PRACTICAL WILDLIFE MANAGEMENT INFORMATION

Wildlife Trends JOURNAL

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Earl Says...

I've been working on a new article for a few weeks now and I could really use your help. You see, I've always been interested in how and why people name their favorite hunting stands. I'll give you a couple of examples to give you an idea what I'm talking about.

Deer stands are usually named based on either their condition or something memorable that happened at that particular spot. Now, when I talk about the condition of a stand, think about any property you've ever hunted. Usually the most comfortable and sometimes opulent stand is called the Condo, Taj Mahal, The Penthouse, etc. If you have one of those stands with cable TV, a refrigerator, recliner and heaters, let me know what you call it and how you've furnished it to make your hunting experiences better.

The other types of stands are usually named for something that happened at that place. We once had a green field called the Rattlesnake Field because we killed a huge rattlesnake there the first time we planted it. On my current lease we have a field called the Helmet Field because someone threw away an old football helmet beside the road by the gate to the field. I know this all sounds pretty simple and odd but I am fascinated by stand names. And think about it, have you ever tried to rename a stand once it got its nickname? It just can't be done no matter how you try.

So I'm asking for your help to send me any of your favorite stand names and how they came to be. And it doesn't have to be a deer stand at all. Dove fields, duck blinds, quail courses and even hills and roads get their own nicknames and I would love to hear your stories. If you have names for me, please e-mail me at info@wildlifetrends.com or call me at 800-441-6826 any time. Thanks as always for subscribing with us and I hope you all have a safe and successful hunting season.

Andy Whitaker
Publisher/Editor

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P.O. BOX 640596
PIKE ROAD, ALABAMA 36064
www.wildlifetrends.com
800-441-6826

PUBLISHER/EDITOR
Andy Whitaker

DESIGN
Kim Koellsted/Craftmaster Printers, Inc.
Craftmaster Printers, Inc.
687 North Dean Road, Auburn, AL. 36830
(800) 239-3293

CONTRIBUTING AUTHORS
Dave Edwards
Dana Johnson
Brant C. Faircloth
Wes and Leslie Burger
Dr. Wes Wood
Theron Terhune
Marion Barnes
Ted DeVos
Bryan Burhans
Keith Gauldin
Rodney Dyer
Dr. Keith Causey
Gary Springer
Dr. Stephen Ditchkoff
Anna Huckabee Smith
Tes Randle Jolly
Kevin Patterson
Ryan Basinger
G. Ryan Shurette
D. Clay Sisson
Kent Kammermeyer
Allen Deese
Scott Brown
Dr. Larry W. Varner
Jason R. Snavely
Steve Tillman

For Wildlife Trends editorial, advertising, or change of address:
1-800-441-6826
info@wildlifetrends.com

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Cover photo by Andy Whitaker

Wild Quail Versus Released Quail: The Good, the Bad, and the Ugly

Due largely to a scarcity of wild bobwhites, a mounting number of people now use captive-reared bobwhites to train and interact with their dogs. (photo credit: R. Shurette)

By Ryan Shurette

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

It was a cool crisp morning in late November, 1963. Joe passed a couple of small farmhouses and then slowly pulled to the side of the South Georgia dirt road. In no hurry, he slid out of the driver's seat and mumbled a few calming words to a hyperactive English setter banging around in a rusty metal dog box. The dog only grew more exited as Joe made his way back to the rear of the truck and lowered the tailgate of his old red Chevrolet. In the split second the lock pin was turned and raised, Penny burst out of her box like a race horse at Churchill Downs, leapt off the tailgate, and went straight to work, making broad circles in the broom sedge and briars behind the truck. Joe nonchalantly dropped two number eights into the old side-by-side Browning tubes and followed along behind her. The timber was open and the fire-blackened boles of the pines stood out in sharp contrast among the soft amber bluestems and Indian grass. It took less than five minutes before Penny slowed her

frantic pace and began a methodical crawl. Four or five seconds later, the setter froze in mid-step with her tail out and lowered her head, a ritual Joe had watched her perform countless times over the years. As Joe approached his dog, twenty feathered missiles exploded in all directions and Penny gave chase as Joe knocked down one of the fat brown softballs. Soon the dog was back at his feet and Joe took the bobwhite from her mouth, giving her a quick pat on the head. Instead of tracking the scattered singles that were all around them, Joe called Penny off and they slowly headed over the hill to new ground. In less than fifteen minutes Penny was crawling low and slow again, foretelling the excitement to come. And so went the rest of the morning until Joe had a limit of cock bobwhites in his vest and a smoking cigar in his teeth.

This portrayal of southern quail hunting in its heyday is bound to sound like a tall tale to some, but it's actually not too far from the way it once was. During the peak of the bobwhite boom, densities were such that multiple coveys could easily be found on any given hunt, even into some of the more northern states. But now, due largely to a drastic change in land use across the East and the resulting widespread loss of quality fire-maintained habitat, bobwhite populations are but a fraction of what they once were. This loss has left more than one generation with a void; a feeling that something is missing in their culture and life. To fill this void, many landowners have become quail managers. Some folks enjoy the hospitality and comfort provided by shooting preserves and plantations. Others simply own a fat pointer or setter and reminisce about the good old days.

Due to this scarcity of wild bobwhites, a mounting number of quail hunting enthusiasts now use captive-reared bobwhites to train and interact with their dogs. Whether, how, and to what extent they are being used depends on the landowner's interests, objectives, and budget. It has obviously been a common practice over the past few decades to use pen-reared birds during field trials, and on shooting preserves to meet the high demand of numerous clients. Although they rarely offer exclusively wild quail populations, preserves typically offer an atmosphere of nostalgia and fellowship, lodging, fine dining, and other comforts and amenities (including guides and dogs), along with a guaranteed opportunity to shoot at several quail without having to trudge through fifty miles of brambles. Considering the various services they provide, quality shooting preserves are typically a good value, especially for the casual shooter, corporate or family groups, or when introducing newcomers to quail hunting. In the preserve

The eastern (Virginia) subspecies is the most commonly produced variety of bobwhite used for recreational shooting. Commercially-produced quail can range from $3 to $6 each. (photo credit: R. Shurette)

The masked bobwhite, although now endangered in the wild, is still sometimes used in domestic production. (photo credit: J. Rorabaugh, USFWS)

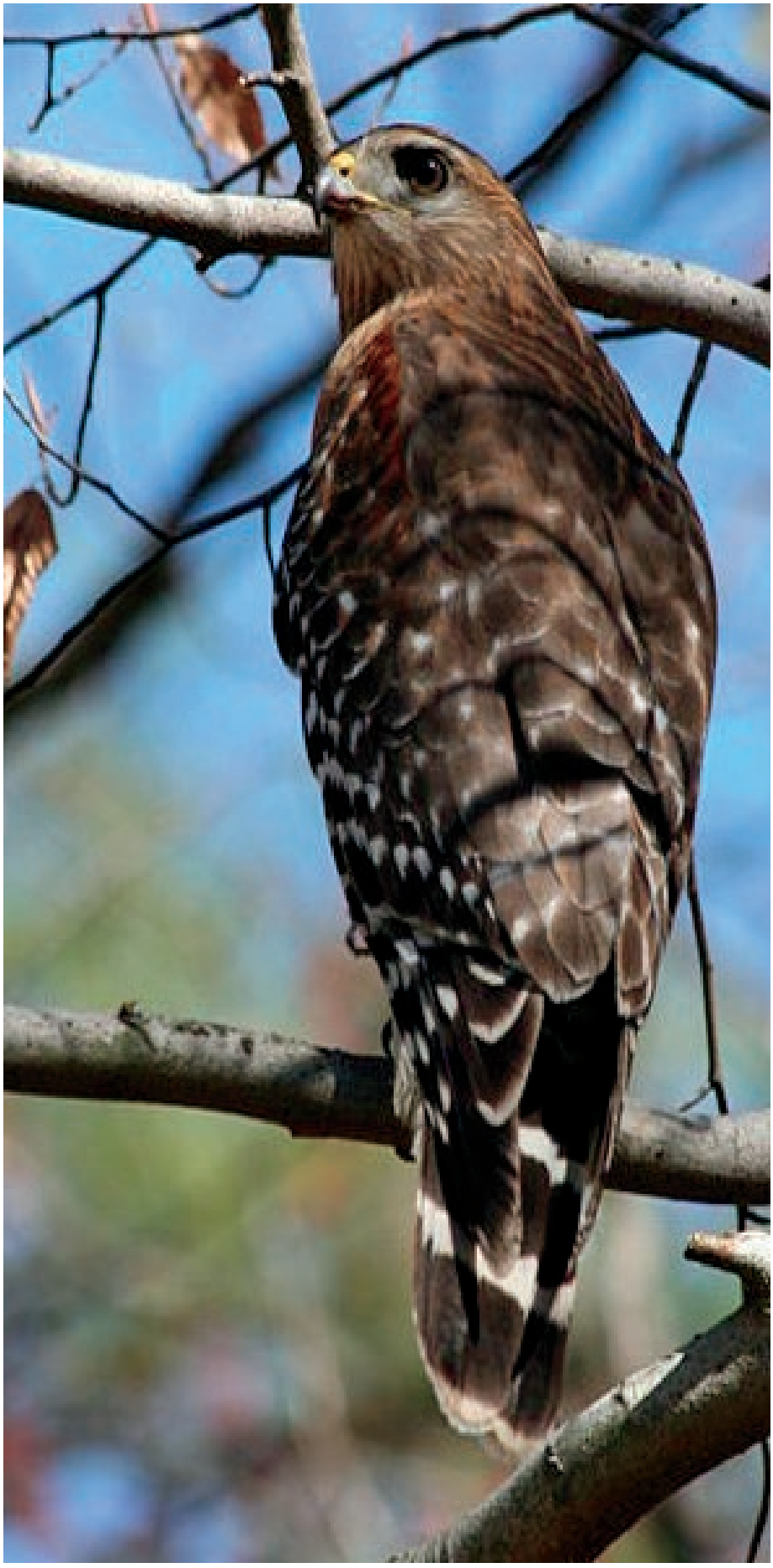
situation, pen-raised birds are a known and normal part of business operations. However, now that there is a growing interest among individual dog owners and landowners in using flight-conditioned captive-reared birds, many are learning some interesting lessons in dealing with these domestic varieties. There are important things one should consider before they go out and purchase a bunch of bobwhites. This article contrasts using released (pen-raised) bobwhites with wild bobwhite management on private non-commercial lands, and discusses some of the pros and cons of each.

Two Different Birds

Pen-raised northern bobwhites typically come from a handful of the twenty-plus distinct bobwhite sub-species, with virtually all of them being derived from their respective wild brood stocks many generations ago. The eastern northern bobwhite (Colinus virginianus virginianus) is the most common captive-bred subspecies, but other commonly raised subspecies include the Texas bobwhite (C. v. texanus), Florida

bobwhite (C. v. floridanus), and even the endangered masked bobwhite (C. v. ridgewayi). Just as in domesticated dogs or chickens, many different varieties have been engineered from these subspecies over time. Some varieties have drastically different color patterns from the normal original strain. Such changes in phenology are born from genetic mutation and are well illustrated in the commonly produced "Tennessee Red", "Snowflake", and "Blonde" bobwhite varieties. Other traits in bobwhites have been selected for over the past several decades depending on the breeders' interests. Since meat and egg production was a popular objective among breeders in the past, several domestic varieties are larger than their wild counterparts. For shooters, explosive and sustained flight is now the most desirable quality, and smaller and faster bobwhite varieties are now becoming more common among quail farmers. These flying traits, coupled with environmental conditioning, more often produces a bird that can reproduce the flush of a wild bird in the field.

In a typical domestic eastern northern bobwhite, plumage coloration and phenology (appearance) are generally the same as in wild birds. Their physiology is also basically the same. However, anyone who has dealt with both wild and pen-raised birds will tell you that, behaviorally, these are very different creatures. Domestic varieties are generally docile and do not recognize humans as potential predators. The analysis is not as simple as that, however, and the difference between wild and captive-reared birds cannot be based completely on the simple fact that pen-raised birds are not overly afraid of humans. To illustrate this point, I will use another species as a contrasting example. About fifteen years ago I worked on a large project banding the rare Mexican subspecies of spotted owl in the remote mountains of Arizona. Although I had experience with other birds of prey, I had never worked with this particular



Pen-raised bobwhites are typically not able to effectively evade potential predators like the red-shouldered hawk shown here. (photo credit: Wikipedia public domain)

species. To my surprise, these owls were very tolerant of humans and would allow me to walk or climb right up to them, almost to the point of catching them with my bare hands. In fact the most common method of capturing adults involved luring them down to within 10 -15 feet of the ground with mice (from the local pet store) and gently noosing them with a pole snare. Several times, owls even came down to take a mouse right out of my hand as I was taking it out of the container. Although they were not afraid of humans, those owls were still wild animals. They were perfectly adept at hunting and catching their own wild prey (as well as researchers' lab mice). And so the important difference between wild and domesticated animals pertains not to their tolerance of humans, but to their ability to survive without human assistance. This is where pen-raised quail generally do not pass the test.

Aside from some very important genetic differences, probably the most significant contributing factor that leads to the drastic behavioral differences between captive-bred and wild birds pertains to the many lessons that are "learned" from a wild adult bird during the natural brooding process. Even prior to hatching there is communication between the wild chicks and the adult. Although they may seem subtle to the human observer, the experiences gained during this early period by wild quail chicks are critical in providing them with behavioral tools required to survive in the wild. Captive-reared bobwhites receive no such training and therefore are at a gross disadvantage the moment they step out of the pen. Let's say for example, a few healthy pen-raised bobwhites are released into an area of fairly suitable quail habitat. First of all, pen-raised bobwhites typically don't have the skills needed to efficiently recognize and scratch out many of the native seeds, even when they are readily available. Pen-raised birds that manage to avoid being eaten (more on this in a moment), quickly become lean and emaciated in most situations if left to forage on their own. Disease, or more often hypothermia, can make short work of a malnourished bird. Even just a couple of days without food can be a death sentence to a bird on a cold night, as it must generate its own body heat from the energy it derives from food items. Survival can sometimes be prolonged with supplemental feeding (usually milo, sorghum, or a similar grain) but often the return is not worth the investment. The next problem the released bird faces deals of course with predator evasion. As I refer to in the title of this article, this is where it can get "ugly". Managers who have tried to stock large numbers of pen-raised birds to augment quail populations have one thing in common. They have all seen a bunch of little brown feather piles scattered across their property where hawks have picked over quail dinners. Often these kill sites are in the middle of an exposed patch of clean ground or in the middle of a road, which is evidence of a captive reared bird's inability to recognize or hide from danger. Threats don't just come from avian predators, of course. The usual list of suspects, including native and domestic mammalian predators, all get in the game when it comes to preying on wandering domestic quail. I once observed a house cat sneak up on an unsuspecting released bobwhite that had been left over from a shoot a couple days before. The poor thing never even took a step when the cat pounced.

Lastly, even if released quail manage to survive for longer periods of time, they are rarely successful at reproducing and raising a brood. It has been suggested that wild birds often do not recognize domestic individuals as the same species due to the behavioral differences among them. A low percentage of pen-raised individuals may attempt to nest, but they may or may not incubate effectively. If successful incubation does occur, adult domestic birds often abandon the clutch upon hatching, since they are not programmed to brood chicks. Thus the circle of life is broken and released birds typically soon dwindle in numbers.

Granted, a couple of individual studies (Woods, 2013; Mueller et al., 1997) have suggested that released coveys can sometimes persist with fairly good survival rates in some locations (63% at 6 weeks in Texas) and (55% at 12 weeks in South Carolina). But generally pen-raised quail will not persist on most properties for extended periods of time. For example, one study in Virginia reported a total loss of 60 radio-tracked released birds within the first nine days (Fies et. al., 2000). DeVos and Speake (1995) observed higher initial survival (35% in first 9 weeks), but observed low survival (8 to 20%) at 22 weeks following release of pen-reared bobwhites in Alabama. Another study in Texas reported 50% mortality within nine days of release, and 100% mortality within 70 days of release (Perez et. al., 2002). Anecdotally, this trend has been my observation as well, with signs of emaciation and breast muscle mass loss within the first two weeks of release. It was also consistently demonstrated in widespread state programs during the 1940's and 1950's that pen-raised bobwhites couldn't be effectively used to re-establish sustainable quail populations. After millions of dollars and a lot of effort, wild quail managers clearly saw that habitat (and occasionally predator) management was the most viable solution to the quail conundrum.

Are Pen-Raised Birds a Risk to Wild Bobwhites?

This question has been recently debated among landowners and biologists. The answer probably depends largely on where the pen-raised birds are released, the scale and duration of the release(s), if a local wild quail population exists, and if so, the demographics of that population. If there are no wild quail around to interact with, the domestic birds obviously do not pose as

much of a risk. However, if the potential for interaction among wild and domestic birds exists there may be a few concerns. One such concern deals with genetic degradation of the wild population. Although wild quail may sometimes reject a domestic mate they may in fact interbreed on occasion, especially if the frequency of encounter is high. If interbreeding occurs, the genetics of the domestic variety may "contaminate" the wild population at some level. This has been suggested to result in reduced vigor and lower survival in the wild local population.

The second potential problem relates to disease transmission from domestic quail to local wild populations of bobwhites and even turkeys. Pen-raised quail are often subjected to a variety of diseases. Common inflictions include: coccidiosis, avian pox, avian influenza, quail fever, and bronchitis. It is plausible that domestic quail may act as carriers into the wild populations, especially since the medications they receive in captivity may suppress some symptoms of disease. The transmission risks and pathways of these diseases among domestic and wild bobwhites are still not well understood however, and it is not clear whether direct interaction associated with supplemental feeding, or insect vectors, poses more of a threat for spreading disease.

Another concern pertains to the potential for an artificial increase in local predator populations. The theory is that released quail would create a higher density of predator species that would put un-natural pressures on the wild quail in the area. This issue would obviously depend on the number and duration of releases that were made. A predator (avian, mammal, or otherwise) pop-

True quail restoration is achieved by building suitable habitat for wild northern bobwhites. The utility of a pen-raised bobwhite is limited to something entirely different, due to its inability to cope with the complexities of living life in the wild. (photo credit: R. Shurette)

ulation response to a couple of released coveys per year on a property would probably be negligible, whereas hundreds or thousands of birds per season would most likely have some influence in both hawk and meso-mammalian predator populations. This phenomenon is commonly observed on shooting preserves. What has not been closely examined however is if these high predator densities actually consistently and significantly impact wild quail numbers, and if so, which of those predator species are most important. On the other hand, in a wild quail scenario, managers also sometimes have to worry about predation, but they can usually depend on the instinctive behavioral defenses of the wild birds and indirectly manage predators to a large extent by providing quality habitats and cover on the landscape.

Economic Considerations

Like other factors we have discussed, the economic comparison between using pen-raised birds versus hunting wild birds is relative to scale. Obviously, if you are lucky enough to have wild quail around you (either on your property or on public hunting lands), it can be a fairly cheap endeavor to head out on a wild quail hunt, for no more than the cost of a box of shells and a hunting license. On the other hand if you implement large scale, intensive quail management, it can be quite expensive to create and maintain primo habitat for a handful of wild coveys to hunt. For example, habitat management activities such as pre-commercial timber treatments, hardwood mid-story control, herbicide applications, native grass restoration, and prescribed burning on a thousand acres could easily cost several thousand dollars in a given year.

Conversely, when releasing pen-raised birds for immediate shooting, one needs only a physical "holding cover" to temporarily keep them in place long enough for their "recovery". This cover can be in the form of a quality native bunchgrass, but it could also be otherwise undesirable invasive grass like bahia, or even just a pile of straw. The actual increase in individual birds in a managed wild quail population is technically free however, whereas pen-raised quail generally range from $3 to $6 each, which can add up quickly. Flight-conditioned varieties raised for shooting purposes can be more expensive than non-exercised varieties (including "jumbo" and "pharaoh") that are raised to be sold for meat. The bottom line is that there are costs associated with both wild and pen-raised shooting quail and these may vary depending on each person's situation.

Since flight-conditioned birds are not cheap, some landowners use various feeding stations and call-back systems in an attempt to recapture or re-concentrate released birds that escape shooting. In these cases, survivors are lured back to one or more locations on the property using feed and/or a live calling bobwhite. Some type of cover is also usually provided to hide the incapable birds. There are many different commercial and home-made versions of this system. Some folks set traps at the locations while others shoot whatever birds congregate there. Reports on the efficacy of these systems vary from landowner to landowner and it often depends on the frequency of follow-up shooting. Some argue that these stations are simply concentrated killing zones for the predators that learn to use them whereas others find that they do in fact significantly aid in the capture or harvest of survivors.

Summary

Surprisingly often, I read or hear about landowners "restoring quail" on their properties, only to learn a few seconds later that they are actually re-stocking pen-raised birds. The fact is that true quail restoration is achieved by building suitable habitat for wild northern bobwhites. The utility of a pen-raised bobwhite is limited to something entirely different, due to its inability to cope with the complexities of living life in the wild.

Some biologists advise never to release pen-raised birds because of the potential risks they may pose to wild local birds. The fact remains however that some folks just don't have the acreage or resources to effectively manage native habitats for wild quail. Still others may not be interested in the management aspect of quail hunting, but still want to experience shooting quail over dogs. My advice in these cases would be to either visit a reputable shooting preserve, or if you have dogs you want to work yourself, to use pen raised birds in areas with no quail on an immediate put and take basis. This strategy will get you more for your money and you won't be wondering whether you are putting wild populations at risk. The Georgia Department of Natural Resources suggests, "The use of pen-raised quail should be viewed strictly as a means to provide the desired level of shooting on areas that are not capable of producing enough wild birds to meet the shooting objective." This is probably a pretty sound point of view if you are considering using captive bred bobwhites for recreational shooting. Finally, keep in mind that some states require a shooting preserve or dog-training license prior to releasing pen-raised birds. It is also illegal to release any species of wildlife on most public lands. Be sure to check local game laws and restrictions.

References

DeVos, T. and D. W. Speake. 1995. Effects of releasing pen-raised northern bobwhites on survival rates of wild populations of northern bobwhite. Wildlife Society Bulletin 23:267-273.

Fies, M. L., J. E. Fischer, and D. E. Steffen. 2000. Survival of game farm, F1-Wild progeny, and wild-relocated northern bobwhites using two release methods. Proceedings of the Annual Conference of the Southeastern Association Fish and Wildlife Agencies 54:350-364.

Georgia Department of Conservation and Natural Resources. 2014 (accessed). Pen-raised Quail: Considerations For Release.

http://georgiawildlife.com/node/2256

Hurst, G. A., W. R. Davidson, T. Devos, E. L. Kozicky, and A. D. Peoples. 1993. Strategic plan for quail management and research in the United States: Issues and strategies: Releases of pen-raised quail. Pages 178–179 in K. Church and T. Dailey, editors. Quail III: National Quail Symposium. Kansas Department of Wildlife and Parks, Pratt, KS.

Mueller, B. S., L. Robinette, and J. Wilson. 1997. Progress report number 2: a study to determine the impacts of pen-raised bobwhites on native quail populations. Clemson University, Clemson, South Carolina.

Selph, J. 2014 (accessed). Pen-raised Quail: Their Use and Problems for Wild Birds. Florida Cooperative Extension Service. http://www.wec.ufl.edu/floridaquail/Documents/PEN%20RAISED%20BIRDS.pdf

Sisson, D. C., D. W. Speake, and H. L. Stribling. 2000. Survival of northern bobwhites on areas with and without liberated bobwhites. Pages 92– 94 in L. Brennan, W. Palmer, L. W. Burger, Jr., and T. Pruden, eds. Quail IV: Proceedings of the Fourth National Quail Symposium. Tall Timbers Research Station, Tallahassee, FL, USA.

Skewes, P. A. and Wilson, H. R. 2003. Circular 879: Bobwhite Quail Production. Department of Animal Sciences, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida.

Woods, P. 2013. Survival of Pen-Raised Northern Bobwhite Quail Released Into the Wild. Master's Thesis, Texas Tech University. http://repositories.tdl.org/ttu-ir/bitstream/handle/2346/48887/WOODS-THESIS.pdf?sequence=1

Economic Impact of Whitetail Deer Crop Consumption

Crop losses by whitetail deer around field borders. Significant browsing damage occurred in the middle of fields as well.

By Mark Thomas

Mark Thomas is a Certified Wildlife Biologist/Forester and President of Forestry/Wildlife Integration, LLC. He is also a Past Chairman and current Board Member of the Quality Deer Management Association. Contact him at 205-733-0477 or caribouhunter55@yahoo.com or visit his website, www.forestrywildlifeintegration.com.

Recently I was asked to evaluate a property in the Southeast to evaluate crop consumption by white-tailed deer and their economic impact on the property. The following results of my report may help many landowners because we often see the same problems in many parts of the country. The farm was placed in Trust with Regions Natural Resource Department as part of estate planning over 20 years ago. This was done in order to hand the property down to the heir, insure sound financial management well into the future and reduce tax liabilities. Two Regions employees handle the farm; a Trust Administrator and a Property Manager. There is also a Farm Manager, Crop Advisor and a Crop Duster. My initial evaluation was conducted in October 2013. Hunting whitetail deer had never been allowed on the property and the Property Manager felt that the deer population was too high, reducing the cash flow potential of the property. I usually take a holistic approach to a task like this and eval-

uate the entire property, making recommendations as appropriate. The following subjects, therefore, were addressed:

Whitetail Deer Density/Economic Impact, Poaching Loss, Deer-Vehicle Accidents, Fire lane Screening, RIFA (Red Imported Fire Ant) Control, Non-Native Invasive Plant Eradication, Longleaf Pine Prescribed Burning Regime, Sawtimber Stands, Late-Rotational Sawtimber Stands Low-Quality Hardwood Brush Control.

Whitetail Deer Density/ Economic Impact

According to the Quality Deer Management Association's White-tailed Deer Density Map, this geographical area contains approximately 30 to 45 deer per square mile (640 acres). So, at an average of around 38 deer/square mile in the subject county, there should be approximately 300 deer on the property. In a normal population, a well-managed free-range condition would equate to around 100 bucks and 200 does/fawns, with a 1:2 buck to doe ratio. These 300 deer would consume approximately 2,550 pounds (green weight) of vegetation/crops per day, or around 930,750 pounds vegetation/ crops per year, most of it native browse.

Actual deer density at the subject property appears to be significantly higher than the state average. During my first tour on the afternoon of October 22 with the Regions Trust Administrator, Regions Property Manager and the Farm Manager, we saw a total of 48 deer (5 bucks & 43 does/fawns) for a buck/doe ratio of 1:9. Later that evening, we returned to place 13 cameras at 10 locations and saw another 82 deer (all doe/fawns). We returned the next morning to take up the cameras and saw another 39 deer (3 bucks and 36 doe/fawns) for a buck/doe ratio of 1:12. That was a grand total of 169 deer and we only visited a relatively small percentage of the total acreage, and only for a few hours over two days.

The Farm Manager has witnessed single whitetail deer herds of over 100

Whitetail deer eating pecans. Virtually 100% of all early-drop pecans were consumed, sometimes by over 100 deer in a single pecan plantation.

individual animals on numerous occasions, all feeding on crops, as had the Crop Duster on two occasions in the same day. He witnessed a herd of over 100 deer from the air and questioned the need for a fungicide treatment in that field as he thought that the deer would just eat all the leaves. Herds of over 40 deer have also been observed on numerous occasions. On one 400-acre parcel, herds of 40-50 deer and 30-40 deer have been seen. And on two occasions, herds of between 60 and 70 deer have been observed at one time. In one 38-acre pecan orchard over 70 deer were observed in a single herd, and 30-40 were witnessed several additional times, all feeding on pecans.

It is extremely difficult to accurately ascertain the exact population on the farm without conducting a full 10-day camera census, but it is apparent that the deer density is substantially higher than the state average, perhaps by a two to three-fold factor. This would equate to a deer density of perhaps 100 deer/square mile, or approximately 800 whitetail deer on the farm at any given time. This would also equate to around 6,800 pounds of vegetation/crops (green weight) consumed daily, or around 2.5 million pounds per year, every year. It is impossible, however, to know how much of each crop (corn, cotton, pecans, soybeans, and peanuts) they consume, and how much natural vegetation they eat. Over a 10-year period, assuming the whitetail deer population remained fairly constant (and likely would in the complete absence of hunting) they would eat over 26 million pounds green weight of vegetation and crops.

The deer seem to be consuming vast amounts of the crops and are quite mobile, constantly moving around the property as each crop becomes available. They rely mainly on crop residue and native vegetation during the winter. The camera sites resulted in many photographs of deer, and in only one occasion was a deer in poor physical condition, probably due to EHD (epizootic hemorrhagic disease). One can look at the QDMA Forum and search for "Deer eat Pecans" or "Deer eat Cotton" and read the posts from around the country that discuss how much farmers are losing annually.

Perhaps a more accurate way to estimate deer utilization of crops would be to look at the estimated percent crop loss per commodity/year and subtract the amount that we believe that the deer eat of each. The Regions Trust Administrator provided me with the income figures for the five primary commodities for a three-year period (2010, 2011, and 2012).

The five commodities were corn, cotton, peanuts, pecans, and soybeans. The total cash flow was $4,595,888 for the three year period, ($1,531,963/yr) or $919,178 per crop. There was only one negative cash

flow for one crop over the three year period, so there were 14 positive cash flows with a profitability ratio of 93% which is outstanding!

Now, that is the total for three farms that are held within the Trust. I have ascertained that, based on the number of irrigated and dry crop acres of each farm, the subject farm accounts for 55% of the total income. All the pecans are located at the subject farm.

Next, let's look at crop loss due to consumption by whitetail deer on the farm. I questioned the Farm Manager as to his estimation of each commodity's consumption as a percent and asked the same question of the Crop Advisor, as well as the Crop Duster. The Regions Property Manager and I also looked at the whitetail deer consumption of cotton and pecans and measured the losses in each field. There was some variation in the estimated percentage crop loss from each person, so I took the average percent crop loss.

Crop	*Percent Loss
Corn	15%
Cotton	20%
Peanuts	20%
Pecans	20%
Soybeans	25%

**From Whitetail Deer Consumption (Annual Estimate) Averaged per Commodity*

Applying these percentage crop losses to each crop (total revenue from all three farms) realizes -$75,991 (corn), -$27,019 (cotton), -$246,924 (peanuts), -$531,288 (pecans), and -$15,781 (soybeans), for a total loss for the three-year period of -$1,531,963. We now must take 55% of each of those numbers in order to isolate the loss only from the subject farm.

There are several ways to minimize

Crop	Total Loss	Subject Farm	Subject Farm Loss
Corn	$75,991	.55	$41,795
Cotton	$27,091	.55	$14,900
Peanuts	$246,924	.55	$135,808
Pecans	$531,288	0	$531,288
Soybeans	$15,781	.55	$8,680

Total Loss from subject farm from Whitetail Deer Consumption = $732,471.

Now remember that this is over the three-year period of 2010, 2011, and 2012.

The annualized loss is approximately $244,157 per year, or approximately a quarter of a million dollars per year. That equates to a loss of around $2.5 million over a 10-year period, to look at a longer term view. I suspect that is an accurate figure, and one can say with some confidence that the whitetail deer herd at the subject farm have consumed around $2.5 million worth of crops from 2003 – 2012. Without some adjustment this property will likely realize another $2.5 million loss over the next decade.

the economic loss from whitetail deer predation on cropland. The most common method is the use of regulated hunting to reduce the whitetail deer density. High-fencing is also utilized, but is quite expensive at around $25,000/linear mile. Another negative is the constant opening/closing of gates when moving equipment and harvesting crops as well as continual fence maintenance. Planting food plots can also be done, but in this case the deer would not be able to distinguish between food plots and agricultural crops.

I would recommend leasing the deer/turkey/small game rights at the farm to a local hunting club which utilizes modern archery methods (compound bow/crossbow) only (no firearms). The farm can be certified as a QDM-managed property with the Quality Deer Management Association (QDMA) and also a Wild Turkey Woodland through the National Wild Turkey Federation. You can stipulate terms in the contract with respect to parking (designated areas only along the periphery), doe harvest, ATV use (for deer retrieval only), sanctuaries, buck harvest criteria, etc. Leasing 5,000 acres would generate revenue of approximately $125,000/year @ $25/acre. It would reduce crop predation by deer, increase crop revenue at the farm and potentially reduce deer-vehicle accidents. It would also substantially reduce poaching. The deer harvested would not be wasted, as is currently happening. You may also be able to realize an additional savings by not utilizing the property security firm for the full year. There would be no impact on the existing farming operation.

Poaching Loss

Poaching of whitetail bucks is an ongoing problem at the farm, as the estimated buck/doe ratio of 1:9 to 1:12 indicates. Two older bucks were poached in 2012, there were four arrests in 2011 involving shooting from the paved road, and four dead (shot) bucks were killed in 2010 and found on the property. The Farm Manager believes that these poachers are using night-vision (FLIR – Forward Looking Infra Red) technology. Since the locals know that there is no hunting at the farm, it has become a magnet for poaching, and the lack of hunting is actually promoting this behavior. So, the buck population is not growing and being retained at the farm, but is being poached by night road hunters. EHD (epizootic hemorrhagic disease) is also taking some of the older bucks each year. There is a dead 10-point in the creek right now, likely killed by EHD.

Deer-Vehicle Accidents

The Regions Property Manager and I noticed during our brief tour that there had been two recent deer-vehicle accidents on the paved roads that dissect the farm in the last several weeks.

From July 01, 2011 to June 30, 2012, there were 1,142,910 claims filed (State Farm Insurance) in the United States. This was 13% higher than five years ago, and 22% higher than nine years ago. Much of this increase was in the Southeast. In the Southeast, the number

A moderate red imported fire ant infestation was noted on the property, mainly confined to field borders and within pecan plantations.

of deer killed by vehicles during 2011-12 was 19% of the 2011 total deer harvest in this region. Thus, approximately one deer was hit on the road for every five taken by hunters. From 2002-03 to 2011-12, the Southeast saw a more than 35% increase in deer-vehicle accidents. The best techniques for reducing deer-vehicle collisions are to balance the deer herd with the habitat and make motorists aware of high-risk time periods (spring-fawning and fall-breeding) and areas. QDMA recommends the use of regulated hunting to manage deer herds at levels that are in balance with the habitat which reduces the number of animals that are available for accidents.

This may reduce the liability of litigation in the future and dramatically reduce deer-vehicle accidents along the frontage roads that dissect the farm. My recommendation is to implement managed hunting within the farm coupled with signage at known deer crossings.

Fire lane Screening

Many of the fire lanes intersect the road systems at a 90 degree angle, allowing poachers to shine down the lanes and shoot deer. I would recommend planting a screen of loblolly pine, arborvitae, eastern red cedar, etc. in order to screen these fire lanes from the adjacent roads.

RIFA (Red Imported Fire Ant) Control

I noticed a moderate infestation of red imported fire ants mainly confined to the pecan plantations, field borders and fire lanes. For every visible above-ground mound, there are approximately 20 more subterranean colonies, and a broadcast treatment is the only feasible control method.

I recommend an Amdro® application to the pecan orchards and fire lanes of one pound/acre broadcast. Apply in the mornings when the dew has completely

dried and the temperature is over 84 degrees for optimum results. Do not disturb mounds during the application.

Non-Native Invasive Plant Eradication

The Regions Property Manager and I noticed that there is a significant problem with non-native, invasive plants at the farm, mainly Chinese parasoltree, Chinaberry, and Chinese privet. The Chinaberry and Chinese privet is mainly along the interior road edges and field borders. The Chinese parasoltree is mainly confined to an interior compartment near an old cemetery, and currently has spread to take over approximately 8 acres. I communicated with the Farm Manager concerning the prescribed treatment which includes imazapyr @ a 50:50 dilution with water and applying 1 ml. per injection site with one injection site per 4" DbH. Glyphosate @ 3% by volume with a surfactant can be applied to the leaves to wet for the smaller stems. The Chinaberry can also be injected, and the Chinese privet can be sprayed with 3% glyphosate during the dormant season, prior to March/April. All of this work can be done this fall/winter.

Longleaf Pine Prescribed Burning Regime

The longleaf pine stands from 10-12 years of age are in need of a prescribed burn. I would recommend that these be burned within the next year or two along with a regular prescribed burning regime. Currently around 1,000 acres/year ((917 acres in '09, and 920 in '10) are being burned. This prescribed burning regime is providing excellent habitat for whitetail deer fawning/bedding cover, and for quail habitat. The RIFA is probably keeping the quail population down. One of the indicator species for habitat quality is the desmodium population (beggar's ticks), and there is a very high concentration of this plant in the burn compartments.

Sawtimber Stands

The sawtimber stands that have been thinned at least twice are in need of the final harvest, as economic maturity has passed and many of the stands are

Young pine stands ready for their first thinning, followed by a prescribed burn.

either stagnant or barely growing. There is significant mortality in many stands, and growth right now is not sufficient to counter mortality. I recommend setting these stands up for harvest within the next 2 to 3 years, timing with the increasing sawtimber market.

The southern pine sawtimber market is poised for a major boom, as the Canadian sawtimber supply is shrinking due to two primary factors. The British Columbia pine beetle epidemic has destroyed over 43 million acres of Crown timber, and they are at the end of their salvage operation. The supply from British Columbia will be reduced dramatically over the next two to three years. Secondarily, Eastern Canada has been grossly over-harvesting for a decade now, and it is predicted that their output will drop dramatically over the next several years. There is also a growing demand from China, and this should coincide with the housing market expansion in the United States. Approximately 64 billion board feet will be needed in the United States for the estimated 1.4 million new housing starts. The traditional Canadian market share in the southern United States averaged around 33% but will be reduced to around 20% within a few years.

In summary, the South will have to fill this void, and sawtimber will increase in stumpage value as a result. Further testament to this is the fact that Canada is presently buying high production southern pine mills at an accelerated rate.

Late-Rotation Sawtimber Stand Low-Quality Hardwood Brush Control

Several stands that have been recently thinned are in need of an understory low quality brush control herbicide treatment. The Regions Property Manager and I pointed out these stands to the Farm Manager during our tour. Prescribed burning alone will not sufficiently control the hardwood brush in these areas. Apply 0.5% imazapyr by volume with 0.25% surfactant to the leaves during the late fall for complete control.

Conclusion and Update

I am pleased to report that immediately after reading my report, the Property Owner and the advisors started implementing many of the recommendations that I made. Over 120 white-tail deer were harvested before the end of the season last year and an aggressive program to eradicate non-native vegetation was initiated over the dormant season. This year, plans are to conduct several timber sales, and fire lanes are being prepared for prescribed burning. Red imported fire ants are being eradicated in the pecan plantations, signs are being put up at deer crossings, and understory herbicide treatments to control low-quality hardwoods are being conducted. Lastly, if you are thinking about estate planning, I would recommend placing your land in Trust managed by professionals. And if you suspect your property is not producing the maximum cash flow possible, engage a consultant to provide an objective analysis.

Whitetail Deer Plant Consumption

Whitetail deer rely primarily on native plants and agricultural crops for food. These plants can be divided into three main groups depending on the natural preference in which deer will consume them. First choice foods consist of succulent herbaceous plants like Alabama supplejack, greenbrier, blackberry, lespedeza, and strawberry bush. Second choice foods will start to be consumed when most of the preferred foods are depleted. They include species like American beautyberry and sumac and some of the more woody browse-like red maple, red mulberry and flowering dogwood. Third choice foods are sometimes called emergency foods or stuffers and include sweetgum, blackjack oak, hickory, redbud and cedar. Agricultural crops preferred include soybeans, alfalfa, corn, clover, peanuts, cotton, and pecans. Whitetail deer preferentially browse the most preferred plants first, utilizing less desirable browse later until they are finally forced to browse on emergency/stuffer foods. If you lack herbaceous plants on your property and there is a browse line on your hardwoods and your cedars look like bonsai trees, you have a serious whitetail deer over-population problem. This, sadly, occurs on many properties, especially in our State Parks and other areas where hunting is not allowed.

Think for a moment about the incredible amount of plant materials that are consumed annually by whitetail deer. A single whitetail deer consumes between 8.25 and 12 pounds of plant material daily (green weight) or over 3,000 pounds a year. That does not sound like all that much does it? But let's look at the annual consumption in a single state and then look at the entire whitetail deer range. Let's say that the state of Alabama, for example, has approximately 2.8 million whitetail deer which each consume an average of 8.25

Excellent wildlife habitat in thinned mid-rotation stands after prescribed burning. Whitetail deer would not browse on native plants until after all agricultural crops had been harvested.

pounds of plant material daily, or 3,011 pounds annually. This equates to over 4.2 MILLION TONS of plant material required ANNUALLY! That's over 8 BILLION pounds consumed per year by deer in Alabama. This would equate to over 80 BILLION pounds required in a decade if the deer population remained stable in Alabama. There are approximately 32 million whitetail deer in the United States today. This population is considered super over-abundant and is substantially higher than at any time since pre-recorded history. This is a testament to the hard work done by our State and Federal wildlife departments, hunters/sportsmen, private landowners, and wildlife conservation organizations like the Quality Deer Management Association. The whitetail deer population in the United States consumes approximately 132,000 TONS of plant material daily or almost 50 MILLION TONS annually! This equates to almost 100 BILLION POUNDS of plant foods consumed per year in the range of the whitetail deer in the United States. In areas where whitetail deer are over populated, a significant reduction in overall plant biodiversity has occurred with some preferred plant species having been all but wiped out.

What further complicates this is the fact that exotic, non-native and invasive plants are displacing our native plant communities at an alarming rate. We are currently losing over 4,500 *acres per day* of native plants in the United States due to the encroachment of exotic, invasive, non-native plants. This equates to over 1 and ½ MILLION acres of native plants permanently lost per year. Over 7 million acres of native plant communities have already been displaced. Other wildlife species also consume native plants. Elk, mule deer, antelope and moose populations are all over 1 million animals each in North America. Moose, for example, consume an average of between 40 and 60 pounds of plants per day. In Maine, for example, a population of around 70,000 moose consume around 4 million pounds of plants (including broccoli and potato) per day. This equates to almost 2,000 tons per day, or over 650,000 tons of browse consumed each year by moose in Maine.

Whitetail deer are selective feeders. They choose native plants with considerable discrimination and, in actuality, consume a variety of different foods including acorns, vines, mushrooms, nuts, fruits, grasses, sedges, rushes, forbs, shrubs and twigs from trees. They tend to select succulent herbaceous plants first and turn to woody plant materials later. Food plots utilizing agricultural plants can be a source of highly nutritional food, as can agricultural fields (primarily soybeans, corn, peanuts, cotton, pecans, etc.). But, primarily, whitetail deer rely on agricultural crops when available, as the protein content of these plants is often over 25%, compared to only 10% in native plants. There is, however, little emphasis placed on enhancing native plant communities and little information available that explains exactly how to do it. Yet, it is relatively easy with long-lasting positive impacts usually at a fraction of the cost of establishing and maintaining agricultural food plots. Research has shown up to 40-fold increases in highly preferred native plants with protein contents of 26 to 32%, much higher than the 12-18% minimum required by whitetail deer. And, native plant communities are seldom impacted by drought. Selective herbicides like imazapyr actually release many native plants preferred by whitetail deer, wild turkey, and bobwhite quail. Other desirable native plants are promoted during forest management activities, especially clearcutting. It's amazing how many hunters still do not understand how forest management activities improve whitetail deer food availability. Undoubtedly, the most food available on any hunting club is right in the middle of the most recent clearcut. Mid-rotation pine forests released with imazapyr also have an abundance of native plants preferred by whitetail deer, especially after thinning.

The next time you observe a whitetail deer browsing, remember that 100 billion pounds of plant materials are consumed each year by whitetail deer in the United States. This is why so many of our State Parks that are overpopulated with deer and that do not allow hunting are essentially biological deserts with many deer starving to death each year or fanning out to consume landscape plants in adjoining neighborhoods at night. Follow the advice of your deer biologists when they suggest harvest strategies that reduce deer density by removing does. This will ensure that your deer population stays within the limits or carrying capacity of your habitat. This not only promotes healthier deer but also enhances the buck/doe ratio. Seek advice pertaining to native plant enhancement and learn how to identify preferred native plants utilized by whitetail deer in your area. Follow the Quality Deer Management Association (QDMA) guidelines on protecting yearling bucks from harvesting, thus shifting your population to older age class bucks.

When is Lake Management Complete?

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.

There is plenty to do when your lake gets to where you want it. Enjoying it is one of the things we encourage our clients to do.

The simple answer is NEVER! Many lake owners make the mistake of feeling they have done enough to get their lake to where they want it and stop management practices or discontinue the assistance of their Lake Manager. This complacency comes when fishing has gotten good due to intense management practices performed. This thinking can lead to timely and potentially costly measures to correct issues that arise from lack of lake maintenance after you have reached your goal. Water chemistry, vegetation and fish all need to be continually monitored and addressed even after your lake's objectives and goals have been reached. Once goals and objectives are met, there are still things to be done to keep the quality of the fishery at the level you have achieved, otherwise it can quickly return to where you started, or become worse.

Water Chemistry

Water chemistry parameters in both old and new lakes change quarterly. Water chemistry is the foundation of the aquatic ecosystem. Once your lake has reached your goals, occasionally monitoring water chemistry is still advised.

If you have initiated a fertilization program, checking visibility every two to three weeks from early spring to late fall is mandatory. When fertilizing, visibility should be between 16 and 30 inches. If a Sechii Disk is not used, the trick of lowering your hand into the water off a dock or from a boat is advised, and if you can see your finger tips when most of your arm is under water, add pond fertilizer as directed on the label until water temperatures drop below 60 degrees F in late fall or early winter. Reference: *Southern Regional Aquaculture Center Publication Number 471.*

Also associated with fertilizing is water pH. If the pH gets too low, it will not allow an algae bloom to occur and lime will need to be added. We recommend adding lime in late fall to get it right so nutrients can produce planktonic algae (green water) next spring. The reason lime should be added in fall is so it has time to completely dissolve and gradually improve the pH to a desirable level for fertilizing. Reference: *Southern Regional Aquaculture Center Publication Number 4100.*

Vegetation

If vegetation begins to appear and fertilization has been stopped during the growing season, watch to see if there are too many plants present above or below the surface to allow an algae bloom. When nutrients (fertilizer) are put into a lake, they will be used by planktonic algae, filamentous algae, submerged or emergent plants.

Shoreline and submerged aquatic vegetation, including algae (filamentous and planktonic) must constantly be monitored and treated as needed. Letting a plant species go in hopes it will correct itself can render a costly mistake and possibly be detrimental and even catastrophic to the fish population you have worked so hard to develop. Once a potential invasive or problem plant appears, it needs to be identified by species, labeled as beneficial or detrimental, and if needed, treated with herbicide immediately. The earlier the herbicide treatment is performed the better your results and the less expensive. If a plant gets out of control and covers a large portion of a waterbody in

This lake dam has multiple species of trees growing on it. Treating with herbicide and cutting down or mowing of unwanted hardwood and pines should be done annually so they do not get out of control.

late spring or summer, treating it can put your fish population in jeopardy by stressing or killing them with a sudden drop in Dissolved Oxygen (DO) caused by decomposing plant material. Some plant species have the capability of reproducing and spreading faster than you think. Your pond may look good today but after a few large rains with high nutrient runoff over the next few weeks, the situation can leave you scrambling and losing ground on your perfect lake. If a chronic vegetation problem exists, consider stocking grass carp. Be sure the problem plant species is consumed by grass carp prior to stocking. Not all plants are consumed by grass, and very little filamentous algae.

Filamentous algae is one of the most common nuisance plant species we encounter. Many call it pond moss or scum and can turn a very nice, aesthetically pleasing water body into a mess in a short period of time if unchecked. This is caused by excess nutrients whether already in the lake, washing in from nearby uplands, or being added to produce a planktonic algae bloom. Besides treating the algae with herbicides, (usually copper based products) the cause needs to be identified and reduced or eliminated, if possible. If a fertilization program is in place, this can be a vicious cycle of fertilizing and spraying if not done properly. That is why staying on top of a fertilization program is mandatory. As water gets clearer, other plants besides the planktonic algae are absorbing the fertilizer and growing. The fewer nutrients available for planktoninc algae growth, the clearer the water and the better other plants grow above and under the water surface.

Common invasive plant species always need to be monitored and kept in check. A few other plant species besides algae that grow and spread quickly include bushy pond weed (Naiad), Hydrilla, watermilfoil, Salvinia, water hyacinth, primrose, water lettuce, cattail and duckweed. All these species, as well as some other fast growing ones, need to be closely monitored as they can get out of control quickly. A shoreline hardwood species such as willow needs to be addressed on an annual basis, because they can quickly spread, get out of control and become costly to treat and/or mechanically removed. Once a year, unwanted trees need to be treated with herbicide, cut down and treated to prevent regrowth, especially on the dam, as no trees should be allowed to grow on the dam for any length of time. To encourage soft tissue plant growth and reduce unwanted hardwood and pine growth, annually mowing the shoreline in late winter is advised. If you are treating any vegetation in or around your waterbody yourself, contact your professional lake manager or herbicide rep to discuss the techniques and herbicide options that will best solve your problems. Too many landowners are provided wrong information or advised to use herbicides illegally from family members or friends who are “lake experts” that cause issues in the future, or do not achieve the desired goal.

This lake is full of bluegill feeding heavily on the fish feed and has been dyed to reduce unwanted submerged vegetation and filamentous algae growth.

This electrofishing sample indicates not enough small largemouth bass have been taken out to keep bass growth at a desirable rate.

Checking the proper operation of fountain and aeration systems every six months helps prolong the life of the pump and other parts.

Fish Attractors

Refurbishing natural material fish attractors is required about every three to six years, depending on what material was used. Christmas trees will lose their needles and small branches after a couple of years and after four, all that is left is a trunk and weights and floats. Oak tree tops will last four to six years, but will need more material added when they become sparse with cover. That's why we prefer to use artificial materials. Reference: *Wildlife Trends Journal July/August 2012 Volume 12, Issue 4.*

Aeration and Fountains

Cleaning and servicing fountains and aeration systems is required every six months to two years, depending on the type of system you have. Fountain heads can become clogged with algae and/or calcium. If your system has aeration stones, they need to be cleaned about every two years with muriatic acid and a brush. If your pump is oil or carbon vein, they should be inspected and parts replaced as the manufacturer recommends. Check air filters and replace every six months, and always check that cooling fans are running properly to ensure the pump does not overheat and cause undue breakdowns or inefficiencies.

Feeding

Supplemental feeding of fish is constant if water temperatures are above 55 degrees F. Allowing feeders to go empty and not feeding for several weeks is unadvised when a lake reaches its carrying capacity, especially if it's an intensely managed lake. You have artificially created a higher carrying capacity than a natural, un-manipulated waterbody, so the feeding program that's been in place for some time needs to continue uninterrupted.

Fish Population

Maintenance to the fish population may include evaluating, stocking and harvesting. We recommend conducting

This lake has constant filamentous algae and submerged aquatic vegetation problems, but identifying the source of excess nutrients didn't take long.

an electrofishing survey every two years to determine fish species present, abundance and health. Even if your lake is just the way you want it, it will change, and those changes need to be documented, management strategies validated and current management techniques adjusted to correct any foreseen future issues. Electrofishing also can predict gaps in the near future of forage sizes and species make up, which allow stocking plans in the future to assure no size class of largemouth bass are left with too little food and growth rates slow.

Stocking forage, either to introduce a new forage species or to replenish depleted forage may be required once a lake reaches quality or trophy status. This refers back to electrofishing results and looking at stomach contents when harvesting smaller bass to see what they are feeding on and how plentiful the forage size for that size bass is available. Also, if a species that does not naturally reproduce such as channel catfish, striped bass hybrids, or species that were stocked as bass forage knowing they would not survive the summer (trout) or winter (Tilapia) will need to be restocked every year, every other year, or whenever numbers become depleted. Again, if you are working with a professional lake manager, do not stock any fish without consulting them first. A good consultant will not mind and should not charge you for a few minutes of time on the phone or via email addressing your desires of stocking, whether you want to replenish an existing species or introduce a new one.

Removing bass is a constant task, needing to be done every year. Reducing bass numbers and having abundant forage for remaining bass is necessary in all size groups to keep growth rates high. Once you get a largemouth bass population, even to trophy status, removing some individuals is an ongoing chore. This is a common mistake among lake owners, once they start seeing more forage and abundant bigger bass, they stop harvesting bass in the designated slot that was prescribed. Or they do not adjust the slot as needed to alleviate the "bottle neck", wherever that may be within the population. If this is not feasible for you to

remove fish, get friends and family to help or talk to your lake manager and if they have an electrofishing rig and your state allows it, the required number of bass you need to remove can be done by electrofishing. Continually keeping on friends and family to not harvest fish outside the determined slot is very important. We have seen a lake drastically improve over a two year span, only to be drug back to its original shape due to friends and family harvesting larger fish to the point where they were sneaking out four to seven pound largemouth bass on a regular basis, decimating the quality population and turning back time on all the work done to get the population to that point. Electrofishing results documented the drastic decline in quality fish, and investigation and spying by the landowner exposed the harvesting of quality fish, despite the angler's knowledge of the harvest guidelines set to create a trophy fishery.

Final Thoughts

The final task to do on a regular basis with your waterbody is to enjoy it! Too often we see great lakes developed and the owner never enjoys the fruits of his labor. Spring is the best time to fish ponds. For largemouth bass it's the pre spawn. I have fished three acre lakes for only three hours and caught over 25 bass of various sizes ranging from 1 to 8 pounds. When they are biting like that, removing bass becomes easier and reaching your recommended harvest goal doesn't become a chore. There is no more thrill than catching largemouth bass at dusk from a pond with topwater lures. For bream the best time is late winter to late fall. The hotter it is, the earlier and later in the day you should fish. We have a client in Georgia who fishes summer evenings with crickets after 8:00 PM a couple of nights a week, just to catch a mess of bluegill for a dinner that week. Black crappie fishing peaks in early spring but is fairly good fall through spring. For catfish, early in the day and late afternoon with worms, chicken livers and hotdog pieces work best. It's a lot of fun catching your own 14-20 inch catfish and frying them up the same day they are caught.

There is no doubt, once your lake gets to your desired goal, the time and money needed to keep it at that level is reduced, but management does not stop. Some tasks will always need to be performed and the quality of the lake will depend on it. You will get some fluctuations in quality from fish population dynamics and Mother Nature (flooding or drought), but the more you stay on top of the routine tasks the less fluctuations you will observe, and the more your lake will stay where you want it. Your lake manager should provide you with a quarterly calendar for two to four years out when he creates a management strategy. This will help remind you what needs to be done and when, especially if you or your staff are performing most of the work yourself.

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Wildlife Trends Journal Management Calendar

By Dave Edwards

October/November 2014

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.

Creating soft edges in fields and along roadsides is easy to do and creates valuable wildlife habitat

Mow lanes through CRP areas, grassy powerlines, or standing corn fields to provide additional hunting opportunities

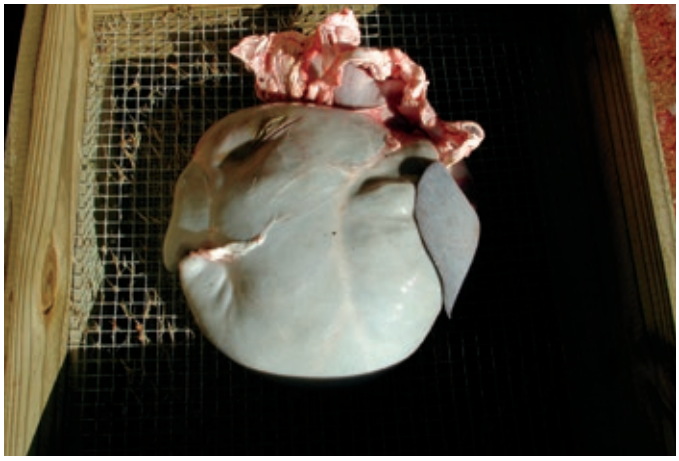
Growing mature bucks is relatively easy to do if you stick with a sound deer management program geared towards quality deer management. However, harvesting mature bucks is another story. Through my experience, there is no better place to observe and/or harvest mature bucks than in a long mowed lane that runs through thick cover (e.g., clearcuts, young pine stands, chest high grassy areas, corn fields, etc.). This thick cover is where the mature bucks live. These lanes offer bucks a sense of security which makes them more apt to use these areas during daylight. They know that with a quick bounce, they are in heavy cover and safe. Mowed or disked lanes through thick cover also provide great travel corridors to connect woodlots or mature timber. Deer will often take the path of least resistance and will use these lanes to travel which can make for some exceptional bow hunting opportunities. Mowing a wagon wheel pattern or hub & spoke design works well for gun hunting if the situation allows for it. If designing the set up for bow hunting, make sure the lane runs close enough to the stand site for a close shot. These areas make for some exceptional hunting, particularly during the rut.

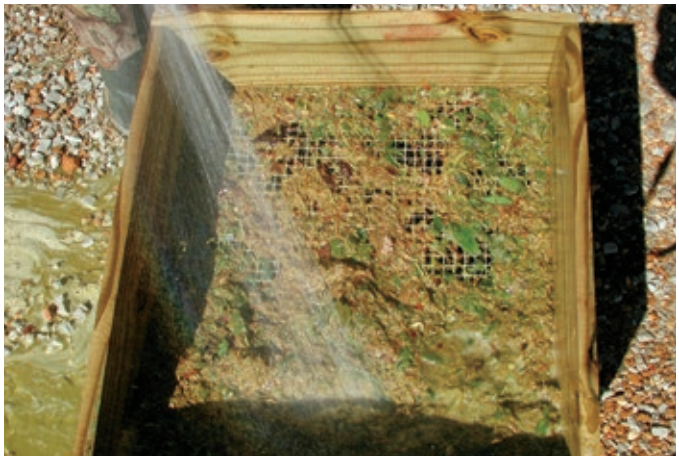
Scout from the skinning shed

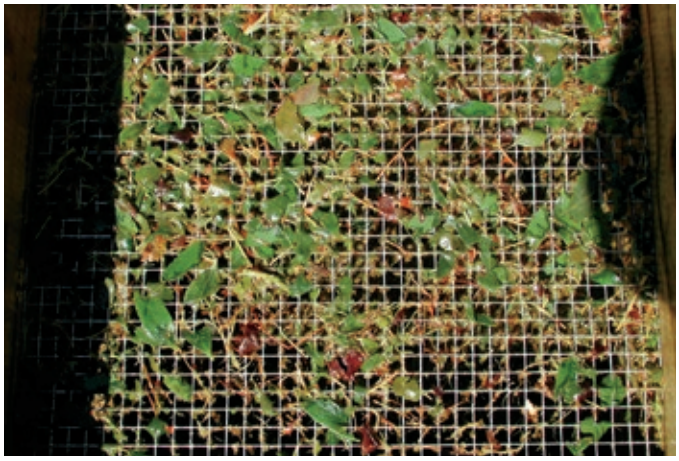
How many times have you found a great place on your property to hunt that had everything – great food sources, cover, maybe a few deer trails and rubs… set up a stand, sit there all day with anticipation and never see a deer? Or worse yet, have you ever convinced yourself that "this is the place, it's just a matter of time" and spend a weekend committed to a single stand and not see much of anything? I have, and it isn't much fun! Don't get me wrong, I don't have to kill a deer every time I go to the woods, but I at least want to see some action. It was very likely that the area I was hunting was indeed a "good area" and had all the ingredients of a prime spot, but the deer simply weren't using it at the time. It is also very likely that there were either abundant food sources or more preferred food sources available somewhere else on the property. Like me, deer are slaves to their stomachs (or rumens). They feed many times each day. Thus, food is what drives most deer movement. Deer movement results in successful hunts. The key is to know where deer are bedding or loafing, which food source they are using, and position yourself in a strategic location near the food source, bedding area, or between the two and you're in business.

Effectively scouting by traditional techniques is certainly necessary to consistently have successful hunts. However, traditional methods require a good bit of time and energy on your part, which for most of us is limited. Besides the time required, traditional scouting techniques require the hunter to "ramble around" the woods disturbing deer and leaving a lot of scent behind. This is where scouting from the skinning shed comes in handy, will minimize "scouting pressure", and can save precious time that can be spent on stand.

Scouting from the skinning shed simply refers to inspecting the rumen contents of harvested deer to determine available and preferred food sources that deer are using at that particular time of the season. "At that particular time" is important because food sources change from week to week. To do this, simply cut the rumen (stomach) open and look to see what's inside. A word of caution: if the rumen is bloated or tight, release pressure slowly with the point of your knife before slicing….and turn your head or you may be inspecting your own stomach contents! Although the contents often look like a green gooey mess, with some inspection the primary food sources the deer has been eating should be obvious. It helps to dump the contents on the ground or concrete pad and run some water over it. I keep a "scouting box" at the skinning shed that makes the job eas-







Investigating rumen contents of harvested deer is a quick way to determine what deer are eating. Using this information to select stand locations often leads to more successful hunts.

ier. The scouting box is nothing more than a wooden box with a hardware cloth bottom. This box allows you to dump the stomach contents onto the screen and wash away the more digested/fine particles leaving only the larger pieces behind. Stomach contents often include various leaves and acorns. Simply identifying what deer are eating will help you focus on specific areas of your property, leading to more productive hunts.

Ensure proper pH to save money when planting food plots

If you haven't been to the feed store in a while, hold onto your hat – or maybe your wallet. Due to the increasingly high cost of oil and the search for alternate bio-fuel sources, the cost of fertilizer, corn, and many other seeds have more than doubled over the past few years. Because soil pH plays a significant role in the ability of plants to uptake nutrients (fertilizer), you can save money by adequately liming to ensure proper pH levels are maintained in your food plots. With a balanced pH, plants will be able to use nutrients already in the soil along with the most expensive ingredient of food plot planting - the fertilizer. The accompanying photo shows the difference in plant growth of Egyptian wheat with proper soil pH vs low soil pH. Both areas received the same fertilizer and rate. However, the area on the left was limed to adjust soil pH above 6.5 while the area on the right was not limed and had a soil pH of 5.2. The difference is quite obvious. Liming can be done anytime during the year. However, because it can take 3 to 6 months to effectively change soil pH, applications of lime are often done in spring or summer.

Save leftover seed from fall food plots

If you have food plot seed leftover after planting this fall, save it! Some seed can remain viable for a long time and can be used next year; particularly if it is stored in a dry/cool place (I often use a walk in cooler to prevent problems with rats and bugs). When planting time comes around next year simply conduct an easy germination test to determine if the seed is still good. Take 10 seeds and place them in a moist paper towel in a window sill. Monitor and keep the towel wet/damp over the next week to 10 days. If 6 of the 10 seeds germinate then your germination rate is roughly 60%. Adjust planting rates accordingly to ensure adequate coverage is obtained. Don't toss that old seed out - planting old seed can save you money.

Where possible, leave field borders and/or summer crops standing for additional winter cover

Deer, turkeys, and quail use thick habitats along field edges for loafing, escape, bedding, and nesting cover. There are a few options I often use to create field borders – simply leaving a border of natural vegetation around the perimeter of a food plot or plant summer crops along the edges and leave them through winter. To manage a natural field border, mow the borders in late winter every few years or as needed to maintain vegetation and saplings at a manageable height. When leaving a summer crop, there may also be some seeds left from the crop that will pro-

Soil pH plays a vital role in plant growth. Egyptian wheat on the left was limed to achieve soil pH of 6.5 while plants on right were not.

vide additional food sources during the winter for turkeys and quail. Standing dead summer crops such as grain sorghum, corn and millets provide additional edge habitat and can be used to create "soft edges" along areas where food plots or fields abruptly meet mature forests. Soft edges can provide areas where deer feel safe and comfortable as they enter a food plot. Deer will often emerge from the woods and stand in the soft edge habitat as they check the field for danger. This provides hunters an opportunity to observe and judge deer before they enter the field.

Consider split applications of nitrogen on food plots (not on perennial legume/clover plots)

Applying a split application of nitrogen means that you apply half of the recommended rate of nitrogen at or slightly before planting time, then apply the remaining half a month after crops have germinated and are growing. Split application reduces the exposure of nitrogen in the soil to elements that can create losses such as leaching and denitrification. The second application of nitrogen provides a boost to the growing crop when it can utilize the added fertilizer resulting in better forage production. Before deciding to apply this technique, consider normal rainfall and soils of your property. If you are in an area that receives a good bit of rainfall during early winter and your soils get muddy easily, preventing you from driving on food plots with equipment needed to spread the second application of fertilizer, split applications may not be an option. Not only will applying a boost of nitrogen increase forage production, but deer and turkeys are attracted to plants that are nutritious and actively growing which will result in better hunts on your property.

Record and utilize deer hunting observations

Quality deer management involves more than producing quality bucks. It should create quality hunting experiences as well. Collecting hunter observation data (where hunters record the number of deer and quality of deer they see while hunting) allows you to monitor the hunting quality of the property. Adjustments in management strategies can be implemented accordingly to promote quality hunting. Additionally, hunter observation data is a great (and cheap) method to help assess some parameters of the deer herd. Although a camera census is, by far, the most accurate way to collect information regarding the deer herd, trends in population parameters such as the adult sex ratio, buck quality, and fawn recruitment can be monitored with hunter observation data. However, for this data to be meaningful, it must be collected accurately each year to track trends in the data. Hunter observation data is also a good way to assess hunting strategy success. When recording this information hunters generally record when and where they were hunting (e.g., PM-food plot, AM-woods, AM-clear cut, etc.) and what they saw. When the data is analyzed, it provides insight as to which hunting methods and which areas are most productive for the property. For example, through hunter observation data collected throughout the season, you may find that hunters saw more mature bucks per hunt in thinned pine stands in the morning verses the afternoon. Thus, you can adjust your hunting strategies to enhance the productivity of your hunting time. Like most data, as you begin to collect enough over time, trends in the data will begin to paint a picture. Remember to record observations from every hunt even if you do not see any deer.

This simple test allows you to determine the viability and germination rate of seed.

Conduct a camera survey to assess the status of your deer herd

If you are a long term subscriber to Wildlife Trends, you have seen this calendar task in many fall issues. The reason is simple. Conducting a camera survey is one of the most powerful and useful tools available to assess a deer herd. Monitoring the status of your deer herd is the backbone to the success of your program. Collecting and recording harvest data (weights, measurements, ages, etc.), hunter observation data (number, sex, and quality of deer you see while hunting), as well as population surveys provide information about the deer herd that will allow you to make sound deer management decisions and adjustments in strategies where needed to accomplish your goals. Without this information you are simply guessing. If you are like me, you spend

way too much time, money, and energy managing your property to just guess on how many and which deer to harvest this season. I want to know. Conducting a camera survey is the best way to get an accurate assessment of the status of a deer herd (number of deer, buck quality, fawn recruitment, etc.) and make buck harvest decisions before you head to the woods. The best times of the year to conduct a deer survey is when natural food availability is at its lowest which is generally late summer/early fall and late winter before spring green up. Most managers conduct fall surveys (September through early November) because they also use the photographs to make buck harvest decisions before hunting season. We generally try to conduct our surveys soon after bucks shed velvet but before the majority of acorns start to drop.

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

Why guess when you can know? Conducting a camera survey is the most accurate way to assess a deer herd and put you on the fast track to reaching goals.

Wildlife Trends Journal
Pond Management Calendar

By Scott Brown

October/November 2014

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@southernsportsmanaquaticsandland.com or (336) 941-9056.

Fall work around your waterbody doesn't always mean no play. By the look on this young man's face, plenty of fun was had by all in the waterbody behind him.

Remove Largemouth Bass

Largemouth bass harvest is necessary to develop a trophy bass fishery. Spring is one of the easiest times to catch bass, but if harvest number goals have not been reached, try and catch remaining fish prior to winter, when catching bass becomes the most difficult. If it's 13-16 inch fish being targeted, do not take all 13 inch or all 16 inch bass, but evenly distribute the harvest. Invite family, friends and neighbors over to catch bass and let them take home or have a giant fish fry. Try some middle of the day angling in cooler weather while not on the deer stand. Check your state's regulations on the number per day that each angler can harvest from private lakes. Some states have no regulations on fish caught from private waterbodies, while others are very strict.

Treat Nuisance Aquatic Vegetation with Herbicides

Any troublesome vegetation during the summer that was not treated should be treated before the growing season ends. Ask your herbicide supplier or Lake Consultant which herbicides work best on which plant species during the fall. Some plant species treated in fall may respond best with a different herbicide than in spring, or vice versa. When using herbicides near or in water you should have a professional, certified, licensed and insured applicator perform the work. Aquatic herbicide applications

Although spring is the best time to electrofish, good samples can be taken during the fall to evaluate a fish population.

Some plant species treated with certain herbicides respond well to fall treatments to reduce unwanted plants like these cattails that have been allowed to get out of control.

are much more complicated than performing these tasks on uplands. Done improperly they can result in a partial or entire fish kills. And depending on the circumstances, anything downstream can also be in danger. Fish can perish from direct contact of improperly used herbicides, but more often are affected by decomposing vegetation which can cause low Dissolved Oxygen, leading to stress or a fish kill. A low DO fish kill is of very little concern when performing a fall herbicide application, but still needs to be considered when large percentages of the lake must be treated.

Conduct an Electrofishing Survey

Spring is the best time to conduct a fish survey (electrofishing), but fall is the next best time. These surveys provide a starting point and/or assess previous management practices, which results can be used to make sound management decisions and help you reach your goals. Electrofishing allows us to obtain a snapshot of the entire fish population, not just the species and sized individuals that are caught on hook-and-line. These surveys should be done every two or three years. They are a critical management tool in the decision making process for your waterbody. It is best to conduct these surveys during the same time of year for a particular waterbody. However, with care in analyzing the data, the samples do not always need to be taken during the same season (spring or fall). Reference *Wildlife Trends Journal* Volume 12, Issue 2, March/April 2012, Electrofishing: How it Works and What Biologists/Managers Get Out of it.

Stock Fish

If you are developing a new lake, stocking forage in the fall followed up by bass in the spring is acceptable in the Southeast. This gives forage time to grow and prepare to spawn next spring when fingerling bass are stocked. Almost no private lake requires restocking of largemouth bass. However, for-

This fountain is clogged (notice how the spray pattern is not uniformed) and needs to be cleaned. It can be and should be cleaned any season, as long as you can tolerate the air and water temperatures to perform the work.

age fish such as threadfin shad, trout or yellow perch can be stocked in fall. In the Southeast, threadfin shad stocked in early fall have shown on occasions to spawn prior to winter, providing an even greater amount of forage in fall and spring the following year.

Prepare to Stop Fertilizing

Stop your fertilization program once water temperatures appear to stay below 60 degrees F. A waterbody with an algae bloom is more productive, meaning it can grow larger fish and more of them than a clear waterbody. Planktonic algae (green water) does not grow in winter in most of the United Sates other than extreme southern climates. Done correctly it also helps shade out light, which helps control submerged vegetation growth during the growing season. Check water chemistry parameters to make sure pH, hardness, alkalinity and conductivity are within the desirable ranges for a successful fertilization program next spring. If the above parameters are not within desirable ranges, coordinate liming the lake late fall to early winter so lime has time to dissolve and gradually adjust parameters associated with fertilizing to desirable levels.

Stop Fish Feeding or Change Feed Type

Stop your feeding program when water temperatures are continuously below 55 degrees F or change from floating to sinking feed. It is recommended to have approximately one feeder per five acres of water. If desired, switching to sinking feed in colder months and feeding once per day during the warmest part of the day in 4-6 feet deep water is advised to maximize feed consumption.

Enjoy the Fruits of Your Labor

Take time to enjoy the lake and do some fishing. Sportfish will be feeding after a hot summer either preparing for winter or because they hadn't fed well when water temperatures were elevated due to long, hot summer days. Catch a mess of small bass, big black crappie, bluegill or 16-20 inch channel catfish to make memories and dinner. A fish fry at deer camp is just another way for friends, relatives and youth to enjoy their days afield. Maybe shoot a few doves or waterfowl around the pond a few times during the fall.

These ducks heading south stopped for a few days. They can be enjoyed and admired while watching from the dock, or with a few decoys from a cattail patch with a shotgun!

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