Avoiding Timber Harvest Pitfalls

A timber harvest can be your most *valuable* tool in designing quality deer habitat, but only when used after *careful preparation and planning*.

by John Donoughe and Mike Wolf

Every woodland owner who has or may have marketable timber wrestles with a series of related dilemmas: Should I or should I not harvest timber? When? This year? Five years from now? Or should I let the trees mature and add value for another decade or so? Which timber harvest strategy should I use – clearcut, selection cut, or one of the myriad other choices? How do I get started?

Landowners who also practice QDM will have additional concerns. What impact will a timber harvest have on whitetail habitat and resulting carrying capacity? Will my land be more or less attractive to deer and other wildlife following a timber harvest? Could a timber harvest be used to help concentrate deer in a certain portion of my property or funnel their movement?

First, the good news: Owning marketable timber is not a dilemma! A good timber harvest can improve wildlife habitat, increase the growth rate of valuable timber left on site, and put a nice chunk of change in a landowner's pocket.

Deciding which trees are harvested and which, if any, remain is a critical decision not to be left to the timber buyer. Ensure that a professional forester is on your team for planning and implementation.

Now the bad news: Good timber harvests may be the exception rather than the rule. A timber harvest that satisfies a conservation-minded landowner's desire to improve habitat does not happen by default. Such harvests are the result of education and planning. Leopold Landscapes require work, time and knowledge to create, and good timber harvesting can be an essential step in the process. Landowners who believe that good things come from all timber harvests often learn the hard way that their habitat has been degraded, their timber has been high-graded, and they've been paid far less than the potential value of the timber they've sold.

How can you avoid disaster? Above all, don't rush! Take the time to familiarize yourself with the process

and the possible strategies for improving your forest and your hunting.

For readers of *Quality Whitetails*, land stewardship is a guiding principle, and ownership objectives are often more visionary than simply turning a quick profit. However, economics are a major part of managing forest resources. Timber is a valuable commodity and money will and should play a role in our forest management decisions. After all, creating and maintaining food plots, purchasing equipment, and building roads and bridges all cost money. Timber assets can be properly utilized to support such land improvements. Using our resources wisely fits well with the ideals of stewardship and long-term management.

To familiarize *QW* readers with the foundations of conducting a successful timber harvest, we're pointing out the most common mistakes that can and often do lead to habitat degradation and financial rip-offs. These are the DON'TS of timber harvesting. For the flip side of the coin – the list of DO'S that are your best bet for ensuring the positive biological and financial results – see the sidebar entitled "The Five Essential Steps."

Any timber harvest should be part of a larger, long-term management plan. On this topo a single property, outlined in black, is divided into individual forest stands. Each stand will have a unique managememt prescription based upon site conditions and landowner objectives.

You'll notice that throughout this article we refer to a "forest management plan" or simply a "plan." This is the last of our Five Essential Steps, but it's really the game plan that outlines when a timber harvest will be conducted, in which forest stands and with which type of harvest strategy. The plan is written only after a thorough inventory of the site conditions of the property. For a hunter and conservationist who considers forested hunting land to be a legacy, a single timber harvest is rarely conducted in isolation. Each harvest is a step that brings a landowner closer to larger goals. Develop a plan to help you see the larger picture before cutting trees that probably can't be replaced in your lifetime.

One article can't possibly cover all the variables involved in ensuring the best results from a timber harvest on all properties, but the principles outlined here will help steer any landowner in the right direction.

No two timber harvests are alike. Your objectives, site conditions, soils, geography, region of the country, property size, budget, and other factors will all contribute to the uniqueness of your harvest. The following pitfalls are common mistakes made by landowners. Be aware of them, and make sure that each issue has been discussed with your consultant before finalizing any timber harvest contract.

BIOLOGICAL PITFALLS

1. Failure to Assess Advanced Regeneration

The principle of ecological succession tells us "If you cut a forest, something will grow to replace it." True enough. But what will that something be? You should have a specific goal or goals for regeneration. Some species need a lot of light to germinate and develop and other species need very little light. A well-planned timber harvest controls the amount of sunlight that reaches the forest floor to encourage certain types of seedlings to grow. However, predicting the species that will dominate your next forest can also largely be accomplished by a close examination of the trees, shrubs and plants that make up the understory of the current stand. The seedlings currently established on your land have the jump on those that will germinate in the spring following a timber sale. You or a forester can survey the site of your proposed timber harvest to assess the quantity and species composition of stems. If, for example, oak and hickory seedlings are well-represented in the understory of an oak-hickory stand, your odds of successfully, if slowly, regaining valuable browse, mast, and timber are high. Let's say your property is a mixed forest of large oak, maple, tulip poplar, hickory, cherry, and basswood. If a survey of the forest floor reveals a preponderance of cherry and red maple seedlings, you should be careful of any harvest plan that greatly reduces oak, poplar, hickory and basswood. Species diversity is an

Continued.

The Five Essential Steps

1. Come to Grips With the Complexity of Forest Management

The sidebar on the next page, "Know the Lingo," will familiarize you with some common terminology. The complexity of the various options makes it clear that picking the brains of several experts would be to your advantage.

2. Seek Expert Advice

Gather all the free advice you can. Most state natural resource agencies have county or regional service foresters who will discuss the potential problems of which any landowner in your region should be aware. The same is true of university Cooperative Extension agencies, and don't overlook forest landowner associations. These organizations promote responsible management by offering seminars and giving tours of well-managed properties.

3. Pay a Professional

You need to have an experienced pro looking out for your interests. Period. Interview as many candidates as possible to determine which has the experience that best matches the objectives for your property. Landowners with QDM-focused objectives will also want to incorporate deer and wildlife-specific habitat initiatives into their management plan. Some foresters are qualified to plan and oversee both silvicultural and wildlife management strategies. In some cases, landowners will do best to hire both a forester and a wildlife biologist to collaborate on a forest management plan.

4. Set Clear Objectives.

There are many potential objectives that can be achieved by harvesting timber: immediate cash flow, long-term income, deer and wildlife habitat improvement, road-building and access, food-plot development, etc. These objectives are not necessarily conflicting, but, generally speaking, a greater emphasis on one de-emphasizes another. This is why it's critically important to establish a clear, prioritized list of management objectives.

5. Develop a Plan.

A sound forest and wildlife management plan is a guide that will direct a landowner's actions over years and decades. It will change as unforeseen conditions change, as landowner objectives evolve, and as new management strategies are brought into use. However, it's very important that your land's potential be thoroughly assessed before any major steps are taken. A management plan will include topographic maps with property boundaries, possibly aerial photos, a soil map, and the boundaries of stands of timber. Most plans have a 10-year limit. At that point the property is reassessed and the plan is updated. Other items that would likely be included or that you could specifically request include a 10-year activity schedule to be utilized by the owner as a timeline and checklist of activities.

indicator of forest health and stability and should be encouraged.

If plant species such as ferns or grasses cover a high percentage of your land, it's a sign of trouble ahead. To foresters, ferns and grasses, as well as many alien invasive plants, are known as competing vegetation.

2. Failure to Assess and Address Competing Vegetation

Kudzu. Mile-a-minute. Tree of heaven. Japanese knotweed. We utter these and the names of other invasive plants through clenched teeth. Though the species may vary by region of the country, many invasive plants share a common characteristic: they do best in recently disturbed soils open to full sunlight. In other words, timber harvest operations can be an open invitation for invasives that come to dinner and decide to stay.

Each part of the country has its own version of highly invasive plants such as this multiflora rose bush pictured here. In many cases, a forest manager has no choice but to treat competing plants with herbicide prior to harvesting. If left unchecked, plants like multiflora rose may completely take over after a harvest.

Hay-scented fern, common grasses, fire cherry, and striped maple have not invaded our shores, but these and many other native plant species have little or no value as future mast, browse, or lumber producers. Like weeds in a garden, these and other competing plants will rob desirable tree species of sunlight and nutrients, and they may spread very quickly in new forest openings. Many foresters consider 30 percent competitive ground cover to be a tolerance threshold. If 30 percent or more of the ground is covered by competing plants, you will need to consider treating those plants with herbicide prior to a timber harvest.

A competent, professional forester will address competing vegetation in a forest management plan. Are invasives or other competing plants a problem in your area? Should herbicides, burning, or other strategies be employed to minimize the risk? How expensive will it be? Get it all on the table and into the plan right up front.

The consulting forester may prescribe burning or herbicides to treat the land before or after a timber harvest. All of these practices will incur cost and will decrease from the immediate receipt from your timber sale. In some cases cost-sharing may be available; in others the cost of the practices compared to the value of the timber may be prohibitive. You may decide against either the practices or the timber harvest for that reason, but there is no reason that you should not be aware of the risks.

Know the Lingo

Best Management Practices (BMPs) – A written set of standards designed to eliminate or greatly minimize erosion, sedimentation and waterway pollution during and after a timber harvest.

Diameter-Limit Cut – at harvesting practice in which all trees over a specified diameter may be cut. Diameter-limit cuts are rarely good for the resource or the landowner and often result in high-grading.

Forest Management Plan – A written document for your wooded land that likely contains stand mapping, soils mapping, topographic maps, aerial photos, stand analysis/inventory data, management recommendations based on your unique ownership objectives, a 10-year forest management activity schedule, and more.

High-Grading – a type of harvest in which larger trees of commercially valuable species are removed with little regard for the quality, quantity, or distribution of trees and regeneration left on the site.

Performance Deposit – A cash or bond amount that is held in escrow until the completion of a timber harvest. The amount of the deposit depends on the value of the residual forest (unmarked trees) and/or the potential value of any site damage.

Regeneration – the replacement of one forest stand by another as a result of natural seeding, sprouting, planting, or other methods; also young trees which will develop into the future forest.

Seed-Tree Cut – a regeneration cut where mature trees are left standing in a harvested area to provide seed for regeneration of the cut-over site.

Selection Cut – a regeneration strategy designed to create and perpetuate an uneven-aged forest. Trees may be removed singly or in small groups. A well-designed selection cut removes trees of lesser quality and trees in all diameter classes along with merchantable and mature high-quality sawlogs.

Selective Cut – a timber harvesting practice in which only the largest, most valuable trees on the site are removed. This can result in high-grading.

Shelterwood Cut – a regeneration cut designed to stimulate reproduction of an even-aged forest by removing all overstory trees. This is achieved by a series of cuts over several years. Gradual reduction of stand density protects understory trees and provides a seed source for stand regeneration.

Stand – a group of trees sufficiently uniform in species composition, age, and condition to be distinguished from surrounding vegetation types and managed as a single unit.

Timber Stand Improvement (TSI) – a combination of treatments over many years that may involve cutting, burning, bulldozing, applying herbicides or other practices designed to improve growth and compostition of the forest.

3. Failure to Assess and Address Deer Impact

Where deer densities exceed the carrying capacity of the habitat, regeneration will be reduced, sparse, or nonexistent; and problems with competing vegetation are virtually assured.

Heavy deer browsing can change the species composition of the forest. Indicators of heavy browse impact begin with subtle changes such as seedlings that annually lose end buds to browsing deer. The impact is first noticed on the most preferred browse species such as blackberry and raspberry brambles, most species of oaks, aspen, and maple, among others. More severe or prolonged overbrowsing will result in a gradual loss of the most-preferred browse species from the understory. In the worst cases, the forest floor is barren or becomes dominated by species that deer will eat only when faced with starvation.

Consider fern, a plant genus that includes dozens of species,

Continued.

About This Article

"Timber Harvest Pitfalls" was published in the October 2008 issue of *Quality Whitetails* magazine, the journal of the Quality Deer Management Association (QDMA). To become a QDMA member and receive *Quality Whitetails* six times a year, use the coupon below for $5 off the regular membership rate of $30.

Join QDMA through this special offer and save $5 off a regular membership.

Name _____

Street _____

City, State, Zip _____

Daytime Phone ( ) _____

Email _____

❑ 1-yr NEW Adult Membership - $25
❑ 1-yr NEW Student Membership - $20
❑ 1-yr Junior Membership (15 & under) - $15
❑ 2-yr NEW Membership - $45
❑ 3-yr NEW Membership - $65

❑ Mastercard ❑ Visa ❑ AmEx

Card # _____ Exp. Date _____

❑ Check # _____ ❑ Money Order # _____

Fax this form to: **706-353-0223**
Or Mail to: QDMA, P.O. Box 160, Bogart, GA 30622
Phone Orders: 800-209-3337 (use **Promo Code 9030**)
Web Orders: www.QDMA.com (use **Promo Code 9030**)

many of which flourish in forests of the Eastern United States. When it establishes small, scattered patches in an otherwise healthy ecosystem, fern can provide important bedding cover for deer, especially during the fawning season. As far as deer nutrition is concerned however, fern has little redeeming value. In many parts of the Northeast that have high deer densities, hay-scented and New York ferns take over as more palatable plants are browsed. A thick carpet of ferns on the forest floor may be pretty, but recall from above that ferns are competing plants. Competing vegetation and deer abundance can form a vicious cycle that must be broken if regeneration is a goal of a timber harvest.

(For an in-depth discussion of deer impact on forest regeneration including instructions for conducting a browse impact survey, see "Over the Limit?" in the December, 2007 issue of *Quality Whitetails*.)

The bottom line is that an overabundance of deer paves the way for competing vegetation to take hold and take over. A thorough assessment of the potential of your woodland to regenerate will include a close examination of deer impact. Your forester or an experienced wildlife biologist may recommend increased antlerless harvests for several years before a timber harvest. In situations where deer populations are beyond the control of a single landowner, fencing may be necessary for several years following a timber harvest until desirable tree seedlings have grown beyond the reach of deer.

BUSINESS PITFALLS

1. Failure to Hire a Consultant

We all like to watch our spending. None of us like to pay for a service that we can either do without or do ourselves, right? If you carry this idea over to your forest land, you may be in danger of falling into a disastrous pitfall!

Consulting foresters are degreed foresters who, among other things, are trained to represent forest owners during a timber harvest. Hopefully the relationship between the forester and the landowner started long before harvest time, but let's just focus on the timber harvest aspect of the relationship. The forester is an asset manager for the landowner. The forester knows what the ownership objectives are and is responsible to manipulate the forest with specific landowner goals in mind. The forester works directly *for the landowner* and represents the landowner to the timber industry. The forester is not a "middleman" but rather a professional service provider. In fact, studies have shown that a forester's professional fees, which are usually a percentage of gross receipts on a timber sale, are commonly completely covered by increased timber sale receipts through improved marketing and competition. Also, similar studies have shown that the value of the forest after the harvest is higher in situations where a professional forester was hired by the landowner. If a forester were just a middle-man, the landowner would pay a fee for convenience or access to the market. In the case of a consulting forester, the landowner pays a fee so that the timber sale generates more money and so that the forest is treated well.

This tree has been seriously damaged by careless log skidding. Accidents happen, but a consulting forester will collect a performance deposit from the logger which will be held to cover the cost of such damage and other unforeseen problems.

Half-Truths Used by Unscrupulous Timber Buyers

"What we'll do with this cut is clear out the overstory to let direct sunlight hit the forest floor and promote early-successional growth. The deer will think they've died and gone to heaven."

That depends upon what species constitute the early-successional growth. If your stand is replaced with non-preferred browse species or invasives, you've created a QDM disaster. Recovery could be expensive and take many years.

"Most of your trees have lived out their lives. You need to get your money out of them before they rot."

This line is simply a pressure tactic. Even when trees are mature and growth rates have slowed, a consultant may advise waiting to harvest a particular stand based upon price fluctuations in current timber markets. Aside from a salvage harvest of trees recently killed by insects, disease or storms, there is rarely, if ever, a reason to rush through the harvest planning process.

"We'll only cut trees over 14 inches DBH. That way, we'll take only the older trees and leave your young trees to add value for the next harvest."

In many stands approaching maturity, trees of vastly different sizes are the same age. Smaller trees have lost the battle for abundant sunlight, but manage to eek out a stunted existence for decades. The logger's "select cut" is actually selecting the best trees for his sawmill and leaving the landowner with stunted trees that should have been culled.

"I'm a forester and I'll make sure that we do this right by your land, your deer, and your heirs."

Find out who signs a forester's paycheck. The man or woman knocking on the door may very well be a forester, but if they're employed as a buyer for a sawmill or a logger, you can bet that your objectives are not foremost on their mind. And, signing a contract without competitive bidding virtually guarantees that you won't get the best possible price for your timber. Interview potential consultants and check references. Remember, the consultant's fee is not money out of your pocket, but the opposite – increased revenue and increased future timber value.

2. Failure to Make a Complete Management Plan

This is actually a crossover pitfall. From both the biological and financial perspectives, the importance of developing a written, long-term management plan can't be overemphasized. Doing so forces a landowner to slow down, make professional contacts, get expert advice, and learn as much as possible about management options. Most timber harvests don't include a management plan, but then most landowners don't share your QDM goals. A landowner who is selling timber prior to commercial or residential development, to supplement retirement income or to satisfy debt, may have no concern for long-range habitat or timber value improvement.

If your highest priority is deer habitat improvement, begin with a detailed map that clearly shows the habitat types that already exist on your property and adjacent land. Determine the habitat types that are in shortest supply. Bedding cover, feeding

Continued.

areas, sanctuary, travel corridors, food plots, and edges can all be created or improved through proper timber management, but the landowner needs to see how a single harvest fits into the big picture. Every timber harvest should be done in the right location, at the right time, and with the correct harvest practices to ensure satisfactory results. The larger the property, the more important the management plan.

One excellent starting point for plan development is the U.S. Forest Service (USFS). The USFS has run a Forest Stewardship Program since 1991. The program's overall aim is to encourage landowners to develop management plans, known as Forest Stewardship Plans, for their private woodlands. The USFS provides cost-share funds to each state's forestry department. The funds are allocated through state service foresters who may cover a one- or two-county area. These funds can be accessed by calling your local service forester who will guide you through the process. Typically, these cost-share funds will cover a large percentage of the cost you will incur in hiring a professional forester to write your plan. For more information on the Forest Stewardship Program visit the U.S. Forest Service Website:

http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml

3. Failure to Mark and Measure Trees to be Cut

Foresters will designate individual trees that are for sale. Most of the time, the trees to be cut are painted at eye level and at ground level. The ground-level "stump mark" remains even after a tree is harvested and helps a forester with the spot checks that occur during and shortly after a harvest. All interested buyers will understand that *only* the marked trees are for sale and will be cut. In cases where a forester is not hired and potential buyers are allowed to come in on their own to "mark" the trees, there is <u>always</u> chaos! We have seen sales like this with 10 or more different colors of paint, and none of the potential buyers have marked the same trees. In cases like this, the landowner has no way to fairly assess the best value of the returned bids. While one price may be highest, that buyer may have marked twice as many trees or just all the veneer trees on the property. If you want the best deal on apples, make sure everyone is comparing the same apples.

While painting trees for sale, the forester is also calculating the number of board feet in each tree. Before the industry is invited to bid on the sale, the forester has already determined the volume of each species (in board feet) and the minimum acceptable bids for the whole sale. This is good information for anyone who is selling anything. You should know what you are selling and have good information on approximate value.

4. Failure to Get Competitive Bids

Be sure to get multiple bidders involved in any sale. Your forester will develop a timber sale prospectus for you. It will detail all the specific items associated with your timber sale, including the amount of a performance bond, the quantity and quality of marked timber, unique attributes of the planned logging job, etc. The prospectus usually includes all the details that any bidder would need to make an informed bid. It also invites potential bidders to a "tour" of the timber sale – given by the forester. The prospectus is mailed out to many potential bidders – often 40 or more! While it would be rare to get 40 bids, the more bidders invited the better. Most foresters only accept sealed bids that are due on a selected date by a selected time. Usually the highest bidder is awarded the job – provided they are a reputable company with the proper insurances. Of course the landowner has the right to reject any and all bids. Occasionally, bids may not reach the forester's predetermined minimum, which, incidentally, is only known by the forester and the landowner. In this case, it is common for the landowner to reject all bids. The forester then advises the landowner about timing of the next marketing attempt.

5. Failure to Delineate Stands

If you walk your property from one side to the other, you will see differences. The trees are different, the ground cover is different, the aspect (facing north, south, east or west) is different, the topography is different, and so on. With all these site differences, there should certainly be differences in the way each stand is managed. If you're about to enter into a timber harvest agreement that includes the same "prescription" for your whole property, you could be in trouble. Any reputable harvest plan will differ as a har-

Continued.

vest area incorporates different stands on your property. One size does not fit all in overalls or in timber harvests. A typical disaster occurs with a "diameter-limit" prescription being put on a forest. Biologically, this is a nightmare, but also from a business sense, this is a quick way to reduce the value of your forest for generations.

6. Failure to Have a Good Contract Written with Your Interest in Mind

As frustrating as paperwork can be, there are times when paperwork cannot be ignored. Timber sale time is certainly one of those times. A good timber sale contract is a critical part of a successful timber sale. It is important to consider who wrote the contract. If it is someone who is working for you, like your forester or your attorney, you should feel confident. If a sawmill representative or logger wrote the contract, look out – you may be in trouble. The timber sale contract contains all of your power to control the outcome of the timber sale. It includes protections for you and your property. It includes best management practices, addresses safety concerns, covers potential damage incidents, and puts a great part of the burden of a successful outcome on the operators themselves. The rubber really meets the road at timber harvest time. You may have had the best management plan in the country, but harvest time is what will make or break your future forest potential. It is important to discuss your expectations with your forester and/or your attorney so that all of your concerns and others can be covered in a well-written timber sale contract.

Regular site inspections should be a part of your forester's services. During the inspection, your forester will be making sure that the logging contractor is sticking to the agreements made in the timber sale contract. If any part of the contract is not being followed, your forester may shut down the job until the item is rectified.

Conclusion

Many readers of this article already have a sound management plan in place. Others don't own or manage property with marketable timber. We hope that all readers will keep this point in mind: each of us has a much larger impact than the direct management of the acreage that we own, lease, hunt, or cooperatively manage. The average QDMA member exercises management control of less than 250 acres, but our influence as a group can be large. We all know landowners who are not hunters and may not describe themselves as conservationists, who lack the time or interest to dedicate themselves to self-education. These folks are neighbors and friends of friends, and the decisions they make regarding their property will impact the landscape. When your neighbor has been approached by a logger or feels the economic compulsion to harvest timber, take the time to explain the basics. Do your best to see that all of your landowner contacts understand the complexities and variables involved in timber harvesting and guide them to seek professional assistance in developing and implementing a sound plan based upon the best information available. We can all be ambassadors for the best possible stewardship of prime whitetail habitat.

About the Authors: *John Donoughe is a freelance outdoor writer, QDMA member, and member and past-president of the Brush Mountain Sportsmen's Association which is currently in the process of developing a Forest Stewardship Plan for its 600 acres of Pennsylvania woodland.*

Mike Wolf is a partner with Appalachian Forest Consultants, a Pennsylvania-based forest management company. He is a founding member and vice president of QDMA's Laurel Highlands Branch. He promotes forest health education through a company web site (www.appalachianforestconsultants.com) and through the new Trees of Pennsylvania web resource (www.treesofpa.com) where his feature is called 'The Forester.'