PRACTICAL WILDLIFE MANAGEMENT INFORMATION

Wildlife Trends JOURNAL

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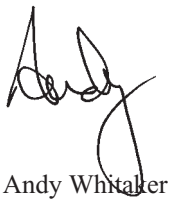
Earl Says...

Finally, after several months of thought and hard work, I am proud to announce that our new and improved website, www.wildlifetrends.com, is up and running! Although we will still be making tweaks and changes here and there the site is now available to everyone.

All current subscribers will have access to the website but you will need to obtain a Username and Password. To do so simply contact us at info@wildlifetrends.com and we will set you up on the site and send you info to set up your own personal Password.

The biggest new feature is the inclusion of back issues of *Wildlife Trends Journal* magazines. To date we have all back issues from 2007 to the current issue on the site and soon you will have access to every issue ever published since our beginnings in 2001. In other words, you can view any past issues and articles in the field from your laptop, tablet or Smartphone. That's hundreds of articles available for your use. There is also a detailed Article Index by year and subject for ease of use.

Thank you all for your patience as we've been working on the new site. We've done all of this to provide you with not only the latest research-based information but also have access to our vast library of past issues. Check out the new site and let us know your thoughts as well as where we need to make changes or additions.



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Cover photo by Dave Edwards

If At First You Don't Succeed: Trial and Error Wild Pig Trapping

This is the first sounder group we trapped and removed containing 15 individuals

By Jeremy Meares and Kevin McKinstry

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Kevin is the Recreation Manager for the Westervelt Company. He holds a Bachelor of Science in Forest Resources and Conservation from the University of Florida and is a certified wildlife biologist with 33 years of professional experience.

Background

Wild pigs have become public enemy number one across most of the country. Many landowners are fighting daily battles in efforts to either reduce or prevent them from damaging their properties. Wild pigs are not native to the United States but were introduced during the 1500's by explorers traveling across the Southeast. With populations now in at least 45 states, wild pigs have become abundant and widespread. This widespread distribution is not due to natural causes, but rather human intervention by way of translocating animals and they have taken it from there.

Given their nature of being habitat generalists, these animals are highly adaptive to a variety of conditions and climates. Wild pigs have been classified as opportunistic omnivores. This means they primarily feed on plant material and invertebrates like worms and insects. However, when the "opportunity" arises, small mammals,

the young of mammals, and the eggs of ground nesting birds and reptiles can all be food items for wild pigs.

Unfortunately for property owners, wild pigs have very high reproductive potential. When you combine reaching sexual maturity at six months, litter sizes of 6-8, the ability to have more than one litter per year, and low natural mortality it is not hard to see how numbers can increase rapidly. The highest rate of pig mortality results from human activities like trapping, hunting, and vehicle collisions.

Damage

Wild pigs typically cause damage to agricultural crops, livestock, forests, and are now threatening native wildlife populations and environmental quality in some areas. Nationwide damage resulting from wild pigs lands somewhere around $1.5 billion annually, that's right billion, with a B! On the agriculture side, common damage includes trampling crops, wallowing in the fields (damages fields and equipment), and on occasion preying on livestock (mainly newborn lambs, goats, and calves). When you leave the fields and come into the woods the story does not get any better. Wild pigs impact hardwood forests by targeting mast as a major food source, thus limiting regeneration and acorn availability for other wildlife species. In addition, rooting can pull up seedlings in areas where mast was able to germinate. Pine plantations are not immune to damage either. Wild pigs can impact plantations through trampling, rooting, and feeding on the seedlings (especially longleaf).

If the issues above aren't bad enough, wait there is more. Wild pigs compete for habitat resources with native wildlife species and can have significant impacts on ground nesting birds, sea turtles, snakes, and several other species. While they are not thought to be a significant source of fawn predation, wild pigs will eat newborn fawns. As stated above, rooting, wallowing, and trampling all have negative impacts on forests but it also can cause environmental issues such as soil compaction, degrading water quality, and damage to fresh and saltwater marsh ecosystems.

Disease Risk

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

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

Pseudorabies is a viral disease that infects the central nervous system of wildlife, livestock and domesticated animals. For most species, infection will often lead to death. Only pigs are able to survive an acute infection and become a lifetime carrier of the virus. Fortunately humans cannot contract the virus, but if infected fluids saturate your clothing and your pet dog happens

to chew on it or a piece of contaminated raw meat, their survival is unlikely. This disease can be spread through direct contact or consumption, contaminated feed and water or from the ingestion of any infected tissues. Research by the state Florida has suggested an infection rate in the wild hog population to be between 40 and 50 percent.

Prevention and Protection

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

- Always use latex or rubber gloves and eye protection when handling the carcass or raw meat.
- Avoid direct contact (bare skin) with blood, fluids, reproductive organs and fecal matter. Wear long sleeves covering any scratches, open wounds or lesions on your arms.
- Use clean, sharp knives for field dressing or butchering. Be sure to disinfect knives, cleaning area, clothing and any other exposed surfaces when finished.
- Burn or bury used disposable gloves and any parts of the carcass that will not be eaten.
- Wash your hands frequently during butchering with soap and water.
- Avoid eating, drinking or using tobacco when field-dressing or handling carcasses.
- Do not feed raw meat or other parts of the carcass to dogs.
- Thoroughly cook all meat to 170 degrees. Freezing, smoking, drying and pickling will not kill the bacteria that will cause brucellosis.

"Control" Options

So once you realize you have wild pigs, what can you do about it? While success will likely be determined by the number you are dealing with, landowners have a few options for tackling wild pigs. There are non-lethal and lethal methods for attempting to control pig numbers. Non-lethal approaches are more of a preventative stance. Typically these methods will include exclusion fencing, use of protective animals for livestock, and vaccinations to prevent disease transmission and spread. While non-lethal options may prove effective in some instances, they can become costly and high pig populations may require more aggressive tactics. Lethal control options include shooting, trapping, and hunting them with dogs. Currently the USDA is in partnership with the Texas Parks and Wildlife Department along with representatives from Australia and New Zealand on a poison specifically targeting feral swine. While researchers still have work to do, the poison is essentially salt based (sodium nitrate) but nothing has been approved and registered for use in the U.S. Initial trials showed 70-85% mortality, but more recently researchers

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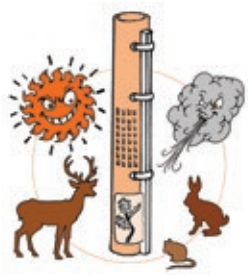

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have achieved 90%. Obviously one major challenge is figuring out delivery methods to avoid/significantly reduce consumption by non-target species. After the pen trials are complete, the EPA will review all the results then field trials will be conducted (pending EPA findings). Realistically, the earliest estimate on when a product may be available at this point is five years.

Summer 2014

In late 2013, our company formed a Wild Hog Policy and Process Team. Being a large timberland owner, our land base covers many areas with high wild hog populations. Our reasoning was the potential for the damage listed above and recent hunting lease customer surveys were showing wild pigs were something that decreased satisfaction for some of our customers. Basically, the team was tasked with creating a reporting system and assessing areas where lethal control measures were needed to protect environmental quality or help hunting clubs reduce numbers to more tolerable levels.

In early 2014, we purchased a Jager Pro™ hog trapping system. For those that may not be familiar with this system, this trademarked system uses cellular technology to facilitate targeted trapping efforts remotely. Basically the Jager Pro™ system uses a M.I.N.E (Manually Initiated Nuisance Elimination) camera and gate setup that allows users to interact with the trap using your cell phone. There is also a remote control option with an effective range of 250 yards. Aside from the camera and gate, the remainder of the setup includes 16 ft. long metal fencing panels (60 inches tall), metal t-posts, t-post camera mount, and signal booster (if needed). The main objective for this type of system is entire sounder group removal.

A sounder is simply a group of pigs made up of sows (typically related) and

There's nothing that says you can't have some fun when you're trapping hogs

their piglets. Young males tend to disperse from the sounder around 16-18 months of age. One of the benefits of this system is that it allows the flexibility for users to manage camera settings and drop the gate without having to travel to the site. Personally, I think it's outstanding to have the ability to drop the gate on a sounder group from the comforts of my recliner using my cell phone. With our tools now in hand, it was time to decide where to use them.

We first identified an area where we had a large population of wild pigs along with customers looking for help. Since this technology utilizes cellular technology, a SIM card with a data plan is required. The key in this process is finding someone who can set up the unlimited data plan and format the card properly (Jager Pro™ has some very good instructional videos outlining the best process). This sounds like a simple thing to do, however it can become the most challenging. We have also learned that without warning the cellular carrier may change your data plan and the camera will suddenly stop sending images. If we experience a camera that is not functioning properly, the SIM card is the first item we confirm is working properly. The new cameras now no longer use SIM cards, but use a data service plan that operates on a computer server. Data is pre-paid and this should be a more user friendly system.

With the camera set up and ready to go, we were now ready to go catch hogs (so we thought). We found a sight with fresh hog sign and decided to build the trap there. With this being our first time setting up the trap, it took us a little more than two hours to do so. Also, it was summer so that comes with its own set of challenges when you are in the middle of nowhere Alabama. Once everything was set up and baited, we turned the camera on and waited for the pictures to start rolling in…and waited…and waited. Why were we not getting any pictures? We thought for sure this would be easy and we would be catching and killing pigs but we weren't. Finally we started getting a few pictures of deer coming to the bait but no hogs, and the pictures were few and far between. So what was going on? As a backup, we set up regular trail cameras at our trap sites. It became evident that the issues we were experiencing were tied to the cell service in the area. Despite our phones having service at these sites, it was not sufficient for the camera to operate properly. This was the reason for the sporadic images we received. After this realization, we added a new first step to our process; take the camera to where you want to set up the trap **first**. If you don't have service, keep looking. In some cases, using the booster antenna available with this trapping system may provide enough signal strength to get the job done.

With our new intel in hand, we began looking for new places to trap. Once a new site was found, we tested the camera and it appeared we had sufficient signal strength to trap. This area had plenty of fresh hog sign so again we were cautiously optimistic. However, for the first several nights we were only get-

ting deer coming to the bait. Frustration began to sink in at this point. Finally after another night or two of only deer coming to the bait, a large group of pigs showed up. This group came in two nights in a row, and now we started making plans to set up the corral. The next day we made plans to set up the corral if they came in again that night. We went out the next morning and freshened up the bait. That night we waited and watched our phones but unfortunately deer were our only visitors. Surely the next night they would be back in there, right? Well it didn't work that way. Over the next several nights, with the exception of one lone boar that came by one night, we had no pigs visit this site. At this point, bow season was rapidly approaching so we made the decision to pull out so there would not be an issue with bait being on the ground once bow season started. Our

We removed this 300 lb. boar in hopes the sounder group frequenting our trap site would return.

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An example of damage caused by hog rooting

pride had taken a hit at this point and we really needed some validation. However, we thought we would have to wait until after deer season to get it, but an opportunity materialized in late fall.

Fall/Winter 2014-15

After licking our wounds from our experiences during the summer, several hogs began showing up on a piece of land that previously had little to no evidence of pigs. Significant rooting damage was being done to roads and food plots. This tract of land was large enough where we could effectively trap without impacting deer hunters. Our first step again was to take the camera to the sites where pigs had been observed and where the freshest sign was. After finding a spot that had service, we set up the camera and baited the site. Regular trail cameras were set up in other locations as well to try to get a feel for how many pigs we were dealing with and if they were frequenting specific areas more than others. The pigs however did not get the memo on what was expected. We moved cameras around chasing fresh sign and observations until we were able to focus in on a couple of areas they seemed to be frequenting. When the pigs finally started cooperating, things began to work as they were supposed to. By the end of February, we had trapped and removed 38 pigs from the property. From that point through this summer, we have seen no pig activity on the property. Realistically we know pigs are still in the area but for the time being they seem to be avoiding this property. We were not able to start trapping efforts again until the summer. But with some places already in mind, we felt better about our process and expectations were high.

We also decided to stop using the electric spin feeder. Hogs did not respond to the timed feedings and usually showed up at our traps around midnight. This move eliminated issues from a failing battery or device in delivering the feed. In other words, we removed

one headache from the process. Now we simply place a bag or two of corn near the back of the corral. We have not seen any negative impact on trapping success as a result.

Summer 2015

With a couple of spots already scouted, we were ready to hit the ground running. We decided to add a couple more corrals to give us the flexibility of having setups in multiple locations where all we had to do was move the gate depending on pig activity. Our first setup proved fruitful as we trapped and removed a sounder group of 15 pigs. Despite this good start to the summer, it would be another two weeks before another opportunity presented itself.

We began seeing a small sounder group of about seven pigs working around one of our setups. Once we had all seven comfortable coming in to the corral, we moved the gate in hopes of catching them that night. However, the pigs once again had other plans and apparently temporarily moved away from this site. The following night it became evident why, a 300 pound boar paid us a visit in the middle of the night. The following night he came back and even though it was only one individual, we felt like we needed to remove him in hopes that the sounder we knew was there would return. We quickly learned the camera really did not do this boar any justice; he was easily the largest we had trapped to date. Previously the pigs we had trapped went to opposite side of the trap looking for an escape route when we arrived to dispatch them. This boar firmly stood his ground as we approached the trap and charged, crashing into the corral panels multiple times. Even though we were in a safe position, a 300 pound animal with bad intentions charging towards you still causes a little anxiety.

For the rest of the summer, pig movements were extremely variable. They would come into the sites for a couple nights in a row, we would move the gate, and then they would vanish for a week or so. We were seeing this happen on multiple sites so we decided to change our strategy to be more opportunistic. In other words, if we had the gate set and most of the sounder group was in the trap we went ahead and dropped the gate. This seemed to work as it would take about a week for pigs to come back to the bait once we removed a group. By the end of the summer, we removed 50 pigs from a couple of different sites. Despite what we had read and heard about not dropping the gate until the entire known sounder group was in the trap, our experiences this summer showed that the pigs we were dealing with would come back and we were catching them. We had some pigs that were unique (color, size, "no ears") that we could track so we knew they were still around and we eventually caught them.

Each situation will likely be different in how pigs use bait sites so do not be afraid to change tactics from what textbook process is supposed to be when their behavior changes. We are not proclaiming ourselves as experts as we are continuing to learn each time out. There are plenty of resources available to help landowners battle these exotic invaders. Here are a few tips we have discovered as a result of our experiences so far:

Trapping Tips

When making a decision to install a corral trap, scout the area for fresh hog sign and put out some bait.

Test the cellular signal at the potential trap site by taking the camera to the exact spot and sending a test picture. If it does not send due to poor signal, look for some alternative sites to set up the trap; sometimes 100 yards makes a difference to the cell tower.

Build the corral and bait without the gate. Install the camera and booster antenna to monitor activity. Jager Pro™ sells precut wire and a bit that will go on a portable drill that will cut your install time significantly.

After hogs are comfortable coming and going from the corral, install the gate and use some brush for camo. Before leaving the trap, have somebody test drop the gate using the available cell signal. The battery on the gate should be replaced every two weeks.

It's tempting to wait for an entire sounder to get in the trap before dropping the gate. However, many times we have had the majority of a sounder entering the corral every night and continued to wait for all of them, but ended up missing trapping opportunities when the entire sounder showed up and decided to go somewhere else and never returned. We now employ the "bird in the hand" philosophy when we have the majority of the sounder in the corral.

Available Resources

Technology for cellular-based hog trapping systems is constantly changing. The best method to stay current is to follow social media sites or register for free e-newsletters. We suggest jagerpro.com, agrilifeextension.tamu.edu, wildpiginfo.msstate.edu or noble.org/feral-hogs/.

Trapping Deconstructed

Grouping traps in bundles that can fit into your containers make for a more time efficient dying and waxing session.

By Keith Gauldin

Keith Gauldin is Keith Gauldin is a wildlife biologist by trade and past contributor to *Wildlife Trends Journal* and other publications. Keith currently serves as Chief of the Wildlife Section of the Alabama Division of Wildlife and Freshwater Fisheries.

The trapping of wildlife has been documented back to the Neolithic period, where the semi-nomadic tribes of Eastern Europe used traps to capture animals for food and clothing. Since that inception, a quest for protein and loincloths continued to fuel trapping efforts until the late 1600's arrived in the New World, where trapping for the fur industry and to control livestock predation first began. During the 1800's, companies such as Newhouse and Oneida were the first to mass produce the steel foot-hold trap that would serve as the catalyst that sparked the exploration and settlement of the West. While the traps utilized in contemporary times have evolved considerably since those earlier versions, the primary reasons to trap have not. Trapping continues to play an integral role in managing furbearer populations, either through pursuing them for the fur industry or wildlife damage abatement, it continues to represent the most effective means of control.

While new designs and modifications of contemporary trapping equipment have made for a more effective furbearer catching tool, the original longspring trap remains to be the template of which these traps are based. The basic traps in the collection of a modern day trapper include the foot-hold trap (categorized as longsprings, coilsprings and foot encapsulating devices), cage traps, body-gripping traps and snares. Typically, the longsprings would be used to target smaller furbearers such as muskrats, opossums and raccoons; coilsprings for any of the furbearing species; foot-encapsulating (sometimes called dogproofs) for raccoons and opossums; cage traps for raccoons and opossums; and body-gripping traps and snares for beaver and otter. The information below will provide a description of the modern day equipment available, preparation methods for use and tools to enable a landowner or lessee to conduct effective control measures on furbearer populations.

Foot-hold Longsprings

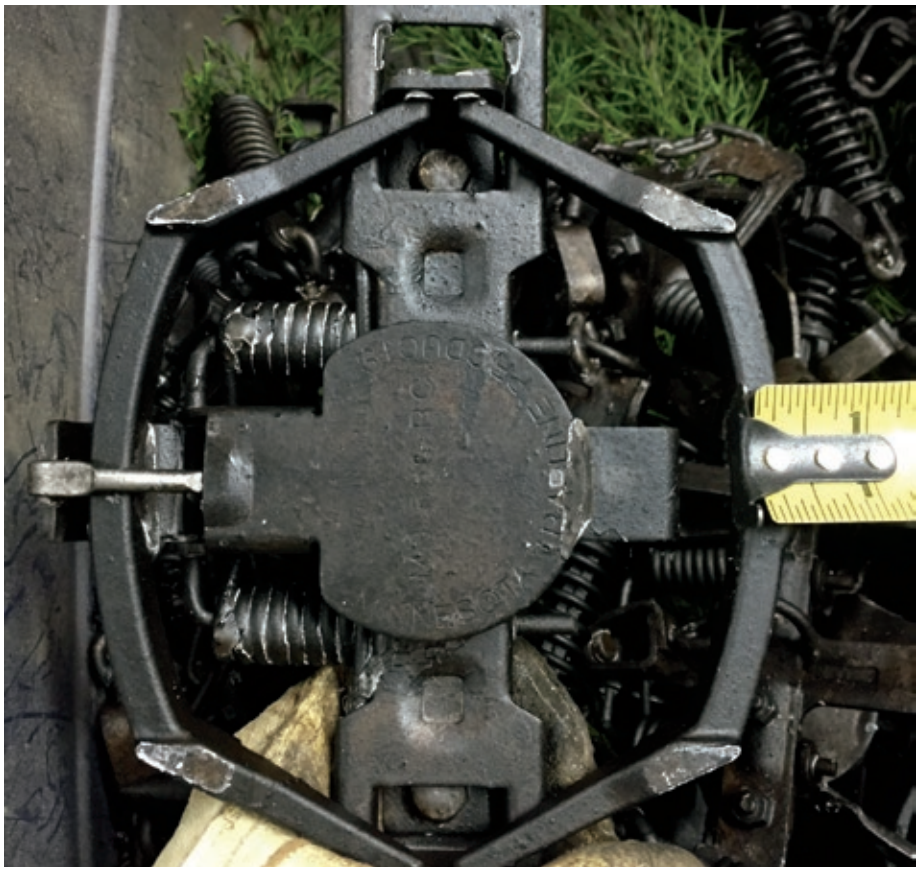
Today's longspring trap is nearly identical to those used by past year's mountain men. They can be fitted with one or two longsprings and manufactured from a size #0 single longspring, geared for weasels, to a #5 double longspring, for beaver and larger predators, such as mountain lions and wolves. Their simple design consists of either one or two longsprings, frame, two jaws, pan and dog. While some old-school trappers still use them for land sets, they are typically utilized for water trapping when pursuing muskrat, mink, beaver and otter. While effective, they are bulky and require a larger trap bed to make secure and they are heavy, which makes them more suitable for water trapping where drowning sets are commonly utilized.

Foot-hold Coilsprings

Instead of long springs, this style trap utilizes either two or four coilsprings to supply the leverage responsible for closing the trap jaws. This design has been modified through the years to become the most prevalent trap utilized in today's trapping efforts. While most have the same components as the longspring to function, the use of coilsprings allows for a more compact, stronger and more efficient design for both land and water trapping applications. They are manufactured in sizes similar to that of the longsprings varying from a #1 to a # 5, with the diameter of the jawspread increasing as the

Coyote caught on a MB-550 foot-hold trap

A modern-day foot-hold trap, MB550. Note the 3 swivels, shock spring and offset jaws that make for an efficient and humane trap.



The cast metal jaws of the MB-550 provide a wide pressure displacement area, similar to a laminated jaw, to lessen animal discomfort.

number increases.

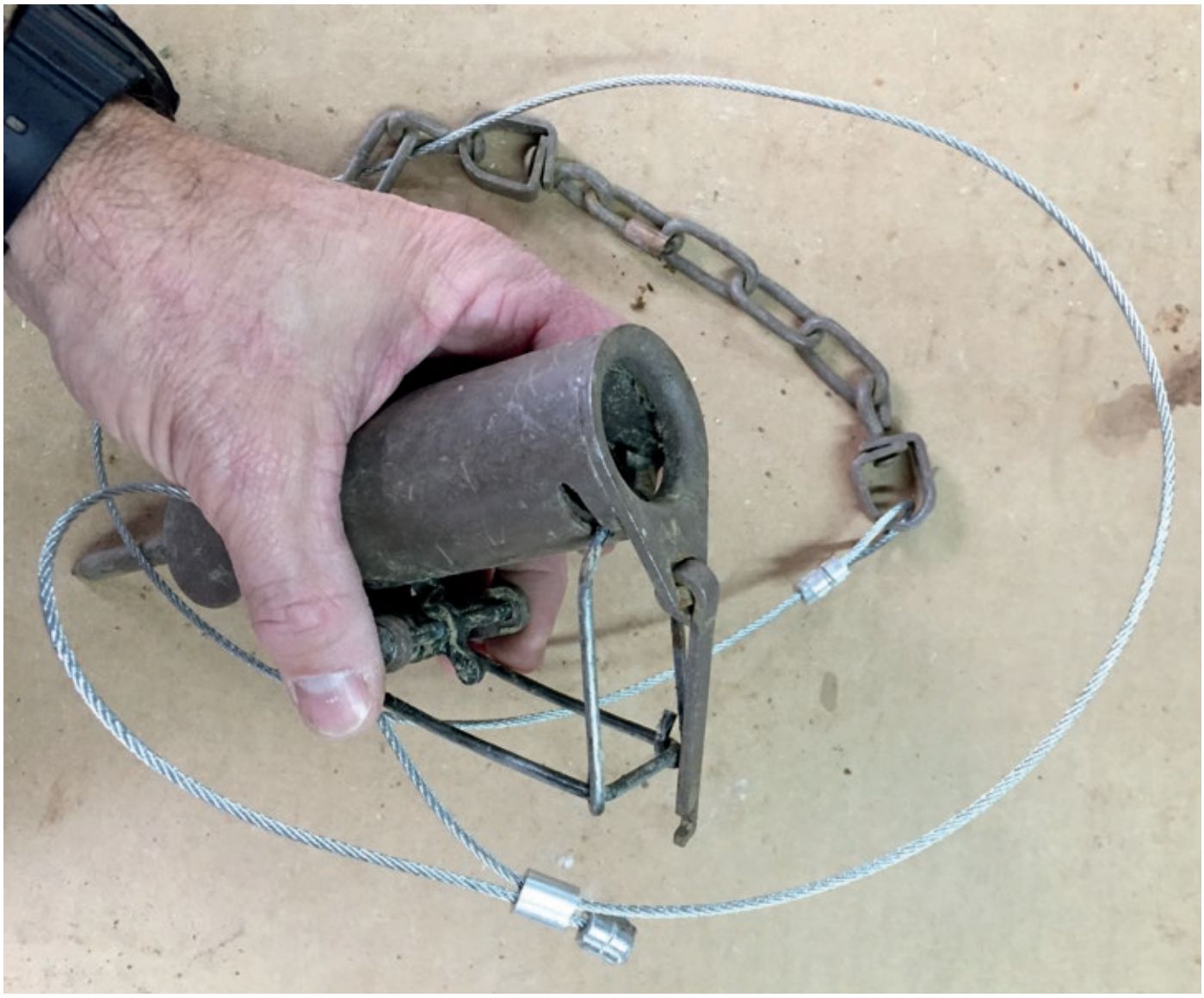
Foot-hold traps have long endured the propaganda from the animal rights activists as a cruel and inhumane capture device. While the earlier versions did have some significant measures that were less desired, the modern-day foothold has evolved into a device that is very efficient and focused on the animal's well being. Most studies that involve larger predators utilize foothold traps to capture their subjects to install the GPS or VHS collars or transmitters, further illustrating their humane effectiveness. The modern-day foothold has attained a balancing act, where it has to have sufficient speed in order to catch the animal and ample strength to hold after caught, all while causing no

injury to the animal. While it is likely the predator will be dispatched following capture, it is our responsibility as a conservationist and ethical outdoorsman to make every effort to treat the animal humanely until that time arrives.

Depending on the brand trap, certain options can be selected or modifications made to make a coilspring trap more effective and humane. Jaw selection should be offset, which provides a ¼" space once the jaws are closed, to both decrease pressure on the animal's foot and allow the jaws to completely close and springs to travel completely up, locking the jaws closed. The jaws of the trap should either be laminated, by welding ¼"round rod to the outer face of the jaw, or equipped with ¼" cast metal jaws to increase the surface area of the jaw face. This modification or feature will dissipate the pressure of the closed jaws over a wider area on the animal's foot, reducing the possibility of injury. Also, if any sharp edges are prevalent on the trap, they should to be filed smooth to negate the possibilities of possibly lacerations resulting from the sharp edges. Some of the more economical traps will likely need the frame base-plated to lessen the likelihood of a coyote bending the frame and popping the jaws out of the trap. Coyotes can inflict an impressive amount of energy on a trap and destroy those that aren't properly equipped to handle such force. It's a lot cheaper in the long run to take the financial impact of an initial investment and purchase quality equipment, to not only avoid wasting money but also educating coyotes as they'll quickly attain a PhD from a busted trap. The traps I have had the best experience for larger furbearers such as fox, bobcat and coyote are the Minnesota Brand 550, 2-Coil, Offset, also know as the MB-550-RC-OffsetJaw or the smaller 450 model, MB-450-OS, as they come already equipped with smooth offset cast jaws and are built like a tank.

Foot-Encapsulating

The foot-encapsulating, or dogproof trap, is a fairly recent introduction to

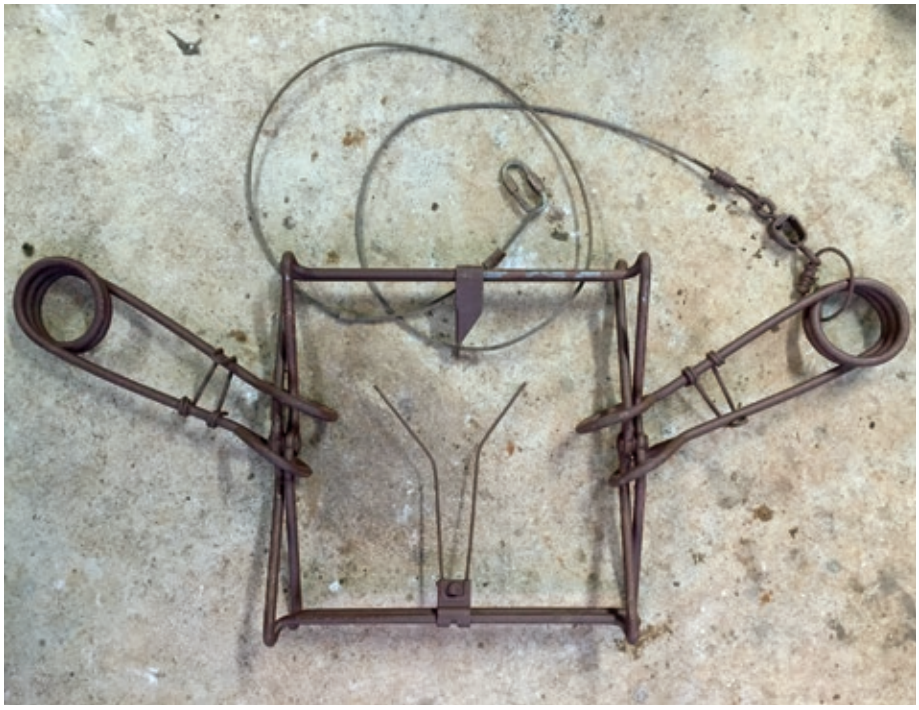


A Foot-Encapsulating or Dogproof Trap. Note the multiple swivels and adjustable terminal end of the cable that provides a simple attachment to a root or small trees to anchor.

More recent designed cage traps that have entered the marketplace can be quite effective at targeting gray fox and bobcat, while deterring catches of larger dogs.

Smaller cage traps can be quite effective in removing smaller predators such as opossums and raccoons.

the trapping arena that specifically targets raccoons, but is also as effective on opossums. The trap basically consists of a metal tube 4" in length and 1¼" wide, open on one end and closed on the other with a 4½" stake to secure in the ground. It is equipped with a coil spring powered wire jaw and a fully enclosed trigger system that typically fires from a pull or push when the raccoon reaches to the back of the trap. This innovative trap design has enabled many landowners and managers to effectively manage nest predator populations with far less effort than traditional methods, and as the name implies, this design prohibits the capture of dogs. The target specific nature of this trap and ease of use makes it perfect for an introductory trap for a beginning trapper. These traps don't require any dying or waxing, rather, they can simply be spray painted to prohibit rusting, and some can even be purchased powder-coated.



A body-gripping trap with the springs depress and safety latches closed. Note cable with swivel and quick-link that can easily anchor the trap to a root or small tree.

Cage

These traps are produced in varying sizes to accommodate wildlife species ranging from a weasel to a large dog. All manufacturer designs are similar in nature, having a locking door mechanism that is triggered when a pedal is depressed as the animal enters the trap. This trap is more effective on the smaller furbearers than the larger such as the coyote, as they typically shy from entering enclosed situations that cage traps

Snare constructed of aircraft cable.

present. However, recent innovative cage designs have been found to be quite effective on gray fox and bobcats, two of the canines that aren't wary of approaching constricted spaces. Cage traps are simple in design, easy to use and are quite effective when targeting the certain members of furbearer groups and can be a key tool when working in close proximity to urban areas where foot-holds might not be the best option.

Body-Gripping

Sometimes referred to as a conibear, which refers to a particular brand, this trap represents one of the most effective means to control beaver and otters, but can also be used to take other aquatic furbearers such as muskrat and mink. Manufacturers produce similar designs that are produced in 4-5 varying sizes, according to the intended target. The smaller sizes are typically categorized as a #110 and average 4½"x4½" and stairstep up to a #330 which is usually around 12"x12" in jaw spread. These traps are set in a manner to enable the animal to travel or swim through the trap as opposed to stepping in the trap. They are powered by two long springs that rotate two square jaws when fired when a trigger is set off to quickly strike the head or neck region, typically causing a quick dispatch. Due to their effectiveness in dispatch, the larger versions of the trap are only legal in water sets in most states.

Snares

Also known as cable restraint devices, they provide an effective means of capturing any of the furbearing species. In Alabama, they are only legal in water sets as are the larger body gripping traps, so their description of use in land applications will be quite limited. Today's snares are made of aircraft stranded steel cable of various sizes and equipped with one of the many locking devices on the loop that the animal passes through and is subsequently subdued. Though they require a little more experience to utilize, they offer an effective and lightweight option to utilize in certain circumstances.

Anchoring Systems

A roll of 14 gauge has been the staple means of securing traps for years when targeting smaller furbearers but there are more suitable options available. Using a 3' section of 1/8" aircraft cable secured with a ferrule to the trap and an adjustable loop on the terminal end is quite effective and efficient for dog-proof traps and smaller foothold traps. The same cable works for body-gripping as well, being secured with a ferrule to one of the trap springs and a small loop on the terminal end that can be secured to a root or tree with a quick link or spring hook. The terminal end of snares would be secured in a similar fashion as the body-gripping trap.

When targeting the larger canines such as fox, bobcats and coyotes, chain is the best option. Quality traps will be sold with #3 chain and typically outfitted with "Crunch-Proof" in-line swivels connecting the trap to the chain and at the terminal end of the chain. The "Crunch-Proof" version is preferred as its thicker metal makes it nearly indestructible. The swivel can best be described as an oval-shaped thick metal band with connection hooks, termed J-Hooks, at the flattened ends. Swivels play an important role in preventing injury by allowing the animal to rotate and spin the trap around while not kinking the chain. Every foot-hold trap should be equipped with at least two swivels. In addition to swivels, in-line shock springs in the chain serve to absorb the shock, as the animal bounds

Locking device designed to close and hold the loop of the snare.

An independent anchor such as the Fox Hollow version provides a steadfast anchoring system. Shown here with the terminal end of the driver.

and tensions the trap chain, to lessen the possibilities of injury as well.

Anchoring systems at the terminal end of the chain to secure the trap vary widely in application. Rod stakes, most commonly of rebar, have provided the most common anchor for years but they can eventually be pumped out of the ground as the animal jumps when caught, so two were typically used driven diagonally to make it steadfast. The extra effort to drive the stakes and weight to carry has made them an anchor of the past as independent driven anchors were recently introduced to the market. These anchors are attached at the terminal end of the chain and driven into the ground by a rod driver, which is removed after the anchor is driven to the desired depth, and provides the most secure option available. These anchors are best used in areas that aren't too rocky, which makes for a difficult substrate to penetrate. In these areas, drags provide a viable option to equip your trap. Drags are basically shaped like a boat anchor and serve the same purpose, to anchor your trap. They are typically equipped with at least 8' of chain and function to snag vegetation and secure it as it leaves the set area. They are also beneficial in preserving set locations, as the other anchoring systems leave what is termed a "catch circle", where the caught animal pivots at the anchor point, devoiding the area of existing vegetation and duff.

Trap Preparation

Most all foot-hold traps arrive from the manufacturer with a coating of oil to deter any oxidation during the time of transit from the manufacturer to the customer. While it might be possible to catch animals in this state, it is best to remove this oil coating in order to properly prepare the trap for the field. Any compound that has degreasing properties can accomplish this task. Many accomplish this task by various methods including spraying them with

engine degreaser followed by pressure washing to boiling them in a lye solution. But running them through a cycle in the dishwasher is the easiest I've found. When doing this method, be sure to securely zip tie the chains around the traps, as they can wreak havoc on the spinning washer heads within. Just run them through as you would the dishes and the detergent will remove the oils, and wipe the dishwasher clean afterwards. Following the degreasing, the traps can be left out in the elements for several weeks to attain a slight coating of rust to better accept the dying process.

The next step is to dye the traps. In my early years, this was accomplished by boiling them in outer husks from black walnut trees and it remains a viable alternative. But there are now commercial products such Logwood Dye that better accomplishes this task. Dyeing the trap not only darkens the color of the trap but also assists in protecting the trap from rust, as the initial layer of rust allows for the dye to penetrate and adhere to the steel of the trap. A commercial powdered dye pack is combined with several gallons of water and brought to a boil, then immerse traps to simmer for around 30 minutes and remove to dry.

Following this process, it's time to wax the traps. The wax should be heated slowly and held at a constant temperature when the liquid state is attained. Always have a lid to the container at hand to quickly cover the container should the wax catch fire, this is definitely a step to accomplish with caution. Tie traps in small batches in a size that all can be completely immersed and remain for 2-3 minutes to attain the same temperature of the wax and withdrawn, held a second to drip excess back into the container and hung to dry. If the traps are immersed too brief of a time and removed, the wax layer will be thick and not have had time to penetrate into the steel and not be effective as it will likely flake off the trap. The ideal coating will be a thin layer on the entire trap and will appear as a wet trap when removed from the wax. During this process be sure to include the entire chain, anchors and drags to completely protect the entire array. The waxing process serves to penetrate the steel to prevent oxidation and also lubricates the trap to function smoothly and quickly. After this step is completed, I store my traps in plastic totes lined with small branches of cedar and forest duff to deter any foreign smells impregnating the traps.

Many of the foot-encapsulating or dogproof traps come with a powder-baked coating that serves the purpose as described above to protect the trap.

Dyeing in a Logwood Dye solution provides an excellent media to maintain effective foot-hold traps. Any large container, such as a converted keg, can be utilized.

For those models that do not, a simple coating of Rustoleum spray paint can serve the purpose to protect the trap from oxidation. Just be sure to coat the interior of the trap as well. If trapping in areas where others may see your traps, a subtle color can be selected to blend them in the surroundings. If theft is not a concern, as odd as it sounds, white makes for an excellent color choice as it peaks the raccoon's interest and can increase catches.

Cage Traps usually come from the manufacturer with a galvanized coating on most sections. In order to increase the longevity of the trap, a spray paint coating of Rustoluem primer and paint can serve to increase the resistance to rust. While this action will most likely not affect the catch rate of the trap, it can also assist in decreasing the chances of theft by camouflaging the trap. Following the painting process, a propane torch can be used to heat the metal pivot points slightly and rubbed with a section of trap wax to lubricate and increase the speed of the trap.

While mainly used in water applications, body-gripping traps will be protected best with a coating of paint. While a simple spray paint can suffice, a dipping in a 1:1 mixture of Rustoleum Primer and Acetone is the promoted recommendation to attain a lasting finish. Colors can be mixed to attain a subtle gray or other earth color to assist in blending the trap into the surroundings. If you can locate a container of sufficient size, these traps can also be boiled in Logwood Dye to attain a similar effect. But do not wax them under any condition, as they become a hazard to set. This is one trap that you do not want to have a hair trigger.

Snares from the manufacturer should be coiled in small loops and boiled in a mixture of water and baking soda to remove some of the factory oils. This will render the snares to a dull grey and remove the oil odor that is accustomed to those straight from the factory. The steel strands of the aircraft cable do not take dying very well so the dull grey color attained from this method is acceptable.

Tools for the Field

Just as in the world of hunting accoutrements, the sport of trapping has been accosted by a plethora of products and

The arrangement can effectively dye an abundant amount of traps in an afternoon. A converted keg for the dye and a smaller pot for the wax serve this purpose well.

gimmicks. The listed items are what I've found beneficial through the years but keep in mind, I typically trap from my truckbed along established woods roads and fields, so I won't be toting any of these items any considerable distance.

- Five-gallon bucket with pouch organizer
- Sod-buster hammer
- Hatchet
- Welded Sifter
- 1 ½" Auger with Drill Driver
- Linesman's pliers
- Limb cutters
- J-Hook Pliers
- Anchor Driver
- Kneel Pad
- Bag for Lures, Baits, Urine, Polyfil,
- Sheepswool, Feathers and Gloves
- Extra container for Peatmoss
- Anchor Puller

Preparation Complete

This article serves as an introduction on the equipment available, review recommended uses and how to properly prepare equipment for use in the field. Subsequent articles will follow on how to effectively utilize the listed equipment to manage a variety of furbearer populations on your property or lease. The articles will be divided into two segments, water trapping and land trapping, and will contain information to enable you to become a proficient trapper.

Durable plastic totes provide an excellent means of storage for prepared traps.

Water Chemistry for Ponds

Knowing the influences upstream from a waterbody helps you understand and identify issues the water chemistry results render.

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. Scott can be reached at scott@southernsportsmanaquatic-sandland.com or (336) 941-9056.

Anyone who performs lake management professionally or as a hobby knows the importance of good water quality. Water quality is the foundation of a pond or lake. There is almost no naturally occurring water chemistry make-up that will not support some fish, but there are definitely some that are better than others. Some of these can be manipulated, and some are too large or receive too much undesirable runoff and cannot practically be improved. Many things influence water chemistry in a waterbody such as where in the country the waterbody is located, nearby and upstream runoff, soil makeup, age of waterbody, depth, aquatic vegetation (shoreline, emergent and submergent) and historical vegetation present and historical runoff. Some of these are human influenced and some are naturally occurring. Over time a waterbody changes physically and chemically.

Basic water chemistry analysis consists of looking at water temperature top and

bottom, Dissolved Oxygen (DO) top and bottom, ammonia, total alkalinity, conductivity, pH, carbon dioxide, total hardness, salinity (typically present along coastal areas) and visibility. There are other parameters that can be looked at depending on your location such as the source of the water or if you are managing a hatchery pond or fishing pond. Sometimes issues can be explained, the cause identified and corrected, while occasionally they cannot be depending on various factors.

Common tools for testing water chemistry are a standard Secchi disk, freshwater aquaculture testing kit, and possibly some electronic meters for testing various parameters. The Secchi disk is an eight inch circle attached to a string or stick. The top surface has alternating quarter black and white sections. These can be homemade or purchased. Aquaculture testing kits look similar to a common pool testing kit, but designed for testing lake or river water. Samples of water are tested on-site to render results. These kits cost between $200 and $300. Various testing meters range from $100 for testing a single parameter to over $5,000 for testing multiple parameters down to 30 feet deep and deeper.

Before we make a site visit, we can tell some things about a waterbody and its water quality from aerial and soil maps. But, each waterbody is unique and has its own water chemistry make up, which is why water chemistry data should be collected every quarter at some point to know what is occurring during summer, fall, winter and spring. Each season will render different results from water chemistry data and a limiting factor slowing production and/or growth may only occur certain times of the year. It is not uncommon for water quality in warmer climates to look good in fall, winter and spring, while during the longest part of the growing season (summer) it may be poor or possess a limiting factor only detected by gathering water chemistry data. Knowing how a waterbody functions chemically all year long helps identify possible problem areas in a specific species, or in a certain stage of life for a particular species. Parameters such as pH, alkalinity, hardness and conductivity are different in different parts of the country. Water in the Southeast, away from the coast, usually has low conductivity, alkalinity and hardness. Salinity levels go up the closer to sea level the waterbody is located. If the waterbody is located

Sometimes water quality issues are staring you in the face. Livestock waste can cause issues with excess nutrients contributing to a too dense algae bloom.

A Secchi Disk is the common tool used by lake managers to check water visibility. For fertilization programs, 18-36 inches is desired.

down stream from a swamp/wetland with cypress and/or has a nearby pine plantation, the water may be tea colored, which is stained from tannin emitted from cypress, pine needles and a few other common plant species in that area, and will create a low pH due to tannic acid. Newer lakes tend to have better dissolved oxygen (DO) levels than older shallower lakes that have more organic material built up on bottom. Lakes with an algae bloom (green water) on sunny days have a high DO level, while overnight or on cloudy days DO is lower. At any given time, some parameters may be good for the fish population, but others may be bad at the same time, depending on the season, time of day and water quality makeup.

Water Temperatures

Water temperature on the surface and in the deepest holes tells us about mixing or lack of (stratification) and thermal refuges present, which change during each season. The depth at which the drastic temperature change occurs is known as the **thermocline**. Most waterbodies mix in spring and fall, where bottom temperatures may be similar to surface temps, depending on lake depth. Certain freshwater species cannot tolerate warm or cold water, so if considering stocking any of these species, knowing the water temperatures throughout the year and how they may affect your fish is important. A commonly stocked forage species is the **threadfin shad**. This species can become stressed and die if water temperatures get below 45° F. If a lake's water temperatures frequently get below this threshold, from top to bottom, stocking this species may not be the best choice. Native warm water fish species all have their own optimal water temperature for growth between 55 - 85° F. The longer the water temperature is in this range, the more growth per year you will observe in all fish species present. This parameter fluctuates during the day, usually going up at daylight and down after dark.

Lake roll-over can occur when water temperatures on bottom warm above the surface temperature and surface water sinks and bottom water rises. If high organics and extreme low dissolved oxygen are present, a fish kill can occur. There is no practical way to cool or heat up a waterbody, but a bottom aeration system will mix water and provide a stable water temperature from top to bottom to help prevent lake roll-over due to temperature.

Dissolved Oxygen

One parameter always looked at is **DO (dissolved oxygen)**. Dissolved oxygen helps with decomposition and is what fish take in through their gills to survive. When dissolved oxygen levels get low in deep water, fish will avoid these areas until it comes back up. If the entire waterbody experiences low DO fish may become stressed, not feed, not breed, eggs may not hatch, and newly hatched fry may perish. Some species of freshwater fish tolerate low DO better than others. Catfish, gar and bowfin are a few that can tolerate extended periods of low DO levels while shad, bass, bream and other species cannot. The DO also fluctuates over a 24 hour period where the highest level is just before sunset and the lowest just before sunrise. Plants (including algae) begin emitting dissolved oxygen when the sun hits them. Older lakes with a large buildup of organics or dead plants (decomposing) may experience low DO all day. Warmer water holds less oxygen molecules, which is why it is not uncommon for DO readings to be low in shallow lakes during the summer. Desirable DO is above 4 ppm (parts per million) in the morning. Most fish species can survive in DO between 3 and 5 ppm, but they do not thrive, and below 3 ppm can severally stress and kill fish if exposed for long periods of time. Decomposition will slow down or stop without oxygen, but fish will die without adequate levels of DO. Most fish kills are the results of low DO. Why it occurred is always the mystery to be solved. This can occur from lake roll-

These pallets are being used in a fertilization program where bags of fertilizer are cut open and laid on the platform which allows it to slowly dissolve and disperse, adding nutrients to generate and maintain an algae bloom.

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over, heavy rains and runoff, natural or man-made (agricultural runoff, excessive aquatic weed treatment) nutrient overload, and a green lake (algae bloom) experiencing several days of overcast weather where planktonic algae dies, starts decomposing and the DO drops to near zero from top to bottom. A solution to chronic low dissolved oxygen or stratification is aeration. These come in two types, surface or bottom. Surface aerators add more oxygen, but do not mix top and bottom water, which allows fish to use the entire water column, as opposed to just the top few feet where the oxygen is located without aeration or with surface aeration. For additional aeration information, reference *Wildlife Trends Journal,* January/February 2013, Volume 13, Issue 1.

pH Levels

The pH represents the acidity of the water. pH is as important to producing fish as it is in crop production. On a scale of 0 – 14, below 7 is acidic, above 7 is basic and 7 is neutral. An ideal pH is 6.5 - 9.0 for fish production. A low pH below 5.5 slows some plant species production and negatively affects fish from adults down to eggs in most species. A good estimate of the pH in your lake is whatever it is in your uplands. If your food plots typically have a pH of 5.7 before liming, overall



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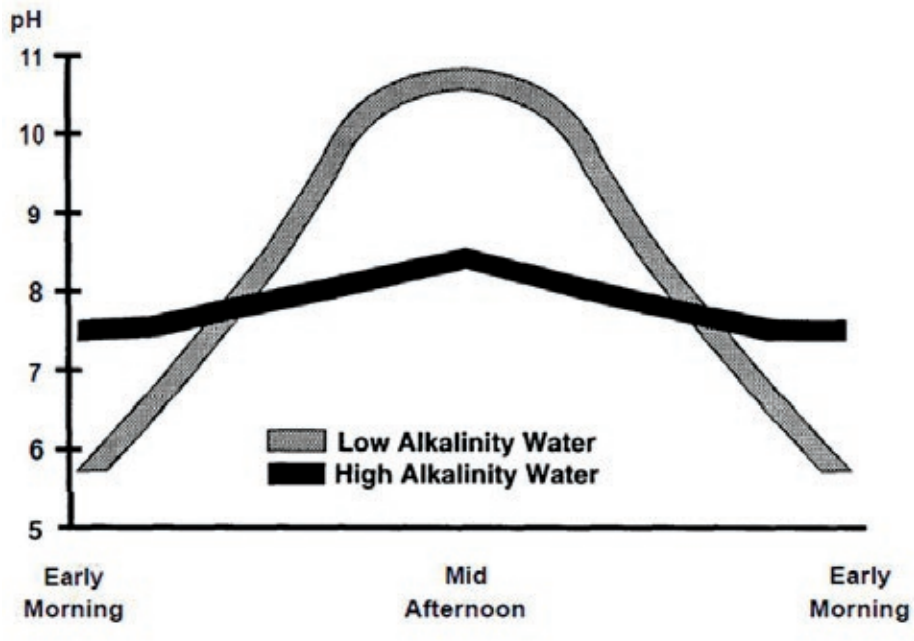
lake pH will usually be similar and close to 5.7. A drastic daily fluctuation in pH can occur and is detrimental to fish. This is usually associated with significant amounts of organics present and/or elevated carbon dioxide levels, which may also be associated with an alkalinity value below 20 mg/l (milligrams per liter). A pH of below 4 and above 11 will kill fish. It is customary to lime lakes if a higher pH is desired. Rising into the desirable range and/or a fertilization program is desired. Liming where extremely high pH exists is also performed in rare cases.

Conductivity is measured by how well the water will conduct electrical current. During calculation it is also correlated with salinity. A desirable range is 100-2000 uSiemens/cm (centimeter) and acceptable range is 30-5,000 uSiemens/cm. You always have high conductivity with high salinity. However, you can have high conductivity with low salinity in water that has other conducting particles present. Total alkalinity is the measure of water's buffering capacity as carbonate and bicarbonate. A desirable reading is 50-150 mg/l and acceptable is >20 mg/l. Total hardness measures calcium and magnesium. A desirable reading is 50-150 mg/l and acceptable is >20 mg/l. Adding agricultural Lime at a rate of one to two tons per acre raises these if they are not acceptable for quality fish production.



A daily fluctuating pH is as harmful as a continually low one. Liming to bring up Alkalinity and Hardness will reduce the large 24 hour swings and be better for the fish present.

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Activities on and around the lake such as weed control can change the water chemistry make up when plants begin decomposing. Runoff from the plush sloping lawns in the background is also contributing nutrients to the waterbody which affects water chemistry and can cause plant growth issues.

Ammonia is naturally present, but can become elevated in waterbodies with large numbers of fish (from waste), heavy organics or high presence of well water (in some areas). Ammonia levels also fluctuate from season to season. It is rare to find ammonia levels detrimental to fish populations, but can be in a few rare instances. One lake we worked on in south Georgia had a fish die-off from elevated ammonia levels due to the addition of too much well water all at once. The levels were so high almost all of the first 13,000 bream stocked were no longer present a year later. This occurred in response to the landowner using center pivot irrigation from the lake during a six month long drought and simultaneously refilled with well water. Ammonia is absorbed by plants and bacteria. However, this particular lake did not have any aquatic vegetation to perform that process. Once the water withdrawal was moved to a different lake, the fish population has flourished ever since.

Salinity is generally related to the coastal areas, but not always. There are many waterbodies around the interior United States that have high salinity concentrations. Freshwater fish are common in brackish waters, and can do well. But if sudden salinity levels spike due to flooding from nearby saltwater areas or from underground seepage, freshwater fish will perish. A **halocline** is sometimes observed where saltwater is on bottom and freshwater on top in ponds as it is in natural open systems (saltwater wedge in coastal rivers). We recently discovered this in a small pond near a saltwater marsh where the salinity on the surface was low and appeared normal for a freshwater pond, but below seven feet deep brackish water characteristics existed. The freshwater fish at times would not utilize the fish feeder and multiple stockings of fish had rendered little improvements in forage or predator numbers. It was determined that at times, the lake would become mixed and salt levels would spike too high for some

of the freshwater species and they became stressed or perished. Without testing water chemistry parameters we would have never discovered this anomaly.

Visibility is determined with a **Secchi Disk**. It is lowered into the water until the "X" becomes blurry, then slightly raised until the "X" becomes clear. That distance from the water surface to the disk is the visibility reading. This is very important if performing a fertilization program. Ideal conditions when checking for a fertilization program is a visibility of 18-36 inches. Fish can tolerate some turbidity, but if too little light penetrates into the water, fish become stressed, slowing down growth and reproduction. To clear muddy water gypsum, or alum is traditionally used. The shading of light, from whatever the source, helps reduce unwanted submerged aquatic plant growth.

If you are trying to correct an unfavorable water chemistry issue, first identify what is causing the problem. Too often lake managers rush to correct something, only to have temporarily corrected it and shortly end up where they started, which leads to manager and Lake Owner frustration and costly mistakes. As we tell all our clients,"this is the boring stuff", when collecting water chemistry data prior to electrofishing. But it is as important as the electrofishing, just not nearly as fun to do or talk about.

These bream are enjoying the benefits of an ideal algae bloom. Planktonic algae and zooplankton are the foundation of the food chain.

Wildlife Trends Journal Management Calendar

By Dave Edwards

December 2015/January 2016

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

Harvesting an adequate number of does each year is essential when managing for a quality deer herd and quality hunting.

Ensure doe harvest goals are met

Based on observations during my travels this fall, many areas of the Southeast have experienced another abundant crop of acorns. Due to the increased food, deer populations in these areas will have increased fawn production and survival. This means that increased harvest may be needed on some properties to maintain deer populations at desired levels. A very simple law of nature taught in college Wildlife Population Dynamics courses is that Population Growth = Births minus Deaths. Thus, with an increase in "births" (more fawns), managers will need to increase harvest rates unless growth is desired.

Ideally, it is best to harvest does early in the season and/or before the rut. Doing so will save food resources for remaining deer and immediately improve the sex ratio for the upcoming breeding season which will conserve energy for your deer herd. An unbalanced sex ratio will result in an extended breeding seasons where bucks can lose up to 30% of their body weight from excessive breeding activities. Consequently, under these conditions bucks enter spring trying to recover. The highly nutritious spring food then goes towards body maintenance verses body/antler growth for the following year. The extended breeding season

associated with an unbalanced sex ratio also results in poor hunting due to the lack of breeding competition. That is, there are so many does that bucks do not need to compete. In this case, hunters generally do not see much breeding activity such as chasing, rubbing or scraping. We often refer to this as a diluted rut.

By the time you get this issue of *Wildlife Trends* it will be late in the hunting season in most states. If you have not met your doe harvest goals, get to work. If needed recruit the help of friends. Holding a "doe harvest weekend" is a great way to get participation from club members or friends. Make a big deal out of it by having a cook out at the camp with "awards" for those that harvest the largest doe, oldest doe, or most aggregate weight. With the associated comradery, these events can sometimes be the most memorable hunts of the year.

Create quality wildlife habitat through "hinge cutting" undesirable trees

Timber Stand Improvement (TSI) is the general practice of removing lesser quality or undesirable trees within a forest to reduce their competition with desirable trees. An example may be a situation where a quality oak tree is surrounded by lots of young or mid-aged red maple trees. As you can imagine, the ground below is layered with fallen leaves and because sunlight is not reaching the ground little vegetation exists – which is poor wildlife habitat. Removing the red maples would increase sunlight, water, and nutrients for the oak allowing it to grow more vigorously (this is known as "releasing" the oak) and due to increased sunlight plants would begin to grow on the forest floor. Hinge cutting is simply a variation of the normal TSI technique. Rather than completely cutting down undesirable trees, trees are cut only halfway through. They fall, or "hinge" over, and create instant cover but in most cases do not die, so they continue to produce leaves and vertical shoots. If they are desirable browse species, a new food source is created. Hinge cutting is a good way to provide food for browsing animals such as deer, provide thicket cover for quail and rabbits, nesting cover for turkeys, and release the best quality saplings/trees for optimal growth, all at the same time. Hinge cutting is an excellent way to create both food and cover within large areas of park-like oaks without cover, near wildlife food plots, or along transitions

Strategically hinge cutting undesirable trees can create additional wildlife habitat while improving timber stands.

between different habitats such as along edges of fields. If planned well, hinge cut areas can be strategically located to create thickets (bedding and loafing cover for deer) in a way that will influence deer movement and enhance hunting success.

Methods used to hinge cut vary depending on how large the undesirable trees are. Hinge cut trees at waist height. For small-diameter stems, the simplest way is to hold the sapling in one hand, bend, and whack the bend with a machete. Two or three shallow cuts side by side will allow a better bend than one deep cut. A hand saw or a chainsaw is easier for larger stems. After the cuts, force the sapling down until it is parallel to the ground.

Prepare dormant season prescribed burn plans and initiate burns as weather permits

Fire is a management strategy that is relatively cheap to implement and the results are very obvious for wildlife. If you have pines on your property, fire is an essential tool to improve wildlife habitat and should be on your annual task list. However, burn plans need to be well thought out and completed well ahead of time. With the exception of longleaf pine/coastal plain areas, most understory burning in the Southeast is conducted during the winter dormant season. Acceptable relative humidity, temperature, fuel moisture, and steady, persistent winds often occur during this period. Cool season burns are generally conducted between December and spring green up. In the Deep South, try to conduct burns before March 15 to avoid destroying turkey nests. Cool season or winter burning is not only a good way to reduce fuel loads and control undesirable hardwoods in a pine stand (which reduces the chances of a wildfire that can be detrimental), but is

Prescribed fire is an exceptional wildlife habitat management tool.

Managing duck hunting pressure will ensure quality hunts throughout the season.

also a great way to stimulate new understory plant growth which will result in quality food sources for wildlife. Fire rotations (interval of time between burning the same area again) vary depending on your goals and habitat types but are generally every 2-5 years to promote quality wildlife habitat. It is also a good idea to strategically plan your burns so that you always leave some areas unburned. How much area to burn will depend on your specific property and habitats. However, do not feel that you have to burn large areas (50-100 acres or more) to make a difference and create quality wildlife habitat. Relatively small burn areas in the 5-10 acre range are easily done in a couple hours and will make a difference. Always check local burning laws and consult with an experienced burn manager before lighting a woodland fire. The U.S. Forest Service or your state Forestry Commission are great sources for obtaining more information regarding burning in your area. Check with the US Forest Service for information regarding prescribed burning as well as examples of a burn plan. It is also a good idea to coordinate your burns with a professional land manager that has experience burning.

Assess progress and create a plan for improvements

With hunting season coming to an end, it's time to revisit the wildlife management program on your property to assess whether or not your management strategies are working to help you achieve desired goals. Doing so may reveal limiting factors that may be preventing you from reaching your management goals or maximizing your efforts. Addressing limiting factors and implementing improvements where needed will help you succeed. Unfortunately many landowners and hunting clubs keep doing the same thing and expect different results. Depending on the wildlife species you are managing for, late winter or early spring is generally a great time to assess habitat needs, review current management strategies and how wildlife or habitat has responded to these strategies, and devise a plan for addressing

needs. While a general property assessment is easily done by a landowner, I recommend getting the assistance of a professional experienced wildlife biologist to help identify less obvious and often times overlooked strengths and weaknesses of your property or wildlife management program. I can't tell you how many times I have been helping a client where I made what I thought was an obvious recommendation that they had never thought about or recognized as a limiting factor. My point is that it is always good to get another set of eyes when assessing your property, particularly from someone that does not see the property often and/or someone that is an experienced wildlife/land manager. With the property wildlife management goals in mind, and from this assessment, you and/or your wildlife consultant can develop a list of several to many management activities that will address limiting factors identified. Depending on the property, this can be a relatively short list or a very long list of activities that need to be addressed. Many of you have heard me say this before, but consistent good hunting doesn't happen by accident. It takes planning, hard work, patience and an understanding that Mother Nature is dynamic and things are constantly changing requiring adjustments in management strategies to reach desired results.

Prepare for last phase of duck season and manage hunting pressure

If you have multiple duck ponds and hunt waterfowl through the season, strategic/staggered flooding schedules help maximize hunting opportunities by extending the food supply in ponds. That is, by not flooding some ponds or areas early in the season you essentially "save" these ponds and their associated food for later in the season. Thus, if you've "saved" ponds on your property for the late phase of duck season, mid-late December is the time to initiate flooding of these areas. Maintaining water depths of 12"-18" is ideal for puddle ducks such as wood ducks, mallards, gadwall, teal, etc.

If you enjoy duck hunting but only have one or two small "duck holes" on your property, enhancing these areas (water management, plantings, etc) and managing the hunting pressure will ensure you have exciting hunts each time you go. Like most wildlife, ducks react to hunting pressure. As hunting pressure increases, the number of ducks using the area decreases. Something in your favor is the fact that most ducks are migratory. Depending on the time of year, strong cold fronts often result in an abundance of "new" ducks pushing south. Managing the pressure simply means that you don't hunt the pond too often and allow the area time to rest between hunts. A good rule of thumb is to not hunt a small pond (or any small area where ducks use) more than once per week. It is also a good idea to not hunt the area in the morning and afternoon of the same day. If food sources remain and you allow the pond to rest longer than a week, you will be pleas-

antly surprised at the number of ducks that will be using the pond, especially if there is hunting pressure on surrounding areas.

Prepare deer stands for the off-season

Once deer season ends, it is a good idea to "summer-ize" them. That is, to ensure they are in good working order next season there are a few things to do. Ladder and lock on stands should be loosened or removed from the tree to allow the tree to grow during summer and prevent it from absorbing the attached chain or strap of the stand. This not only protects the stand from potential damage, but is good for the tree. If the stand is not going to be removed from the woods, remove any cushions or seat straps and burlap/camo covers that may be on a stand. This will prolong their life and prevent the weather or critters from ruining them before the next season. Cushions and covers should be removed from tripods or other stands as well. Although they should already be secured, double check the tie downs and anchors of a tripod. There are two kinds of tripods – those that have blown over and those that will. Making sure they are securely anchored will reduce the chances of a tripod getting blown over. Shooting houses should be cleaned out and sealed up as much as possible. Sealing them (meaning closing the door and windows) will reduce damage by squirrels, owls, etc. It will also reduce wasps as well (notice I said reduce). Cleaning shooting houses out in late winter is much nicer than trying to do it in August! Obviously, all climbing tree stands and pop-up blinds should be removed from the woods and stored over the summer. When "summarizing" ladders and lock on stands, it is VERY important to revisit these stands just before hunting season starts again the next year to reattach the chains/straps and tighten everything. One trick we use to identify stands that are ready is to tie a piece of flagging onto the stand once it has been tightened and checked. Use the same color flagging for each season. For example, this year we are using blue flagging. Next year we will use orange flagging. So if a hunter gets to a stand this season and does not see the blue flagging, he will know that the stand may have been overlooked and/or has not been checked and secured.

Build wood duck boxes

Wood ducks are cavity nesters, meaning they construct their nests in hollow

Building, installing, and managing wood duck nest boxes is a great way to enhance wildlife value of your property.

trees near water. Since nesting trees can be limited, providing artificial nest boxes can attract more Wood ducks to your property and help increase local populations. Because it is sometimes hard to find time to do "side projects", building wood duck boxes while hanging out at camp during hunting season is a great time to do this. Because "green" cypress wood is very wet/heavy, building the boxes ahead of time allows the wood/boxes time to dry before installing them making the task much easier. Building, erecting, and annually maintaining wood duck boxes can be a relatively easy way for the entire family to be involved in wildlife management that is both fun and rewarding. **See *Wildlife Trends* website for blueprints of a one-board design for building a wood duck box.**

Wood ducks will begin searching for a suitable nest site as early as February. Therefore, install new boxes during winter so they can be used during the upcoming spring nesting season. Existing wood duck boxes should be cleaned out each year before nesting begins to remove old nesting material, squirrel nests, and egg shells then filled with 4-6 inches of fresh wood shavings or chips (preferably cypress or cedar) which are available from many pet stores, chip mills, lumber mills, cabinet shops, etc.

Identify roads on your property that need attention

Winter is often very wet in the Mid-South which makes this a great time to identify and assess problem areas along roads where work will be needed next summer. Make notes or identify areas on maps that you can refer back to when you start to repair roads next spring or summer. You will be glad you did. Once your property dries out, it can be difficult to remember and/or find the areas that were bad during the hunting season. Although many landowners/hunters access properties during hunting season on 4-wheelers, electric carts, or other gas powered ATV's that will certainly get through wet and slippery roads, roads are an important part of managing a property. If you are actively managing your property, you will need to be able to drive or transport large pieces of equipment such as spreader trucks, tractors, and agriculture buggies throughout the property. Thus, having good roads is essential.

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