



PRACTICAL WILDLIFE MANAGEMENT INFORMATION

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Earl Says...

It's a little too easy to take things for granted these days such as your health, your money and especially your spouse. But after reading the article on bees in this issue by Tes Randle Jolly, it made me appreciate their role in wildlife management and the fact that their numbers are declining.

I've always tried my best to avoid any bees or wasps because we've all been on the wrong end of their stings! And many people are dangerously allergic to any type of sting. I saw a friend of mine nearly die a few years ago after a few yellow jacket stings while we were planting our green fields. Now he carries an EpiPen everywhere he goes. But as you'll see in the article, bees and other pollinators are very much needed to produce the crops we plant for wildlife.

I hope you find this pollinator article as informational as I did. And if you decide you want to try your hand at beekeeping, let us know how your efforts have gone and/or if you need anything to help you. Good luck and I look forward to hearing from you all.

Andy Whitaker
Publisher/Editor



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Cover photo by Dave Edwards

Promoting Pollinators on Your Land:

How to trap a wild swarm and beginner beekeeping tips

Text & Photography
By Tes Randle Jolly

Tes Jolly is an award winning writer and outdoor photographer. You've seen lots of her work in past issues of Wildlife Trends Journal. Check out her website at www.jollysoutdoorvisions.com.



Mention trapping to a hunter, or wildlife habitat manager and it's likely to start conversations on how to trap fur bearers, predators, pests or the current scourge to wildlife and habitat feral pigs. But how many have ever considered trapping honey bees? The author and her husband certainly had not until a good friend and beekeeper, Kevin Dodd, gifted us with a Mason jar of "homegrown" honey. Kevin's a "do-it-yourselfer" who enjoys beekeeping and builds much of his beekeeping equipment.

Kevin shares our passion for habitat management and hunting and explained the importance of promoting pollinators for food plot crops, trees and native vegetation. He noted we were already managing pollinators and may not

realize it. Bees benefit from our wildlife and timber management procedures such as thinning pines, tree plantings, prescribed fire, food plots and native vegetation enhancement. Bees utilize the wildflowers and grasses that regenerate in burn areas managed for deer, turkeys and quail. Bees visit clover and brassica blooms in food plots during early spring and summer. Adding a new

dimension to our existing management efforts was a no brainer.

Perilous Times for Pollinators

Honey bees are fascinating creatures and produce one of Nature's sweetest rewards (think honey slathered, hot, buttered biscuits). That's reason enough to promote them! Their impact on the world cannot be

overstated. Protecting pollinators such as honey bees is vital to global plant production and directly impacts wildlife and mankind. More than two thirds of the world's food supply come from plants pollinated by bees and other pollinators such as butterflies, birds, bats, beetles and certain small mammals.

Sadly, in recent years, Colony Collapse Disorder (CCD) has caused an annual reduction of 30-40% of honey bee (*Apis mellifera*) populations in the United States. CCD is a phenomenon that occurs when the majority of worker bees in a colony disappear and leave behind a queen, plenty of food and few nurse bees to care for the remaining immature bees and the queen. Several possible causes for CCD and the decline in populations have been proposed, including varroa mites, genetic factors, loss of habitat, changes in forest structure, the use of off-label pesticides and changes in beekeeping practices.

National Pollinator Week (June 18-24, 2018) celebrates pollinators and raises public awareness to the importance and plight of this group. The North American Pollinator Protection Campaign promotes awareness through education and partnerships while encouraging restoration, establishment and enhancement of pollinator habitats. To promote and attract pollinators, consider planting a perennial pollinator seed mix (<https://www.ernstseed.com>). The Wildlife Group (<http://www.wildlifegroup.com>) offers flowering nut and fruit trees that attract bees.

Find a Mentor

After several conversations and a tour of Kevin's apiary we were anxious to learn more about beekeeping



Beekeeping is best undertaken by joining a beekeeping association or local club to find a mentor. Local beekeeper and friend, Kevin Dodd, pictured left, agreed to mentor the author and husband. Here they are readying a swarm.

and add it to our habitat management plan. It was clear there was much to learn before actually acquiring bees to start a hive colony. Kevin stressed mentoring was key to success for novice beekeepers and graciously offered to help get us started with supplies and guidance.

Honey bees are complicated creatures. Even with extensive scientific research studies there are mysteries on their behaviors and biology that remain unsolved. Veteran beekeepers understand the steep learning curve and strongly advise novice beekeepers to join a state beekeeping association or local club where they are likely to find a nearby beekeeper willing to mentor. As a rule, beekeepers are passionate about their craft and most are happy to help “newbees”. (See Side Bar, “Basic Beekeeping Kit & Educational Resources”).

Acquiring Bees

Kevin noted the first step in beginning beekeeping is to decide how to acquire honey bees and listed the following options:

1. Purchase a colony and move them to a location. Cost can range from \$150-200. These are often heavy and difficult to move.
2. Purchase a small NUC (nucleus) colony with three to five frames of established brood and honey stores from a beekeeper and expand into a full-size hive. Cost ranges from \$140-\$185.
3. Purchase mail order packaged bees (\$90-\$135) which contains about 3 pounds of bees and a queen. It must be introduced into a small hive and grown over time.
4. Catch a feral swarm of bees from the wild (mostly free) by locating a swarm or using swarm traps.

The expense and availability of the first three options can be a limiting factor for some which makes swarm trapping appealing for first time beekeepers. Timing on capturing swarms off a tree limb or other structure can be difficult because bees are unpredictable and may

move before they can be captured. Swarm traps allow the swarm to settle in permanently. This allows for scheduling the trap relocation at the beekeeper’s convenience.

How to Trap a Wild Honey Bee Swarm

Kevin prefers to construct swarm traps from scrap lumber because it’s an economical and easy way for beginners to get started. There is no magic size in constructing a swarm trap. For the do-it-yourself crowd visit <https://www.mclendons.com/tips-projects/diy-how-tos/urban-farming/Building-a-Langstroth-Behive> for detailed instructions on building a Langstroth style ten frame hive. However, unless you can easily drive to the trap location, size can be an important consideration as you will have to carry the hive some distance. The solution is to build a box big enough to accommodate several brood frames (3 to 5) but small enough to be easily portable.

The trap box inside measurement will be half the width (8 1/4 inches) of the 10 frame Langstroth brood chamber’s width (16 1/2 inches). It’s important to remember that honey bees tend to build in every available space. If there are open spaces beside or between the frames they’ll build a freestyle comb that will contain precious eggs or brood larvae which is difficult to transfer to a permanent hive.

Swarm traps may be built out of scrap wood but avoid thin plywood as it warps easily in wet weather. A waterproof top is important. Traps should be painted with an exterior paint, preferably a light shade. Drill a 1 inch round opening that’s easy to plug (cork or wood) when moving the trap. Any larger will allow



Honey bees are attracted to traps using a scent attractant such as Lemongrass oil or an artificial pheromone. Lemongrass oil is applied to a cotton swab and placed in the traps.



Securely attach a trap 6 to 12 feet above ground on a tree, treestand platform or shooting house top. Higher is better. The trap will quickly become much heavier when bees begin producing comb, brood and storing pollen and honey. Choose a location easily accessible for safely lowering the trap.

nesting birds and flying squirrels to enter. Slotted openings work as well.

The swarm trap should provide a suitable location for new swarms. There are many varied opinions as to how to make the trap appealing, however several common facts include:

1. Placing 3-5 frames with foundation in the trap. At least one must contain drawn comb, preferably dark comb, from a brood chamber. This is obtained from an established beekeeper or an abandoned hive.

2. Placing a scent attractant or artificial pheromone inside the trap. This includes oil of lemongrass (sold by Walmart, bath scent stores, Amazon.com) or artificial pheromones available through bee supply outlets.

3. Placing the trap a minimum of 6 feet above ground and preferably up to 12 feet. Remember, depending

on the trap size, when occupied for a few weeks, it's possible that the five-pound swarm trap may contain 10 pounds of bees and up to forty pounds of honey and brood. Climbing down a tree or ladder with

a heavy box of angry bees is not a safe undertaking. When locating and securing a trap, make sure it will hold extra weight and can be safely retrieved. Established shooting house roofs or ladder stands



Capturing a wild honey bee swarm is an economical way to get started promoting pollinators on your land. Install swarm traps generally from March through June in the Southeast. Check traps for bee activity at least every two weeks.

offer safe platforms for swarm traps. Traps can also be tied or bungee-corded to tree trunks or limbs.

Some believe trap proximity to water or forest openings or shade is important. Consider putting the trap where midday shade will shield it on hot days. Placing traps in close proximity (several hundred yards to a mile) to established bee hives increases swarm captures substantially. Another location option to consider is where swarming honey

bees have been observed in the past.

The prime swarming period in much of the Southeast runs March through June, although swarms may occur later. The earlier the bees are trapped the better the chances for colony success. Check traps fairly often (every two–three weeks) as new swarms will outgrow a smaller trap rapidly during prime honey flow periods.

When a swarm settles into a trap, purchase or build the compo-

nents for an 8 or 10 frame hive body. Choose a location for the permanent hive. Food plots that offer spring and summer forage such as annual and perennial clovers and areas of native forbs and grasses such as old pastures and managed pine plantations near a water source are good locations. Make sure the location is easily accessible. Place the hive on concrete blocks or some type of secure elevated stand.

When a swarm occupies the trap, it is preferable to capture as many bees inside as possible. It's best done in early morning, after dark or on a cool rainy day. If possible, have your mentor direct and assist you



To capture as many bees as possible, move the trap to a permanent 8 or 10 frame hive during early morning hours, after dark, or on a cool rainy day.



Use a bee brush or soft bristle paint brush to sweep remaining bees into their new home.



If possible, locate the permanent hive in an area with some midday shade.

when moving your first swarm. Plug the entrance (round holes are very easy to plug) and then move to the permanent hive location. From there, simply open the box and carefully transfer the frames to a new 8 or 10 frame hive while wearing protective shoes, clothing, gloves and hat with veil. A bee smoker, used as directed, can be used to subdue the bees while working a swarm trap or hive.

Supplies, Tools & Gear

There's an endless list of accoutrements for beekeeping to dazzle and confuse the beginner. Like hunting or fishing gear, most of it is unnecessary. The basics will get the job done. Kevin suggests a hive tool for pulling or prying frames loose (sold as paint scrapers at Lowes and Home Depot) and a bee smoker. A quality head covering with veil is a

must have. Don't scrimp on this gear. Being stung around the face is the quickest route to losing interest in beekeeping! A bee jacket with a built-in head veil is better. Various styles are offered. Prices range from \$25 and up. You can substitute a thick fabric light-colored long sleeve shirt for a bee jacket as long as there are no openings for bees to enter. Long-cuffed beekeeping gloves are recommended. Regular denim blue jeans are normally sufficient to protect your legs. Make sure there are no openings around the ankles. Use tape or elastic bands if needed. Light colored clothing should be the rule as bees tend to focus their aggression on dark colored items. There are numerous bee supply stores online most of which will offer a "beginner" package that includes the above and more. Local Farm Supply and feed stores carry supplies as

well. For full protection, the pros use a bee suit and gloves.



When checking the health of the hive it's important to know how to recognize bee eggs which resemble a minuscule grain of rice. The larger white curved larval stage is easier to spot, as shown in this photo.



Honey is produced when bees collect nectar from flowers which is regurgitated and stored in comb cells of a frame. Honey contains mainly sugars and small amounts of vitamins, proteins, mineral matter and enzymes.

Why Trap Wild Honey Bees?

The dramatic decline in honey bee populations from Colony Collapse Disorder has researchers testing and looking for ways to increase populations through improved genetics. Strong genes are important to the health and sustainability of honey bees. Besides the economic advantage, collecting wild honeybees through trapping is another way to help fortify the genetic pool. A colony that's trapped in an area where there aren't many managed bee farms nearby are likely from a colony that is essentially wild. A colony that survives long enough to produce a swarm must be hardy. They've been tested by pests, disease, withstood harsh weather and survived on their own. Time will tell how hardy the author's first colony trapped from the wild and featured in this article will be as it grows through its first season. Stay tuned for updates.



More than one-third of the world's food supply comes from plants pollinated by bees and other pollinators. Promoting pollinators through beekeeping helps honey bees recover from the devastating annual population declines caused by colony collapse disorder.



Honey is produced when bees collect nectar from flowers which is regurgitated and stored in comb cells of a frame. Honey contains mainly sugars and small amounts of vitamins, proteins, mineral matter and enzymes.

Basic Beekeeping Kit & Educational Resources

Beekeeping supply companies and some farm stores offer beginner kits. The list below provides everything needed to start and work your first hive, except the bees and feed. For do-it-yourselfers use tutorials and build some supplies yourself or save time and purchase fully assembled supplies. Either way, links below will help get you started.

Basic Beginner's Beekeeping Kit

Telescoping Top
1 Hive Body
Inner Cover
1 Bottom Board
10 Assembled Deep Frames with Foundation
Entrance Reducer
Entrance Feeder with Quart Plastic Jar
Smoker with Fuel
Bee Brush
Standard 10" Hive Tool
Beginner's DVD and Book
Plastic or Leather Beekeeper Gloves
Head Veil or Bee Jacket with Built in Veil

Hive Components

Telescoping Top - Seals the top of the hive, providing protection from wind and rain.

Inner Cover - Creates dead air

space for insulation against heat and cold and makes removing the top easier.

Super - Comes in two sizes, Shallow and Medium used for honey storage.

Queen Excluder - prevents the Queen from laying eggs in the honey supers above the hive body.

Hive Body - Used as the brood chamber for the queen to lay eggs and rearing of new bees. Any size super can also be used as a brood chamber.

Bottom Board - Screened bottom board provides ventilation and aids in mite fall.

Entrance Reducer - Reduces entrance opening. Used when feeding and over-wintering.

Hive Stand - Provides a landing board for bees and raises the bottom board off the ground minimizing moisture.

Frame - Wood or plastic frames inserted into the hive body and supers designed to hold the comb where brood, pollen and honey are stored.

Educational Resources

There's much to learn about beekeeping: hive biology, apiary (bee yard) supplies, tools & gear, hive management through the seasons, honey collection and DIY honey extraction methods. It's a great activity in which to involve the entire

family. Join a local beekeeping club or association for guidance to find a mentor and attend field days.

Search online and book stores for books and videos. Go online for associations, clubs, newsletters, workshops and mobile apps for tracking hives. Facebook is loaded with chat pages to help the beginner. Below are a few recommendations to get you started.

Associations

Alabama Beekeepers Association
(Search your state associations online)
www.pollinator.org

Books

"First Lessons in Beekeeping", Dr. Keith Delaplane

"The New Starting Right with Bees", Kim Flottum & Kathy Summers

"Plants Honey Bees Use in the Ohio and Tennessee Valleys", Shannon Trimboli

"Beekeeping for Dummies", Howland Blackiston

Websites

www.brushymountainbeefarm.com
www.GrassyRoadsFarm.com
www.carolinahoneybees.com
www.Amazon.com
For DIY'ers visit <https://www.mclendons.com/tips-projects/diy-how-tos/urban-farming/Building-a-Langstroth-Beehive>

Facebook pages

Sweetgum Ridge Honeybee Chat
Grassy Roads Farm
Carolina Honeybees & Beekeeping Beekeeper Charlotte
Mention trapping to a hunter, or wildlife habitat manager and it's likely to start conversations on how to trap feral pigs, predators, pests or the current scourge to wildlife and habitat feral pigs. But how many have ever considered trapping honey bees? The author and her husband certainly had not until a good friend and beekeeper, Kevin Dodd, gifted us with a Mason jar of "homegrown" honey. Kevin's a "do-it-yourselfer" who enjoys beekeeping and builds much of his beekeeping equipment.

LEARNING “BEEK” SPEAK

by Tes Randle Jolly

Beekeeping requires an understanding of basic honeybee biology and the hive. A Google search will reveal numerous beekeeping glossaries. Below are some basic terms “beeks” (beekeepers) commonly use. Pay close attention to your mentor and you’ll learn the lingo even quicker.

BEE TERMS

Colony

The entire bee population of a hive or other dwelling that includes worker bees, drones, queen and developing brood.

Queen

There’s just one queen per colony and she lays all the eggs. The queen leaves the colony once to mate with drones. Her body is longer and larger than the workers and drones.

Worker

These are female bees who care for the queen, nurse the new brood, forage for nectar, pollen and water. They do most of the work.

Drone

Male bees are recognizable by their rounded bottoms. They are fewer in number than female worker bees.

Brood

Bees before they hatch from the cells as they go through the stages of egg, larvae and pupae. They are kept in the center of the colony.

Swarming

The process of a colony expanding or reproducing. The old queen exits the hive escorted typically by over half of the colony. The remaining bees are left with all the brood and food stores. A new queen is hatched and will leave the hive to mate with drones from other colonies, then returns to lay eggs.

BEE PRODUCTS

Honey

What we drizzle on biscuits a sweet thick treat produced by honeybees from the nectar of flowers, composed mainly of sugars dissolved in about 17 percent water. Honey contains small amounts of vitamins, proteins, mineral matter and enzymes.

Bee bread

A mixture of honey and fermented pollen fed to the brood.

Royal jelly

A milky secretion made up of water, proteins and sugars produced by worker honeybees. It's fed to all the larvae and the adult queen. It's the same "milk" that feeds the workers but with a greater proportion of sugar.

Beeswax

Used for building comb. A complex mixture of organic compounds secreted from special glands on the worker bee's abdomen. Beeswax has a melting point ranging from about 143 to 147 degrees F.

Comb

A structure of six-sided cells made of wax produced from wax glands on a honeybee's abdomen. A comb is comprised of two layers connected at their bases where brood is reared and honey and pollen are stored.

Propolis

Also called bee glue. A sticky waterproofing substance used to strengthen the comb and seal the hive. Made from resinous materials or sap collected from plants and trees.

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WILDLIFE WATERING DEVICE FOR HABITAT IMPROVEMENT



Text & Photography
By David Long

Before his recent retirement, David Long served as the Arkansas Game and Fish Commission (AGFC) Private Lands Supervisor over 9 Private Lands Biologists, targeting technical assistance to private landowners. David is a Certified Wildlife Biologist and owns and actively manages 80 acres of land. Contact him at josephdavidlong@gmail.com.

Establishing permanent water sources where they are lacking is most valuable to the landowner and wildlife manager serious about providing quality wildlife habitat. Providing permanent, well distributed, reliable water for wildlife should be a major goal of every landowner and wildlife manager since most wildlife species require a source of water which is easily accessible and readily available.

Wildlife habitat consists of three major components - **food, water, and cover**. One of the most overlooked habitat components by private landowners is water. There are areas of habitat even on smaller properties that are void of permanent sources of water. In areas where ponds, reservoirs, springs, seeps, creeks and streams are not present to provide a year-round water source for wildlife, watering devices can be utilized to improve the habitat and meet this habitat requirement.

In addition, when a landowner does not have access to a bulldozer or the funds to have a pond or watering hole constructed, a simple watering device as provided in this article can be constructed using 55-gallon poly-plastic barrels. Most of the material used to develop

this wildlife watering device usually will cost \$10 or less per device.

Where should this water source be utilized? On private property, watering devices are best used where new or additional water sources are needed to increase the range and distribution of wildlife on the property, helping meet wildlife's daily water requirements. The device works best in hilly and mountainous terrain. Normally these areas funnel water down hillsides in draws which results in water filling the device during and after every significant rain event when runoff occurs.

Wildlife watering devices should be protected from livestock. Otherwise, livestock such as cattle, horses, goats and hogs would not leave adequate water for the wildlife you desire to benefit. If livestock are allowed

in the area where the device will be installed, it is recommended that they be excluded by sufficient fencing.

What is the yearly average rainfall on your property?

The number of inches of yearly rainfall is important to the self-filling feature of the device. The area of the country where you will install your device and the average rainfall in the area determines how often the device will be filled by natural rainfall. Areas receiving more than 40 inches of rainfall each year works best. These areas are particularly easy to install functional wildlife watering devices as described in this article because they naturally funnel water from the existing watershed into the device. They also provide great flows during and after rain events to fill your watering device on a regular basis from runoff.

Areas with less than 40 inches may make it necessary to carry water to the watering device during the really dry portions of the year to ensure water is available year-round. In these cases, locating watering devices close to roads and trails makes this task much easier.

Natural occurring springs that provide a year-round water source should provide an adequate water supply for wildlife. However, those intermittent springs that are seasonal, holding water only during a portion of each year, can be supplemented with a watering device to provide a year-round water source

Water Requirements of Specific Wildlife Species

Different species of wildlife have unique daily water intake requirements during different periods of each year which are

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impacted by such variables as topography, temperature, rainfall, and habitat type. Spacing will be discussed below for the primary species most landowners prefer to manage and are recommended as a rule of thumb only.

White-tailed Deer - Water consumption by adult deer depends on temperatures, physical condition of the animal, and the kinds of food available. Deer have been known to shift to areas having fresh water during drought periods. Our observations have found that placing numerous watering devices on our property has increased deer sightings primarily from May to November, especially during dry spring and summer months in Arkansas. The devices seem to keep deer, especially the deer family units (doe and fawns) utilizing smaller

home ranges.

Many wildlife biologists recommend free water sources should be established a minimum of one-half mile apart to meet deer water requirements. At least one device every 80 acres is suggested. However, we have placed watering devices on our small property with a spacing of one per 10 acres. This distribution provides water close to all the fawning, bedding and feeding areas that are provided on the property, requiring deer to travel less than 200 yards to obtain water at any spot on the property. It has been our experience that by providing water using this water device at a much closer spacing has appeared to increase the use of many portions of our property by deer.

We have documented white-

tails coming to our water devices from deer stands and on game cameras into November in dry falls in the Ozarks of Arkansas. Water availability is important in hilly or mountainous terrain since water runs off quickly and the topography provides few areas that will pool standing water for more than a few days.

Eastern Wild Turkey - Free standing sources of water are necessary for turkeys during the warmest months, especially to young poults. In at least one turkey study, one brood was observed to travel to a specific water source twice daily during extremely hot weather when forage was extremely dry. The hen and poults ranged less than one-fourth mile from their source of open water during the first two weeks of the young bird's life.

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Hens usually nest close enough to permanent water for daily visits.

Turkey will use any water source readily available and are quite dependent on them during the critical late summer dry periods. One researcher reporting on the location of 25 turkey nests showed that all were within one-quarter mile of a permanent water source, most often within 200 yards. This study result further adds emphasis on the importance of well distributed sources of water on areas being managed for wild turkey production. I suggest one device per 40 acres for helping increase water availability to wild turkey.

Grey & Fox Squirrels - Squirrels can do without open surface water, but it's an attractive feature in any forested habitat. Squirrels drink freely from streams, creeks, springs, seeps

and other natural water sources, but also exist where water in the free-state is entirely absent. However, we have documented squirrels, primarily greys making numerous trips to the devices throughout the day from game cameras during dry periods of the year. It is recommended that spacing of the watering device for the serious squirrel hunter/manager should be placed one per every 3-5 acres.

Songbirds - A broad range of songbirds have been observed utilizing this water device. Chick-a-dees, titmice, flickers, nuthatches, and finches are some of the birds we have observed.

For songbirds, I recommend placing one watering device on every five acres or less of habitat where practical and adaptable according to topography. For general viewing of songbirds and

other non-game wildlife you may want to install these within viewing areas such as cabins, homes or walking trails.

NOTE: For general wildlife use, install a watering device on each 20 acres of habitat is a good general rule of thumb.

Developing Wildlife Waterer

These water devices provided an economical method to establish simple watering devices from 55-gallon poly-plastic barrels. It is recommended that barrels black or green in color be used since they blend into the surroundings and appear natural. Other colors will work, but don't have the advantage of blending into the habitat.

Materials

- One 55-gallon clean poly-plastic barrel (makes two watering devices per barrel)



Installed "Wildlife Watering Device" looking down-slope. It is critical when installing to use a level in the bottom of the device to level the watering device so it will hold the full amount of water (27 gallons). Rocks should be placed up against the end of the device on the outside and the down slope end to assist in keeping the half barrel in place (see rocks in the picture above).



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- One each 12 inch by one inch by 12 inch piece of wood, preferably cypress
- One each hinge at least 4 inches in length
- Wood screws at least 1-inch long that will fit in the holes in the hinge. These are used to attach the hinge and 12 inch by one inch by 12 inch piece of wood to the half barrel.

NOTE: Clean barrels thoroughly before use. Chemical barrels are not recommended unless completely cleaned of any chemical residue.

Method:

Cut 55-gallon plastic barrels using a jig saw. Make the cut along the long axis of the barrel, down the middle, all the way

around it.

Attach the hinge to 12 inch by one inch by 12 inch board and to side of half barrel. The piece of wood is attached to provide an escape route for small mammals, box turtles, reptiles and amphibians that will utilize the watering device. If the wood you utilize has a smooth surface, use a file or other tool to rough up the surface to ensure small animals have a surface they can obtain traction when attempting to escape. (*Note: Rocks can be piled at the end of the half barrel to serve as an escape ramp instead of the wooden ramp*).

Proper Locations to Install

Install watering device in draws, hillsides, mountain sides and other areas which would allow

runoff from rainfall to fill the device. Although devices may be installed any time of year, it is best to install in late summer or early fall so they fill up during the winter periods of heavy rainfall and are ready for utilization. However, to speed up use by wildlife, you may elect to hand-carry water to the watering device to initially fill up.

I have installed these only on my property in the Ozarks. I am speculating that in areas where the ground is relatively flat, installing the watering device in seasonal streams, drainage ditches, creeks, or other drainage systems which do not maintain water throughout the year would also provide permanent water.

It is best to locate watering devices where overhead cover

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from trees will shade the water from direct sunlight. Watering devices placed in locations without overhead cover will result in higher rates of evaporation, especially in the summer months and may result in periods during hot dry summers when the watering device dries up completely. In these situations, transporting water to fill the device may be necessary.

When trying to determine the proper location of the watering device, potential sites can be visited during or immediately after a significant rain event to locate areas where the natural drainage funnels water that could be captured by a watering device.

These watering devices are self-filling when proper placement is achieved and provide a year-round quality water source. Since water is replenished after each significant rainfall event, fresh water is replaced.

If after the watering device has been in place after several good

rain events and an inspection reveals the device is dry or is not relatively full, move it to a new location where the watershed will provide sufficient water to fill and keep the watering device actively holding water. When the soil is saturated with moisture and you experience several 1-2-inch rain events, the watering device should be at least ¼ full. I ended up moving two devices for this reason when I initially installed them because they were not capturing enough water.

Installation

Hollow out the area selected to install the watering device with a shovel and/or pick. (Pile up the dirt and rocks, you will use some of this later). Use a level in the bottom of the half-barrel to level it to ensure it will hold maximum water. Dig out an area the shape of the half-barrel and place it deep enough for the up-slope end of the barrel to be level with the ground on the upper edge of the

barrel. It is very important to place several large rocks in the bottom of the half-barrel to keep it from floating away during the first rains after installation. Once the watering device is at least one-quarter full, the rocks may be removed. However, leaving a few rocks in the device will allow a place for songbirds, squirrels, frogs, salamanders and other species of wildlife to rest while drinking and/or using your watering device.

Once the watering device is in place, take the dirt and rocks you dug from the hole where the device will be placed and pack it around the edges of the half-barrel.

Critical Maintenance

Watering devices should be checked at least twice a year to insure they are functioning properly. Any leaves, twigs or limbs, small rocks, sediment, vegetation, logs and other debris should be removed during these inspections to allow

maximum water holding capacity of the device. If you use a wooden escape ramp, replace as required. This poly-plastic watering device will provide many, many years of usage by wildlife if properly maintained.

Tip: I have found a squared ended shovel works best to clean out the device. I arrived at this solution after numerous trial and error methods of clean-out.

Closing Thoughts...

Is more better? In my opinion, yes! At least that has been my observation. Since placing the first watering devices on our property over 20 years ago, we started seeing more wildlife each year as more were installed. Our eight watering devices are still functioning as well as the first year we installed them, however, proper maintenance must be continued.

Placing additional watering devices on your property will

increase use of more acres of habitat and provide alternative water sources if one watering device happens to dry up. On our property, we have placed these wildlife watering devices at a rate of one per 10 acres. This level of placement (and maintenance) provides basically a year-round water source on the entire property with a water source on average no more than approximately 200 yards apart. We do not have any year-round springs or creeks or other permanent source of water on our property except for a very small pond (1/8 acre) next to our cabin.

I set-up a camera on one device for 20 days between August 22 to September 11 of this year. There were a total 15 deer visits during this period occurring on seven separate days. Length of time at the watering device ranged from one minute to 10 minutes. Numerous squirrel, songbirds, a few crows, and

raccoon were also captured. It would have been neat to have had a camera on all eight devices during this period to see what total use was.

Remember to mark your watering devices clearly if you will be conducting timber harvest operations so loggers will avoid them with their skidders and other equipment.

These poly-plastics last and last and are extremely durable. Hard freezing temperatures do not affect their water holding function.

The first time you see a deer, turkey, squirrel, or songbird using your watering device, or get pictures from a game camera, you will take great pride in knowing you improved your habitat and are providing this essential habitat requirement for the wildlife utilizing your property (at minimal cost and labor).

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MANAGING BIG WATER



Text & Photography
By SCOTT BROWN

Scott Brown is a Biologist and regular contributor to Wildlife Trends Journal with over 30 years experience in research and managing natural resources throughout the Southeast. Scott founded Southern Sportsman Aquatics & Land Management in 2007 and now has clients from Texas to Florida and into the Carolinas. Contact him at scott@southernsportsmanaquaticsandland.com or (336) 941-9056.

Big water doesn't always mean bigger fish. But with some management techniques implemented, it can mean more big fish.

There are private lake owners all over the country that own and try to manage larger waterbodies bigger than the typical private pond or lake. There are many private lakes around the country over 100 acres and even in the thousands of acres, whether man-made reservoirs or natural. Pond and small lake management techniques are not always successful when applied to big waterbodies. Everything from water quality, habitat and fish management needs to be addressed, and how you improve those may require different techniques, but modified from the techniques used on smaller waterbodies. There will also be situations where you can do nothing due to the size and/or cost of the work needed done. There is no definition on how many acres defines a large lake or small. I work on waterbodies less than one acre to over 2,500 acres in size. Size, surroundings, past management practices and budget dictates what can and cannot be done to improve a fishery in big water. For the purpose of this article I will define a large waterbody as a lake greater than 100 acres. As we continue you will begin to see the differences in management strategy between large and small lake management.

Water Chemistry

Large private waterbodies should have similar water chemistry makeup as the watershed it is in, unless there is a nearby influence that directly changes the water chemistry make-up. This change is usually due to agricultural or timber practices but can be caused by other human activities. The larger the waterbody, generally the less these outside influences will have on it. Collecting water chemistry data during all four seasons on top and bottom of the water column gives an idea of what is going on throughout the year. This will give you an insight to how the fish species that are present or ones that may be introduced will react and provide information whether they will have a high reproduction and/or survival probability.

On a large scale, adding lime to raise pH, adding Gypsum to reduce turbidity (muddy water), adding aeration to increase dissolved oxygen, etc. in a thousand-acre lake is not feasible. Managing around less than perfect water chemistry traits will be necessary.

The pH is going to stay where it is, so if fish or plants are to be added, those species that are more successful in your pH range should be utilized. If the pH is low, below 5, the water body will probably not have a strong algae

bloom. That does not mean that there is not enough plankton to support a forage fish like threadfin shad.

For turbidity washing into a large lake, identify the source and either eliminate it or use live vegetation plantings to help filter the water before it enters the lake. On a small lake this may be a 1/10 of an acre, where on a large lake it may be tens or hundreds of acres of plants required to do the job. Some of this natural filter can be in the uplands before water reaches the lake along the shoreline and in the water, including emergent and submergent plant species to create a marsh, if feasible. With larger lakes, having areas too shallow or full of vegetation is acceptable because that creates good spawning, juvenile fish nursery and good overall fish habitat. In smaller lakes there may not be enough acreage to provide an area as described, or if present may cause negative issues in smaller ponds.

Depending on the bottom contour and depth, there may be areas that experience poor dissolved oxygen levels at times throughout the year. In a large waterbody, adding aeration is not a feasible option due to expense to help the entire lake. Even large tractor-driven surface aerators cannot produce enough additional oxygen to help fish in a stressful situation in big

water. Fish kills may occur in isolated areas or coves, but generally affect a very small percentage of the fish population.

Habitat

If you have decent water quality, creating quality habitat is the top priority. The more quality habitat, the more small and large fish it can support. You will need to look at aquatic vegetation differently in a large lake. An example is what amount of vegetation around, above and below the water is acceptable? What species need to be reduced and which species expanded? In a 2,000-acre lake, 300 (or more) acres of quality emergent and submergent plants may be acceptable, and desired. That number is just for example, there is no magic amount of vegetation versus open water. Quantity, quality and variety all determine if a large lake has good habitat or not.

Creating a plant species list and properly identifying all aquatic plants will assist in management. Frequently making trips around a large lake treating undesirables with properly labeled herbicides is advised. **DO NOT WAIT UNTIL A PLANT BECOMES A PROBLEM BEFORE IT IS TREATED!** Large lakes without proper plant management can become a labor and financial nightmare if allowed to get out of control. This is probably one of the most common large private lake management mistakes we see, not addressing undesirable vegetation early enough. Big water can bring on big problems when neglected. We have observed where vegetation was ignored until the only management options were a drawdown with scraping and harvesting and/or aerial spraying. All are very expensive and should be avoided before situations get that drastic.

Quality habitat is critical to growing quality fish in a big lake, so leaving good plants and treating



Some surrounding influences that have drastic negative impacts on small waterbodies may have no significant impacts on big water.



Here is a floating island (tussock) that has cut off an entire cove over several hundred acres to angling and boat traffic. The water depth here is over 6 feet and the dissolved oxygen level is near zero when these take over large areas.

exotics and invasive plants is a constant task. Knowing which species are beneficial and which detrimental is imperative. Either assigning a staff member or hiring a professional company to make monthly or bi-monthly visits is advised during the growing season. Once under control, it is not that labor or financially intensive. Once under control, spot treatments of the undesirable plants are all that is required. Again, the person or people spraying herbicides need to know their aquatic plant species well enough to not treat the desirables.

Never allow plants to form floating islands, called tussocks. Once these become established, they are expensive to remove with a drawdown, aerial spraying or mechanical chopping and removal. Some have said these floating islands are beneficial, but other than in an aquarium or fish bowl, they are not. Besides creating poor water quality under them, floating islands can affect navigation and completely block off areas of the lake to boat access and angling. In big water management it is easy to let vegetation work slide due to time and cost, only to create a more expensive solution. But with small steady control efforts, the big price management options are not needed.

It is also advised to make sure all boat anglers entering the lake have clean trailers. It is common for anglers to unintentionally introduce plant species. Bigger water may grow more

big fish, but bigger water can also incur bigger vegetation management problems.

If trying to increase plant coverage, harvest and replant species from within the lake or watershed. The plants are already growing in the current conditions, so you know their success will be higher than plants from elsewhere. Replant species in proper depth, water and sunlight, spaced far enough apart to allow them to naturally spread and grow in. This requires a lot less labor but takes a little longer to get stands established.

Water level fluctuation is a necessity to help manage plants and maintain good water quality. Occasional flooding of uplands and the drying of plants and organic bottom sediment is beneficial to large waterbodies and their long-term management. Water levels that never

fluctuate create many problems. When water is low, herbicide treatment of vegetation can be less expensive. When water is high, fish populations expand with the additional acreage and higher quality habitat aids in spawning and survival.

Fish attractors made of brush, artificial trees, gravel or rubble can be added in various areas to concentrate fish and provide additional habitat from loafing to spawning. In big water these fish attractors can range from 1/10 of an acre to over an acre. Rubble underwater near the shoreline can create habitat for insects, small fish and crayfish. Brush or artificial offshore fish attractors can be large areas, as opposed to small in smaller lakes. During a drought, gravel can be spread a few inches deep with dump trucks for spawning areas where organics may have built up. Large waterbodies present more opportunities to create waterfowl areas to attract birds for hunting. Many times, fish and duck management practices clash, but on big water there is plenty of room for both. Shallow vegetated areas or flooded timber are always good areas to draw ducks. Planting around the natural rise and fall of water or creating berms and canals with gates and/or pumps to manipulate water levels to desired depths can be done fairly



Once vegetation management techniques like this are employed the expense is very high. It is recommended to stay on top of vegetation management on big water.

(Photo courtesy of Florida Fish and Wildlife Conservation Commission)

inexpensively in lake beds. In certain situations, moist soil management can be performed in areas where water can be manipulated.

Fish

Fish can be stocked and removed. However, adding the proper numbers will have a price, and removing fish will require possibly an unrealistic annual removal goal. But, things can be done to help improve the fish population and concentrate fish for higher catch rates. First step is to identify what species are present with an electrofishing survey. All fish need to be dipped and identified, bass and other fish should be measured and weighed. Identify desirable sport species and what forage is available for them. Large waterbodies usually have several species present, including several species of native bream and minnows. Hopefully the lake already has the usual forage for largemouth bass – bream, golden shiners, threadfin shad and other less frequently observed for your area. Largemouth bass growth will be slower than documented in smaller, more intensely managed waterbodies. Largemouth bass may take 8 to 10 years to reach double digits in the South and grow slower in the North, possibly never reaching double digits.

Stocking additional forage or introducing a new species is feasible. Per acre rate will probably be less to offset costs. Choosing to stock species that have high reproduction rates is also advised so they may increase in numbers while providing forage for sportfish.



Tagging largemouth bass can help further your knowledge of your bass population if anglers are willing to keep track of recapture data.

In smaller lake management it is recommended to harvest largemouth bass in the smaller size groups to help the remaining fish grow faster into larger size groups. These harvest goals are normally 10-30 bass per acre be removed. In a 500-acre lake, 5,000-15,000 bass cannot feasibly be removed. If you want to eat fish, its recommended to keep the bass 12-14 inches long. Unless the lake is fished by many anglers, its hard to remove a significant number to make a difference. Largemouth bass, bluegill, redear sunfish, black crappie, catfish and other desirable species can be removed in any numbers, as there will not be enough removed to reduce the populations.

Tagging bass in large waterbodies may be conducted to document growth and/or movement. This is only advised if the anglers are willing to record catch data on the recaptures, otherwise, it is a waste of time. Growth from time of tagging to recapture can help determine growth rates among the size classes. Movements of fish in the lake from where it was tagged and recaptured may identify spawning

habits and/or water chemistry issues in areas during certain times of the year where fish avoid those poor water quality areas.

Collecting age and growth data for largemouth bass is also feasible on big water without affecting the population. In the South, removing the otolith (ear bone) is required, which means fish are killed. But in the North, a scale may be used to obtain ages. Sexing the fish is also necessary as male and females grow at different rates. The results can be compared to data from nearby public lakes as a gauge of your management practices success.

When managing big water, sometimes action can be taken to improve it and other times you have to live with what is present. It can be frustrating knowing what a lake needs to improve it, but not being able to perform the task because of the size and/or cost. Although bigger than most, there are management techniques that can be performed on your big water that will improve your fishery and possibly provide other activities such as duck hunting instead of conducting no management actions at all. Best advice is stay ahead of problems and do not let issues get out of hand where more time consuming and more expensive solutions are required. Once things are running smoothly and you're growing quality fish, staying on top of the lake management is necessary to keep it at that level and to avoid costly problems in the future.



On big water, designating areas for waterfowl is much easier than on small lakes. These areas can also benefit the fish population.

CLOVER MANAGEMENT



By Daryl Bell

Daryl Bell is a freelance outdoor writer from Mobile, Alabama and President of the Five Rivers Delta QDMA Branch. Contact him at darylbell7041@gmail.com.

Spring is in the air and soon the woods will be full of young, green foliage. Whitetails and other local wildlife will have an endless buffet of native forbs and woody browse at their disposal and all will be right in the world.

However, before this spring green-up is a pretty tough time of year for not only your local whitetail herd, but for all wildlife. The woods are barren, fall food plots are maturing, thus becoming less palatable and food is in limited supply.

This time of year is truly a testament to your food plot program. It's the time of year when your food plots supplement your local habitat the most and should be of the utmost importance vs. other times of the year.

Because clover is the first thing to green up every year, the amount of work that you put into your clover stands throughout the year will really show from February into early April. Typically in the Southeast, I will start to see germination of my frost seeded perennial clover around the second to third week of February, and by March 1st, that and my annual fall planted clovers are really booming.

As I write this article, it's currently February 24th and I actually went out and checked my clover fields today. I was very pleased to see that my Arrowleaf, Crimson, and Ladino clover were all doing great and were already proving plenty of forage for the deer and turkeys.

On my property, and my recommendation on all of my client's properties, is that 10% of your total food plot acreage be in perennial clover. This is typically enough clover to help carry your

deer herd through until spring green up, provided you don't have an overabundance of mouths to feed.

Clover is packed with protein, its highly browse tolerant, and it's the first plant to green up every year, sounds like a miracle plant, right? While it is one of the most important, if not the most important, aspects of your food plot program, it's not for the faint of heart. It takes more intense management than other food plot crops and can take a beating in our mid-summer heat. However, I believe the work is well worth it and should be implemented on every property.

The Basics

When establishing a perennial clover plot, or any food plot for that matter, the very first step should be a soil test. In our region, we tend to deal with soils that are more acidic, and don't often run into soils that are alkaline. However, whether the soil pH is too high (alkaline), or too

low (acidic), both scenarios will cause soil nutrients to bond with soil particles, thus causing those nutrients to become unavailable to the plants growing in the soil.

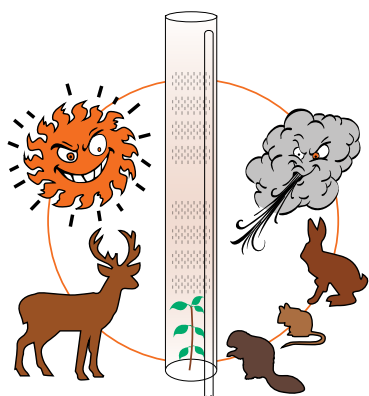
Some plants are adapted to acidic soils and even prefer more acidic soils, but clover is not one of those plants. Which is why it's crucial to take a soil sample and apply the recommended amount of lime based off of the results. Skipping this step is essentially shooting your plot in the foot, so to speak.

After you have tested the soil and applied the lime, it's time to plant the plot. When establishing a new clover plot, I will actually plant the plot the same day as I apply my lime. Because you want to disk your lime into the soil, it makes it the perfect time to go ahead and put the clover in the ground.

Once I disk my lime into the soil, I will then roll the field with a cultipacker to firm the seed bed and

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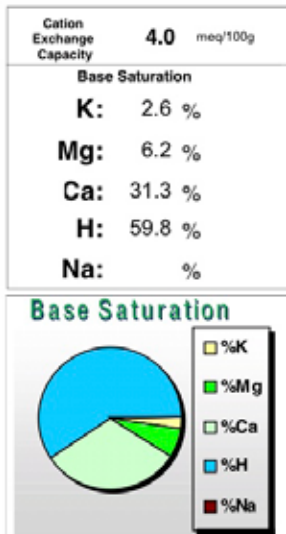
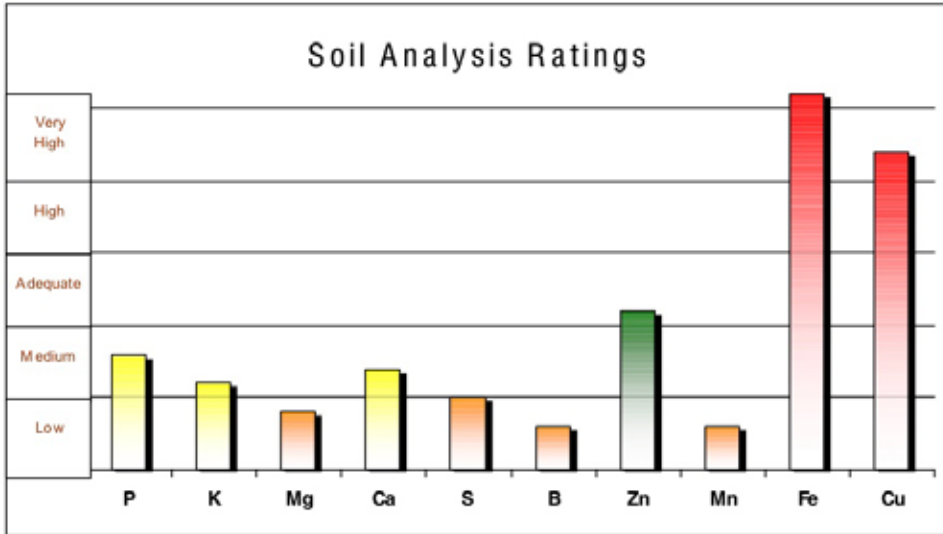


Soil Analysis

Grower: PHIL MATTHEWS **Received** 02/23/2018
PHIL MATHEWS 11 **Farm ID:** **Processed** 02/27/2018
7177 HIDDEN FOREST TRAIL **Sample ID:** SW **Account #:** 24801
PACE, FL 32571

Lab Number: 742344BC **Lab Results** **Target pH:** 6.5
lbs. per Acre **Test Method:** Mehlich I

P	K	Mg	Ca	Soil pH	Buffer pH	S	B	Zn	Mn	Fe	Cu
Phosphorus	Potassium	Magnesium	Calcium			Sulfur	Boron	Zinc	Manganese	Iron	Copper
64 M	82 M	60 L	502 M	6.1	7.70	25 L	0.3 L	5.3 A	12 L	64 VH	3.2 VH
Aluminum	Sodium	Nitrate N	Soluble Salts	Organic Matter	ENR	Molybdenum	NH ₄	Nickel	BiCarbs		
			mmhos/cm	1.13 %	22.6	ppm		ppm	meq/l		



Fertility Recommendations **lbs. per Acre** **Yield: MAX**

Lime	Gypsum	N	P2O5	K2O	Mg	S	B	Zn	Mn	Fe	Cu
Tons/Acre	Tons/Acre	Nitrogen	Phosphate	Potash	Magnesium	Sulfur	Boron	Zinc	Manganese	Iron	Copper
0.5		20	70	80	20	10	0.7		8		

Comments: * = Maintenance Recommendation
 PLANT SAMPLES SHOULD BE TAKEN DURING THE GROWING SEASON. ADDITIONAL OR SUPPLEMENTAL NUTRIENTS MAY BE NEEDED. If Dolomite Lime has been applied recently - Magnesium recommendation can be cut in half.

get rid of any air pockets that my seed may fall into. I often see people skip this step, but it will make a big difference in your germination rate versus spreading your seed on top of the fluffy, freshly disked soil bed.

Once the soil bed is prepped, it's time to spread your seed. When establishing a perennial clover field, I typically use Ladino or White Dutch clover, and sometimes a

combination of both. Ladino clover is larger than White Dutch and will produce more tonnage per acre. However, the White Dutch clover is more browse tolerant than the Ladino clover. No matter the seed you decide to go with, the seeding rate will be the same; 10-12lbs./acre for newly established plots.

Weed & Grass Control

Now that you have your clover in the ground, the real work begins. I

find that the most frustrating part of maintaining your clover is keeping the undesirable weeds and grasses out of the plot. If not taken care of early, broadleaf weeds and invasive grasses can quickly choke out a stand of clover.

One downside to clover is that it cannot take much competition. Mowing your clover around mid-April to early-May will actually eliminate most of your broadleaf

weed issues. For harder to control weeds, an herbicide treatment may be necessary.

When an herbicide treatment does become necessary, applying 2,4-DB combined with a crop oil will be your best bet. Be sure to read the herbicide label in its entirety before applying any herbicide. It will give you the recommended rates of application, proper timing of application, and any precautions you may need to be aware of.

When it comes to controlling grassy weeds, unfortunately, we don't have the luxury of being able to mow them out. It will almost always take an herbicide application in order to gain control. I recommend applying Clethodim combined with a crop oil in order to gain control of most grass types in your clover.

In extreme cases, a light rate of Glyphosate can be used to gain




Due to the very small size of clover seed, I prefer to weigh out my desired amount of seed for each plot.

control of grassy weeds, but I prefer to use this as a last resort if you are not 100% certain that your spray equipment is calibrated correctly. The results of a mis-application of Glyphosate could result in the complete burn out of your clover

plot.


One method of weed control that I use more often than anything else is the old school hand pulling method. For hard to control weeds, or when it becomes too hot to apply herbicide without risk of burning,



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hand pulling the weeds or grass is your best option.

I could not begin to tell you how many hours I have spent pulling Pigweed out of clover fields. Pigweed is difficult to control with herbicide, and it ends up being more effective and cheaper to spend a couple of hours pulling it versus multiple applications of herbicide.

Fertilization

When establishing a new clover field, I always like to apply a good starter fertilizer, such as a 5-20-20, or something equivalent. This will aid in seed germination, root development, and aid in the overall establishment of the clover.

As far as how much to apply, that is strictly going to be determined by your soil analysis. I prefer to break my fertilizations up into 25% increments if the corrective rate needed is 200lbs. per acre or higher. This will keep from burning any foliage or fragile root hairs in the clover.

For example, my most recent soil analysis says that I need 20lbs. of Nitrogen per acre, 70lbs. of Phosphorus per acre, and 80lbs. of Potassium per acre. Using a fertilizer such as a 5-20-20, I would need roughly 400lbs. per acre to reach the recommendations based off of the soil analysis.

That's not very much and I will most likely split that into 2 applications. 25% at the time of planting and the remaining 75% a few months later. Keep in mind, you want to get all fertilization done before it gets into the heat of the summer, as to not burn the clover.

You may be curious as to why I am not applying all the fertilizer, or even half of the recommendation, at the time of planting. While I want to aid the establishing clover, I do not want to lose my fertilizer to leaching. If nothing is actively



Because clover can not withstand much competition, selective herbicide applications are a key part of the success of your clover stands.

growing in your soil profile, there is nothing there to hold the nutrients at a level in the soil that future plants will be able to access it.

Because perennial clovers spend much of their first year establishing a root system, you would likely lose a good deal of the nutrients to leaching before the clover reached a growth stage that it could access and hold the nutrients. Therefore, I prefer to apply the bulk of my supplemental fertilizer after the clover is better established.

I actually used this method of fertilization on all of my food plots this fall. We did not apply the first pound of fertilizer to any of our fall food plots at the time of planting. Instead, we waited 2-3 weeks to come back and apply a balanced 19-19-19 at a rate of 200lbs. per acre. The results were night and day compared to fertilizing at the time of planting and then again later in the fall. I predict we will use this method every year moving forward.

Fall Forage Within Perennial Clover

Let's look back to late September for just a minute. It's fall food plot time and you definitely need to plant something into your clover stands. It's not often that clover goes

completely dormant in our region, but if it does, you want to have something growing to provide for your deer herd, as well as serve as a cover crop to the clover.

Clover is a legume, which means it fixes much of its own Nitrogen out of the atmosphere. Therefore, clover will not need the supplemental Nitrogen fertilizations every year in most cases. It will, however, need maintenance rates of potassium and phosphorus to continue expressing its full potential. This can be applied through synthetic fertilizers like we previously mentioned, but it can also be added to your soil through proper crop rotations. My favorite fall blend to over-seed my clover fields with is Awnless Wheat and Rape.

The wheat is an excellent phosphorus source and will also provide another influx of forage when it goes to seed in the spring. The Rape is a great soil builder and will provide the late season attractiveness that you want in any fall food plot.

I always recommend staying away from crops such as rye and oats in your clover fields, simply because these are grasses and will require an herbicide treatment to

kill them out in the spring. The Rape will die with the heat, right along with the wheat. The wheat can also be rolled to terminate it should you choose to do so.

Planting your fall forages in your clover couldn't be easier. Simply broadcast the fall blend into the clover and roll it with either a sod roller or cultipacker. Don't worry, the rolling will not kill, or harm the clover. In most cases, it will pop right back up, or be standing again by the next day.

We actually rolled our clover fields with a roller crimper last spring as another way of terminating the wheat. The roller crimper didn't damage the clover one bit, so a cultipacker or sod roller definitely will not.

Be sure that you continue to take a soil sample each and every year. You may find that no supplemental fertilizations are needed if you are building your soil correctly through crop rotations. However, you want to monitor the nutrient availability and pH levels in your soil from year to year, in case something is needed. It will be tougher to make the needed adjustments if you let them get worse over multiple years.

Frost Seeding

In the Southeast, I recommend top seeding your clover the last week of January. This gives you at least two or more frosts to rely on to aid in achieving good seed to soil contact. The freezing and thawing effect that happens on top of the soil when temperatures dip below 32 degrees is an excellent way to work your seed into the soil and increase your germination rate.

When top seeding clover fields, I simply use a bag spreader and walk through the fields broadcasting seed either on the entire field or in thin areas. During the first year, you

will really be able to see the spots that you either missed or didn't get great germination. Frost seeding is when you want to fill in these areas.

When frost seeding an established clover field, I recommend using rate of 2-5lbs. per acre, depending how thin your stand of clover actually is. If possible, check the future forecast and plan your over-seeding ahead of either a rain or coming frost.

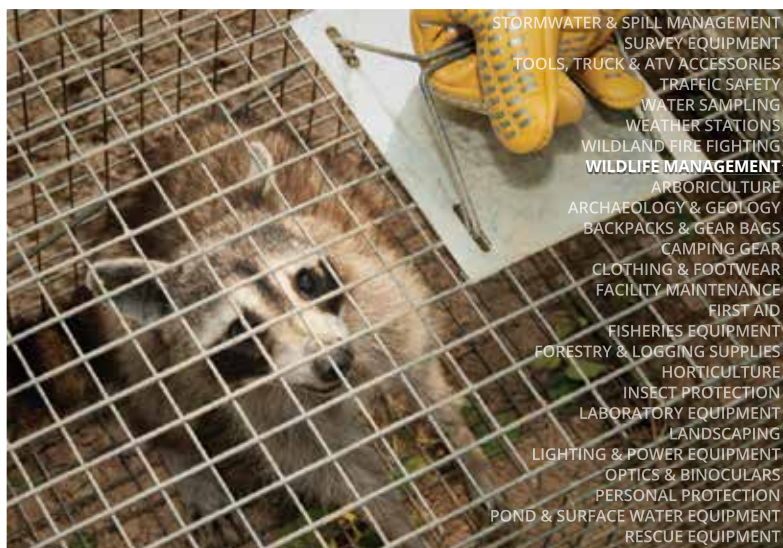
Final Thoughts

Clover can be a lot of work, especially for anyone who is new to food plots or hasn't had any previous experience managing the crop. However, I cannot stress

enough how important it is to your food plot program.

There is no other crop you can grow for your local wildlife as versatile as clover. Be sure to take your soil samples, keep the competition to a minimum, and give it what it needs to thrive. You will not be disappointed in the results.

Not to let the cat out of the bag, but I am currently testing a product that will not only fertilize your clover, but it will also eliminate crabgrass and other grassy weeds before they even become a problem. It could be game changer for habitat managers. I'll have more on that as the results roll in.



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Wildlife Trends Journal Management Calendar

By Dave Edwards

April/May 2018

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This area currently provides good habitat for quail but lacks habitat diversity.



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 a lot of energy and effort into planting during this time of year. Deer hunters are well aware of fall food plots because they are so attractive to deer during hunting season, which helps hunters observe and harvest deer, but often overlook the benefits of summer crops for deer. If you are not fortunate enough to have commercial agriculture on your property or nearby, planting summer crops will benefit your deer herd if adequate acreage is planted. Many nutrient draining biological processes such as fawning, milk production, and antler development are taking place in deer at this time. 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 blends for deer in the Southeast is a combination of clay-iron peas, lab lab, and peredovic sunflowers. In the past few years I’ve become a big fan of “RoundUp”- Glyphosate ready forage soybeans. One mistake I often see made is trying to plant these crops on small food plots. Because they are so attractive, plots need to be at least an acre, 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.

Create and/or recharge mineral licks for deer

If minerals are lacking in the native habitat (or in the soils), deer will readily use mineral licks throughout the growing season (spring/summer). There are many commercial products available to use in mineral licks that are pre-mixed or you can create your own. A recipe I often use is mixing 50# Dicalcium Phosphate, 50# Calcium Carbonate, and 50# Trace Mineral Salt. These ingredients can be found at most farmers cooperative stores. To mix the minerals simple add each to a wheelbarrow or 3-point spreader and mix well using a shovel. This mix will be enough to create about 3-4 mineral licks. A good rule of thumb is to establish 1

lick per 200 acres. Rather than simply stirring minerals into bare ground, I prefer to create mineral lick sites using a small stack of half rotten logs and pour the minerals over the pile. Using this method the rain will leach the minerals into the logs. It is also a good idea to dig a small trench around the stacked logs to contain the minerals and prevent run-off. The dirt can be added to the mineral mix and added to the pile. Deer will simply eat the rotten wood that is saturated in minerals. As the pile deteriorates due to deer use, simply add a few more logs and minerals to the pile. If deer on your property do not use the licks, don’t worry. This probably means that they are acquiring adequate minerals from native plants and do not need supplemental minerals.

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 (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 a deer



This feeder has been cleaned and is being re-deployed.

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 a quality natural food source is often at its lowest. I recommend providing a quality nutrient rich feed that contains a proper level and ratio of protein, calcium, phosphorus, fiber, etc. 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

verses 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 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 the property. Roadsides can account for a great deal of acreage on your 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. Liming and fertilizing roadsides not only enhances the wildlife habitat, but because wildlife are attracted to these areas it also increases wildlife viewing opportunities while riding around the property. This strategy is well suited for 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 natural 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.

Clean and store prescribed burning equipment

Now that the winter burning season is over, take time to clean

and properly store equipment used so that it is in good working order the next time you burn. Burn fuel should be properly labeled and stored in a dry/cool place – actually I try to use up all burn fuel during the burning season if possible so that I do not have to worry about storing flammable material. Take firepots apart and clean nipples and replace wicks if needed. Ensure the rubber seal on the lid is in good shape and replace any parts that show excessive wear. Clean and inspect handles, parts, and screws of fire rakes, flappers, etc. Although I use my herbicide tank/sprayer for fire suppression (water), I generally take time in late spring/early summer to clean it up and do general maintenance because I know I will be using it a good bit for herbicide applications throughout the summer. Without proper care and preventative maintenance you are sure to have problems with prescribed fire equipment the next time you need it (I’m speaking from experience).

Establish or create field borders where possible

Field borders are just as the name implies – the areas around the perimeter of fields where they meet woods. This area is biologically referred to as an ecotone (where two different habitats meet). These areas can be significantly enhanced for wildlife by creating a “soft edge”. Soft edges can be created using a variety of strategies. The goal is to gradually taper the abrupt edge of a mature forest along a field which increases “edge habitat” and results in an abundance of food and cover for wildlife. A 40-60 foot field border can be established by planting crops such as sorghum and millets and/or brush/shrub species



Early summer is a great time to increase efforts to control hog populations

along field edges. These areas provide food, travel lanes, nesting, brood-rearing, loafing, and escape cover for many wildlife species. Field borders can be managed for native grass/shrub species as well. Simply leave these areas fallow and maintain by periodic mowing, burning, or light disking to prevent trees from encroaching. As you may know, most game species thrive and depend on edge habitat. Strategically creating field borders on food plots can enhance bow hunting opportunities as well. For example, creating an hour glass shaped planting area on a rectangular food plot, and allowing

the middle edges to grow up naturally will “funnel” deer through the pinched portion of the planted area, offering bow hunters a close shot. I encourage you to check with your local NRCS office to see if you qualify for the “CP33” program. This is a Conservation Reserve type program (CRP) that offers incentives for landowners to install field borders. There is often a cost share initiative that would help pay for this work.

Control feral hog populations

Feral hogs are very destructive and a nuisance on many properties throughout the Southeast. While



Ecotones (where two different habitats meet) can be significantly enhanced for wildlife by creating a “soft edge”.

hogs add additional hunting opportunities for landowners, they are difficult to control. I often hear, “I’d like to have a few hogs on my property to hunt”. I agree and enjoy hunting hogs from time to time. However, if you’ve ever had hogs, you know this is not possible...you cannot have a “few” hogs. A property normally has no hogs or an overabundance of them. The reproductive potential of hogs is extremely high in good habitats. With pregnancies lasting only 115 days, hogs generally produce 2 litters of 1-13 piglets per year, with the potential to have 3 litters! So needless to say, extreme/aggressive control is needed to simply keep up with or stabilize a hog population. There are many ways to remove

hogs. Some of the most common methods include trapping, recreational hunting, and professional hunting/trapping or a combination of all. There have been many articles in Wildlife Trends dedicated to successful trapping methods. Hog control should be applied throughout the year or when needed. However, many landowners increase efforts during the summer to reduce disturbance and “hunting pressure” during hunting season. Besides their destructive nature on wildlife habitat, hogs can destroy roads, food plots, pond dams and many other structures on your property. They can do several thousands of dollars’ worth of damage in a short period of time. Controlling hogs will save you time,

money, and frustration. A word of caution for those that have hogs but don’t think they are a problem yet – the key word is “yet”. Once they are a problem, it is very difficult to remove enough to control the population.

Create and protect areas for quail habitat

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



If properly planted and managed, summer food plots can provide highly nutritious food sources for wildlife



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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, creeks, 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. To create or “protect” the areas within habitats that receives regular disturbance, just protect the designated area from mowing, disking, etc. For areas that receive fire every 1-2 years, simply install a firebreak around the 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.

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