



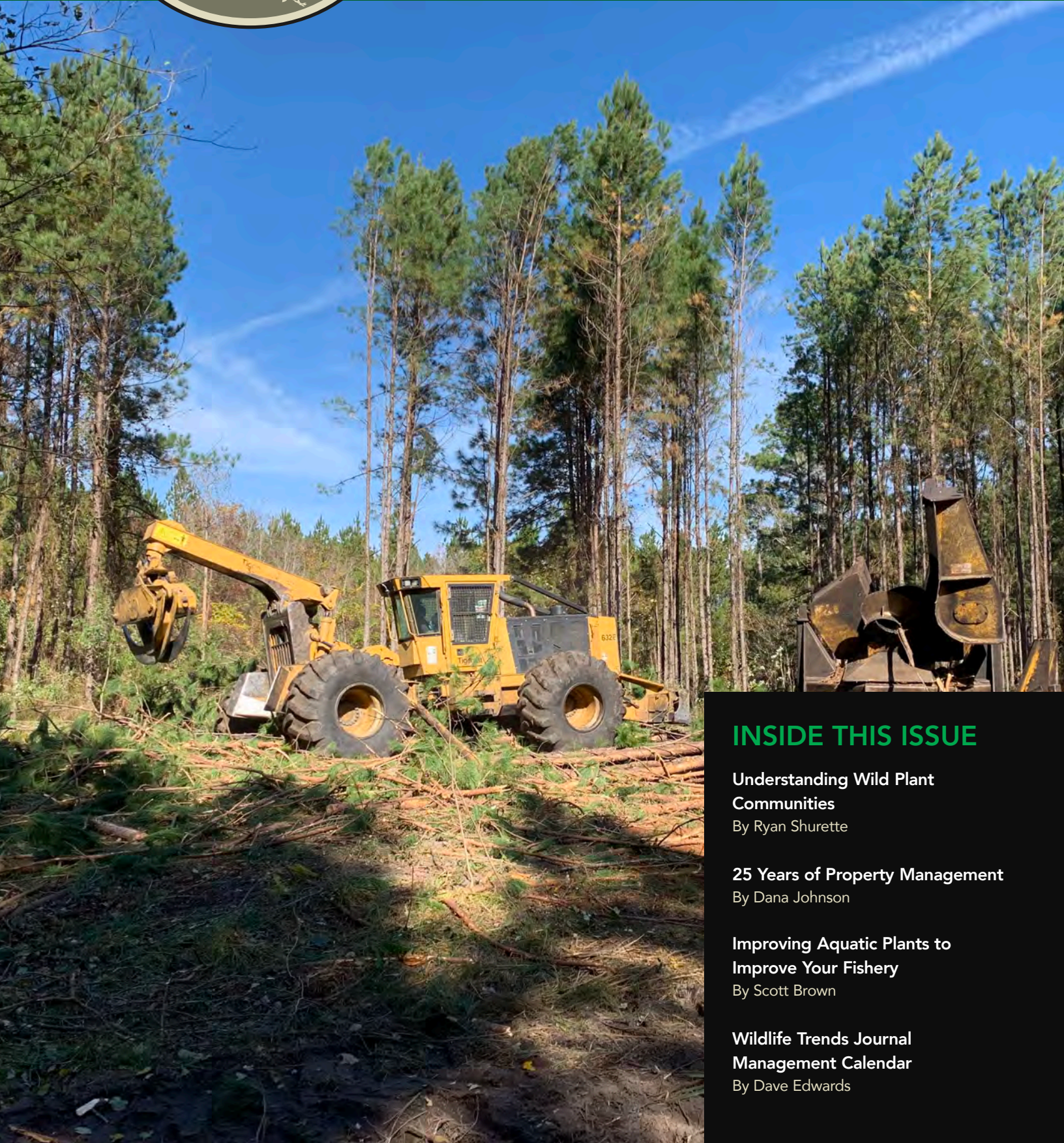
PRACTICAL WILDLIFE MANAGEMENT INFORMATION

# Wildlife Trends

## JOURNAL

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## Earl Says...

**P**lants and planting play a huge part in wildlife management. I hope you enjoy and learn something new with the articles in this issue.

Scott Brown has been in the Pond Management business for decades and he's seen his share of both beneficial and invasive plants. If you have problems with invasives or plan to add plants to your new or existing pond, contact Scott and he'll be happy to help.

And Ryan Shurette teaches us about the many natural plant communities that can save us money while feeding our wildlife, from deer and turkeys to quail and more. Depending on your soil types and landscapes can determine what natural plants you can have.

Lastly, the weather has been so crazy so far this year. I hope and pray you all stay safe through any rough weather through the year. Hopefully we're done with the all this bad stuff but please be prepared.



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# Understanding Wild Plant Communities

By Ryan Shurette



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*Wild plant communities develop in a particular location as a result of many interconnected physical, chemical, and biological factors.*

*Photo by R. Shurette*

If you are reading this publication, it is likely you have some great memories of hunting or of just being outdoors in nature. If you are a bobwhite quail enthusiast for example, try to recall one of your favorite hunting moments in the field. Now visualize the scene in your mind and note your immediate surroundings. Looking back on that snapshot, I would expect many quail hunters would recall themselves standing amongst amber tufts of autumn bluestem grasses, or scratching through a patch of blackberry brambles, approaching their dogs. For the springtime turkey hunters, what does your scene look like? Are you listening from a pine ridge, surrounded by the new spring growth of lowbush blueberry? Or were you leaning against a tree in a bottom with your gun up on your knee, in a clump of lime-green

cinnamon ferns whose large and elegant fronds had recently unfurled, as a spitting and drumming gobbler was drawing closer? Whatever the scene, without those natural plant communities in the picture, these memories just wouldn't be the same. They help to create the wild and natural setting just like props on the stage of our favorite films.

The truth is the charismatic plants we see in our recollections of wild places most likely weren't there just by chance, or solely for our aesthetic enjoyment. Wild plant communities develop in a particular location as a result of many interconnected physical, chemical, and biological factors. In other words, there is a science, and even a predictability, to their occurrence. And as we know, these plant

communities are the building blocks of wildlife habitat. The native plant community of an area can even act as the primary driver of an entire ecosystem, although the specific vegetative communities are often surprisingly overlooked. When it comes to wildlife management however, whether we are talking about game species or critically rare wildlife species, there is probably no single more important consideration than the native plant composition of a site, a stand, or a landscape. Plants obviously provide food and structural cover needed by animals. But the seemingly endless services that wild plants render are very complex, and they can vary greatly depending on the species being affected. Furthermore, the composition, structure, abundance, and vigor of the community all can affect its

usefulness to an animal species. For example, a single large common **milkweed plant** (*Asclepias syriaca*) might be adequate for a monarch butterfly larva to feed on before successfully molting, pupating, and morphing into an adult. However, a covey of bobwhites would typically need a more extensive botanical habitat, likely an entire stand of bluestem grasses mixed with legumes, to sustain their cover and nutritional requirements over a season. And a healthy half-acre patch of densely occurring **beggarweed** (*Desmodium* sp.) in one location may very well offer bobwhites and white-tailed deer more nutritional value than 10 acres of scattered lower-quality plant species. If the beggarweed stand should become heavily infested with an exotic sod-forming grass species like Bahia or Bermuda, however, the cast seeds may become almost completely inaccessible to quail, thus negating the potential value of the resource. These situational examples illustrate the matrix of how species composition, structure, abundance, and vigor are interconnected with regards to creating habitat.

### Plants in Their Place

Just as natural plant communities can influence the presence and abundance of wildlife species in an ecosystem, soils will almost always dictate the assemblage of the plant life in a particular area. As we have discussed in previous articles, geology is one of the most fundamental factors at play regarding the vegetative capacity and botanical expression of a piece of ground. Huge differences can be found in ecosystems along drastic topographical gradients. The forests (or lack thereof) and vegetation in high mountain regions for instance is typically much different than those found at sea level in the same

general regions. While altitude caused by topography is an important factor, the chemical and physical attributes of soils can also shape native plant communities, and this is the aspect we will focus on further. Soil type will determine whether a particular plant species has the ability to grow and reproduce on a particular site. Therefore, some plants are very predictable in the locations and sites they are found. Just as in wild animals, many plants are habitat generalists, and they can tolerate a range of soil particle sizes (which in turn can affect moisture and nutrient availability), mineral content, and pH levels. A common southern native plant like **little bluestem** (*Schizachyrium scoparium*) for example, can happily thrive on the poor, acidic clay soils of a dry ridge, but it is also commonly found growing in fertilized loamy pastures among exotic hay grasses. It can even persist along the open sandy streambank of a river, provided it receives adequate sunshine. Little bluestem commonly grows alongside a long list of companion plants and can even be seemingly random in its occurrence. As long as the site is sunny, and not too wet, you might expect to see this species growing there. Another southern habitat generalist plant is **black-eyed Susan** (*Rudbeckia hirta*). Again, it is commonly seen in all the open to semi-open habitats mentioned above. Although these species prefer acidic soils, they can and do sometimes occur in neutral and slightly alkaline soils. You can find both of these species randomly along the roadside from Florida to Texas, transecting dozens of soil types. Plant specialists, on the other hand, are often much more restricted in their soil habitat requirements. It stands to reason they are also sometimes rare across the landscape. The **white-fringeless orchid** (*Platanthera integrilabia*),



*Just as in wild animals, many plants are habitat generalists, and they can tolerate a range of soil types. A common southern native plant like little bluestem (*Schizachyrium scoparium*) for example, can thrive on the poor, acidic clay soils of a dry ridge, but it is also commonly found growing in fertilized loamy pastures among exotic hay grasses. Photo by R. Shurette*

for example, is a federally threatened plant species, also native to the Southeast, that occurs in wet, acidic environments (bogs, seeps, springs and stream sides). These specific micro-site habitats typically limit its abundance and distribution on the landscape. It can tolerate sun and shade, but in the wild it is much more limited to certain acidic soil and moisture requirements, and it is predictably found with a few predictable companion plant species like **netted chain fern** (*Woodwardia areolata*) and **Sphagnum mosses** (*Sphagnum* sp.).

In addition to the mineral properties of the soil, organic composition is also important to many plant species. Soils with high organic content are sometimes referred to



*In addition to the mineral properties of the soil, organic composition is also important to many plant species. Soils with high organic content are sometimes referred to as being “rich”, and these sites often contain early and ephemeral blooming species like the yellow trout lily (*Erythronium americanum*). Photo credit: Mtswa, in Public Domain, no changes made.*



*The open sunny conditions created in dry, fire-maintained pine woodlands and savannahs can create diverse grassy understories. These expansive grass-dominated communities were extremely common a few hundred years ago due to the abundance and frequency of wildfire on the landscape. However, now they occupy a small percent of the southern forests. Photo by R. Shurette*

as being “rich”, and these sites often contain early and ephemeral blooming species like the **yellow trout lily** (*Erythronium americanum*). This species can be found across most of the eastern US, outside of the Coastal Plain, in moist deciduous forests growing among several other companion species depending on the location and ecoregion including **spring beauty** (*Claytonia virginica*), **cut-leaf toothwort** (*Dentaria laciniata*), **wild geranium** (*Geranium maculatum*), **Dutchman’s breeches** (*Dicentra cucullaria*), **false rue anemone** (*Enemion biternatum*), **wild blue phlox** (*Phlox divaricata*), some species of **wake-robins** (*Trillium* sp.), and **mayapple** (*Podophyllum peltatum*). Members of this community together often form a green carpet of lush growth each spring. The trout lily itself has distinct leathery mottled green leaves that emerge from the ground (typically February) prior to the leaves of the canopy trees overhead, and it usually blooms in March in most areas of its range, with a single yellow flower per plant. It is almost always associated with these moist soils with high humus content and it can form colonies ranging from a few, to a few thousand, plants. These colonies spread clonally by runners and can be well over a hundred years old. The trout lily colony only blooms for a week or two before setting its fruit and seed, and then withering away to remain dormant until the following spring. In this short time however, it serves as an important pollen source for several insect species. One species of **solitary miner bee** (called the trout-lily mining bee; *Andrena erythronii*) depends heavily on this plant for its survival; collecting and feeding the pollen to its larvae in underground nests. Like many other members of the Liliaceae family, the trout lily also forms an underground corm or bulb that is high in starch

content, and this resource is also utilized by squirrels, chipmunks, and other wildlife as a food source. From this example alone, one can see how a single, small, short-lived wildflower can affect the links of the ecosystem chain.

Soil moisture alone can influence plant communities, regardless of richness, and we almost always see this influence in saturated habitats like open swamp or at the edges of ponds. In fact, a big part of wetland delineation is performed by looking at the plant life on a particular site. If there are wetland obligate species like **cattails** (*Typha latifolia*), **rushes** (*Juncus* sp.), **sedges** (*Carex* sp. *Scirpus* sp. and *Cyperus* sp.) present at a site, you can automatically predict that the soils there are saturated with water, at least for a large percentage of the year. Besides these wetland herbaceous examples, companion wetland shrubs in the Southeast typically include **hazel alder** (*Alnus serrulata*) and **buttonbush** (*Cephalanthus occidentalis*), as well as **black willow** (*Salix nigra*). Beaver dams, and the resulting hydrological changes associated with them, commonly result in the proliferation of wetland plant communities.

At the other end of the spectrum, we see plant communities that are perfectly happy on dry, poor soils where there is little to no organic content in the soil. Dry (xeric) sites like ridgetops or the upper south-facing slopes of the piedmont or ridge and valley ecoregions are generally adapted to periodic fire, since they retain so little moisture. This fire influence would often leave only the toughest, flame-resistant tree species (like longleaf pine and blackjack oak) to stand on these sites. But it would also naturally affect the structure of the forest, leaving gaps and sunny openings in the stand, where



Glades are essentially sites where the local soils are very shallow due to bedrock rising to the surface of the ground. A sandstone glade in the South might contain unique plant species like Small's stonecrop (*Diamorpha smallii*), Nuttall's rayless goldenrod (*Bigelovia nuttallii*) and Appalachian sandplant (*Minuartia glabra*), shown here. Photo credit: Mason Brock, Public Domain, no changes made.

grasses and herbaceous plant communities could develop. As we stated earlier, native bunch grasses like little bluestem thrive in these situations. Companion plants at these sites often include: **broomsedge bluestem** (*Andropogon virginicus*), (*Andropogon gyrans*), **lowbush** and **highbush blueberry** (*Vaccinium pallidum* and *V. arboretum*), **Curtiss' milkwort** (*Polygala curtissii*), **narrowleaf silkgrass** (*Pityopsis graminifolia*), and many other asters and composites. These plants have adapted to the low fertility and seemingly harsh conditions in these dry soils and can thrive here when others may die in a few weeks. Even farther toward the extreme are those plant communities adapted to maritime and beach dune ecosystems and even deserts. Many of these plants adopt the strategy of storing water in thick succulent leaves or stems, which are almost always coated in some kind of wax.

### Open Rare Plant Communities

Sites with unique combinations of soil and hydrologic features are often occupied by one or more uncommon plant species. These special sites are referred to as **rare communities**. In some cases, it is the presence of the plant species itself that makes these areas significant, and in other locations it is the abundance or structure of the plants that creates a unique habitat. Researchers in the fields of botany and ecology often conduct investigations in these unique areas, and fascinating discoveries have been made regarding the physiological adaptations many plants possess. An understanding of these intricate relationships between soils, plants, and animals has significance, partly because we as humans also depend heavily on plants for our own food and cover, as well as medicine and other essential needs. There are

literally hundreds of unique documented plant community types. We will focus on a few for the purposes of this article.

**Glades**, also known as **barrens**, are one broad example of a rare plant community type. Glades are essentially sites where the local soils are very shallow due to bedrock rising very near the surface of the ground. Glades are typically associated with areas of rock outcroppings where the soil is completely absent, also known as **balds**. This scarcity of soil limits most large trees and many other types of deep-rooting plants. Glades can be very wet at certain times of the year, but also extremely droughty, so the plants that thrive there must be able to cope with these extreme changes through their life cycles. Glade soils are also usually heavily influenced by the parent rock material of the location since it is so close to the surface, and therefore glade soils can vary widely in their pH range. Acidic glades are often associated with sandstone, iron, or

other acidic minerals, while alkaline glades are associated with parent material like limestone or dolomite bedrocks. Glade soil composition can also be that of igneous, shale and chert parent materials. In the eastern US, most basic glades usually have Eastern redcedar growing around the perimeter. Some examples of alkaline glade plant community species include **gladecresses** (*Leavenworthia* sp.), **fragrant sumac** (*Rhus aromatica*), **big bluestem** (*Andropogon gerardii*), *Schizachyrium scoparium*, **grama grasses** (*Bouteloua* sp.), **whorled milkweed** (*Asclepias verticillata*), **wild bergamot** (*Monarda fistulosa*), and **roundleaf groundsel** (*Packera obovate*). A sandstone glade in the South might contain other species like **Small's stonecrop** (*Diamorpha smallii*), **Appalachian sandplant** (*Minuartia glabra*), and **Nuttall's rayless goldenrod** (*Bigelovia nuttallii*).

**Bogs** are another type of rare community. Bog soils are very wet, acidic, and low in organic nutrients.

Bogs can host an extensive list of weird and uncommon plants, and they may occur in open, fire-maintained pine wetlands, at seeps, and along drains. The hostile, low fertility soils make it hard for most plants to survive here but bog plants have several strategies for thriving in these habitats. Probably the most well-known group from this community is the **pitcher plant**, genus (*Sarracenia* sp.) Most pitchers have large showy modified leaves emerging from the wet soil (growing from underground rhizomes) that form a hollow tube or “pitcher”. Each pitcher has a nectar-producing hood that attracts insects. The waxy inner tube is slippery and has downward pointing hairs that direct any insects that enter toward the bottom of the leaf. Enzymes then digest the trapped prey, and its nitrogen-rich proteins are broken down and utilized by the plant. Bogs can host several other plant species in addition to pitchers, each with its own adaptations to allow it to persist in such a nutrient-poor environment.

**Dewthreads** (*Drosera filiformis*) and other **sundews** (*Drosera* sp.) are typical bog associates, and they also trap small insects with sticky sap-covered hairs on the leaves and stems. **Butterworts** (*Pinguicula* sp.) use a similar strategy and flat sticky glandular leaves. Perhaps the most curious-looking carnivorous bog plant is the **Venus flytrap** (*Dionaea muscipula*), which is native to the bogs of North and South Carolina. Other species like **hatpins** (*Eriocaulon* sp.), **bog cheetos** (*Polygala lutea*), and **bog buttons** (*Lachnocaulon* sp.) don't trap insects, but they are physiologically adapted to cope with the conditions in peaty bogs and seeps of the coastal plain soils.



*Bog soils are very wet, acidic, and low in organic nutrients. Bogs can host an extensive list of weird and uncommon plants and they may occur in open, fire-maintained pine wetlands, at seeps, and along drains. Photo by R. Shurette*

The open sunny conditions created in dry, fire-maintained **pine woodlands** and **savannahs** can create



botanical assemblages that may on occasion qualify as rare plant communities, relatively speaking. These diverse grassy understories that we might think of in only the most prime bobwhite quail or red-cockaded woodpecker habitats were extremely common a few hundred years ago due to the abundance and frequency of wildfire on the landscape. However, now they occupy such a small percent of the southern forests that many on this sun-loving herbaceous community list are now quite rare. One example is the federally endangered **American chaffseed** (*Schwalbea americana*). According to the USFWS Five-year Review for this species (2019), "...only three states (NC, SC, and GA) contain more than five populations." *Schwalbea* is a somewhat unassuming plant with pubescent (fuzzy) leaves and stems. It produces deep maroon flowers in spring into mid-summer depending on the location. It is a hemi-parasite that taps into the roots of other herbaceous plants including **asters** (*Symphotrichum* sp., *Aster* sp.), **composites** (*Eupatorium* sp.), **gold-enrods** (*Solidago* sp.), **hawkweed** (*Hieracium venosum*), and others. The diversity in these open, fire influenced systems can be incredible. According to *LandScope America*, "...more than 40 species have been documented in a single square meter, and as many as 170 species in 1000 square meters" in some longleaf pine stand understories.

Plant communities do not have to be uncommon, or contain rare or endangered plant species, to be important. Native understories of **open pine stands**, consisting only of common species of bunchgrasses, legumes, and forbs, can provide excellent habitat for many of our game and non-game wildlife species. But what is the "perfect" native plant community for say, bobwhite quail, for example? I



*Beaver dams, and the resulting hydrological changes associated with them, commonly result in the proliferation of wetland plant communities. Photo credit: Jūsu darbas Public Domain, no changes made.*

would suggest that that is probably very difficult to define, but probably very easy to know when you see it. Actually, there are so many surrogate species that play similar functional roles that quail habitat can essentially be close to perfect in many combinations and with many different plant species. A number of tall bunchgrasses (including any of the bluestems named previously, **Indiangrass** (*Sorghastrum* sp.), **purpletop** (*Tridens* sp.), **wiregrass** (*Aristida* sp.) and some others), will provide adequate cover for nesting, brood-rearing, and foraging, all while not hindering access to seeds and bare ground below. On the other hand, some composites and forbs can serve the same cover purpose if they allow for protection and access to the ground. For tough loafing cover many species of spreading shrubs, including **sumac** (*Rhus* sp.). **Chickasaw plum** (*Prunus angustifolia* sp.), or even **yaupon** (*Ilex vomitoria*), can provide this habitat function. However, for bobwhite habitat

to be perfect, most biologists would argue that legumes, or at least a solid good surrogate plant, is required for high quality seed production in the stand. This will be critical in the winter months. But there is a long list of species that can adequately serve this purpose, again most of them probably being legumes (like **partridge pea** (*Chamaecrista fasciculata*), **Desmodiums**, and **native Lespedezas**). Excellent bobwhite brood-rearing habitat is essentially produced by lush, soft-tissued herbaceous plants that attract abundant small soft-bodied insects. These insects need to be both plentiful and low to the ground (so the seasonal timing of the growth is important), and the chicks need to be able to move through the plants quickly to catch their prey, (this involves the habitat or structure of the vegetation), all while remaining hidden from avian predators above. Some plants are better at providing these elements than others. Annual pioneer plants like **partridge pea**,



One of the biggest threats to open plant communities is encroachment. This phenomenon can occur in the form of woody encroachment by larger trees like redcedar and hardwoods. These woody species shade out the herbaceous plant species and can even cause their extirpation over time. Fire is obviously one of the natural disturbance elements that keeps encroachment in check, and that is why it is such an important management tool. Photo by R. Shurette

**ragweed** (*Ambrosia*), and **poor Joe** (*Diodia* sp.) are known for their ability to serve as good brood-rearing bobwhite habitat. Again, it is the arrangement, proximity, and structure of an open piney woods plant community, that makes great bobwhite habitat, just as much as it is the species of plants in the community. Thankfully for us managers, periodic fire can usually sort all of this out naturally.

**Cane brakes** (*Arundinaria gigantea*) are just one more example of a fire-influenced plant community that historically occurred in vast expanses on the landscapes of the Southeast. Three subspecies of cane or bamboo are native to the US, and they are **river cane**

(*Arundinaria gigantea*), **switch cane** (*A. tecta*), and **hill cane** (*A. appalachiana*). Early naturalists like William Bartram documented and described mile after mile of almost impenetrable stands of cane in some parts of the region. In the late 1700's he describes some of them as an "...endless wilderness of canes", also noting that some canes were as "...thick as a man's arm". Fires maintained these stands by killing off the tree seedlings and saplings that would otherwise shade the canes out. Some cane brakes still exist but they are typically much smaller and dissected than they once were, often occurring in slender patches along streams. Native canes spread clonally by rhizomes and flower only rarely, maybe even once in a

hundred years. *Arundinaria* generally dies after flowering.

One of the biggest threats to open plant communities is **encroachment**. This phenomenon can occur in the form of woody encroachment by larger trees like **redcedar** and **hardwoods**. These woody species shade out the herbaceous plant species and can even cause their extirpation over time. Fire is obviously one of the natural disturbance elements that keeps encroachment in check, and that is why it is such an important management tool. Encroachment in rare plant communities can also be caused by exotic invasive plants that are able to out compete native

plants in their own niches. We know some exotic tree species like **tallowtree** (*Triadica sebifera*) and **Callery pear** (*Pyrus calleryana*) can quickly shade out herbaceous plant communities, just like kudzu can. And as we have discussed previously, even the presence of common lawn and pasture grasses like Fescue, Bahia, or Bermuda, can drastically alter a native plant community. Most often the presence and abundance of exotics are related to the amount of disturbance that has occurred over the years on a piece of ground. Look at any typical city park or established yard in the springtime. You will almost always see the same few exotic companions coming in amongst the lawn grasses. They include **henbit** (*Lamium amplexicaule*), **dandelions** (*Taraxacum* sp.) **black medic** (*Medicago lupulina*), **common plantain** (*Plantago* sp.) and several others, and all are most likely there because it is a highly disturbed site. Some plants even have the ability to chemically inhibit the germination and growth of other species. **Chinese privet**, for example, has been shown to exhibit this trait.

In summary, wild plant communities are the fundamental components of wildlife habitat. The interactions between plants and their local environments can be complex. However, the physical and chemical properties of a soil, as well as the hydrology of a location, can allow us to predict which species are likely to occur at a site. Natural disturbance regimes like fire can also be very important in determining the diversity and composition of a plant community. By understanding the interconnectivity between these wild plant communities and other organisms, we can be better wildlife managers and stewards of the lands we manage.

## 25 Years of Property Management

By Dana Johnson



Dana Johnson has a Bachelor's Degree in Wildlife Science and is employed with the USDA as a Wildlife Specialist. Dana has over 20 years of field and research experience managing wildlife and assisting landowners and producing quality wildlife habitats. Contact Dana at 334-301-1417 or [dana.k.johnson@usda.gov](mailto:dana.k.johnson@usda.gov).

*Although not wanted because of their destruction, pigs provide another hunting opportunity.*

The greatest reward in a wildlife biologist's career is getting a text message of a picture of a trophy deer that was just taken on a client's property. And then, that client calls to give a second-by-second detail of the hunt. Listening to the excitement in his voice while he tells you from which direction the deer walked into his sights, to how long it stood right behind a tree, only to step out a few seconds later and give a perfect broadside shot. Listening to clients tell you how long a turkey hung up and gobbled before it decided to find that hidden hen on the other side of a ridge, or when a group of duck hunters limited out on the woodies and got lucky with a couple extra mallards. For wildlife biologists that

manage hunting and recreational properties, those calls give us the satisfaction that our hard work and efforts are still creating lifetime memories for landowners.

I've had the opportunity to be on the other side of the phone for many of these calls since 1999 at Four Oaks Plantation. I was introduced to the landowner in 1999 right after he purchased the first 500 acres and in the next few years another 500 acres was acquired. This property is mainly used for recreational purposes such as deer and turkey hunting. It is also used during the summer for relaxation time just to get away from the city and drive around on the tractor or go fishing at the neighbor's lake.

When I first met with the landowner, he told me his passion was deer hunting and he wanted to maximize his opportunity to take one to three mature trophy bucks yearly. Although income from any forestry practices was a plus, it was not the focus for this landowner. Besides, timber harvesting should only be done to improve wildlife habitat, increase aesthetic value, or when a harvest is the best for thinning a pine plantation.

After considering what the landowner had envisioned for his property, I told him I was going to manage the property overall for turkey habitat and slowly transition his pines to "quail woods." I could see the puzzled look on his face as

he didn't quail hunt and, although friends turkey hunted, he did not, so I explained myself a bit further.

My rationale was based on what turkey and quail need to survive. First, substantial mast production in fall and winter of open understory hardwoods are a must. Thick areas are also strategically needed throughout the property to provide for good nesting and fawning habitat. Additionally, heavy use of prescribed burning in both pines and hardwoods is an annual need, while other areas can be put on 3-to-5-year rotation. Finally, good field management is necessary for providing summer and fall food plots for nutrition and attractiveness for harvest opportunities. Deer can live just about anywhere, but studies have shown they prefer edge habitats, just the same type of habitat ideal for turkey and quail.

Four Oaks contains diverse timber, field, and soil systems. Timber is approximately 40% mature hardwoods, 30% pines of various ages, 15% mixed pine/hardwoods, 10% thick cover, and 5% open fields. The soil types include black belt clays, loam, sandy loam, and sand with pH values ranging from 4.8 to 7.5. The property includes a good percentage of hydric soils which are prone to flooding and ponding. Due to elevation change of less than 5 feet over the entire property, water does not drain well, resulting in hydric soils from constant flooding and ponding.

### **Timber Management**

Prescribed fire is a major management practice on Four Oaks Plantation and is intensely used in late winter to mid spring. Timing of burns and the location is weather dependent, but some locations are burned every year while others are on a 2- or 3-year rotation. Other areas are burned when



*Having big timber is important aesthetically and for hunting.*

there is enough fuel, and the ground is not saturated which may happen only once every 4 or 5 years.

One of the first major benefits of prescribed fire is reducing the duff layer allowing sunlight to reach the ground so plants can germinate and grow. These plants are the basis for the vegetative biomass that will provide young nutritious food in the spring for pregnant doe and bucks recovering from a long winter and post rut. Also, young plants attract insects that will be the staple protein for young turkey poults

while providing overhead cover.

There is a healthy variation of timber scattered throughout the property. Mature hardwood and pine blocks can be found on nearly every quadrant of the property. When the property was first purchased, prescribed fire had not been used and many of the pine plantations needed thinning to open the canopy for sunlight penetration. The pines, because of a poor site index in some areas, had different growth rates even though the trees had been planted at the same time. Pines in the heavy black

belt clays with a high pH were much shorter and had a smaller DBH (diameter breast height) than those planted on the loamy sands on the west side of the property. This knowledge affected exactly how and when timber harvests were done to maximize wildlife habitat and financial benefits. Wildlife habitat was a priority but looking at the long-term planning allowed for some financial benefits as well.

The purpose of one of the first timber harvests was to clearcut two 18-acre plots of even aged 18" to 23" DBH trees to create thick nesting areas. One site was located on more loamy soil and was sprayed to keep any hardwood encroachment. It took nearly three years before the fuel load was good enough to carry a fire. It is now burned annually between February and early March. Management allowed for the natural regeneration of pines. The results have been the development of a savannah habitat, allowing broom straw grass, also commonly referred to as sage grass, to proliferate. Smaller clumps of pines have been killed by fire while the trees that grew faster have survived leaving a very aesthetically pleasing area to hunt while providing plenty of turkey nesting and deer bedding habitat. It also provides edge against the 30 basal area pines, hardwood draws and thick pines that have been thinned.

The second clearcut was a little thicker than the first, with smaller trees, but this area was also identified as one that needed a good thicket for wildlife. Many land managers underestimate the importance of strategically placed thickets. Not only do they provide a large biomass of food, they also provide turkey nesting and deer fawning/bedding sites. This area was not sprayed, but rather allowed

to be infested with sweetgum sprouts, blackberry, dewberry, and similar vines. Many species of shrubs also started to sprout, creating a nearly impenetrable thicket. The thicket area borders mature mast producing hardwoods, 40 basal area pines, a large field, and a 40-acre clearcut that was allowed to naturally regenerate. It also stays rather soaked during the winter months so burning is done when conditions allow. Fires have been successful to help keep the edge manageable, but the fire does not carry through the middle. This condition has proven to be ideal, as several large bucks have been harvested after easing out of this thicket into the pines and hardwoods.

Pine management continues to be an integral part of the yearly habitat management. It provides large amounts of food and cover for wildlife during the summer and fall before mast from hardwood trees and berries from shrubs are available. There are four plots of even aged pines that have been thinned over the last 24 years. Plot size ranged from 25 to 100 acres. All these pines have been thinned to an average basal area of 40 after the average dbh was 24" or higher. The goal was to allow 50% to 60% of the sunlight to hit the ground at noon to promote grass and forb growth, further increasing the biomass of food for wildlife. The smaller plots were thinned a little heavier because of the locations throughout the property and damage to adjacent habitats and roads while accessing these smaller areas.

Pine management in the future will include clearcutting certain areas and replanting in longleaf where the site index is good. Longleaf pines are adapted to fire and are a good addition to properties where

fire is a major habitat management tool. Future management plans include long leaf pines planted in the loblolly's and certain small clearcuts replanted in longleaf. Areas where the soil is not conducive for some of the pine stands to reach maximum potential will be clearcut and allowed to naturally regenerate to create more thick stands for bedding, escape cover, and nesting habitat.

Hardwood management is simple - leave and let nature take its course. The large mast production from mature hardwoods are great attractants for many wildlife species. The hydric soils dominated by large hardwoods is a very delicate habitat and disturbance by large equipment can be very detrimental to the soil. These areas are perfect for natural fire lanes and winter fires that get into them are major attractions for turkeys bugging around. Also, these large white oaks are great areas to hunt when the acorns are dropping.

### **Field Management**

Select fields are managed for spring/summer and fall/winter food plots while the fallow fields are burned yearly to reduce hardwood and shrub succession as well as to promote the growth of annual grasses. Intense prescribed head fires are mainly conducted in March right before the spring "green up." This practice results in large open areas for turkeys to roam. By July and August, during fawning season, there is always plenty of habitat where does and their fawns can hide from predators in the four- to six-foot-high grasses growing in these areas.

Winter food plots are planted with a variety of clovers, cereal grains, and brassicas. A variety is important as some foods are more palatable early in the hunting season



*Prescribed Fire is a habitat management tool that is used yearly.*

and others grow better late. Cereal grains, such as wheat, will become too fibrous to digest as spring arrives, but the clovers start growing better during this time. Clover has a high protein content and is the preferred deer browse. Some perennial clovers can do well, if managed, deep into the hot summer months. The brassica species, like turnips, are planted for early fall forage and do well until the first frost.

### **Predator and Invasive Species Management**

Predator trapping has never been conducted on this property. Although, coyotes and raccoons are prevalent, trapping would require year-round continual effort and results would be difficult to see. Studies on predator trapping have been controversial and results many times have no validity or reliability. Raccoons have a small home range and populations can be lowered with heavy trapping over a few weeks, but studies have shown that the population can recover in less



*The property has many reptiles.*



*Pig trapping is done every summer until the fall acorns start dropping*

than a year. This effort for raccoons alone could cost more than \$2000 for 1000 acres. Results from coyote trapping are equally controversial among wildlife biologists.

One nefarious creature that has plagued Four Oaks is the omnivorous wild hog. When I first started managing this property almost 25 years ago, hog presence and damage was apparent then. I took a hog in 1999 next to a small watering hole, that to this day, still has fresh hog tracks around it. During those years, it was legal to transport hogs. There are many

areas around Alabama today whose hog population began because of relocated hogs from this area. Trapping theories were relatively primitive and most people used dogs to catch their hogs for recreational purposes. Many hunters were attracted to hunting with dogs, a practice well known in this area. This property, along with many others nearby, allowed canine hog hunting as they were told it was the only way to get rid of them. Well, we know different now.

I invest many hours every year trapping hogs on this property to help minimize the damage and destruction this nuisance animal can do in a short amount of time. The damage they do in the fields and woods makes several areas of habitat difficult to manage. Disking and planting fields is a challenge due to hog rooting. Rooting forested areas also slows down fire and can eventually stop a fire from carrying through the pines. Additionally, the feral swine's high biotic potential along with their voracious appetites, can decimate mast crops, lowering the overall carrying capacity of other species.

### **Impact of Neighboring Properties**

Neighboring properties and their land management practices can be a help or a hinderance to a property, including Four Oaks. At one time, the landowners surrounding all sides shared the same strategy when it came to deer hunting; allow bucks to age before harvesting. However, as hunters on neighboring properties changed, so did the approach. In just 2 years, 42 bucks were killed off a 400-acre land area next to Four Oaks. This commercial hunting lodge had no rules and rates were cheap so anyone that hunted shot everything that was legal. Harvest sheets from this property indicated nearly



*Records are kept on every deer harvested and the kids enjoy getting the opportunity to shoot.*

everyone who hunted, killed a deer. I was even informed that eight bucks were taken in one weekend alone. I informed the landowner it would take a minimum of four years for the buck population to return to previous numbers. Fortunately, the rigorous harvesting stopped after that first year. Just as I suspected, hunting was challenging for the next three years. By year four, deer sightings were back to normal.

Another adjacent landowner erected a high fence around his property. The land had been clear-cut and formerly perfect habitat for pregnant doe looking for a good place to give birth, had been destroyed. I informed the landowner that deer sightings of doe would lower over the next two years. During that time, buck to doe ratio trended nearly four bucks to one doe. It took nearly three years for doe sightings to be back to pre-fence numbers.

### **Deer and Turkey Harvest Guidelines**

Four Oaks is managed to provide the landowner and his guests a great opportunity to harvest a "trophy" buck, typically one that is

3.5 years or older. How does a hunter know a trophy buck when he sees it? Aging a buck on the hoof is difficult, even for seasoned biologists. Time of year, nutrition, genetics, and many other factors influence body size and can make aging this way difficult. The person squeezing the trigger also sees each deer differently; what may be a trophy for me may not for you. Hunters that have never been able to hunt on well managed land might be excited about a 110-class deer while someone else is striving for a 140-class deer. Because a trophy is in the eyes of the beholder, a simple request was communicated to everyone hunting Four Oaks: if you shoot it, mount it. With the financial obligation of having to mount a buck, hunters are more inclined to consider whether the buck in their crosshairs is a trophy and worth the taxidermy fees. If hunters simply want meat for their freezer, they are encouraged to shoot a doe.

When the landowner purchased Four Oaks, data showed there were up to eight doe per buck, putting a strain on the carrying capacity of the property. After analyzing weights and kidney fat on harvested deer, I recommended fifteen to twenty does be taken per year for the first few years. Over time, this harvest goal was lowered and today a maximum of 10 doe are harvested every year. In most cases, a doe is only harvested by hunters wanting the meat. Otherwise, they are left alone.

Over the years, one thing has remained consistent with buck harvest. On average, two to four trophy bucks are taken yearly. A few of the trophy bucks harvested had never been seen on camera or by hunters. One 10-point buck that was harvested had never been seen by any of the adjacent landowners.



*Clover is used in food plots to provide food up into the summer.*



*Pine management is an important part of the management plan.*

Radio telemetry studies have shown mature bucks may travel miles during the rut and their home range can get up to 2500 acres for a short period of time.

The most important thing done on this property is record keeping. Since the first day this landowner set foot on his property, he kept very good records. Every deer that is harvested is entered in his harvest and hunting log. After hunting each person fills out a “daily game data” sheet that includes stand, time, moon phase, temperature, every deer seen, and harvests. If anything is harvested that data is entered on a different sheet that includes buck or doe, weight, and points if a buck and inside spread.

No record keeping was done for turkey hunting, but I was the only turkey hunter on this property for years. Today, one other person hunts it, and we speak after every hunt. In the early 2000’s, hearing 12 turkeys gobbling in different directions wasn’t uncommon, and on the worst mornings to hunt, I’d hear 4 or 5. As the pig population increased, the turkey gobbling decreased along with winter sightings. On years where substantial amounts of hogs were removed during the summer, the following spring turkey gobbling was better. This past year over 800 hogs were removed on 10,000 acres surrounding this property and I’ve seen

more turkeys this winter than in years. It seems that hog densities influence turkey hunting and sighting success.

Finally, data collection through record keeping has been one of the most critical activities of this property management. Hunters record detailed descriptions of their sightings and harvests allowing a wildlife biologist to identify trends as well as how habitat changes influenced hunter success. Trends identified from these records has led to the movement of stands for optimal sighting and has influenced decisions regarding habitat management. Every successful property management plan should include a system of hunting data collection to ensure management decisions are evidence based and have the most impact on hunting success.

### **Conclusion**

Managing property for any reason must be a collaborative effort. I have colleagues inform me about beneficial government programs for which the landowner might qualify. I also consult with fellow wildlife biologists about ideas and strategies prior to presenting them to a landowner. The Four Oaks landowner has been gracious enough over the years to allow me to conduct research projects studying various species, including racoons and feral swine. A good wildlife biologist

can’t do it all themselves and relies on their colleagues and the cooperative nature of a landowner to develop best practices in land management.

A strong partnership with professionals in forestry is also a critical component of any wildlife management plan. However, finding a registered forester that will collaborate with landowners and biologists to improve habitat can be challenging as a forester’s primary goal is to maximize stumpage for maximum profit. I have worked closely with two foresters who shared a mutual understanding that their logging strategies on this property were to improve wildlife habitat.

I’ve seen many “firsts” while managing this property over the past 24 years. I took pictures of the landowner and his wife with his biggest buck. I’ve watched infants grow up to be men and women and took every one of their bucks to the taxidermist. I was fortunate to help a young lady and her father with her first deer. My wife got her biggest buck and both daughters took their first deer and trophy bucks on this property. I’ve been a part of some amazing memories managing this property and hope to have many more. I have permission to kill a trophy buck, but never have; I’d rather someone else have the chance.



# Using Aquatic Plants to Improve Your Fishery

By Scott Brown



*This lake is only five acres, but has a quality largemouth bass and black crappie fishery. The live cypress in the background along with several desirable emergent and submergent aquatic plant species creates habitat for forage (bluegill and golden shiners) to flourish, which grows big bass and crappie year after year.*

**F**ish grow faster, larger and there are more of them with quality habitat! Desirable, quality plants in and around your pond or lake enhances the overall habitat, improves water chemistry, enhances the fishery and is aesthetically pleasing. Also providing an abundance of quality vegetation will get fish species repopulating themselves to reduce the need for restocking and reducing expenses.

The simplest plant that is present in your lake or pond is **algae**. There is **planktonic algae** (microscopic green single cell plants that make the water green) and **filamentous algae** (the slimy, stringy algae that grows on rocks, brush, plants and the lake bottom. Both are direct results of nutrients in the water

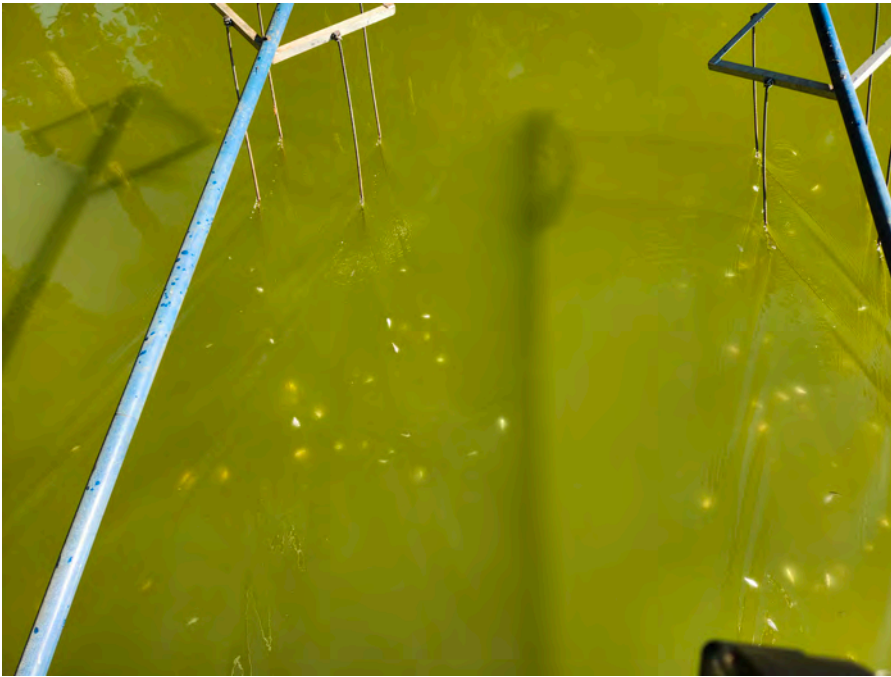
being released to grow these two types of plants. Both types of algae are desirable in moderation. Planktonic algae growth, if not present, can be encouraged with a fertilization program that may require occasional liming. A green lake has been documented to grow 400% more fish than a clear lake, even if the clear lake has other vegetation in it. We have documented a largemouth bass Relative-Weight (bass health/robustness) of 10-15% higher in green lakes than lakes with hydrilla and clear water, on the same property. A visibility of 18-40 inches, measured with a standard Secchi Disk, creates a highly productive fishery, allows other plant species to grow in the shallows, while shading some submerged plant growth out reduc-

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ing the need for herbicide treatments in deeper water. It is possible to have a balance of shallow water plants and green water with a fertilization program, and that is the ultimate scenario for growing quality largemouth bass.

The same principal used in landscaping around your home can be performed around and in lakes and ponds, referred to as aquascaping. Besides maintaining good water quality, habitat is the next most important puzzle piece to developing a quality aquatic ecosystem that requires less maintenance and can provide both aesthetics and quality fishing for many years with minimal maintenance

Plants in and around a waterbody help improve water chemistry.



*Planktonic algae (green water) is not thought of as vegetation, but it is the foundation of the food chain when present. Green lakes have proven to grow up to 400% more fish and 10-15% healthier fish (Relative Weight).*

Plants filter suspended dirt particles before they enter your waterbody reducing the silting in process. Plants uphill, around and in the lake filter nutrients and impurities (if present). Living plants in water put dissolved oxygen into the water. Once plants are treated with herbicides and die, the decomposing vegetation removes oxygen from

the water. This is why large summertime treatments of nuisance vegetation needs to be done in portions to reduce the possibilities of a post treatment fish kill.

Besides providing hiding areas for fish, an abundance of fish food forms on plants like algae, which attracts small invertebrates that



*Grass carp can be used to maintain a desirable amount of aquatic vegetation, but are usually overstocked and cause more harm than good by removing all vegetation, good and bad species.*

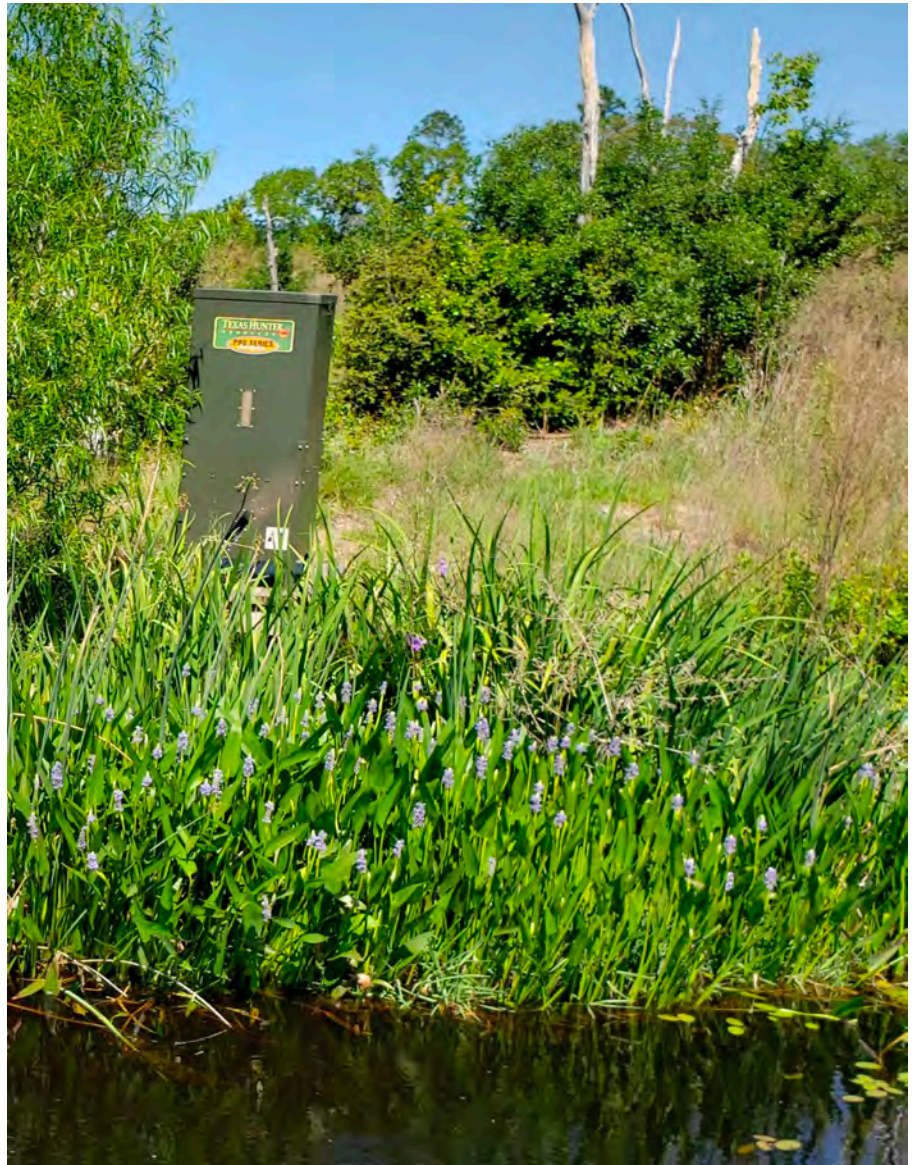
small and young fish require for food. Plants also provide nesting habitat for birds, reptiles and amphibians.

If you have a new waterbody, the canvas is blank and fairly easy to paint. If you want to improve an existing waterbody, identifying current vegetation and prioritizing them from most to least desirable is required. I also dislike exotic (non-native) plant species, but on rare occasions we leave them, only because it is the only habitat in the lake. But as soon as desirable plant species begin to fill in, the exotics need to be treated with herbicides or mechanically removed. Exotic plants tend to be a problem in that they grow in excess and require more maintenance (equates to money) to keep in check. Not to say there are not native plant species that does the same (i.e., cattails under certain conditions may be left to grow on a damn, may be partially removed/treated annually or completely eradicated with herbicide or mechanical removal).

There are three types of plants lake managers deal with – **upper shoreline** (usually on dry ground, but can tolerate being near or in water for short periods of time), **emergent** (part of the plant is underwater and part is above water, but can usually tolerate short dry or being submerged periods) and **submerged plants** (the entire plant remains below the surface and can rarely survive any time being on dry land and short periods partially exposed). All these plant types can contribute to fish and wildlife habitat, reduce erosion and improve water quality. In many situations we may recommend a combination of two or all three types depending on the waterbody and management objectives. Planting submerged vegetation is rare unless part of the waterbody is

desired to attract waterfowl and then it might be employed. I have never prescribed any floating plant species, like used in a goldfish pond in the garden, which is where many exotic plant species got their start in this country from water gardens and the aquarium plant industry. However, small floating islands of vegetation have become popular with some pond managers in northern areas and have proven initially to be beneficial to remove nutrients. In the South, where the growing season is very long, I would advise against it. We have clients in the Deep South that have spent thousands of dollars on aerial treatments of floating plant islands (Tussocks). These can actually cause negative water chemistry issues and are not good fish habitat in the South when out of control.

Do not get your plants and just start planting anywhere, using any method, in any depth of water. Planning it out will allow for greater plant survival and a better layout to reduce having to go back later and cut or spray something that was planted in a spot reserved for a boat ramp, swimming hole, dock or beach. Knowing the requirements of each plant species is necessary to be successful with your plantings. How deep of water does the plant species thrive in? What is the deepest water it can tolerate for how long or how long can it survive on dry land? How much light is required? Some aquatic plants like full sun, while others require a lot of shade, otherwise they grow slow or die. What is the pH of the water/soil? some plant species like low pH (acidic) and others higher (basic). Aquatic plants are similar to agricultural crops or landscape plants. Some plant species like soft water, others do better in hard. Some aquatic plant species require flow, while others become uprooted or perish



*Most of these species in front of this feeder were planted. Make sure you plan out your planting scheme, so you don't have to come back with a weed whacker or herbicides. Short plants could be placed in front of an elevated feeder, just make sure the species doesn't get tall enough to block feed being broadcast out.*

in flow. Think about planting multiple species together as you work your way up the bank, like tall plants behind short plants, or visa/versa depending on from where you are looking at them. Water depth requirements of each species is very important. Do not plant tall plants or short trees between the house/cabin and the lake, to obstruct a view. Never plant woody trees or shrubs on the dam or spillway as they will compromise its integrity and can cause leaks, or partial or complete dam failure

over time.

A very important observation is what water level is the lake currently at, at planting time – flood, drought or average? If in a flood condition, you need to plant some emergent plants as far out as possible, maybe even a couple of inches under water, but yet are still receiving light under water, so when normal water levels return the plant is in the proper water depth and the top is above water level, as it should be. If it is drought conditions and you place some



*Behind this quality bass looks like a golf course or park-like lake, however, this is the shore down from the cabin, so lake view is important, but the rest of the lake is lined with quality vegetation above, at and below the waterline.*

emergent plants under water that need to be above when water levels rise, they could get shaded out if the water is green or tannin stained and all the plants will perish due to lack of sunlight or being submerged too long.

We often prescribe planting cypress trees just in or out of the water to give a natural look. Fruit, nut trees, dogwoods, hibiscus, etc. can be planted in open uplands around lakes and ponds to feed and attract wildlife such as deer, wild turkey, birds and other wildlife as an additional food source and/or for viewing.

Plants can be purchased from nurseries that specialize in aquatic plants and can either be shipped or picked up. Plants can be purchased as bare root or in various sized

*“Memories of Spring just may be the latest and greatest insight into turkey hunting that members of the Tenth Legion will salute!”*

— Will Primos

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containers. Depending on the species, size area to be planted, method of planting and available funds helps determine which is best for your situation. If picking up plants yourself, make sure they are wet and covered during transport to prevent drying or death by wind. Once arriving at the site, park in the shade or uncover in sunlight so they don't steam, and keep moist, so they don't dry out. Collecting plants from donor sites on your property or a neighbor's is a possibility, but please check with your state Fish & Game or Agriculture Department before you do so, because each state's rules are different on relocating vegetation. Also, make sure you know what you are planting. Some plants can look very similar, but have extremely different outcomes. I have seen many people miss identify **torpedograss** (which is an invasive grass looking plant) for **Maidencane**, a native aquatic grass looking species that needs a lot less work to keep in check than its exotic cousin.

Another common mis-identified plant is **water Hyacinth** mistaken for **pickerel weed**. Water hyacinth is an exotic invasive floating plant, while the other is a much slower growing rooted plant. It is best to have a professional identify the plant species if a donor site on your property or elsewhere is available to make sure you are not moving and introducing a problem. There are several books and now apps for your phone that help you identify aquatic plants to assure you that you are not relocating a future problem.

Planting woody species prior to the growing season (winter) and soft tissue species after the growing season begins (spring) is advised. For soft tissue plants the earlier the better. Once a freeze is no longer possible, get soft tissue plants in the ground so they have an entire

growing season to establish good roots prior to the next winter. Plants can be planted with a post-hole digger, small shovel, forked stick, and we also use a Dibble bar (which is normally used to plant pine trees) for planting both water-line moist soil and underwater emergent plants. Examine the plant species and root system. Is it potted or bare root and come up with the best planting tool and method to prevent plant damage during the planting process and for quickness if a large number of plants are being planted. Some plants can be cut at soil level and replanted because they have roots off their stalk, which makes gathering and replanting much quicker than digging them up and digging holes to replant.

Once planted, give it some time. Various species will grow at different rates. To reduce costs, I usually plant at a much lower density than recommended and allow it to gradually fill in and spread. If you plant

so you have an instant filled in vegetated area, it will cost several times more in plants and labor than sparsely planting and allowing Mother Nature to do the rest. You can also create a few sites as donor sites, where you can come back to the area and remove a few plants and transplant them from there to other areas of the lake where that particular species is desired, without leaving your lake or spending additional funds.

You may find out for some reason certain plants didn't do well, or one species completely died-off, despite you doing everything right. We have had turtles come behind us and eat the plantings. If there are grass carp present, they can consume some plantings depending on plant species, water depth and other available food. The most surprising to us was we once had deer or a single deer find our pickerel weed around a five-acre lake in Georgia and walked the entire shoreline in a few nights and ate



*All this giant bullrush was hand planted near Nuphar (lilies) and maidencane. It was not until we started using already present patches as donor sites that it started really spreading. Plants generally do better if from the same waterbody/watershed, as opposed to purchasing them, but it still can be successful.*



*This rush came in naturally, but the maidencane behind it was planted when the lake first filled in.*



*Quality largemouth bass and black crappie depend on some form of vegetation to be successful. Even the single-cell planktonic algae greatly contributes to their growth rates and how many a waterbody can support.*

over 500 plantings we had just put in. I didn't see that one coming, but that deer sure loved those tender leaves and didn't mind getting its feet wet to do it! If this type of activity is observed, fencing areas off with temporary material until it

tion with mild herbicide use or manually removing plants as they begin to encroach. Leaving areas open for such activities is fine as long as the majority of the shoreline has some type of habitat along and/or in the water. If all angling

becomes established and can overcome grazing might be necessary. Even if you have never observed a beaver in the lake, it is safer and cheaper to add tree trunk guards to the newly planted trees as opposed to buying more trees later because of depredation and destruction.

In your planting plan you can designate areas for no vegetation (other than grass to reduce erosion above waterline) for docks, boat ramps, bank fishing access points or swimming holes, and keep those areas free of vegeta-


is done from a boat, even less shoreline can be manicured. Lake edges can be mowed in the dead of winter to knock back dead vegetation and allow for light to penetrate to begin another growing season.

Throughout the Southeast, including east Texas, we recommend using a document put together by the Florida Department of Environmental Protection Titled: *Plants for Lakefront Revegetation* to identify desirable plant species for your lake or pond. It discusses the soil type, the amount of water and sunlight required for each species, and how far apart each plant should be planted to maximize plant survival and expedite growth. Other sources of information can be viewed at your particular state's County Extension Office, Agriculture Department, Fish and Game Department and State Plant Society web sites. Also, the University of Florida and Texas A & M University web sites are considered the best in the country for aquatic vegetation information, regarding both native and non-native (exotic) species, plant biology and control recommendations including herbicides for each species.

Over the decades I have converted several lake owners whose original thinking was they wanted the golf course or park-like look around their lakes, but they quickly learned that weeds grow fish. Weeds can also harbor lots of insects, which feed fish. It can be slow to change your attitude from desiring the clean shoreline look to the more natural better habitat look, but once you see the benefits, and with the right plant species, you will be mowing and weed whacking a lot less and fishing a lot more.

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# Wildlife Trends Journal Management Calendar

Dave Edwards



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 President of Tall Tines Wildlife & Hunting Consultants, Inc. Contact him at [TallTinesConsulting@gmail.com](mailto:TallTinesConsulting@gmail.com) or 912-464-9328.

*Duck pond - Drain flooded hardwoods managed for waterfowl before spring green up.*

## **Drain hardwood areas that are being intentionally flooded and managed for waterfowl (aka – greentree reservoirs or GTR's).**

**M**anaging and flooding hardwoods is a common management practice to attract and provide quality food for waterfowl and/or a way to increase duck hunting opportunities on a property. To be effective, the manager must have the ability to control water levels within the area. Most GTR's are created by building a small dam or levee around the hardwood area being managed that allows you to hold water on the area. Water control structures are used to allow the area to flood, control the depth of flooding, and to release water or drain the area. The timing of the flooding or flooding regime/strategy

is very important and, over time, will affect the species of trees that will exist in the area. Ideally, the goal is to have quality oak species that will produce acorns for ducks to eat; along with quality vegetative and aquatic food sources. Most of the desired oak species such as water oak, cherrybark oak, pin oak, laurel oak, and others, are flood tolerant during the winter because they are dormant then but are not flood tolerant during the growing season. Thus, areas that contain desirable oaks need to be drained before spring green up (which varies throughout the Southeast) to ensure their survival. Areas that are allowed to remain flooded into the growing season will slowly convert to flood tolerant tree species such as tupelo and cypress or other less desirable tree species. Without management, Mother Nature

dictates the tree species in an area that floods. Think about areas on your property that remain flooded or only flood during the winter. Areas that remain flooded through summer or year around will be primarily composed of undesirable tree species for waterfowl. Having said this, many of these areas are still attractive to waterfowl due to the aquatic plants and associated invertebrates that colonize in the water. If you do not have a GTR on your property but have area(s) that would lend themselves well to this type of management, spring and summer is the best time to create them. Depending on the situation, constructing a GTR can be relatively easy and inexpensive and will add additional recreational opportunities for you to enjoy. One word of advice that will save you time and money - consulting with a



*Harvesting timber in late winter or early summer allows more growing season for the area to recover and produce wildlife friendly vegetation.*

make sure the tree and tube are properly staked and upright. If fire ants have built a mound inside the base of the tube, treat them. Make sure zip ties are secure on stakes and tubes. If trees were mulched (recommended), inspect the mulch and add more if needed to reduce weed competition. Speaking of which, late spring/early summer is a good time to spray glyphosate (RoundUp) around the base of each tree to kill grasses and weeds that compete for water and nutrients. Depending on the type of fertilizer (if any) was used when the tree was planted, now is a good time to give the tree a boost. Taking care of young trees during their first couple summers is important and will result in optimal growth and strength.

### **Plant summer food plots for wildlife.**

Throughout most of the Southeast, April and May are the desired planting periods for many summer crops such as millets, sorghum, peas, corn, soybeans, etc. Because many of the seed producing grass type crops that benefit birds are summer crops, wingshooters devote

development are taking place during summer. Most summer plantings for deer are very nutritious and high in much needed protein. Commonly planted summer crops for deer include many varieties of peas, soybeans, corn, lab lab, vetch, and clovers. One of my “go-to” summer plantings for deer in the Southeast is forage soybeans. One mistake I often see made is trying to plant these crops on small food plots. Because they are so attractive and will receive heavy browsing pressure, plots need to be at least a couple acres in size, preferably more. Even at low densities, deer can apply too much grazing pressure on small plots and in many cases eat all plants shortly after germination before the crop has a chance to establish. Regardless of whether you are planting for birds or deer, a successful planting starts with testing the soil and applying required fertilizers and lime to ensure good soil quality. Create a clean, smooth seed bed and plant under favorable conditions. Favorable conditions mean adequate soil moisture and a good chance of rain after planting takes place. As you can imagine, weed

control poses more problems in summer plantings because of the warmer soils and good growing conditions. Therefore, it is essential to monitor summer food plots for weed encroachment and treat as needed for optimal forage production. I also recommend placing a deer “excluder cage” on each food plot to monitor crop production and deer use. Most of you have used or seen these in the past, but an excluder is simply a piece of 4’ tall close wire fence rolled to make a 3’ diameter tube then staked to the ground. It prevents deer from browsing plants inside the cage which allows you to assess crop success and deer use.

### **Move, clean & keep supplemental feeders full for deer.**

For those that implement a supplemental feeding program for deer, you have probably noticed a significant decrease in feed consumption during the spring green-up period. This is a great time to move (but keep in the same general area) and deep clean all feeders in preparation for the upcoming summer. Deep cleaning for us means hauling a feeder back to the shop to clean all old feed and debris out, then pressure washing using a bleach solution. As new vegetation begins to mature or “harden up” it will be less nutritious and attractive to deer and feed consumption will increase. Although supplemental feed should be provided throughout the year (or at least when it is legal), April through September is the most critical period to ensure deer have a quality diet. Supplemental feeding is particularly beneficial to deer herds in poor quality habitats such as coastal plain areas or areas with deep sandy soils. There is simply a larger nutritional gap to fill on these less fertile habitats. Many biological processes such as antler

growth, fawning, and milk production occur in deer during this period. Later in summer is also the period in which quality natural food sources are often at their lowest. Providing a quality nutrient rich feed that contains a proper level and ratio of protein, calcium, phosphorus, fiber, etc. will ensure deer have a nutritious food source. Whole corn should be avoided when possible unless you are “training” deer to use new feeding stations. As a side note and tip, deer will spend more time at and use/consume more feed (which is the goal) at feeders that are located in remote/isolated areas versus those in the open (e.g., food plots). Another tip is to never hunt over a supplemental feeder. A supplemental feeder should be a safe place for deer where they feel very comfortable and secure. Remember, you want deer to spend as much time at a feeder as possible. This seems obvious, but I commonly see supplemental feeders in sight of deer stands. Take these temptations away from hunters by ensuring feeders are not seen from stands. Lastly, remember that supplemental feeding is just what the name implies – a supplement to properly managing the natural habitat and deer herd. It is often the highest hole to “patch” in your management bucket, meaning everything else should be in place before a supplemental feeding program is undertaken or implemented.

### **Lime and fertilize roadsides.**

Many landowners concentrate their efforts in the woods or food plots but overlook roadsides when managing a property. Roadsides can account for a great deal of acreage across a property. Liming and fertilizing natural areas along roads during spring/early summer will enhance plant growth, attraction and nutrition of these areas for wildlife. These areas not only

provide quality browse for deer, but create ideal nesting and escape cover for turkeys and quail. Because wildlife are attracted to these areas it also increases wildlife viewing opportunities while riding around the property. This strategy is well suited for widened roadsides that are currently being managed (by mowing, disking, fire, roller chopping, etc.) for early successional habitats. It may be worth noting that this is a “fine-tuning” strategy to enhance wildlife habitat once other “big picture” items such as woods, fields, etc. are being actively

and properly managed. If you have undesirable vegetation or exotic plants along roadsides such as sweetgum trees, privet, cogon grass, etc., a consulting wildlife biologist or forester may be useful in helping to determine the appropriate mechanical and or chemical strategies to apply to remove these and promote wildlife friendly plants.

### **Conduct timber harvests early.**

If you have timber harvest scheduled for this year, late winter or early summer is the preferred time



*In addition to planting summer crops for deer, now is the time to plant “screen” to help manage hunting pressure next fall.*

to conduct these activities. Harvesting timber during winter, if your property is dry enough, or during early summer will give these areas the entire growing season to re-vegetate resulting in better wildlife habitat. Timber areas that are harvested late in the growing season, say July, do not have much growing season left to recover or



*Avoid the fall rush and send in cameras needing repair this spring.*

re-vegetate which results in poorer quality wildlife habitat until the next growing season when plants can reestablish. Having said this, the wildlife value of thinning or clearcutting timber is more important than the timing of the harvest. That is, do not delay a harvest simply because it will occur during late summer. However, when possible, schedule timber harvest in late winter or early summer.

### **Secure shooting houses.**

Most landowners/hunting club members invest a good bit of time,

money and energy into building shooting houses (a.k.a box blinds, deer stands, condos, etc.) for deer hunting. However, once deer season is over few hunters think about maintenance of these stands until next season. Animals such as owls, squirrels, raccoons, mice, wasps, dirt doblers, etc. can make a mess of and/or destroy the inside of a

shooting house and its contents such as chairs or curtains. Taking a little bit of time to seal/close up stands now will prevent animals from using these structures over the summer and reduce the amount of work needed to get stands ready next fall. Another benefit of sealing stands is keeping water out which will rot wood over time. While all shooting houses are different, the goal is to seal the inside as best you can to keep unwanted critters and rain out. In some cases, it's simply a matter of ensuring all doors and windows are closed. On stands

without closeable windows, simply cut out and screw pieces of plywood over the windows. Expanding spray foam used for insulation can be handy in sealing areas between walls and the roof where corrugated tin is in use. By making this part of your annual activities each spring, your stands will last longer and you will have more time in fall that can be devoted to scouting or other activities that will benefit wildlife on your property.

### **Establish thickets – ring around technique.**

If you actively manage your property for quail hunting, consider establishing protective “thickets” within these areas to provide quail with quality escape and travel habitat. Generally speaking, areas intensively managed as “quail woods” for hunting are maintained through annually burning, disking and mowing or some combination of these. The goal of this management is to set back plant succession to an earlier stage. Plant succession is the natural progression that takes place as plants reoccupy a site over a period of years. Annual plants such as ragweed, broomstraw, croton, partridge pea, wild millets, etc. are considered “early successional species” and are some of the first to occupy a site after a recent disturbance. A mature forest is in a “climax” or late successional condition. Quail are considered a species that prefers early successional habitats. However, while these strategies provide overall great early successional habitat for quail it is also important to “protect” some habitats/areas to provide increased habitat diversity and escape cover within the actively managed areas. Doing so will allow larger plants and shrubs to establish creating excellent overhead escape, loafing, and roosting cover. Having said this, these areas need to be “disturbed” from time to time to set back succession and prevent trees from encroaching. While every property is different, I commonly design/create these areas to be ¼ to 1 acre and ensure they are distributed roughly 150 yards apart throughout the areas being managed. If fencerows and/or ditches are present, leaving a 15–20-yard buffer on each side will create similar habitat and often creates a travel corridor or escape route for quail. For areas that

receive fire every 1-2 years, simply install a firebreak around the thicket areas to keep fire out. We often refer to these as “ring-arounds” – areas we have installed a firebreak around to prevent fire from consuming vegetation within the area. To manage the “ring-arounds” and keep them from getting too overgrown we just create new ones somewhere else every 2-3 years and allow fire to set back succession in the original areas protected when we burn.

**Check and send trail cams in for repairs.**

Late spring is a great time to perform normal maintenance to trail cameras. Generally speaking, this is the period I use my cameras the least. Taking care of cameras now will ensure they are ready to be deployed in late summer to begin assessing bucks or conducting

camera surveys in early fall. With over 20 years of experience using trail cameras and currently owning roughly 150 cameras, I can assure you that giving them a little TLC goes a long way in extending their life. I normally perform a detailed cleaning of each camera. Focus deep cleaning efforts on the user panel (where you adjust settings), battery compartment, lens, and flash areas. I use an electronics spray duster (can of compressed air or liquid gas) often used to dust/clean computer keyboards. A toothbrush is a good tool to clean small debris from these areas as well. Never store cameras with batteries in them. If your camera has a rubber seal around access compartment doors (most do), pull them and clean them good. I often wipe them down with Vaseline to lubricate/condition them which gives them a better seal. If the rubber

seal is dry rotted, simply order a new one from the manufacturer. This is also a great time to send “broken” cameras back to the manufacturer for repair if needed. Obviously, there are many things that can break in trail cameras. Although we all try to handle them carefully, we are taking them into rough and bumpy environments so occasional issues will occur. By sending them in for repair now you will avoid delayed service times later due to the typical “fall rush” in late summer/fall when most hunters start thinking about deploying cameras and remember or realize they have issues. A few of the more common problems I’ve encountered include flash not working properly, photos having a halo around white out areas (like reflective deer eyes) and being out of focus. These are problems that only the manufacturer can fix.

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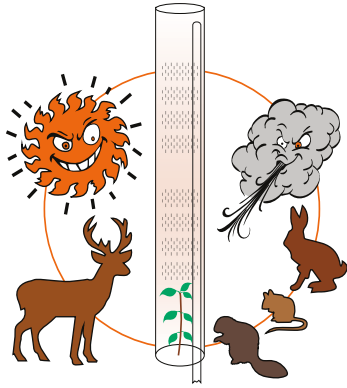
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