DIY LOGGING

By Robbo Holleran

PART 2

FIREWOOD

Most landowners have neither the time, equipment, or desire to do their own woods-work and therefore have to rely on contractors or timber sales to achieve their forestry goals. A few hardy souls undertake these tasks with ambitious effort, and I am honored to have you reading my article!

Do-it-yourself woodlot management is full of hearty challenges, and doing it well is very rewarding. We covered safety issues in Part I, and in this installment, we'll look at equipment limitations, accessories, and production issues, particularly for personal firewood. In Part III, we will look at sawlog and project wood harvesting, planning problems, financial and tax considerations, and more. Controlling the quality of work in your woods is a first benefit, and there are financial benefits of earning the "logging rate" for your products and perhaps a retail rate on special products and "project wood." Annual firewood harvesting is a great way to do forest improvement, maintain trails, and get exercise. Using your brain, body, and equipment well is a worthy challenge.

Annual Firewood Harvest

Annual firewood harvest is the most common project for landowners. If you are cutting your own wood, you probably already have a set of priorities for which wood the woodchuck will chuck. A first choice is to pick up the wood that falls across your trails. Next, folks tend to get the standing dead or recently fallen near the trails. You already know that there is plenty of wood that is not worth pulling out. There is the easy wood, and the rest of it. Some is too rotten or soft, too big or gnarly to process. If you live in an area with good hardwood, generally skip the softwood and poplar, though there are exceptions. Softwood makes great kindling, and if it is handy, why not? It is better than snowballs. And don't start whining about white birch or soft maple. These have

80%–85% of the heat value of sugar maple and burn just fine. If you are out west with softwoods, the cottonwood might be the good stuff, so keep that in mind. It is foolish to go looking for the very best firewood you have, though. Medium-sized, straight, smooth hardwoods in premium species like oak and maple make great firewood, but these might be your best crop trees to grow.

Our northeastern forests grow about a cord of wood, per acre, per year. If you cut 6 full cords, all that can come off of 6 or 8 acres, forever. Southern and wet western forests grow even faster, and dry western forests are about the same, unless they are "really dry." So, if you have more acres than that, there really is plenty of wood. With a 50-acre woodlot, you probably have close to 1,000 cords as standing volume, and it could be much more. About 40 cords grow each year, and on some lots, 20–30 cords might be dying and rotting. You can never keep up. So, use your efforts for the best gain: yes, get the easy wood, but also find the highest priority for your long-term goals. The firewood should be a by-product of forest improvement.

You should have a forest management plan to direct your actions. There might be areas to thin out for better growth, some areas that are ready to regenerate, and some that might be best left alone. What is the best use of your time compared with what can be contracted out? If you are planning a commercial sale in a few years for the regeneration cut, but a commercial logger won't do as careful a thinning in the immature stand, then you should stay in that area. And if you have 10 acres to thin, and there are 6 cords per acre that are "excess stocking," that makes 60 cords. You might think that will be 10 years of work for you, but it might be better to cut more and waste some of the wood. I've seen people pick up their firewood down to 2-inch-diameter sticks, and that makes sense if the top falls in a field that you have to clean up anyway. But in the woods, you might leave all the topwood, and just pull the stems–the "easy wood." Covering more acres with effective thinning is a good use of your efforts, and if you complete the 10 acres in 5 years, all the better. There will be plenty of wood to cut when you finish that area.

Some would go through the whole 10 acres each year, picking the priority stems on each pass. The larger, low-quality stems, such as red maple stump sprouts and limby old pasture trees are a priority and will open up more crown space. They also give quite a bit more wood per tree. Next you might want to consider the species that are less suited as crop trees or trees with obvious defect. If you are just going through and getting trees just before (or after) they die, you are not really increasing the real growth rate. Another approach is to pick a couple acres and start by selecting the crop trees. I usually ribbon them with bright flagging. This is a huge help in the process. You can look

An ATV can be handy for small-scale woods work on good terrain.

out and see the spacing of your selected trees, potential areas for trails, and areas without great trees. When you start felling, you can easily notice the best trees and protect them from felling and skidding damage. Start by cutting open your small, access trails, and then cut all the trees that interfere with the selected trees. Leaving 5–10 feet of open space on three sides is ideal, though you will find some areas with plenty of crop trees and not enough room to leave, and some areas where they are sparse, and you can cut enough low-quality trees to open up all four sides. There are many ways to do this.

Working an area like this to completion means you do not have to come back for a decade or two. Since you are opening it up more than the "pick-through" method, you have more room to work and less hung-up trees. Yes, there are a lot of tops to work around, but with precise felling, and good planning, you can put those tops where you want and work away from your top piles, back toward your main trail. And you will find the process to be much more productive with full loads handy to each spot where you have your equipment. Skip the gnarly or rotten wood, the limby tops and even trees that fall the wrong way or are hard to remove. Best of all, when you are done, the selected trees will have room to grow and you can move to another area next year. The real benefit is effective forest improvement.

Equipment

Following the advice above might be done different ways with different equipment. A skidder is made for hauling wood, and I have a few clients who work their own woodlots with this equipment. Most of these folks know what they are doing and so I can just provide a few pointers. The next choice is a modern 4WD tractor with a few accessories. An ATV is handy for small-scale work on good terrain. Skid-steer loaders have a myriad of attachments available, and these are quite handy but limited for terrain. I know a few people who harvest firewood with a garden tractor and small

Firewood logging with a medium sized, 4 WD tractor and winch is most common.

trailer. It can be done if there is a will. And then there are draft animals such as horse or oxen. Those who log with horsepower love what they do, they love their animals, and like the people with skidders, they generally know what they are about. Tractors and ATVs are most commonly used for landowner woods-work, though. Working safely is first, and then work smart. By using your head, you can be productive even with small equipment.

Winches

For tractors and ATVs, there are a host of accessories for woods-work. Sure, you can drag out a stem or two hitched to the back of a tractor or ATV, but winches and trailers are the main categories for improving this. A winch on a tractor is a good way to go. These are powered by the PTO, or hydraulically, and are quite effective. With my tractor, I can pull two or three times as much with the winch compared to what the tractor will pull alone. It allows you to keep the tractor on the main trail, or decent ground, and accumulate hitches from 100 feet or more. The winch will have several "sliders" where you hook a choker-chain, so you can haul several stems on one trip. And you can put two or three small stems on one choker chain. Winching a long distance can be a problem with loads getting hung up on obstacles. A snatch block is a handy addition, allowing you to change the angle of pull on a long winch cable. A winch can be a safer way to pull down hung trees, work steeper ground, or solve other hazards. One example is holding a stem steady where it is at risk of rolling or sliding while you cut off branches or buck up firewood. And if you get your chain saw stuck, a winch is handy to release the tension. With 100 feet of cable, you can reach almost 3/4 acre from one spot. If you have a bad spot on your main trail, you can drop your load, drive through, and then winch up the load.

A winch is used differently on an ATV. These tend to be 12-volt motors powered off the battery. They are slow and steady and are used to pull stems closer to the trail for access, or to get you out of the mud. They can also pull hung trees or reduce other hazards. These winches are not made for dragging logs out of the woods though, unless they are mounted on a logging "arch," which is a wheeled trailer designed to lift the front of the log to reduce the drag. With this setup, you can move impressive logs with an ATV on good terrain. A logging arch is somewhat like a trailer and is a good way to get the front of the log off the ground to reduce drag.

Trailers

Generally, with an ATV, a trailer is used to haul the wood. Other than the arch as mentioned above, there are two basic types: a log trailer and a box trailer. The box is most common and there is a wide selection. In the woods, I have used the 5 x 8-foot trailer to haul the ATV, but it is too big. A box the same width as the ATV is ideal, and 5 feet to 6 feet long is plenty. Generally, the wood is bucked to firewood lengths in the woods and loaded onto the trailer. A small winch is handy to get the stems close to the trail. Ideally, you can haul the load directly to the splitter and split the wood as you unload to save handling. Of course, there are dump-trailers that make unloading easier. The log trailer is made to handle long lengths in bunks instead of a box. This can be loaded by hand with moderate-sized firewood stems. There are also winches for loading, and hydraulic loaders in appropriate sizes, though these are pricey. This becomes a mini-forwarder.

There is a wider range of trailers available for tractor logging, with sizes appropriate for any tractor. I like

the setup where you have a forestry winch on the tractor with a hitch for the trailer behind. You can use the winch in the traditional fashion and skid logs or firewood stems, and you can leave the winch on and hook up the trailer as needed. With this, you can drag logs directly to the trailer to buck and load. Again, it is most common to buck in the woods and load chunks onto a box trailer unless you just drag out the stems. I have a client with a large tractor and trailer combination and limited wood storage at his barn and outdoor boiler. I suggested he process wood in the woods at several locations with the wood loaded into bunks of about 1/3 cord. It can sit and dry for a year or so in the woods. When his trails are firm, he can load his trailer with two or three bunks with the tractor-forks and haul in the wood as needed. Ideally, he can set a bunk next to the outdoor boiler each week.

There are also log trailers with or without loaders for tractors. With a loader, this functions like a small forwarder and is a smooth way to operate. Having a small winch mounted is helpful since it is harder to get a large trailer off the main trail and the loaders

The Hakmet is top-notch for ATV logging.

don't reach very far. But a hydraulic loader is simply the best way to handle stems for either firewood or sawlogs. The loader is also useful for other things like piling brush, moving rocks or debris, and sorting logs for sale. If you had one, you would find a million uses for it, like handling firewood logs for processing. Skidding arches and grapples are also available for tractors. The grapples are best for larger tractors and are not as versatile as the large grapple on a skidder, but they do save the trouble of getting a chain around each stem. This is very productive if you can back the tractor to each piece. Grapples are also handy for moving brush and debris.

With any machine and a trailer, you will find that you need to organize your trail system with a series of loops. It is hard to turn this system around in the woods (and a wagon is worse) so looping through the area when collecting loads is the best way. It is difficult to work through treetops with a trailer, so a winch is handier in some ways. You can also use a "scoot," which is like a trailer but drags on the ground instead of wheels. Of course, this works great on snow and frozen ground. We worked a couple of mud seasons on "mostly frozen" trails hauling firewood blocks like this. One benefit of a scoot or trailer is that the wood was bucked up while it was still clean and comes out clean for the customers.

One problem with having a large trailer behind a tractor or ATV is that one bad spot on the trail can cause a lot of delay time. We tend to overload to save trips, but the optimal load size is seldom the maximum load. A steep or muddy spot can cause havoc with a fully loaded trailer, and standing in the mud to unload your firewood will be a tough lesson. The optimum load might be medium-sized and come smoothly through your difficult spots without incident. We did a series of time studies with a 35-hp Kubota and a Farmi winch. This is a common setup for landowner woodlot-logging. We found about 1/2 cord of medium-length logs to be ideal in most cases. If there were stems over 30 feet long, we had delays with smaller hitches, so long stems would be cut in half. There were times we tried to pull a full cord, but it took more than twice as much time. Each trail will have its own problems and optimal hitch.

A cord of wood is worth $5 or $10 as standing trees. When you cut them and drag stems to a roadside location, they are worth about $60, so you make about $50 per cord for that process if you are selling wood. This is hard-earned money, and you are competing with the big operators. If you are "delivering" them for your own personal use, you save a trucking cost, so they are worth another $40 per cord to you personally. This is a significant value that helps "pay" for your time and the extra effort for small-scale logging. Processing your firewood to split condition adds another $80 or so of value, and, again, you save another trucking fee. And merely by doing this work 6–12 months ahead of schedule, you add another $50 or more in value to have "seasoned wood." This is the easiest $50 to make.

While there are tangible benefits to cutting your own firewood, the satisfaction is immeasurable. You have done a difficult and dangerous job using your head as well as your body. It is great exercise. You have a local and renewable energy source, and you know where it came from—intimately. You have done your own woods improvement in a way that can rarely be contracted out, and the greatest satisfaction comes as you load your woodstove, and perhaps remember individual trees, their challenges and your triumphs. ■

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