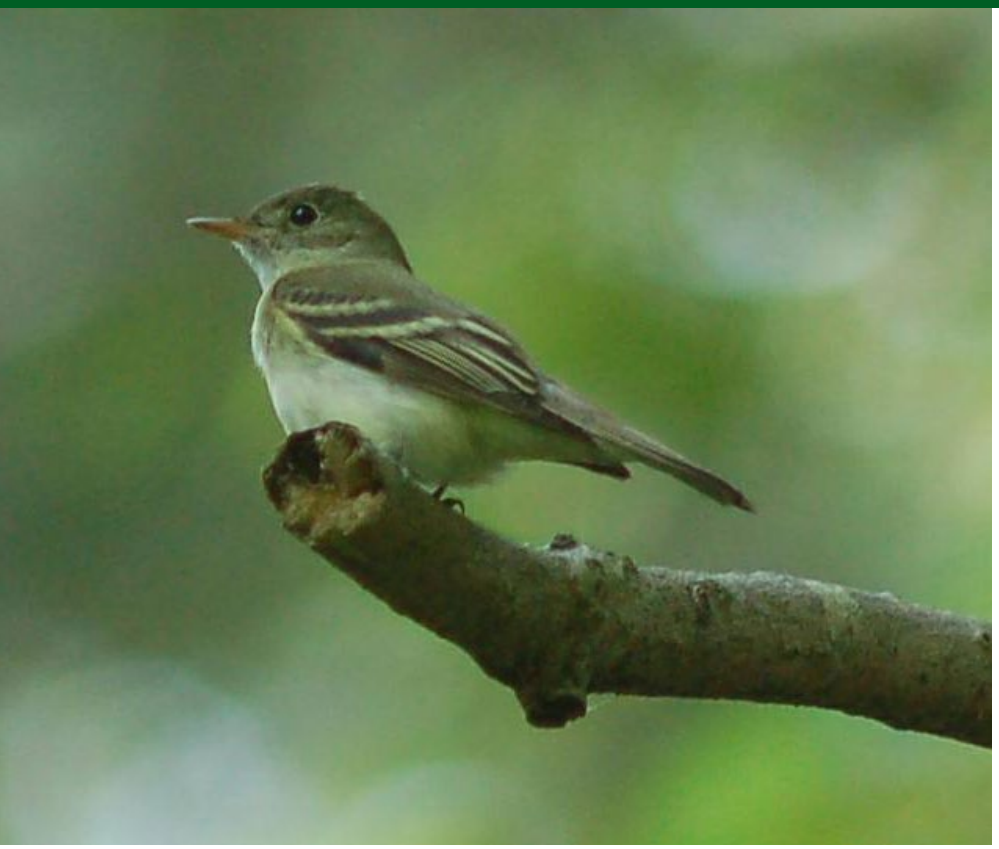


MEMBER FARM CREDIT

Smart Birding: Targeting Species by Their Habitat

By Ryan Shurette

G. Ryan Shurette is a Certified Wildlife Biologist and Owner/Guide of DragSmoker Fishing Guide Service. Contact him at 256-404-5814.



Acadian flycatchers inhabit shaded riparian zones in southeastern US hardwood forests. They look very similar to the other species who belong to the Empidonax genus, all having drab greenish brown plumage with buffy white underparts. Empidonax translates to "gnat master" and this describes them well, since they feed heavily on gnats, midges, mosquitoes, and other small, soft-bodied, flying insects (which they aerially capture on the wing). Photo: Public Domain

As darkness slowly gave way to the pastel orange and pink hues rising in the East, I stood in the cool pre-dawn of mid-April. Just like many other folks scattered across God's country on that fine morning I was waiting for a turkey to gobble, one of my favorite things to do in life. I was in a familiar place, a place where I had stood and waited for gobbles many times before over the past thirty years. Here I knew the lay of the land. Although it was still too dim to see them in full color, I knew that the dry rocky ridge I listened from was littered with tall longleaf pines intermixed with post, chestnut, and blackjack oaks. I knew that approximately one hundred yards behind me to the north was a small five-year old clear-cut that by now was green with native grasses, bracken ferns, and scrubby planted longleaf pines. Down the slope in front of me I knew that the mature dry upland forest transitioned into a rich moist bottom with white, water and laurel oaks, green ash, river birch, and American beech, and that this riparian forest system meandered for as far as the ear could hear along the small clear creek at the lowermost elevations of the drain.

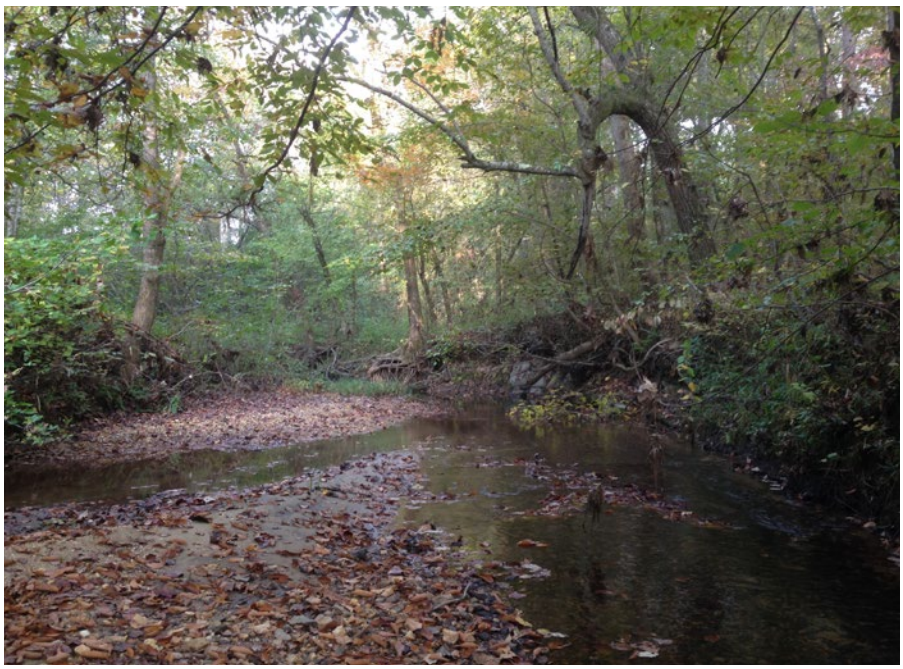
I also knew that within this varied forest landscape, dozens of micro-habitats existed, each providing resources and cover for a predictable assemblage of creatures. And so it was about that time (after the twilight prelude by the Chuck-wills-widow ended) that the morning roll call began, with each participant situated appropriately within their respective habitat. Behind me from the edge of that open cutover a

male Eastern towhee, began repeating "drink your… tea…" from the top of a shrub. After he broke the silence, I heard the blunt non-melodious squawk of the Yellow-breasted chat, immediately followed by the enthusiastic song of "sweet, sweet, chew, chew, see-it, see-it" of the Indigo bunting. This, in turn, inspired the consistently rising song of the field sparrow. From above me, in the mixed longleaf-oak canopy. a Black-throated green warbler softly announced his presence with a fragile sounding "zay zay zay zoo zee". His neighbor, a Black-and-white warbler, also sang as he flitted around high above me looking for his breakfast of small caterpillars in the new, lime-green oak leaves. Farther down into the bottom over the creek, I listened to the rising tone of the Northern parula, a Yellow-throated warbler, and then the loud clear song of a Louisiana waterthrush at the tumbling water's edge.

As I counted them off one by one, I was suddenly startled by a sharp raspy gobble somewhere down below. Like most turkey hunters worth their salt I quickly disregarded all other living things and plucked my shotgun from the tree against which it leaned, and headed down the slope. It is true I am addicted to turkey hunting. However, I am not naïve enough to think that my sheer enjoyment of this sport depends solely on just getting a shot at a longbeard, and that the experience is not also greatly subsidized and affected by all the other little things that contribute to such a morning in the fresh spring woods. Sure I get exited at the sight of long sharp spurs as I walk up and roll a flopping tom over, and I do love fried turkey breast and biscuits. But I think many would agree, it is the peaceful sound of a trickling branch, the brilliant view of God's painted sky, the smell of wild azaleas in the mild breeze, and yes the diverse chorus of birdsong during the hunt that makes the quest truly enchanting, and these are the things that pull me back to the woods each morning.

This same fascination with birds is common to many people. In a 2011 report by the US Fish and Wildlife Service (USFWS), it was estimated that there were more than 22 million avid birdwatchers in the United States alone. The category of "avid" is extrapolated by the number of folks that responded yes to the survey questions about "whether they drove at least 1 mile from home specifically to watch birds and other wildlife in the past year". If this is indeed the case, that means there were more "birders" than hunters at that time. Without license sales it is hard to know exactly how many people participate in the hobby of birding but it is extremely popular across the country and the world. And birders spend a LOT of money. The hobby is reported to have generated approximately $54 billion annually, while hunters spent around $34 billion in that 2011 report. In 2016 another USFWS survey suggested that these trends are changing significantly. Wildlife watching is surging (showing a 20% increase from 2011 to 2016). And wildlife watchers (largely birdwatchers) now spend an incredible $76 billion per year! With the recent pandemic situation, it seems this activity has been an especially attractive pastime recently, since it can typically be done while distancing oneself from others.

There are several different categories of birdwatchers. Many prefer partaking of the hobby while sitting in their kitchen or dining room, observing the familiar seed-eating species that frequent thistle, suet, or various seed feeders throughout the year. Some folks are hummingbird enthusiasts and they look forward to sitting on their decks and porches to watch to their hummers' frantic, buzzing acrobatics each spring. Backyard birders, as they are often called, are probably the most com-



Bottomland forests and riparian habitats are a perfect place to see species such as Acadian flycatcher, Northern parula, Yellow-throated warbler, and Hooded warbler in summer. As autumn arrives these migrants begin to head south and eventually back across the Gulf of Mexico.

Bright blue Indigo buntings are a very common species in open scrubby habitats across the eastern US in summer. They often sing their enthusiastic song of "sweet, sweet, chew, chew, see-it, see-it" from the tops of scattered canopy trees. Photo: USFWS

mon type of birder. But there are only so many species (and only so much adventure) one can expect to encounter peering through one's own window. At the other end of the spectrum is the extreme birder whose life revolves around sighting and crossing off (also called "ticking") bird species. Many of these extreme birders, are known as "twitchers". Twitchers anxiously await the next incoming call, text, or email alert announcing the presence of a rare species that might only be around for a brief period of time. A twitcher will think nothing of dropping whatever they have going at the time, hopping on a plane and flying across the country, or even the globe, to see the next rare species when the opportunity presents itself. Be it a wayward Purple sandpiper that strayed into the Florida panhandle, or a Dusky warbler that wound up in California on the wrong side of the Pacific Ocean, these kinds of sightings can draw big crowds quickly .

There are about 10,000 species of birds worldwide and some birders have spent their entire lives trying to see them all, although only a few highly dedicated travelers have seen more than six or seven thousand. A great many folks have even died on this quest. But don't worry, in this article we will not focus on the extreme, nor will we discuss backyard bird feeders and bird baths. Instead I will focus on the local pursuit of wild native birds, and I will try to provide a virtual diagram of habitats (forest vegetation communities) and establish a corresponding list of predictable birds that you would expect to encounter there depending on season. This kind of selective "hunting" for wild birds can be done over a single piece of property, or across one's own county, for little to no cost. And by knowing which habitats predictably hold which species of birds, you can effectively and efficiently target those in which you are interested, or perhaps have not yet crossed off your list. We will refer to this strategic bird-stalking concept as "smart birding". Although there is nothing wrong with just randomly walking along a trail, down a dirt road, or through the forest identifying birds as you come across them, the focused pursuit of a targeted group of species introduces a slightly different angle to the hobby.

This concept is based on the fact that many, although not all, bird species require or at least prefer certain habitats or vegetative landscape features. There are many generalist species that can be found over many types of habitats and forest communities. Species like Carolina wren, Tufted titmouse, Northern cardinal and many others are just as often seen in dense contiguous hardwood forests as they are along old-field borders and backyards. These species often have varied diets and are pretty adaptable. For this reason generalists are typically the most common and abundant species of wild birds and we won't spend time on them since most folks are probably already familiar with most of them. Specialists on the other hand are much more predicable when it comes to where, and in which kinds of habitats, to hunt for them. Habitat specialists often even have physical characteristics that tie them to a certain food or cover type. The Yellow-billed cuckoo for example is a New World cuckoo (unlike the Old World species that lay their eggs in other birds' nests) native to the eastern United States. It has a long downward curved bill that is perfect for gleaning leaves and feeding almost exclusively on caterpillars, its favorite food. It is not hard to understand why Yellow-billed cuckoos spend almost

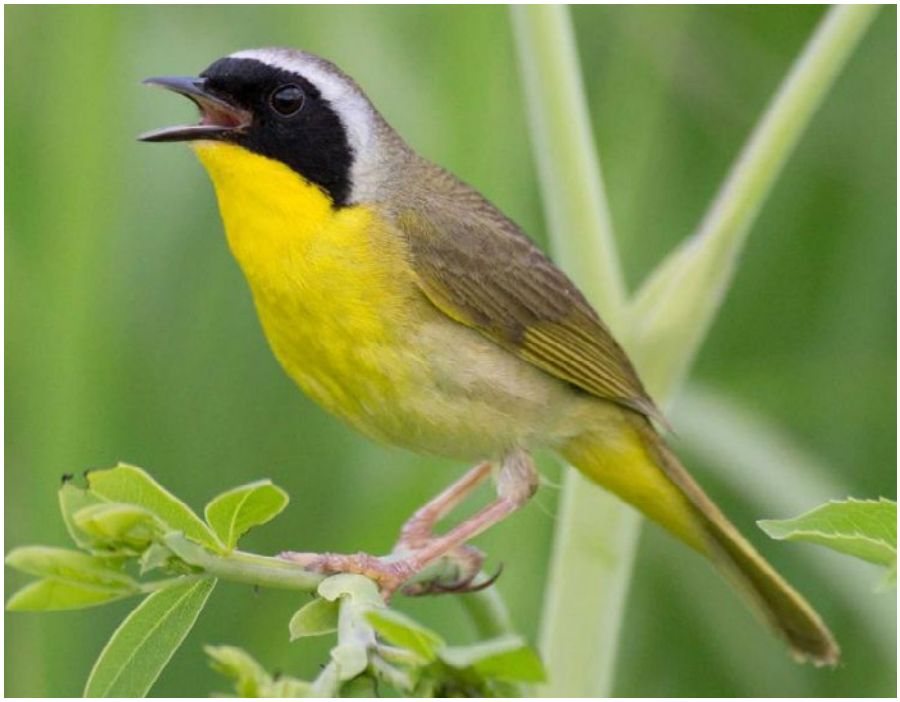
all their time in the mid to upper-canopies of hardwood forests and oak groves. Northern bobwhite quail would also fall into the category of a habitat specialist. They are a little different because they feed on a variety of food items and are not tolerant upon one specific of forest, but they are instead adapted to life in highly disturbed (early successional) systems. Depending on what region you are in, bobwhites may be found in prairies, open longleaf pine forests, or shortleaf pine-oak sand hills. But because they are much less mobile, they rely completely on the seed, insect, and cover-producing resources found within a relatively small area of burned, mowed or otherwise disturbed habitat. The readers of Wildlife Trends can certainly picture in their minds what good bobwhite habitat looks like, and so that same visual picture can also be painted for each habitat specialist. When I think of Acadian flycatchers, for example, I think of a shaded riparian zone in a southeastern US hardwood forest, where this species will likely be perched upright, directly above or near a stream. Here they feed on flying insects associated with the moist environment around the stream or swamp. Not all riparian areas will hold them but when you do find them, they are usually first detected by their short distinctive "pea-soup" call. Acadian flycatchers are not flashy or brightly colored birds. In fact they look very similar to the many other species of flycatchers who belong to the Empidonax genus, all having drab greenish brown plumage with buffy white underparts. Empidonax translates to "gnat master" and this describes them well, since they feed heavily on gnats, midges, mosquitoes, and other small, soft-bodied, flying insects (which they aerially capture on the wing). The Alder flycatcher is a very similar species in its appearance and habitat preference. It overlaps with the Acadian in some parts of the East but its range extends much farther north and well into Canada. Not all members of this genus, however, inhabit shaded riparian areas. The Gray flycatcher prefers dry shrubby pinyon-juniper-sagebrush habitats of the Southwest while the Least flycatcher can be found in open deciduous woodlands, orchards, and parks throughout New England and the Midwest. All of the members of this genus are summer residents in the US. Their food items are obviously pretty scarce in winter so these flycatchers (along with most US warblers, tanagers, and other insect-eating species) migrate to warmer climates in the fall, largely Mexico, South and Central America, and parts of the Caribbean, to spend the winter months. In spring, males return to the breeding grounds, drop from the sky, and file into their appropri-

ate habitats. Once in place they, just like most other neotropical migrants, establish individual territories using their own species' distinctive song to mark, maintain, and defend the boundaries. Since there is so much vocalization during the spring and early summer months, this is the ideal season for seeking interesting birds in their respective habitats. They are much easier to chase if you can hear them singing first. And it only takes a little practice to be able to discern bird species by song. With plenty of song audio readily available on the internet nowadays, it is easier than ever before.

So before we leave the aforementioned riparian, streamside hardwood forests and humid swamps of the Southeast, let's see what else we can find here in spring and summer. This kind of scene is also prime real estate for Northern parula warblers. This species is a small, dark-blue warbler with white wing bars, a white belly, and a bright yellow throat and chest. Males also have a banding of orange and blue on the breast. It is a very striking bird in the hand but it is seldom seen up close because it typically stays well up in the canopy. Its song however is a dead giveaway; a rising buzz with a short end note… "zzzzzzzzzzzzz…zip". Yellow-throated warblers also frequent mixed pine forests along lakes, rivers, and creeks. They also tend to stay up high in the canopy and also have a rising, though not buzzy, song with a rising abrupt end note. Hooded warbler on the other hand prefers the lower canopy and shrubs of swampy riparian areas. Its primary song is a rich "ta-whit ta-whit tee oh" and it is very predictable in the lush shrub vegetation (especially Florida anise thickets) and mid-story canopy in wet areas. This species actually has a secondary song that sounds nothing like its primary. It is one of the few American warblers to sing two separate and distinctive songs. Moving farther down the vertical forest strata and finally onto ground at the edge of the stream itself, listen for the loud clear song of the Louisiana waterthrush. This is yet another warbler species, and as its name implies it loves fresh flowing water. It spends most of its foraging time walking on the bank and streamside rocks, bobbing its body up and down. It has a brownish-black back with a dirty white belly, white eyebrow, black belly streaks, and bubblegum pink legs. In summer, the Wood thrush also frequents the understory habitats of shaded moist woods and swamps in the Southeast. The Wood thrush is said by many to have the most beautiful and complex song of all eastern songbirds (a loud liquid

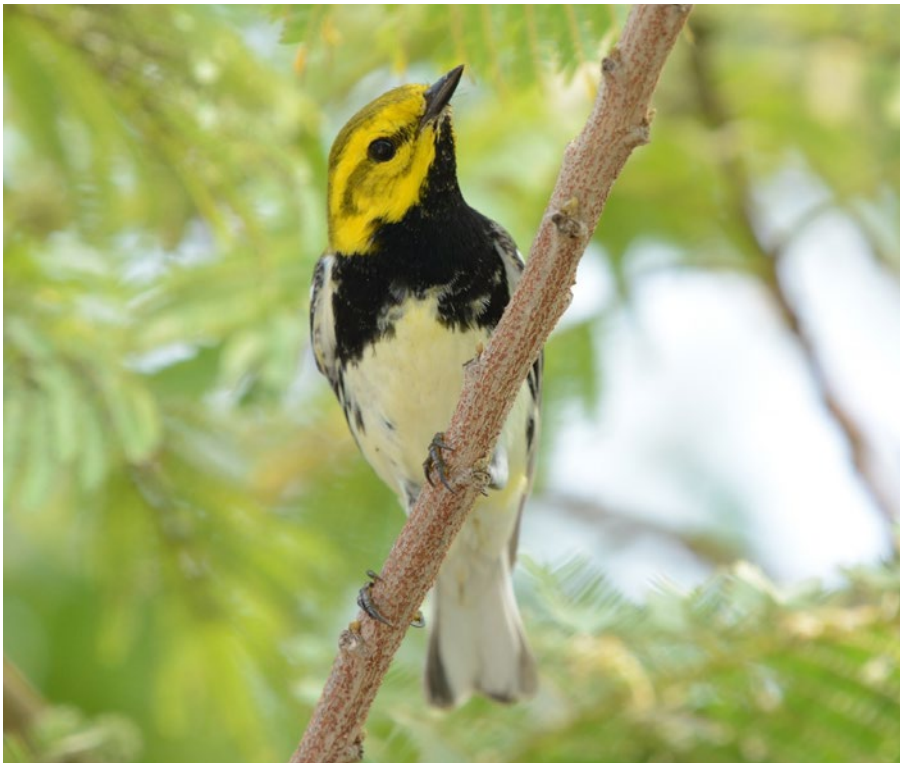
series of notes followed by a trill). Personally I think its cousin, the Hermit thrush, which breeds in the mixed mountain woodlands of the western US, Canada, and down into a portion of the Appalachians, has the Wood thrush beat. Many Hermit thrushes do winter in the Southeast, however, and occasionally you can hear them practicing their flute-like song in the late winter before they head for the high country. Once you hear its enchanting song echoing from the high mountain Douglas fir thickets on its western breeding grounds, I think you will understand why it has my vote. The brilliant yellow Prothonotary warbler is another species you may encounter in low swampy habitats, although they usually prefer areas with slower moving (often stagnant) water. Here they nest in abandoned cavities of dead trees, which is unique to southeastern warblers. While there are several other species associated with wooded riparian zones (even raptors like Red-shouldered hawks) we'll leave this habitat for now and spend some time in drier habitats. Let's think of the other extreme and look at some species that prefer dry forests and ecosystems.

A trip to the Southwest desert saguaro habitats for example, would undoubtedly provide an opportunity to see several fascinating birds. Cactus wrens, Gila woodpeckers, and Pyrrhulxias are classic desert species and are truly adapted to these harsh bone-dry climates. In the East however, there are some xeric habitats that have their own suite of bird species too. We know that open burned longleaf and shortleaf pine habitats are known for supporting Northern bobwhite quail. These habitats can be pretty dry and this is the same kind of vegetation that you would expect to hold early successional species like



The Common yellowthroat is also typically associated with open shrubby stands, especially where early successional habitats are intersected by streams or bogs. Male yellowthroats are brown with bright yellow throats and they have a clean black mask outlined in silver white. Photo: Noppadol Paothong, courtesy of Missouri Department of Conservation

the Yellow-breasted chat, our largest warbler. Chats are very common and they have dark brown backs, bright yellow and white underparts, and large thick bills. They have a very characteristic song that consists of repeated non-musical notes, squawks, and whistles. Male chats sometimes sing while flapping through the air at extremely slow speeds as part of their courtship display to females. In this same shrubby, grassy habitat under open pine forests you can also anticipate plenty of Prairie warblers. They have a rising trilled song and are also bright yellow (with black streaks down the breast). Female Prairie warblers construct small cup-shaped nests low in shrubs, often only three or four feet off the ground. They use spider webs to facilitate construction and then line the inside of the nest with soft broom sedge bluestem grass, feathers, fur, or horse hair. Sighting this species is almost a given in a young cutover or in an open shrubby pine stand in the Southeast. Bachman's sparrow on the other hand is a little stricter in its site selection and requirements. Bachman's sparrows typically only select sites for nesting habitat if they have been recently burned, usually within the last two or three years. They, like most sparrows, are drab brown for the most part, but they are of interest to birders because they are often uncommon and local. This is mainly because of fire suppression and habitat loss, not unlike the Red-cockaded woodpecker and bobwhites. Bachman's need grassy, weedy understories to fulfil their nesting and brood-rearing requirements. The range-wide Bachman's Sparrow population was estimated at 190,000 individuals according to data compiled by the North American Breeding Bird Survey, with Florida by far being the state where they are most common (Rosenburg et. al., 2016). Indigo buntings on the other hand are a very common species to see in



In mature pine habitats with a lot of hardwood midstory encroachment (due to a lack of fire) you can expect to hear and see Black-throated green warblers. Photo: National Science Foundation

these open scrubby habitats across the entire eastern US in summer, and they often sing from the tip-top of the big overstory pines here. The Common yellowthroat is also typically associated with open shrubby stands, especially where early successional habitats are intersected by streams or bogs. Male yellowthroats are brown with bright yellow throats and they have a clean black mask outlined in silver white. They're extremely loud for such a small bird as they repeat "witchity, witchity, witchity". White-eyed vireo is another species common to open pine stands, although they are also common in shrubby cut-overs and roadside edges. This one gives its presence away readily with its harsh nasal garble that some say sounds like "spit… see if I care, spit!" The male white-eyed is a beautiful vireo that forages and sings from low vegetation, while other eastern vireo species like it a little higher up in the canopy. Blue-headed vireos, for example, are often associated with conifer forests in the East. In the northern portions of their range they breed in mature pine, spruce, hemlock, or fir forests. Farther to the south, at the end of the Appalachian Mountains, they breed in pine and mixed pine-hardwood stands. Red-eyed vireo, a more common eastern vireo species, can also be found in mixed pine stands but they occur in almost every upland and bottomland hardwood stand as well, as they are extremely abundant. They typically stay high in the canopy feeding on caterpillars and other insects. While most passerines (songbirds) typically call more frequently in the morning hours, Red-eyed vireos will often sing all day long and they are easy to detect by sound. Actually spotting them is a bit harder. During a visit to an open pine/early successional habitat you might also expect to see the following birds: American kestrel, Blue grosbeak, Blue-gray gnatcatcher, Brown thrasher, Brown-headed nuthatch, Chipping sparrow, Loggerhead shrike, and Pine warbler. In an open stand with lots of dead snags, look for the unmistakable red-headed woodpecker with its clean red, white and black pattern. Red-headed woodpeckers excavate their cavities in dead, standing tree trunks, usually in pine snags which have lost their bark. In mature pine habitats with a lot of hardwood midstory encroachment (due to a lack of fire) you can expect Black-throated green warblers. In a northeast Alabama study that examined abundance of breeding bird species montane longleaf stands, we found that Black-throated green warblers were more than twice as likely to occupy mature longleaf forest that was fire-suppressed and that contained a significant midstory composition of hickory, sourwood, blackgum, and blackjack and chestnut oaks, as opposed to clean open "quail woods" (Shurette, et. al., 2007).

Where fire has been sparse or absent for many years, hardwoods usually take over and can eventually replace the entire canopy. Dry hardwood stands are also great places to see Black-and-white warblers. These summer breeders are insect eaters and they have striking black and white zebra-patterned plumage. Black-and-white warblers sometimes forage up and down the actual tree trunk like a woodpecker or nuthatch. Worm-eating warblers are also locally common in dry hardwoods, especially in stands of chestnut oak and hickory. The worm-eating warbler is more camouflage than the black-and-white warbler since it is a drab brownish yellow with a tan eye-stripe. Its song resembles that of a katydid or tree cricket. They are often seen picking through the high leaves or silkworm webs for caterpillars, which are their primary diet. I

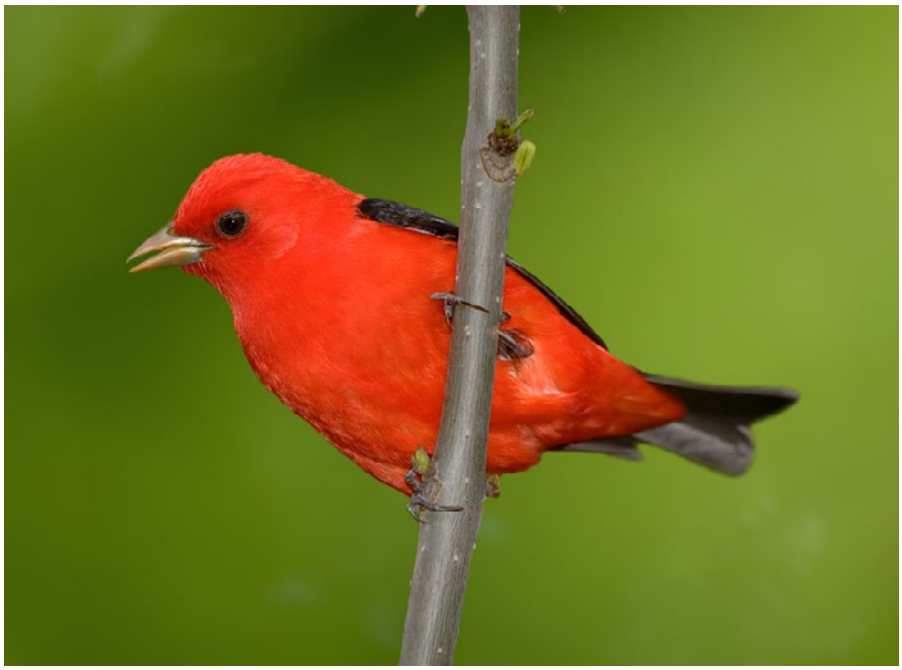
have never seen one on the ground and I imagine they seldom, if ever, eat true worms (like earthworms). Scarlet tanager is another species which you may expect to see in the mid to upper canopy of dry hardwood systems in summer. Their southern breeding range mainly includes the northeastern US, and dips only into the northern portions of Alabama, Georgia, and Mississippi. The Scarlet tanager is a brilliant bright red with jet black wings. Its cousin, the Summer tanager lacks the contrasting black wing color and breeds all the way to the Gulf Coast and into peninsular Florida. On the leaf litter-covered ground in shaded hardwood forests, you may encounter the Ovenbird. This warbler has a loud piercing song that sounds like two metal bearing balls being clanged together. It is one of the very few North American warblers to nest on the ground, where it builds a dome shaped nest that some say resemble an old earthen outdoor oven. This is where the name "Ovenbird" comes from.

Lastly, let's move out of the hardwoods and mature pine timber into a fairly common habitat you'll see all across the southeastern US; loblolly pine plantations. Unless loblolly plantations are older and have been thinned, they are usually dense and shaded, with little to no herbaceous understory. Typically the only thing found on the forest floor in these stands is pine straw litter. This is usually a situation that leads to minimal plant and animal diversity. There is one species however that you can count on here, the Pine warbler. Pine warblers are very vocal and they are one of the few warbler species that reside in the Southeast all year, including the cold winter months. They are generally abundant in any kind of eastern pine forest, including loblolly plantations, often occurring in small groups during fall and winter. If you want to start off with an easy one, go look and listen for a Pine warbler in a loblolly plantation.

There are many other micro-habitats and niches occurring across the varied landscape of the US that will tend to hold a predictable suite of bird species. Some will overlap with others regarding the list of expected inhabitants. Detection success for some species is almost a given, while others will take a little time and effort to cross off your list. In this article we are only able to provide a sample of habitats in which to search for your target species. The most exiting way to discover the many others is to grab your binoculars and put on your boots. Smart birding is a way to narrow your focus on a suite of species and become familiar with your anticipated cast before you go

Dry hardwood stands are also great places to see Black-and-white warblers. These summer breeders are insect eaters and they have striking black and white zebra-patterned plumage. Photo: Katie Koch, USFWS

looking for them. This strategy may help new birdwatchers to feel less overwhelmed, considering there are more than 800 different species that occupy or visit the North American continent. A simple Google search of the species will provide readily available images and audio files for almost any North American songbird. So if you are interested in getting into birdwatching don't be overwhelmed. Take it one habitat at a time and you will be surprised how quickly you pick them up. Some folks, however, find that their preferred method is just to dive in head first. All you really need for birding is a pair of good binoculars and curiosity after all.



Scarlet tanager is another species which you may expect to see in the mid to upper canopy of dry hardwood systems in summer. Their southern breeding range mainly includes the northeastern US, and dips only into the northern portions of Alabama, Georgia, and Mississippi. Photo: Bmajoros, Wikimedia Commons, no changes made.

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Growing Season Fire: Prescribed burning in the spring and its implications to turkeys

By Ted DeVos

Prescribed fire is one of the most useful yet misunderstood and under-utilized tools for the land manager, Forester and Wildlife Biologist. In this article, we will discuss the benefits, risks, and opportunities of burning during the growing season.

In the deep Southeast, fire has been an integral part of the evolution of our woodlands. From East Texas to Virginia, from the Gulf of Mexico to the Appalachian Mountains, the natural ecosystem has been driven by regular fire. The early explorers described abundant wildlife populations of deer, turkeys, bear, panthers, bison, elk, pigeons, etc. all existing in, and dependent on, the fire-maintained woodlands of the Southeast. Fire was and is an important driving force in our woodlands and the general consensus is that most of these fires were lightning set or at least regularly burned during the lightning season (April – July).

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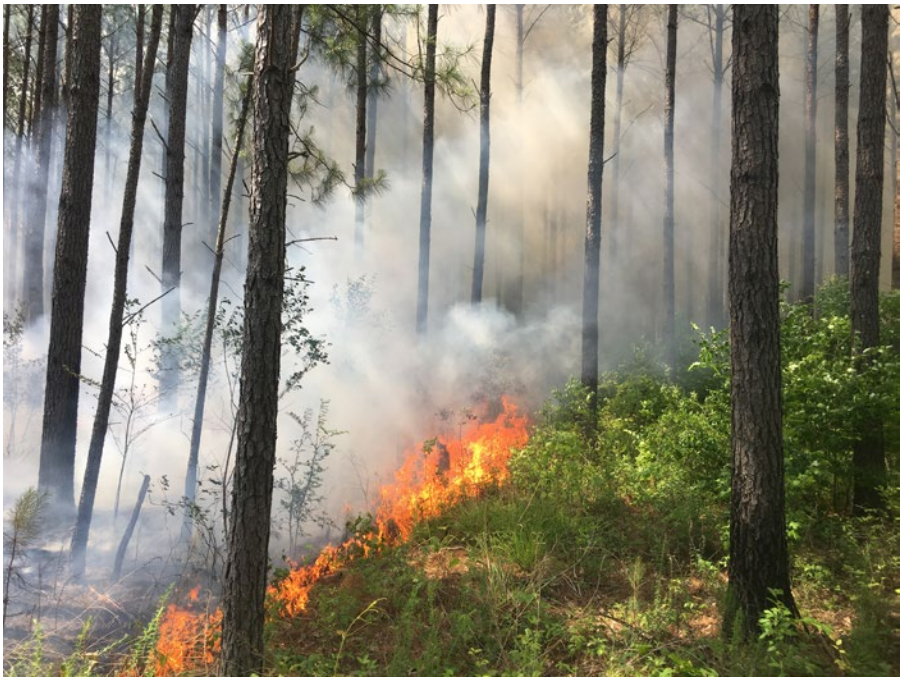
In our business, we see plenty of properties that utilize regular burning and enjoy the benefits of it. We also see plenty more properties that either don't burn or don't burn enough to make much of an impact. The benefits of prescribed fire are many. Regular burning:

- "Opens up" the understory of pine woodlands allowing easier wildlife access
- Increases visibility and hunter access, thereby increasing hunter success and enjoyment of the land
- Increases aesthetic values and promotes wildflower production
- Helps control the density of shrubs and hardwood saplings, allowing more sunlight to reach the ground
- Encourages a more open understory which grows more grasses and weeds providing food for all wildlife species
- Promotes legumes and perennial grasses for food and cover for wildlife
- Acts as fertilizer for some understory plants
- Reduces hazardous fuel buildup that leads to wildfires
- Helps control some insects and diseases
- Helps increase timber growth by controlling competing vegetation
- Helps increase timber value by allowing loggers visual access to all timber so they know what they are buying
- Helps decrease negative impact of logging by cleaning up sapling hardwoods before loggers are on site
- Creates and maintains nesting habitat for turkeys and quail as well as fawning cover for deer

We hear a lot of discussion about concerns with fire and nest destruction, especially turkeys and quail. While this will be addressed more specifically later, remember that at best, 20-30% of the burnable woodlands (pine or pine/hardwood) in the Southeast is managed with fire. That would mean that, at the highest, 5-10% of burnable woodlands are burned in any one year. For growing season fires which are, maybe, 10% of the burns in the Southeast, less than 1% of the burnable forest is burned in the summer.

Regarding nesting wildlife and growing season burns, remember that turkeys start nesting in March and quail nest through September. Also, in Alabama fawns can be born as late as November. We have witnessed hatched woodcock while burning in March in Elmore county in Alabama indicating nesting in February. All that to say that the only time you can be nearly sure not to impact reproductively active wildlife may be December or January.

Keeping control of YOUR fire is of utmost importance. Escapes do happen and plans for how to stop escapes are an essential part of the planning process. Smoke management is also a major liability concern on all burns and knowing what your smoke is expected to do and where it will go is also important in planning the burn. Knowing where any housing



Growing season fires do an excellent job of controlling sapling hardwood, especially gum and provide fresh forage later in the spring.

Often topkill on sweetgum can be as much as 15'. The unburned stand here is the same stand as the burned stand on the right.

developments, urban areas, airports, schools, hospitals, roads or other smoke-sensitive areas allows for planning required wind directions and smoke dispersion levels for your burn area. For instance, if you have a road bordering your burn unit on the west and north side, you will need a north and west wind to move smoke away from this hazard.

Most burning is conducted in the winter or "cool season". It has become the traditional time to conduct burns because 1) less nests or young-of-the-year wildlife are at risk and 2) regular fronts pass through leaving consistent winds and 3) dead vegetation is abundant and available as fuel. In reference to burning, "winter" or "dormant season" burns can be considered those fires conducted between Dec – March 31 when the woods start to green up substantially. After April 1st, most trees, shrubs and understory vegetation have started to fully leaf out and shade the ground. This is the time frame when most prescribed burn practitioners consider their burning season at an end. However, there are a lot more burning days available through the remainder of the summer for those willing to try burning under a little different conditions. For those who burn a lot, extra days mean a lot.

Growing season or summer burns (GS burns) are not that much different and, in a lot of ways, easier to conduct and control than winter burns. Fires tend to be more "well behaved" and are not constantly trying to get out of the burn block, cross firelanes or burn the neighbors. The basics of burning still apply. Securing downwind sides of burn blocks, burning ridge tops first, no ring fires, etc. all still need to be considered.

Also, certain areas should not or cannot be burned with GS fires. Older timber stands, especially old longleaf, that has not been burned in the last decade or more should not be burned in the growing season until a couple winter "fuel reduction" burns have been conducted. Heavy fuel buildup near the bases of these older trees allow feeder roots to grow into the lower duff layers and these feeder roots can be damaged in summer with fire and lead to high mortality rates. Also, young

longleaf that is less than 15-20' tall are susceptible to high mortality with GS burns. In any areas of high fuel loads and/or ladder fuels, a couple winter fires to reduce this fuel load are warranted before a GS burn is considered. Shady hardwood areas and hardwood drains are usually pretty fire proof and usually will not burn.

The major benefits of GS burning are 1) extending the burning window allowing a lot more acres to be burned in a season and 2) GS burns do a significantly better job of controlling understory/sapling hardwoods and shrubs and provide a much higher impact on woody cleanup 3) adding diversity to the property by burning some winter burns and some GS burns. Sweetgum, especially, is a problem in pine stands in the Southeast and GS burning can provide much more "knock down" power than winter burns. Often, gum reaching 4-5" diameter and 20'+ height can be top-killed with a GS burn. While mortality of these hardwoods may still not be significant, the removal of these stems out of the mid-story of a pine stand is substantial. Full kill of the roots of top-killed gum in a winter burn is virtually 0%, however, mortality in a summer burn may reach 10% on a good burn. So, regardless, you will have a hard time removing gum with fire at any time of year.

The type of fire to be applied is usually dictated by the terrain, weather conditions, timber type and age, fuel loading, fuel type and desired results. Backfires are fires burning AGAINST the wind. With winds out of the north, for instance, a backfire is one set on a southern firebreak and burns slowly to the north against the wind. Backing fires have the least intensity, flame length and rate of spread. Backing fires, however, have more "linger time" and do a better job of consuming fuels and burn deeper into the duff. These fires tend to be the safest and easiest to control. It has the least chance of scorch and is best used for "securing" downwind sides of burn units, as well as burning heavy fuel areas and young pine plantations. Bear in mind, however, that with a shift in the wind, a backing fire becomes a head fire instantaneously! Due to the slow movement and better fuel consumption, backing fires can damage feeder root systems

Hens with poults need fresh growing vegetation and insect, both of which are abundant on sites burned during the growing season.

All turkeys need and use open areas where they can feed and see any approaching predators. This includes both fields as well as fresh burns.

if soils and surface duff are too dry or in areas with heavy fuel buildup and burning large areas takes a long time.

Head fires are those fires that burn WITH the wind. These fires are usually fast, hot, and have high flame height. They can often carry, or throw, burning brands, leaves or other debris a considerable distance increasing the chance of an escaped fire. Burning large areas with head fires should only be done when the risk of escapes is minimal and all downwind areas are considered safe. For instance, large sections of open, grassy, pine woods in quail plantations can be burned with controlled head fires very quickly. This makes burning very cost-efficient.

However, head fires can also scorch timber easily, even large sawtimber, due to the release of a lot of energy in a short time frame. Canopy heat with a head fire is usually much greater than with other types of fires. Head fires are best used where large acreage of light fuels need to be burned, especially under mature timber. Breezy conditions make the fire move faster but also keeps heat from building up in the canopy of the trees. Head fires produce a lot of smoke but quickly go out once the fire is past.

Flank fires are those fires that burn at right angles to the wind. Because winds shift considerably during a burn, flank fires usually alternate from flank, head, and back fires. These fires are useful for securing the "sides" of a burn block, where the downwind side has already been burned and secured with a backfire and the sides of the block are lit into the wind.

The amount of fuel and how high off the ground it is has a lot to do with how it will burn. Fuels like pine straw can be flat on the ground in a mat or held up off the ground on bushes, branches, etc., like a "ladder". Situations where bushes like blueberry, wax myrtle, yaupon, etc. have draped pine straw, allows these fuels to dry very quickly and burn with access to a lot of oxygen. This can result in a very hot fire that "climbs" up into the tops of smaller trees. This is often the case where a site has not been burned in several years. Care must be taken to burn these sites carefully and slowly to avoid scorch and an escaped fire.

Good fuels for GS burns are also very similar to winter burns. Even "greened-up" broomstraw still has all the dead grasses from last year available for burning. The new green growth, however, tends to slow the movement of the fire across the stand. Pine straw carries a fire nearly all year. Interestingly, hardwood stands seem quite fire-proof in the GS. If there is no or little pine overstory or little grass growing in a hardwood stand, GS burns will rarely burn through them under normal conditions. Of course, in extremely dry conditions when

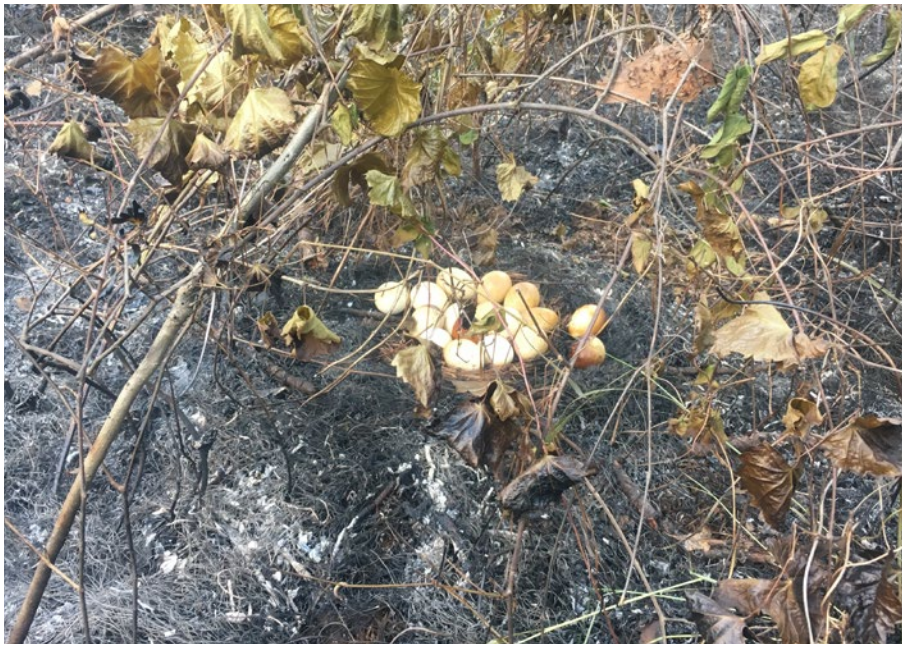
you should not be burning anyway, fire will enter hardwoods and can result in significant damage and mortality. Shady conditions and higher humidity levels under the canopy seem to do a good job of protecting hardwoods in drains and other areas where they dominate the overstory. Interestingly, winter burns have a much better chance of burning down into hardwood drains and bottoms than growing season burns.

Fuel loads do have a major impact in GS burns. Areas with weak fuel coverage, full shade conditions, weedy areas, thin grass coverage or those with light pinestraw will often burn poorly or not at all with a GS burn. These burns need good fuel loading to carry well and do a good job. Also, even though GS burns are best for removing gum from a pine stand, if you allow the gum to grow thick and tall and completely fill in the midstory canopy developing full shade conditions on the ground, you will have a hard time getting the fire to carry.

Humidity, temperature, and fuel moisture conditions are usually quite different from winter fires. Ambient air temps are often quite high and can result in uncomfortable conditions for burners as well as making fires a little hotter. However, it is these higher air temps that help in killing hardwood saplings. It is a lot easier for a fire to heat the inner cambium of a hardwood sapling to lethal levels when the air temp is already in the 80's and 90's.

Humidity is typically higher during the GS which usually leads to these fires not being as erratic and hard to control as during the winter. Higher humidity leads to higher fuel moisture, especially fine fuels like grasses and pine straw which tend to dry quickly. Commonly, lowest humidity levels at mid-day run 30 - 45% on most summer days.

Slow and cautious is often the word for summer burning. Using creepy backfires, short spots and head fires usually gets the job done. Burning too hot and fast can lead to the heat



Burning up a turkey nest is a risk using growing season burns, but not as risky as you might think.

reaching lethal levels on the pines also. Shifts in the wind can lead to spots of pine mortality as can using ring fires. Don't expect to get all ground to be burned like in a winter fire since there will usually be thickets, hardwood draws and canopied hardwoods with poor or no fuel that will stop the fire. If the burn block is well broken up with hardwood areas and mixed pine hardwood that will stop or slow down a fire, then a lot of fire may be able to be strung throughout all the ridges and allowed to go out on its own.

In addition to the better control of hardwood saplings and other shrubs with GS burning, these later fires also promote some variety in plants returning on the site during the following summer months. Later growing legumes like desmodium and lespedezas grow well in summer burn sites with the reduced competition. These plants are excellent deer browse, and increase insect production for turkey and quail chicks. They are also excellent seed producers for various birds who depend on them.

Native grasses like broomstraw that don't do well with competition also come back very well with later burns. Broomstraw and other native grasses are highly important to wildlife for cover and nesting. Typically, grasses like broomstraw are the most common vegetation in areas used for nesting for turkeys and quail and keeping the shrub/saplings from overtaking the midstory and shading out the grasses is the main benefit of GS fire. Quite often, trying to develop a good broomstraw stand in a pine woods can be problematic. Summer burns are an excellent way to encourage broomstraw coverage in these stands. Although they get a late start in growing, they usually do most of their development in late summer anyway and tend to regain full height if burned by July.

Concerns about nesting wildlife, especially turkeys and quail, are justified. However, the areas where GS burns are most needed and used (pine stands choked up with hardwood saplings and other shrubs with little or no grasses available for nesting) are usually poor nesting habitat and rarely selected by turkeys and quail for nesting anyway. In addition, those rare nests that are destroyed in a GS burn are replaced due to strong renesting instinct in these birds. Ideally, one of the objectives of these burns is to create good nesting habitat in future years by removing hardwood midstories and, ultimately, the habitat will be better in years to come, more than making up for an occasional nest loss. In addition, these burned areas become excellent brood habitat for young chicks later in the summer as growing vegetation begins to produce insects and the ground is open enough for young chicks to move through it and find food.

There have been a couple studies looking at GS burning and turkey nesting impacts. Little, et. al. 2014 and Wood, et. al. 2018 had radio tagged turkeys on properties that were managed with regular prescribed fire including GS burns. They found that turkeys generally weren't nesting in burn blocks since hens seemed to prefer habitat burned less than 3 years before and often nested in

the "transition zones" between burnable pine and hardwood where the fire went out so nest "exposure" was very low. Data from these studies and others conducted by Michael Chamberlain at UGA show interesting info. These research projects were conducted in woodlands managed with fire and out of 622 nests located, 7 (1.1%) were exposed to fire. Seven more were also inside burn blocks but had been destroyed by predators before the fire was applied. Five of these burned nests were destroyed but 2 hatched. Other studies found similar results, that 1-3% of nests were in blocks scheduled to be burned, even on areas of intensive fire use where 20-25% of the pine or pine/hardwood habitat was burned with both GS and dormant season fire.

Interestingly, 87% of the turkeys that had a fresh burn available to them, used the burn. Some turkeys were in the burn area while it was burned and never left the unit. About 70% of the turkeys that used the burn were in the burn block and using it within 2 days.

These studies also remind us of the importance of hardwood areas for both winter and brood habitat as well as roost sites for turkeys. Poults, especially those flightless young attended by hens, are very mobile even the day of hatch, but still are a concern with GS fire. Research shows that these broods use grassy/shady hardwood zones (where GS fire would never go) as well as brood fields of ragweed or other green annuals (where fire will not travel either) and, often, pinewoods stands that were already burned earlier in the year. Broods that have been tracked during prescribed fires are rarely at risk. In these studies, they had 137 broods in these woodlands during these studies and only lost one brood to fire. On You Tube, this data is available at "SFE Webinar: Influence of Prescribed Fire on the Ecology of Wild Turkeys".

These broods often move into and readily use fresh burns, sometimes the same day. Newly exposed food, bugs, snails, etc. are available and turkeys make quick use of them and short, growing vegetation makes for

good forage and easy movement. One note of interest is that these radio tagged turkeys spent the majority of their time less than 250 yards from the edges of these burns. This would indicate the value of smaller burn units in the tens of acres rather than larger units in the hundreds of acres if maximizing wildlife usage is a priority.

Anyone interested in this new and exciting research can look into Michael Chamberlains research from University of Georgia as well as his cohorts looking into turkeys using the latest technology.

One word of caution and common sense. When we are in late April and planning to burn a pine stand with good broomstraw/shrub cover that hasn't been burned in 2 years and we know May is peak nesting for turkeys, it may be prudent to hold off the burn to June. This is especially true if a stand like this composes a significant portion of your nesting cover. If it is a small block (20-30 acres) or only 10 or 20% of the nesting cover, it may not matter. Larger blocks or all of the 3-year rough on the property and it may make a big difference. Using best judgement and lowering risk only makes sense.

General Rules and Conditions of Concern

AKA, How to NOT kill your timber and burn off the neighbors!

- Always secure the downwind side of burn blocks with firelanes, a body of water, creeks, roads, and/or backfire creating a "blackline" that is burned out and with no remaining fuels before attempting to burn the rest of the block
- Burning is volatile when humidity is below 25%, soil moisture is low (KDBI index more than 400), winds are above 15 mph, or any combination of these
- Fires nearly always burn fast, hot and head fire uphill. Unless you know what to expect, never light at the bottom of a hill or in a ditch going uphill
- On windy days with low humidity, expect spotting across the firelanes with any head fires
- In most cases, burn ridge tops first, where most scorch occurs, and allow the fires to "drape" off the sides of the ridges to the bottoms. On steeper slopes, most fires will "back" downhill regardless of wind direction
- Ring fires (stringing fire completely around the burn block perimeter) will almost always result in severe damage in the middle. There is probably more timber damage done because of burning with ring fires than any other technique. The more walking out and stripping/spotting the middle of the burn blocks, the better the burn results
- If smoke dispersion levels, fuel moisture levels, or humidity levels are too low, or winds too high, POSTPONE the burn. Better to burn another day than risk having to "fight" your fire all day or burn on another property
- Take your time!! Rushing will get you into trouble, damage timber and result in jumps

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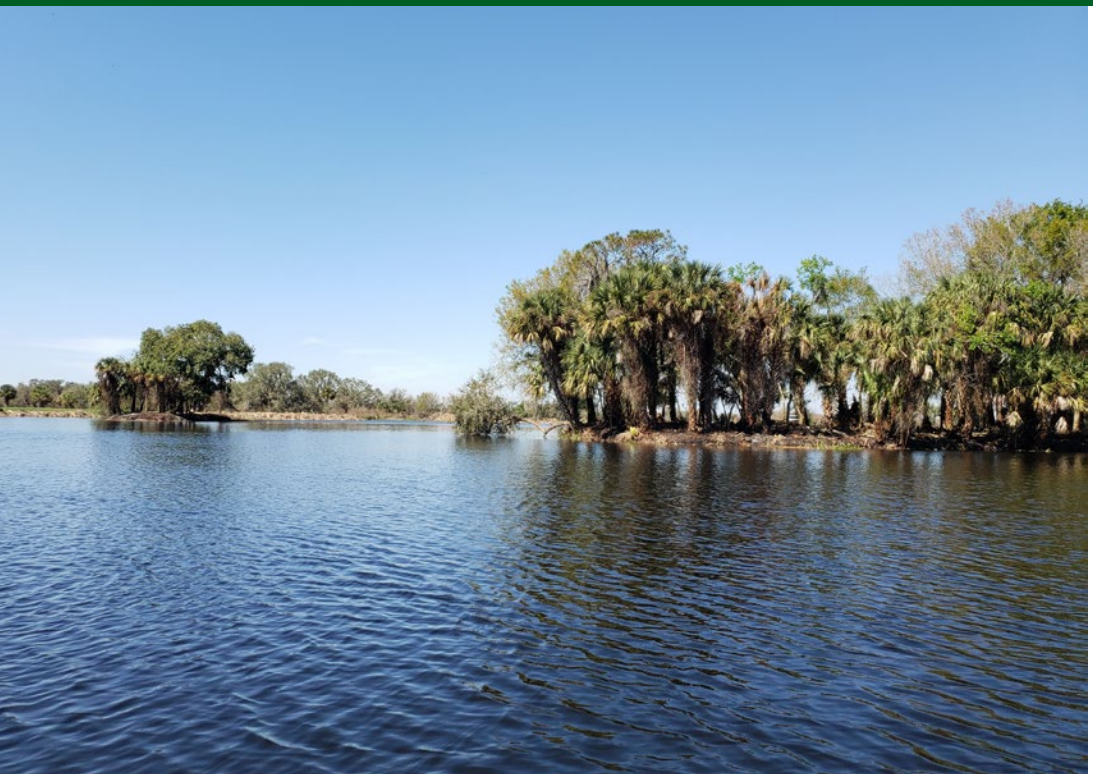
New Lake Owners

By Scott Brown



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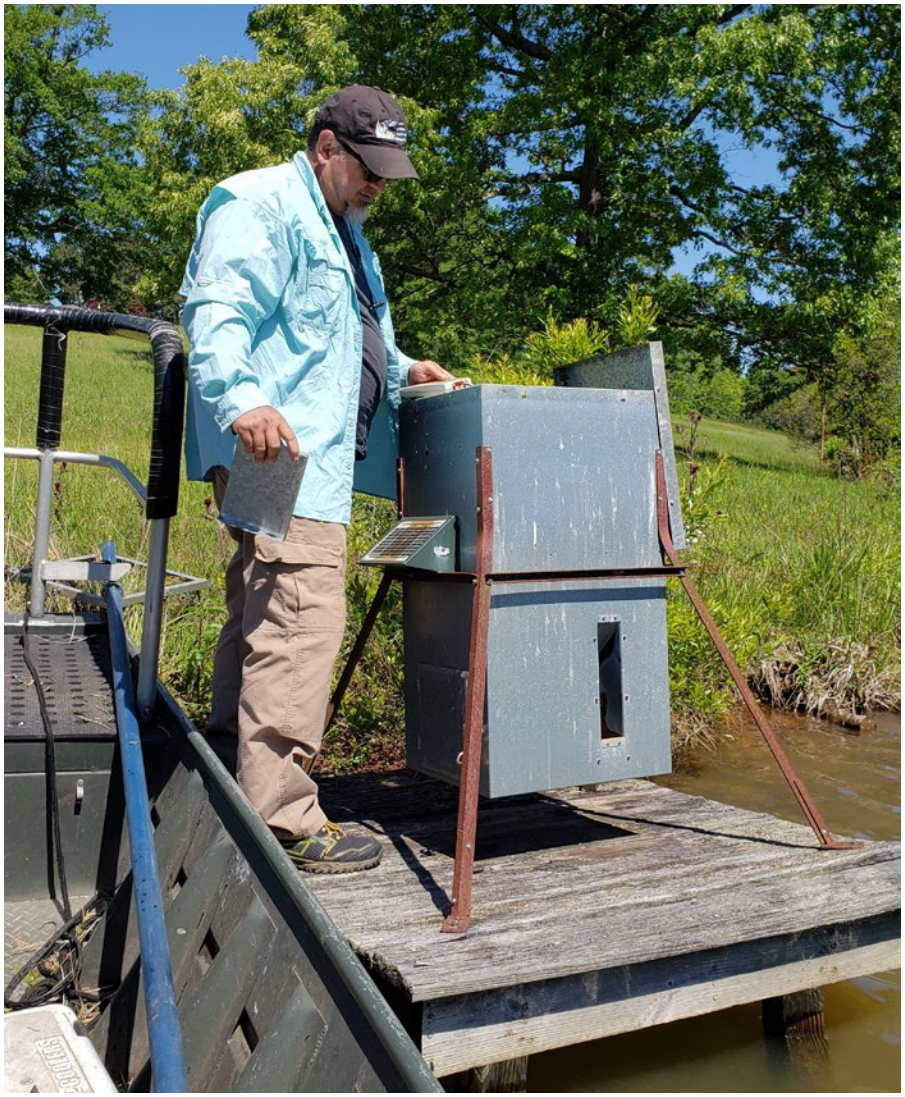
This lake was 80% covered in vegetation (cattails and water hyacinths) and full of organic muck until two days after the new owner took over. They dug it deeper and removed all the undesirable vegetation from in the lake and along the shorelines.

It is quite often a new property owner purchases their dream property, but has no idea what to do after it is turned over to them. They may already have a partial game plan to start managing for deer and turkey, but what needs to be done to a lake is unclear. Hopefully you did a little research interviewing the previous landowner on what has been done, if anything, to improve or maintain the lake or lakes. An inventory and assessment occurs first, then a management strategy with the help of a qualified fishery biologist needs to be created and adhered to so the waterbody can improve and provide you and your family years of enjoyment.

There are several things you can do once you become the owner to start the evaluation process. Establishing when the waterbody was built helps understanding the state it is currently in. If the previous owner does not know, check with county records or County extension agent or try to search older maps to possibly identify when it was built. If it is a newer lake, less than 30 years old, use Google Earth Pro and look at previous year map layers to identify when it was built. If you do not have an accurate size of the lake, and even if the previous owner told you, go to Google Earth Pro and trace the shoreline to calculate the acreage. Next, either use a depth recorder or weight on a rope to check water depths. Most times when we show up at a property the owners or managers say the depth is one thing, but after investigation it is usually something else. Usually the acreage given is larger than the actual acreage, and the depth given is usually deeper



This feeder looked to be neglected, and it was. Deciding whether to repair it or replace it is on the new landowners To Do List.

than the actual depth. Both of these are important in the future for stocking fish and/or applying aquatic herbicides.

While checking depths, notice the lake bottom material. Is it gravel, sand, mud, heavy organics, or a combination. If it is organic muck, use a 20 ft. narrow diameter piece of pvc pipe to measure muck thickness. Gently lower the pipe vertically until you feel it in contact with the muck surface, mark the pipe at the waterline. Then continue to push through the muck until you reach hard bottom and mark the pipe again at the waterline. The distance between your two marks is how much organic material you have. This can be just a few inches on newer or cleaner waterbodies and may be feet deep on older or high organic lakes.

Another area that can be assessed early is inflow, and where the water that fills your waterbody comes from, and where it goes. Does it come from agricultural lands, crop or livestock? Does the water mainly enter from a creek or ditch, and what influences are upstream? Does a nearby large creek or river occasionally flood your waterbody? Is it a combination of influences that feeds your lake? All these questions need answering before bigger decisions are made that can become failures due to the above not being positive for your waterbody. Where the water flows to is also important to you as what you do in your waterbody may have a positive or negative effect on a downstream neighbor's lake or public water. This can be performed by driving around and looking at maps on Google Earth.

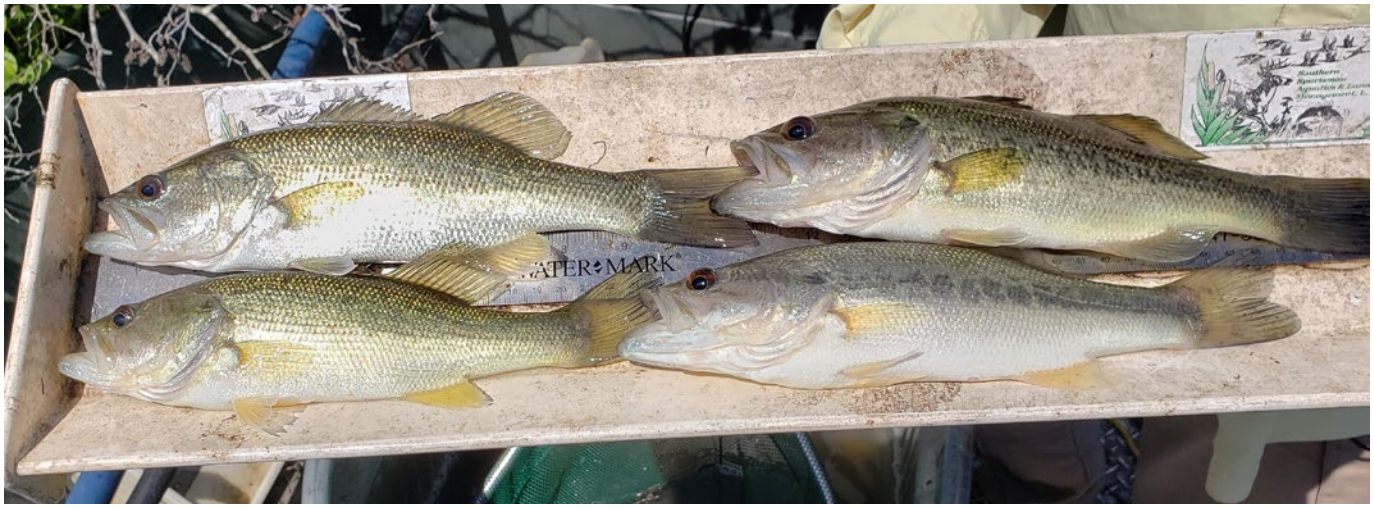
If you have inherited a fountain or aeration system and they are running, great! If you have a fountain that works, but is not on, you may turn on with a timer, letting it run during hours when it gets most enjoyed, or only turn on for special occasions. If it has a light kit, place timers on both the fountain and lights so they can be operated at different times, if desired. A bottom aeration system should run all the time. If it is already running let it go. If it works, but off when you take over, use the proper start-up procedure. Day one, run for two hours. Day two run for four hours. Day three run for eight hours. Day four for sixteen hours and day five leave on constantly. This gradual start-up will assure you will not roll the lake over too quickly and cause a fish kill.

Vegetation in and around your lake may or may not be a desirable species. Identifying plants and learning a little bit about each species helps you by knowing what you currently have and what you could potentially be dealing with during the peak growing season summer months. You do not have to become an aquatic botanist, but knowing the common plants present and whether they are native, exotic or invasive helps you plan and budget even before you hire a fish biologist to help. Looking at historical map layers can also identify any large past vegetation issues. One client had a lot of organic matter on his lake bottom and we identified in the past it had been covered with vegetation either dying naturally or from heavy herbicide treatment.

Identifying offshore attractors can be done again with a fish finder/depth recorder or visually if water is clear. If there are none present, building some to add habitat is suggested. The more habitat the more fish you will have. Every new client we serve on the initial electrofishing evaluation are surprised how all the fish we collect are near vegetation, overhanging trees in the water or woody snag, and very few are observed near the bare shorelines.

If the lake already has feeders on it, evaluate the feeders to see if they work, can be repaired/refurbished or need replacing. If one or more works properly, put some fish feed in one and set it for the same time every day. After a few days, watch what comes to the feed. Feeders are great spots to sight evaluate some fish in your lake,

If you're catching a lot of largemouth bass this size, there is a stunted population and bass removal along with stocking forage will be prescribed.



Stunted bass have sunken bellies and bigger than normal heads. Typical in a lake that has been neglected for a few years or longer.

Besides a lake full of poor-quality bass, you should see a lot of larger bream, but no other sizes.

identifying species present and sizes. If you regularly see fish coming to a feeder, fill and run all the working ones. This helps all the fish both the ones that consume it and the predator fish that eat them. We recommend one feeder per five acres, but sometimes two per five acres depending on the shape of the waterbody. If there are no fish feeders, or they are broken, hand throw fish feed out for several consecutive days in the same spot, at the same time to visually see what fish come to it.

After acquiring a new lake, hopefully you fish it to get a grasp on what fish species are present. Do not just throw your favorite lure a few times and generate a management plan for the next five years. Fish it for bass, bream and catfish, using various sized hooks and bait to give yourself the best opportunity to document what is there.

Your new lake's fish population is in one of three conditions/ categories. The best scenario is the previous landowner managed it up to the day of transfer. In that case, after evaluation you will be into maintenance mode. There will be various sizes of bass from young-of-the-year to quality sized individuals, the bass present will be robust/healthy, plentiful forage for all size bass and quality bream to catch. This is almost never the case! Usually once it is decided to sell a property, management ceases first on the lake, because it is the least important to most property buyers. Another scenario is the fishery has been over harvested, knowing it was being sold and the previous owner wanting to catch as many quality bass or food fish out before turning it over. The final scenario is the most common, where nothing has been done for quite some time, including largemouth bass removal and or weed control. Obviously, you can see if weed control has not been done in a while by standing on the shore. But seeing if you have a stunted bass population and shortage of bass forage requires much further investigation.

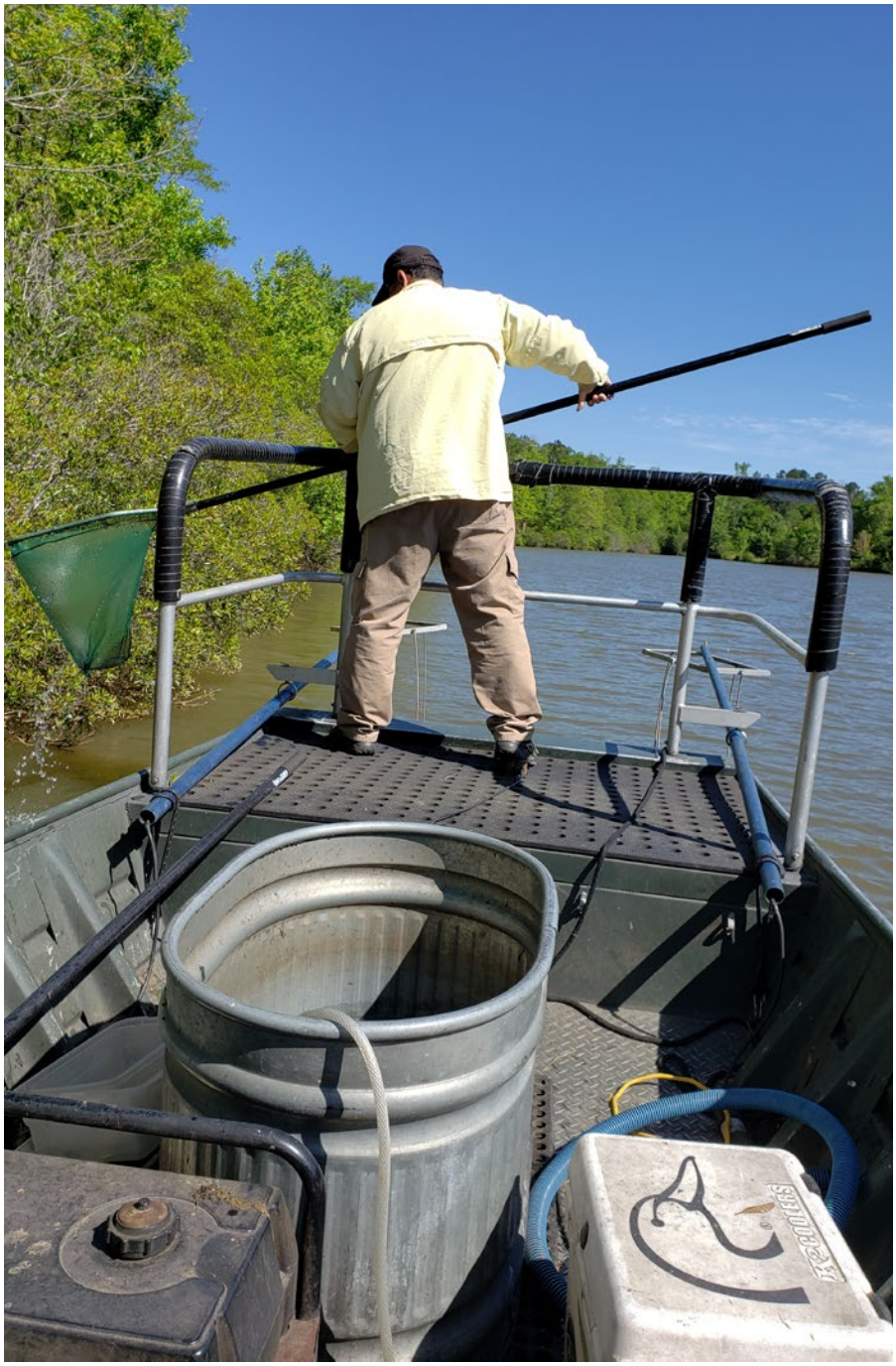
There are a few things new lake owners want to do right away that maybe you should hold off on until your evaluation is complete. Often new lake owners have read or been told fertilizing ponds improves the fish population, and it does. However, unless the previous owner was fertilizing, wait until you get the water chemistry parameters checked. The water chemistry may not currently be right to create an algae bloom, and pouring fertilizer in will not create a bloom, but it will grow other plants at an accelerated, undesirable rate. Adding agricultural limestone first may be necessary to achieve a good algae bloom. If you take over in the middle of the growing season and they have been fertilizing, you must continue to avoid other plant issues. You should never stop a fertilization program until the growing season ends. The other mistake new lake owners make is they aren't catching a lot of fish.

That does not mean you should restock largemouth bass. Restocking bass is almost never necessary. About 99.99% of the time largemouth bass do not need restocking.

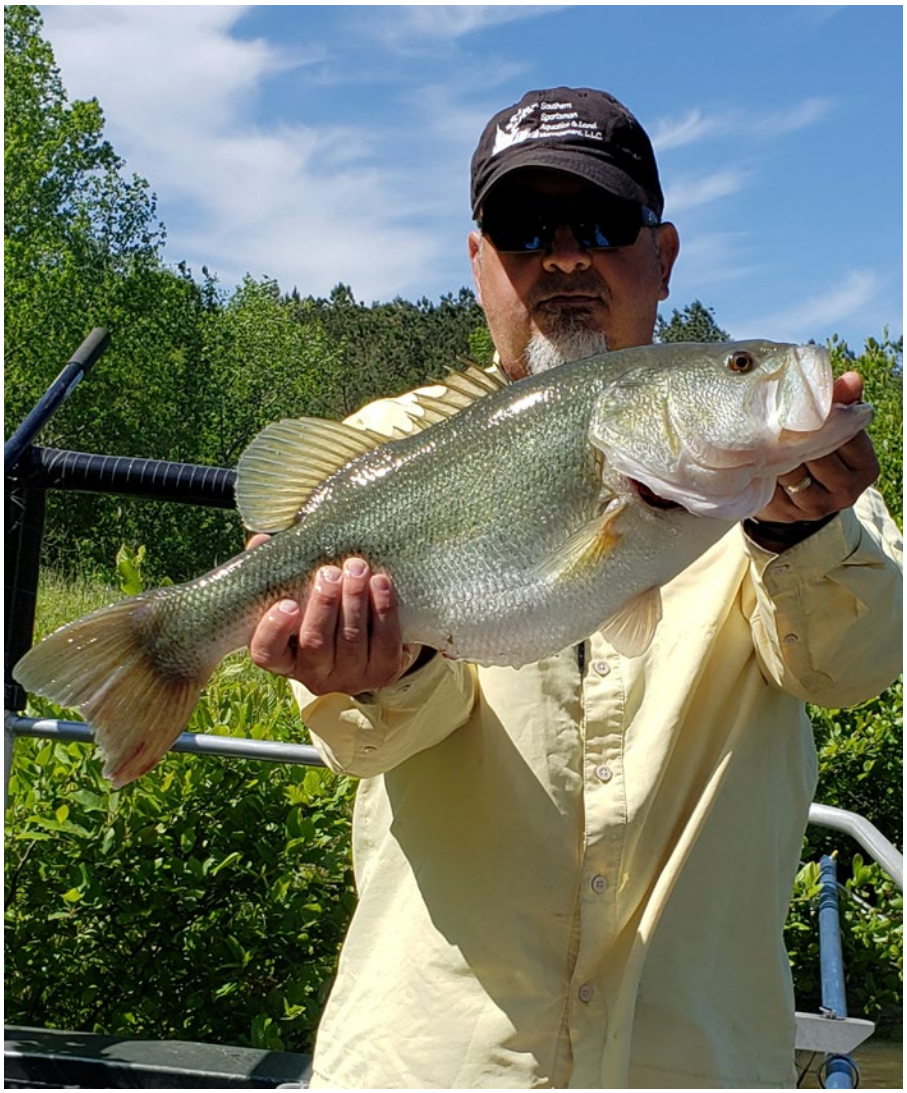
At this point, it is time to acquire a credible lake management company to complete assessing your water chemistry, aquatic habitat and fishery. Yes, this does cost, but if you hire a quality fishery biologist, the information on what you have and what you need to do to reach your goals is extremely valuable. And if you hire a very good company, they will be with you for many years working with you trying to improve and maintain your waterbodies, relieving you from some of the work and stress. Sometimes new owners are faced with the dilemma that a lake evaluation was conducted a few years before they bought it. Depending what management the previous owner did before selling, the condition of the fish population may be the same as when the last evaluation was conducted, may be worse or better if they implemented the recommendations and continued to stay on management duties throughout the time it was listed and the final sale.

We recommend the first year having the water chemistry tested quarterly to verify it is acceptable all year. Water quality is usually poorest in the summer and winter. In the South, summer is usually the hardest and in the North winter can be the worst water chemistry make-up. During these times poor water quality may stress fish and on occasions kill some fish. Gathering a little background helps to make better management decisions. We have seen very detailed and complex lake management strategies implemented with no results because during one or two seasons of the year the water chemistry is poor. Fish become stressed, don't eat, spawn with little success or may not spawn at all.

Once good water quality is established, habitat is the next



Many lake owners want to forgo a professional evaluation of their waterbodies. But finding a quality lake management company that will be with you for many years is important for you to use their knowledge and experience to help you achieve your goals.



Hopefully when you close on your new property your lake is already full of bass like this, but be prepared to do a little work before that level is reached.

area to address and improve. Habitat includes vegetation along shore, and emergent and submergent species out in the water. You need habitat, which means you need plants, but having the right native plants improves the fish population and does not require constant weed control. This is why identifying and knowing some characteristics of each species present is important for you or your lake manager.

After addressing water chemistry and habitat, the fish are the last puzzle piece. Your electrofishing evaluation can identify all fish species present (not just those caught angling), forage species and sizes, along with largemouth bass numbers and health can all be determined and management recommendations created from those results. You may need to stock additional forage in the form of bluegill/redear sunfish mix, threadfin shad, golden shiners, or be in a situation to stock less conventional, but very beneficial species such as tilapia, trout, yellow perch or crayfish.

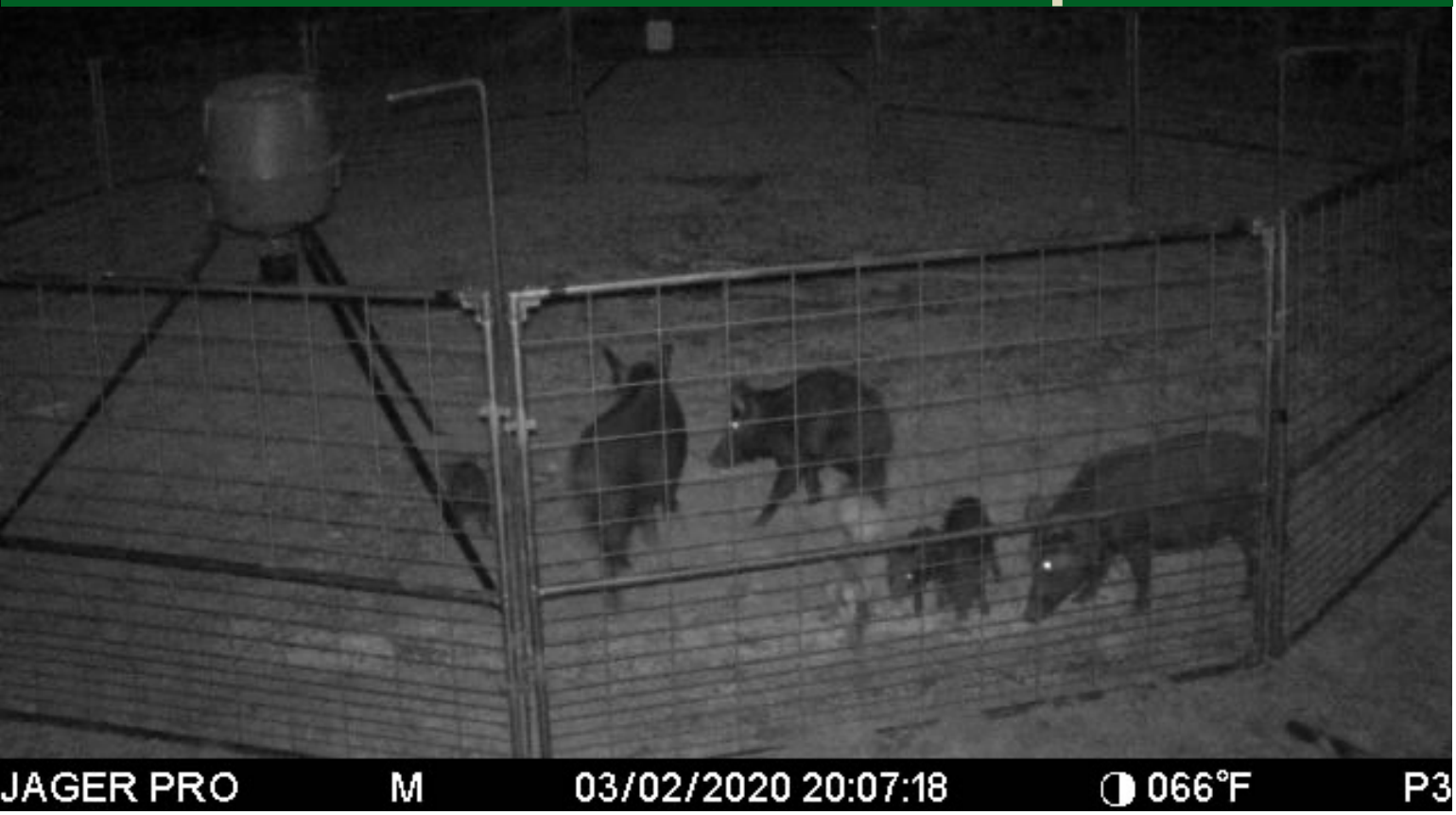
The electrofishing evaluation also determines largemouth bass numbers and health that may indicate some bass in certain size classes need to be removed in order to decrease numbers and allow more food for those left in the population. Most of the time, a new lake owner will need to start removing small bass and stock more forage. A lake not tended to for several years will be full of large bream, small bass, with very few bream 1-4 inches and almost no bass over 14 inches long.

Obviously as a new landowner, costs may be of concern to you. Depending how big your waterbody is and how many lakes you have, cost will vary on all the management recommendations. With some sales, you may get a past lake evaluation from a biologist. Ask the previous landowner if there was one done within the past few years and if you can have it. If it says the bass population was stunted then and the owner says they did not take bass out, then you can pretty much assume the population is the same or even worse now than when the evaluation was performed.

Working for clients on both fish and wildlife, it seems most landowners know more about uplands and land critters than they do about water and fish. It is a great benefit to you to work with a fisheries biologist to at least consult with before you do things yourself.

Wildlife Trends Journal Management Calendar

Dave Edwards



Summer is a great time to increase efforts to remove feral hogs

Control feral hog populations.

"Control" may be the wrong word to use here, but you get the point. Although removing hogs could be on your management calendar throughout the year, summer is a good time to put extra effort into this since it often causes a moderate disturbance on your property. Hog populations are rapidly growing in many areas and are causing significant damage to wildlife habitat, food plots, roads, etc. wherever they exist. One reason it is difficult to "control" hog populations is that they are very productive and may have up to 3 litters of young per year! Thus, exponential population growth can and does happen if resources are adequate. The most effective way to remove hogs is through trapping. Be sure to do some research before you simply throw a few traps out. Specific trapping techniques have proven to be more effective than just baiting a trap and catching a hog or two each time. Since converting to using corral type traps with remote user deployed gates, I have abandoned the use of "old school" single traps. The corral traps

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have proven to be quite effective and efficient. Another effective strategy, but more costly, is hiring professional hog hunters that use either night vision equipment and/or dogs to harvest hogs. Simply shooting hogs when opportunities present themselves helps, but is not as effective as an "all-out war" against them.

Plant chufa for turkeys. Chufa can be planted in May or June in the Southeast, but most plantings occur in June when summer rains start. Monitor chufa plots for competing grasses and weeds and apply herbicide accordingly to control. Adding chufa to your planting program can be quite rewarding if you like to see or hunt turkeys. Turkeys primarily utilize chufa in the fall, winter and spring once the tubers have developed. If your turkeys have never seen chufas, you may need to lightly disk a strip through the patch in late winter to expose tubers. Once turkeys find them, you will not be able to keep them out. A word of caution – raccoons and hogs like chufas as well and can pose problems in some areas. Hogs can be so bad that I do not recommend planting chufa if you have hogs. They often demolish the area once they find a tuber. Chufa patches can often be regenerated the following spring by lightly disking the areas. There has to be adequate chufa seed remaining to regenerate an adequate stand (there's often more left than you may think). To regenerate the stand, lightly disk the plots once in April, again in May, and once

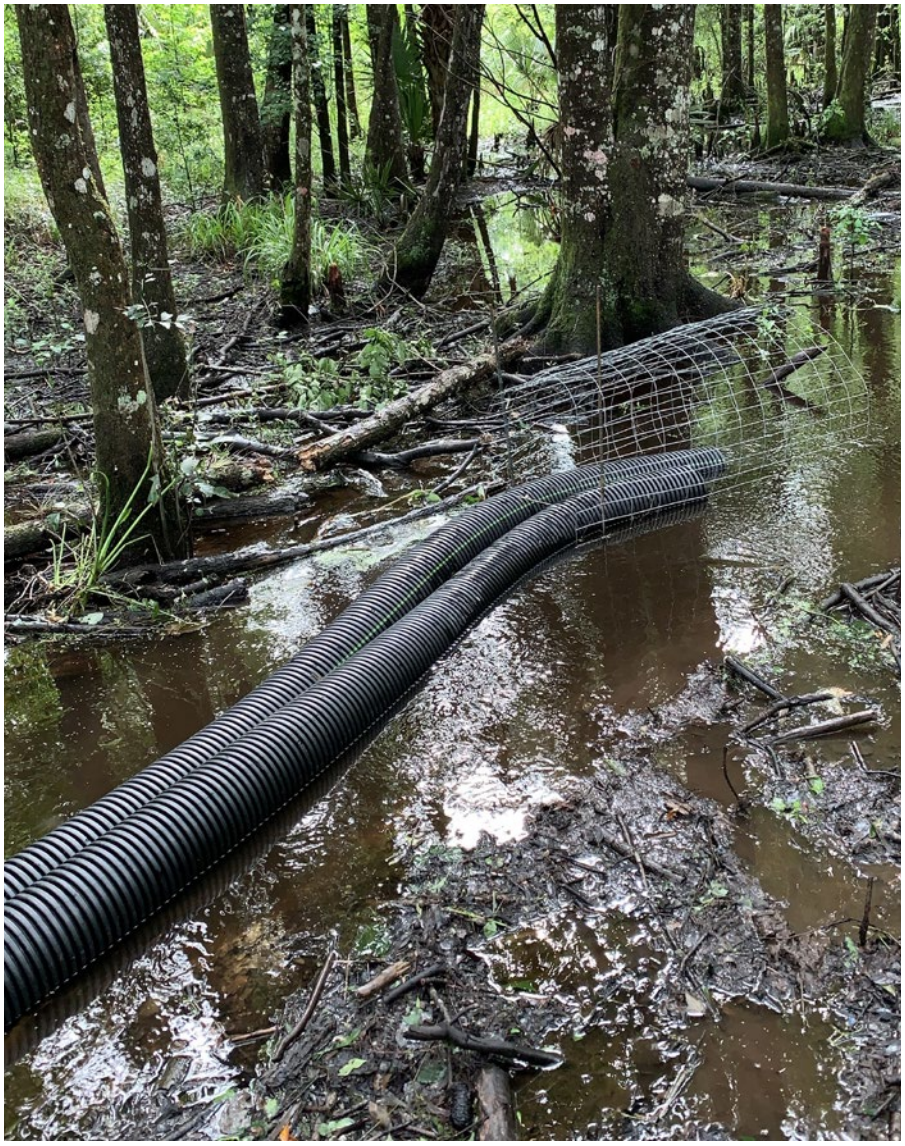
Including chufa into your food plot strategies adds diversity and a great food source for turkeys.

more in June. The key is to continue disking each month regardless of how nice your plot is growing with chufas – it's going to kill you, but do it. Be sure to rotate your chufa patches every 2-3 years to avoid nematode problems.

Take advantage of dry duck ponds – maintenance, repairs, and build hunting blinds.
Unless you are keeping water on a duck pond to act as a weed screen until it will be drained later this summer for planting, now is a great time to make needed repairs to water control structures, catwalks, hunting blinds, and levees. While the pond is relatively dry, I often lubricate and check water control valves to ensure they work properly. This is also a good time to remove muck that builds up in front of drain pipes or along pond edges. In some cases, re-leveling with a tractor may be needed. If you use flash board riser type water control structures, pull and clean all the boards – make repairs where needed. This is also a great time to inspect duck blinds and perform routine maintenance or repairs as needed, or build new ones. From a habitat management standpoint, this is also a good time to inspect and treat the pond area for undesirable vegetation such as sesbania, willows or other non-desirable species.

Identify and control invasive exotic plant species.
Exotic species are very competitive with native plants and can take over your property and compromise habitat quality. The best time to control or eradicate exotic plants is often during the growing season. Strategies to control these plants vary depending on the species at hand. However, herbicide (and fire in some cases) will likely be the tool of choice. It is much easier to control exotic species if you catch them in the early stages of colonization. Once they have a foothold, eradicating can be extremely challenging. Some of the common invasive exotics in the Southeast include Cogongrass, Chinese tallow tree, Kudzu, Chinese Privet, Chinese Lesedeza, and many others. A great field guide to keep on hand is "Nonnative Invasive Plants of the Southern Forest" by James H. Miller. You can get this publication from the **USDA Forest Service – Southern Research Station at Auburn University** or visit **http://www.bugwood.org/weeds/forestexotics.html**. This guide has information regarding identifying invasive exotics as well as methods of controlling them. Another resource is the **Florida Pest Plant Council - www.fleppc.org**. It is also wise to consult with a professional herbicide applicator before deciding which herbicide and method to use. Besides the complex world of herbicides themselves, mixing and applying them can sometimes be complicated as well. However, properly applying herbicides is nothing to be afraid of. You simply need to understand how herbicides work, which plant species they control (or not control), and the techniques to apply safely and effectively.

Conduct warm season or summer prescribed burns.
Warm season burns are an exceptional tool for managing quail habitat. Warm season burns are generally conducted from June through August. However, extreme caution should be used when conducting summer burns. Due to higher ambient air temperatures and low relative humidity, summer fires can get very hot and difficult to control. If the area you plan to burn has a heavy fuel load (understory shrubs, grasses, and thatch) or has not been burned in over 3 years, I recommend initially conducting a cool season burn (December – March) to reduce fuel loads before attempting a summer burn. Fire rotations (interval of time between burning the same area again) for summer burns vary depending on your goals and habitat types but are generally every 1-2 years to promote quality wildlife habitat. Regular warm season burns will often promote native warm season grasses that are desirable for quality quail habitat. It is also a good idea to strategically plan your burns so that you always leave some areas unburned. This will help to maintain diverse habitat types which will enhance the wildlife value of the area. Always check local burning laws and consult with an experienced burn manager before lighting a woodland fire. The U.S. Forest Service or your state forestry commission are great sources for obtaining more



Early summer is the time to manage water levels in beaver ponds that will be managed for waterfowl.

information regarding burning in your area.

Improve habitat edges.
Most game species of wildlife travel, feed, and thrive along habitat edges. Habitat edges or "ecotones" occur where two habitat types merge or join. The most noticeable are edges created where woods meet fields, but edges can be as subtle as the transition of a brushy creek to a stand of young hardwoods. Improving the quality of edges and the food and cover they provide will increase the wildlife value of your property. Although "interior" edges are more difficult to manage due to access, improving the quality of edge habitat along roadsides, food plots, and fields is relatively easy. There are many methods used to enhance edge, but applying selective herbicides generally produce the best and longest lasting results. Application of herbicide can be made with a backpack, 4-wheeler, ATV, or tractor mounted sprayer. Simply apply herbicide along the edge spraying as far into the edge as you can. The goal is to remove undesirable mid-story woody species such as young sweetgum and ash trees to encourage increased growth of plants that will benefit deer, turkey, and quail, like legumes, forbs, and blackberry species. If possible, include these areas in prescribed burns the following year to remove "skeletons" of the trees and underbrush you killed via herbicide and to stimulate additional desirable plant species. Another tip is to include managed edges when you fertilize food plots or fields. In addition to removing undesirable trees/shrubs that compete for sunlight and nutrients, fertilizing these areas can significantly increase the amount of foliage the remaining desirable plants produce.

Initiate management of beaver ponds for creating and attracting waterfowl this winter.
Similar to cultivated duck ponds and green tree reservoirs equipped with water control structures, beaver ponds can be managed to produce duck food to attract waterfowl and provide great hunting opportunities. If quality mast producing trees are still alive in the beaver pond, manage the pond as a green tree reservoir – meaning apply a slow draw down before spring green up. While most oak species can tolerate being flooded over dormant season, few do well and often die if their feet stay wet well into summer. If few quality trees exist or if trees are already dead (from constant/unman-

aged flooding), you have a few options on management strategies. First, you could drain the pond early in the growing season (at spring green up or very early summer) to allow natural wetland/moist soil plants to germinate and grow throughout the summer. Many moist soil plants produce seeds which are quality duck foods. A slower draw down over several weeks will result in a more diverse species composition of plants providing a variety of seeds/food. Another option would be to hold water on the pond until early summer, drain the pond, then broadcast small grains such as millets. I personally like Japanese millet because it easily germinates on mud flats with little or no site preparation, grows well in wet soils, produces an abundance of seeds, and if water is properly managed it will often reseed the following year. Planting grain in a beaver pond is relatively easy. Simply broadcast seed at the recommended seeding rate per acre onto exposed mud flats. Although fertilizing is not essential to success, it can help. I rarely fertilize broadcasted crops in beaver ponds and have had great success without it.

Now to the hard and messy part – water control. To consistently manage a beaver pond successfully for ducks, it is necessary to drain the pond by breaking the dam and installing a drain pipe. Generally speaking, this means a 6'-10" corrugated pipe that extends well into the pond with many perforations along its length to prevent beavers from patching the leak. Although it is messy, and certainly watch out for water moccasin/cottonmouth snakes, breaking a beaver dam is often not as difficult as it seems and can normally be done with a fire rake. Break the dam on the downhill side of the existing channel in the form of a narrow, deep "V". The initial flow of water through the dam will help clear excess dam materials. Place the drain pipe deep into the break so that at least 10' of pipe extends both upstream and downstream of the dam. The final level of the pond will be determined by the height of the downstream end of the pipe, or the stand pipe position height. There are many options for beaver pond drain pipes. The key is to install a pipe that is designed to prevent beavers from "patching the hole", yet does not drain the pond completely so that beavers remain in the pond. Always leave at least 1/3 to 1/2 of the pond area undrained during drawdown, as over-draining may cause the beavers to seek new areas. There are many homemade and fabricated designs that can be found by doing a little internet research. If you do not use a drain pipe that allows you to adjust the water level, you will need to remove the drain pipe approximately 45 days after natural moist soil plants or your planted crop germinates. This will allow beavers to patch the break in the dam resulting in the pond flooding. Using this method often requires re-breaking the dam and re-installing a drain pipe higher in the dam to maintain the desired water level. I like the Clemson Pond Leveler as it is a great and relatively permanent design that allows you to control water levels by adjusting a standpipe on the downstream side of the dam.

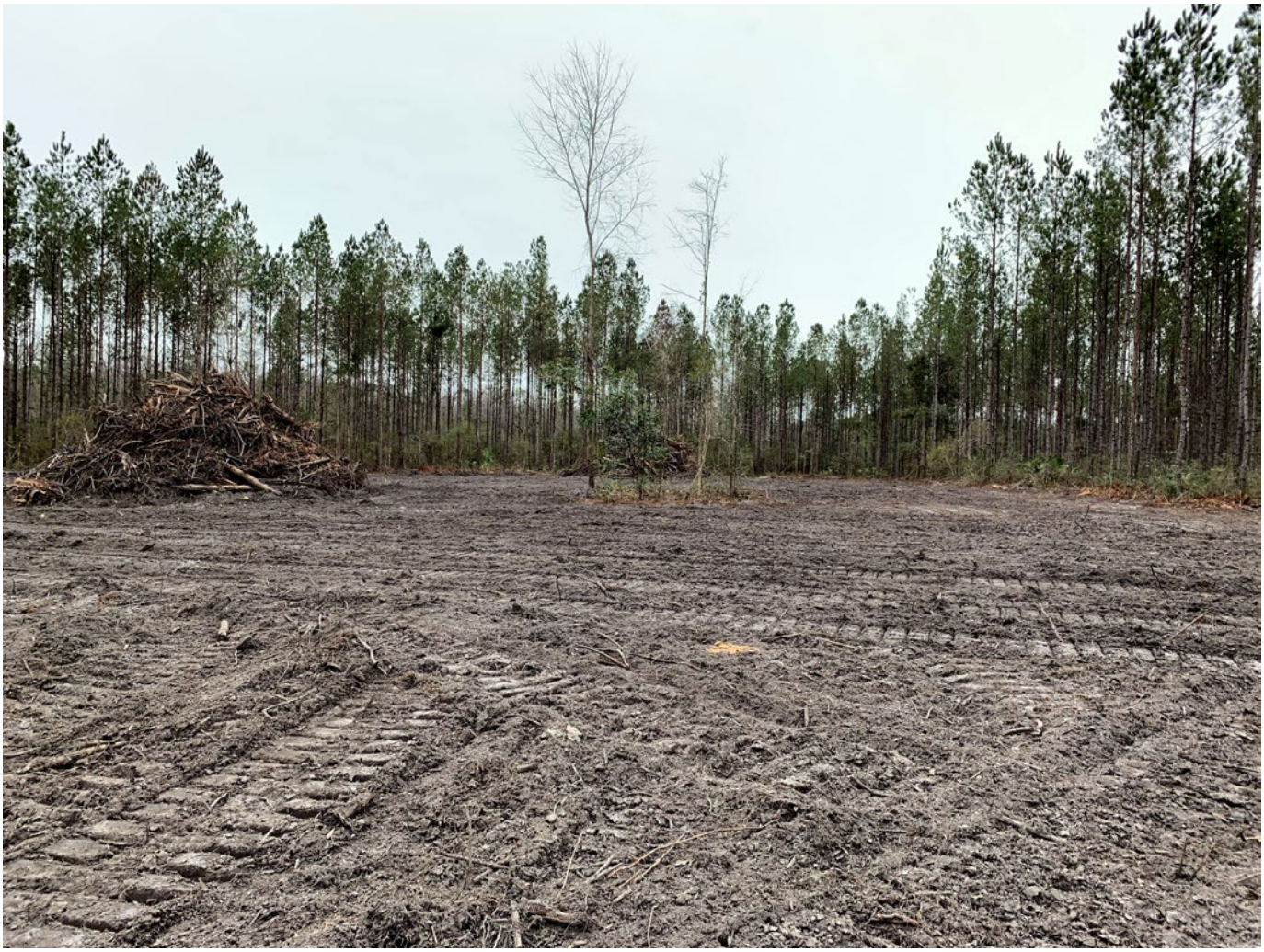
Install new food plots or expand existing ones.

From a landscape level, actively managing nature habitats should be one of the highest priorities for landowners desiring to enhance wildlife value of a property. Having said this, we all know the wildlife value created by dedicating land to actively managed food plots. Because all properties are unique with various habitat compositions, forest ages, diversity, timber management strategies, agricultural practices, and management on neighboring lands it is impossible to provide a "cookie cutter" amount of acreage that should be dedicated to food plots. However, if adding more acreage in food plots is in your plans, summer is a good time to create new ones or expand existing plots. I personally like to plan and mark/flag areas needing clearing during winter months while leaves are off allowing me to see the area better. Another advantage of doing this during winter is there are no snakes, ticks, and chiggers to worry about! I then come back in summer to do the "dirt" work. Through years of experience, I am a big fan of using mulching machines when creating new food plots, expanding existing ones, expanding roadsides, or creating new trails. A mulching machine, also referred to as a forestry mulcher, uses a rotary drum equipped with steel chip-

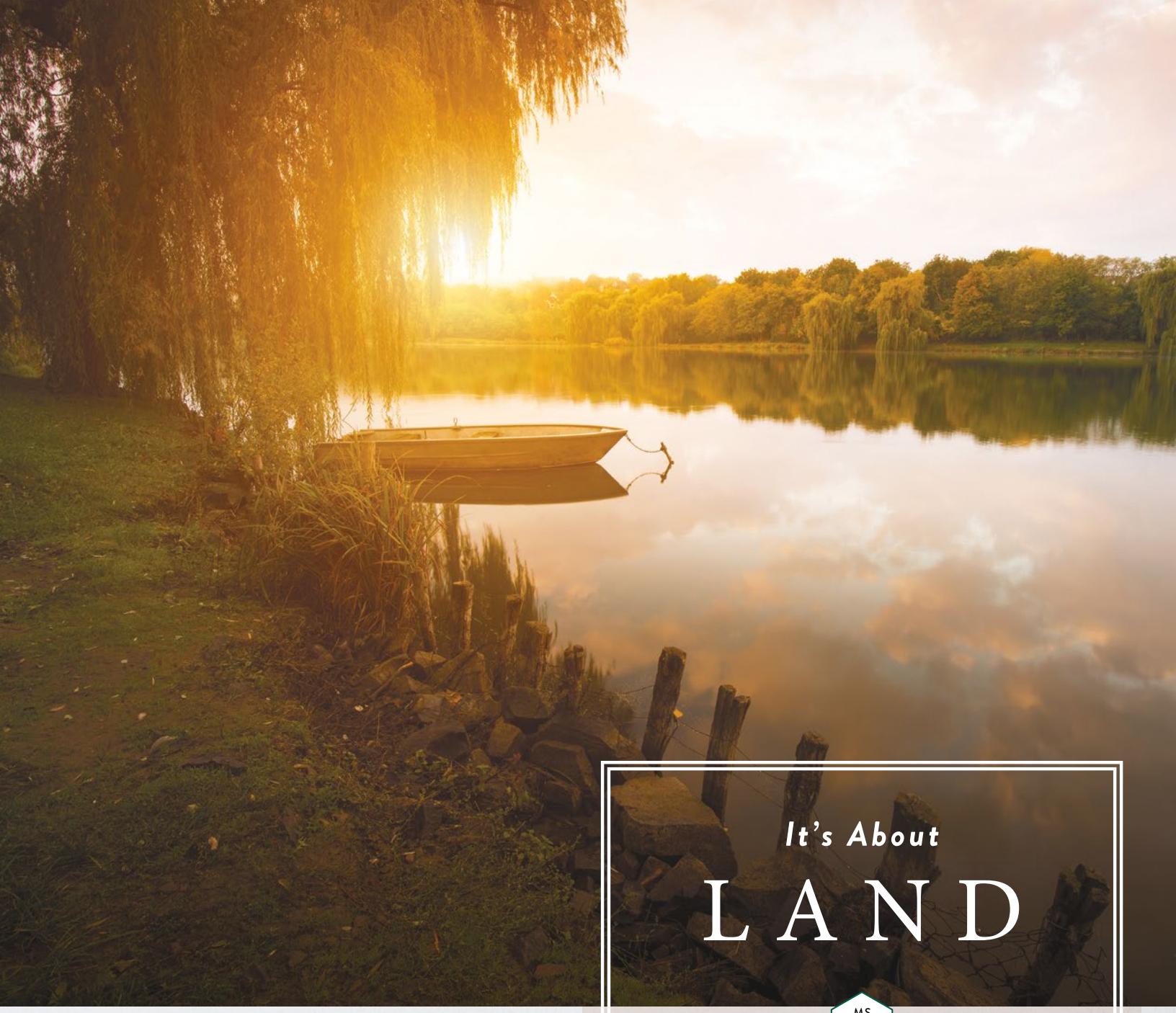
per tools (or teeth) to shred vegetation. Heavy duty forestry mulchers can clear up to eight or ten acres of vegetation a day depending on terrain, density, and type of material. However, 5-8 acres per day is more realistic for most applications where I've used them. The advantage of using a mulcher is only needing a single machine to cut, grind, and clear vegetation verses needing a dozer, backhoe and farm tractor to do the same job. Mulching is essentially a one-pass and done type process. Because the vegetation is grinded into chips there are no debris or root piles commonly associated with dozer type clearing.

Another advantage is mulchers are capable of clearing land of unwanted trees and brush with limited disturbance to soils leaving more nutrient rich top soil and reducing the risk of erosion. From a location and design standpoint, I always consider soil quality, hunting stand placement, preferred wind direction for hunting, hunter access, and obviously what the land, terrain, and habitat will allow. Where possible I try to create linear shaped food plots. Deer, particularly mature bucks, feel more comfortable and secure using linear plots which results in more sightings and harvest opportunities while hunting.

Examples of this may include a "turkey foot", "V" shape, or "hub and spoke" – aka "wagon wheel" shape. When expanding existing rectangular food plots I often add linear "ears" or "fingers" that extend from the core food plot area. In this situation, deer often enter the fingers first then work their way to the more open plot. Regardless of the methods used to clear the land or the shape you design, summer is a good time to conduct this work. Doing so allows plenty of time for working and amending the soil in preparation for fall plantings.



If adding more acreage in food plots is in your plans, summer is the time to create new ones or expand existing plots



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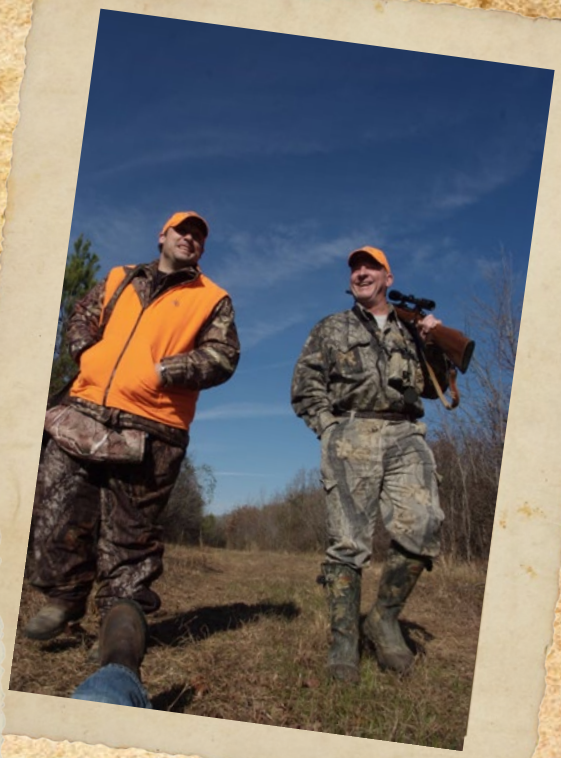

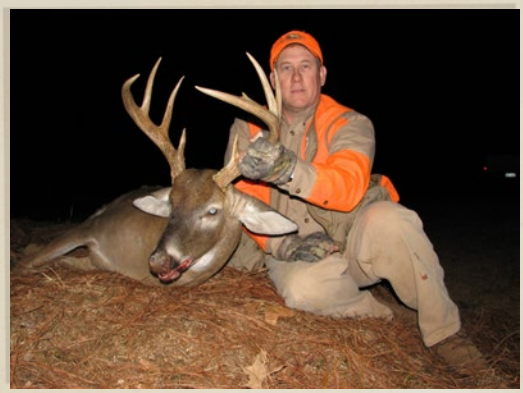

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