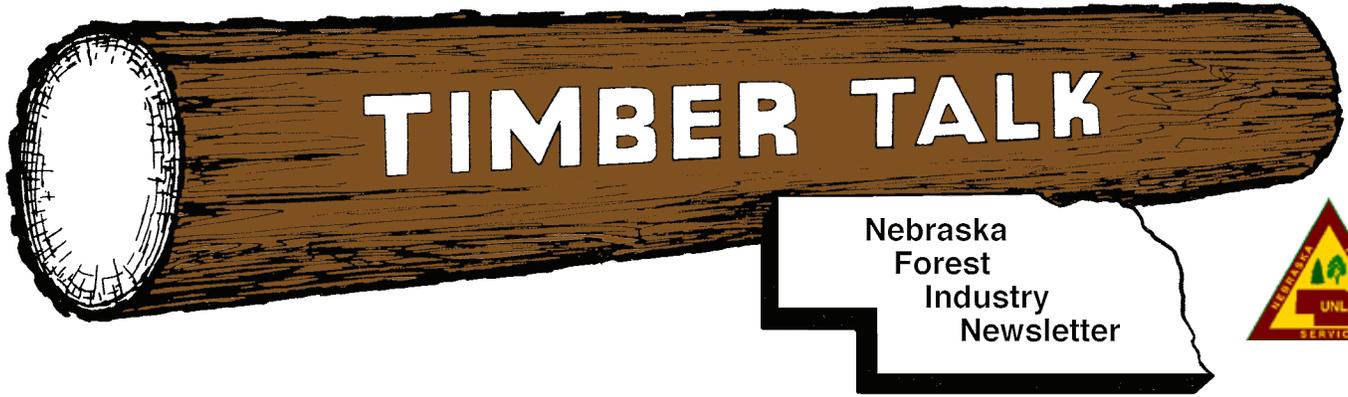


NEBRASKA FOREST SERVICE



Nebraska Forest Service

Institute of Agriculture and Natural Resources

University of Nebraska–Lincoln

November 1, 2014

Vol. 52, No. 4

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The Nebraska Forest Service publishes *Timber Talk* four times annually (February 1, June 1, September 1, and November 1) to serve the forest industry of Nebraska. All questions and correspondence concerning *Timber Talk* should be directed to: Adam Smith, *Timber Talk* Editor, Nebraska Forest Service, University of Nebraska, 201B Forestry Hall, P.O. Box 830815, Lincoln, NE 68583-0815. Phone (402) 472-1276, FAX (402) 472-2964.

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Timber Talk is partially supported by University of Nebraska–Lincoln Extension funding.



Lumber Market

HARDWOODS



Northern. Because of their significance to the marketplace, Hard Maple and Red Oak are still at the center of conversations with industry sources. Steep and continual price decreases have impacted margins up the supply stream. Log and timber prices must eventually conform, but the adjustments seldom come quickly. Furthermore, any price adjustments that might take place will not affect log and timber inventories or deals in play. Some mills have discussed backing off production until after the hunting and holiday seasons. More likely, logging and sawmill production will follow a normal course for the remainder of this year, with inclement weather being the controlling factor.

Appalachian. Area sawmill operators are entering the fall season with high log inventories. There are portions of the region in which excessive rainfall has limited logging activity, but the majority of the mills have an abundance of raw materials. At the same time, yards and secondary manufacturers are working from large lumber inventories. Increased sawmill production this year, coupled with weak domestic demand and mixed international markets has bloated Red Oak and Hard Maple inventories, specifically. On the other hand, supplies of Ash, Walnut, Fas White Oak, and railroad ties are marginally sufficient to satisfy buyers' needs. Mixed activity has resulted in mixed pricing. Where there are shortages, prices are moving up; where there are excesses, prices continue to fall.

Southern. Last year at this time, market conditions had improved enough to provide landowners, logging contractors, and sawmill operators with incentive to sell timber and boost production. The trend has carried through the year. Area mills are operating at a high level and timber and logs are plentiful. The concern is whether domestic demand will pick up in the coming months. Housing activity has been extremely disappointing to this point. Projections are for strong growth in new residential construction in 2015, though there is no indication the prediction with come to fruition. Yards and secondary manufacturers are not anticipating a sharp rise in demand for finished goods and are purchasing raw materials accordingly. For the Southern region, Red Oak has been the most affected.

(Source: Condensed from *Hardwood Market Report*, October 17, 2014. For more information or to subscribe to *Hardwood Market Report*, call (901) 767-9216, email: hmr@hmr.com, website: www.hmr.com)

Hardwood Lumber Price Trends—Green

Species	FAS				#1C				#2A			
	9/14	6/14	3/14	12/13	9/14	6/14	3/14	12/13	9/14	6/14	3/14	12/13
Ash	1075	1075	890	835	710	710	600	575	475	475	415	390
Basswood	885	895	865	835	565	575	545	505	310	320	285	260
Cottonwood	685	685	685	670	480	480	480	470	260	260	250	240
Cherry	1355	1355	1295	1235	955	955	850	775	620	620	530	455
Elm	650	650	635	635	420	420	420	420	300	300	280	270
Hackberry	530	530	475	475	480	480	455	455	305	305	285	285
Hickory	1000	1000	920	845	835	835	775	715	615	615	570	520
Soft Maple	1295	1320	1320	1250	880	880	880	810	565	565	565	510
Red Oak	1275	1430	1465	1320	940	1045	1000	885	770	780	765	700
White Oak	1430	1430	1345	1200	900	900	850	750	700	700	645	610
Walnut	2990	2840	2545	2250	1645	1550	1325	1175	1015	990	820	685

Note: Lumber prices quoted in dollars per MBF, average market prices FOB mill, truckload and greater quantities, 4/4, rough, green, random widths and lengths graded in accordance with NHLA rules. Prices for ash, basswood, northern soft grey elm, unselected soft maple, red oak and white oak from Northern Hardwoods listings. Prices for cottonwood and hackberry from Southern Hardwoods listings. Prices for cherry, hickory and walnut (steam treated) from Appalachian Hardwoods listings. (Source: *Hardwood Market Report Lumber News Letter*, last issue of month indicated. To subscribe to Hardwood Market Report call (901) 767-9126; email: hmr@hmr.com; website: www.hmr.com.)

Hardwood Lumber Price Trends—Kiln Dried

Species	FAS				#1C				#2A			
	9/14	6/14	3/14	12/13	9/14	6/14	3/14	12/13	9/14	6/14	3/14	12/13
Ash	1515	1515	1365	1295	1060	1060	910	880	770	770	740	720
Basswood	1170	1170	1170	1155	765	765	765	750	480	480	480	480
Cottonwood	855	855	855	830	625	625	625	615	—	—	—	—
Cherry	1905	1905	1840	1830	1370	1370	1245	1170	920	920	835	760
Elm	—	—	—	—	—	—	—	—	—	—	—	—
Hackberry	—	—	—	—	—	—	—	—	—	—	—	—
Hickory	1575	1575	1475	1365	1335	1335	1250	1155	1105	1105	1035	945
Soft Maple	1780	1780	1780	1710	1155	1155	1155	1100	835	835	835	785
Red Oak	1765	2005	1975	1790	1465	1560	1470	1325	1180	1255	1200	1100
White Oak	2040	2040	1850	1680	1520	1520	1365	1200	1200	1200	1125	970
Walnut	4090	3795	3490	3240	2300	2185	1965	1855	1520	1345	1160	1035

Note: Kiln dried prices in dollars per MBF, FOB mill, is an estimate of predominant prices for 4/4 lumber measured after kiln drying. Prices for cottonwood and hackberry from Southern Hardwoods listings. Prices for ash, basswood, northern soft grey elm, unselected soft maple, red oak, and white oak from Northern Hardwood listings. Prices for cherry, hickory and walnut (steam treated) from Appalachian Hardwoods listings. (Source: *Hardwood Market Report Lumber News Letter*, last issue of month indicated. To subscribe to Hardwood Market Report call (901) 767-9126; email: hmr@hmr.com; website: www.hmr.com.)

Wood Is Good

It's that time of year again. Phones are ringing, and firewood trees are falling. Splitters and processors are humming, and wood is being cut, split, and delivered all over the region.

I started a firewood operation over 30 years ago by buying log loads and selling split wood. We bucked and handled the wood by hand, splitting with a small hydraulic splitter. Then we worked our way into the woods with a draft horse, finally moving up to a 4WD Kubota tractor to do forest improvement work. We ate a lot of peanut butter, but it builds character.

My father loves to relate this story. We had an underpowered, overloaded farm truck that looked like something from the old "Teed Stories" comic strip. It would hold three cords if it was stacked into the truck. Yes, we stacked every load back then. We called it "advertising." One new customer had ordered six cords, and we brought the first load. He promptly handed me a check for the full six cords, and I promised to bring the second load the next week. He looked shocked. "The last six-cord load I bought came in a truck just like this!"

I know the satisfaction of cutting my own trees, and having a full shed. A visitor from New York City criticized the "mess in my yard." A pile of logs, partially cut and split, and the woodshed half-full looked like an industrial site to him. I pointed out that, here, the active process of work was valued for character, and the full woodshed was a symbol of wealth — just like a big black Cadillac.

Firewood as a By-Product

Seldom are good quality hardwood trees cut for fuel before their prime. It is just not valuable enough. Sawlogs can be worth a hundred times what firewood is worth to the landowner, and ten times as much to the logger. In the normal course of forest management, harvesting good lumber trees produces quite a bit of tree tops suitable for firewood and pulp. And thinning to grow better-lumber trees produces a high proportion of these stems. So firewood is merely a by-product of logging and forest management.

Having markets for this lower-quality wood is essential to forest management. Pulp mills, pallet mills, pellet mills, firewood, and burning chips for energy provide an outlet for the trees and portions that are not good enough for regular lumber. This allows us to take the weeds out of the garden. In every state, growth exceeds harvest, so there is plenty of opportunity for us to improve our "energy independence" with firewood or chip fuel. This type of harvesting is good for forest health, wildlife, landowners, and the local economy. When people are objecting to some new facility that will use low-grade wood, they have no idea that this is critical for forest improvement.

Firewood producers are straight-out, if they can get the logs. Demand for pulp and chipwood is also strong, so loggers have a few options for their low-grade wood. This affects the price for firewood logs, and split wood.

What is a Cord?

What is a cord of wood? It is 128 cubic feet of staked wood, including bark and air. In the old days, wood was often handled in 4-foot lengths. This was the length that a man could handle without equipment. Pulp or firewood would be cut and piled

in the woods, and the piles would be 4 feet high. The big butt pieces would be on the ground and the smaller pieces stacked on top, about as high as you could easily toss the pieces with a pulp hook. A 4-foot stick would be used to measure the lengths and the height of the pile and 2 sticks in length would make a cord, 4 foot x 4 foot x 8 foot. The wood would be hand-stacked onto a sled and dragged out of the woods, in the early days by horses and later with a crawler tractor. When I was in college in Maine in the late '70s, I cut and hand-stacked many cords like this, to be hauled by a horse, though it was the end of that era.

Today, pulp and firewood are still sold by the cord. Most pulpwood is handled by the ton, and then converted to cords by a factor. For example, green hardwood is about 5,200 pounds per cord, depending on the species.

Just to keep things confusing, there is something called a face-cord. This would be 4 foot x 8 foot x whatever the length is. So a 24-inch face-cord would be a half cord, and 16-inch face-cord is a third of a cord. Today, most firewood is loosely thrown, not stacked, into the truck. So it needs to be about 160 cubic feet to make a full cord. Most firewood dealers have a good idea of what it takes to make a cord in their trucks. But if you buy a cord of wood, and it comes in a regular pickup truck without sideboards, just laugh.

Selecting Trees for Firewood

There will be conflicting philosophies about selecting trees: Do you cut the tree that makes the very best firewood or grow the best trees for lumber and value and take what is left over for fuel? I vote for the latter. A cord of cut, split wood is worth about \$200. A cord of quality hardwood logs (without the extra sawing and splitting) can be worth two to ten times that. We report, you decide. We are spoiled to have some of the best hardwood in the world. Most of the world is satisfied to burn softwood, poplar, or whatever. So we shouldn't moan about soft maple or white birch.

We often hear discussion about the quality of different species for firewood. I have looked at a few websites and found some misleading information — as usual. Just to keep the record straight, if we think of beech, hard maple, red oak, and yellow birch (all about the same) as 100%, then cherry, ash, red maple, and white birch are all about 85%-90%. Poplar, basswood, butternut, and hemlock are about 60%, with the other softwoods at about 55%. If you can get some hickory, white oak, locust, or ironwood, that tops the chart at 115% of the heat value of hard maple.

Rather than simply heading into your woodlot to find some firewood, it is far better to understand your long-range goals. Other articles in the magazine direct you to forest management planning and specific silvicultural options to grow or regenerate your forest. So make sure that your firewood operation fits into your "big picture." Are you thinning an immature section to grow the best trees? That is a good choice for firewood. Will you regenerate a section of good mature sawlogs? This might be better left until the whole job can be done well. Have you done a commercial harvest, and are there still some "weed trees" remaining? Good choice. Is there steep or wet ground that is impractical for commercial logging? Skip it. Is there a spot close to

the house on moderate slopes with emphasis on aesthetics? This would be a great choice for plucking your firewood.

The real key for selecting trees for firewood will be the stem quality. Rough, bumpy, or crooked trees will never be much good for sawlogs. They might be tougher to split, but firewood is probably their best use. This may include some good dense wood like beech, oak, or maple. It is also a good idea to harvest trees that show signs of decay or other disease. Sometimes this is obvious, sometimes subtle. But if you can select the best trees to grow in your forest, harvest a few trees whose crowns are crowding your “crop trees,” and they will have the room they need to be healthy and grow. It does bother me when someone advertises wood as “all rock maple and oak.” This is probably from forest high-grading: “Cut the best and leave the rest.” It always makes me feel good to burn beech. This is great firewood, and was probably cut to make room for maple or oak trees to grow.

Dead and fallen trees are another category with mixed opinions. Of course, dead trees might make great firewood, and there is a limited time to salvage them. Especially if the bark is flaking off, they may be partially dry. But they can be very hazardous to fell, with dead limbs breaking off as the tree starts to move. A limb the size of a baseball bat, falling from 40 feet up, will hit you like a baseball bat! Also, dead trees might be already decaying, losing much of their heat value. Standing dead “snags” also provide important wildlife habitat for birds, bats, and other creatures. Fallen trees, unless they are recent, are often already decaying. They can also have hidden tensions that make dangerous work for cutting them. Most woodlots have an excess of live-standing, low-quality trees, and these will be a better use of your efforts.

Firewood Processors — Business Opportunity

There are still a few guys making some extra bucks cutting cordwood with a chain saw and small splitter, but most of today’s firewood is produced with mechanical firewood processors. These are amazing systems of conveyers with a mechanical saw and splitter that cuts and splits without the back-breaking effort. In some cases, the wood is processed from the comfort of an enclosed cab, and never touched by human hands. This issue has excellent articles on the various types available, from small-scale to large industrial types. For a logging contractor with a million dollars of equipment, a mid-sized processor is a good way to add value to low-quality hardwood, and it creates work for the times when the regular logging crew can’t operate, like wet weather. And for an active woodlot owner with a vision for forest improvement, a processor is a labor-saving device to add tremendous value to your low-quality stems.

Some processors are fussy about the quality of logs that get handled. The industrial processors are simply more productive with straight logs in a certain diameter range. From a business perspective, “quality firewood” logs going in will reduce the cost and increase the profit. Matching the processor to the wood you have available is an important step. Perhaps smaller and crooked logs can be sold as “homeowner firewood,” which is a normal sort on most logging jobs. But we still should be thinking of firewood as a “waste product” from the forest.

Source: *Independent Sawmill & Woodlot Management* (IS&WM) magazine, October/November 2014, Article written by Robbo Holleran, Private Consulting Forester. For more information or to subscribe to IS&WM, call 1-888-762-8476 or website: www.sawmillmag.com.

Simple Steps for Double Your Firewood Profits

My brother and I own a business in Cleveland, Ohio, called Madden Brothers, where we’ve been selling great firewood for over 30 years.

Like many of you, I didn’t choose to be in the firewood business; the firewood business chose me. My mom and dad were involved with firewood — that’s how they heated their house. When I was a little kid, we had three-wheelers and my brother and I always wanted to go out and ride them on the weekends. But my mom and dad would not let us do that until we had split a cord of firewood — that was the deal.

When my brother turned 16, our parents gave us a pickup truck we could use for delivering firewood.

To grow our business, we made flyers that we then delivered door to door. The flyers were simple — we made them in our parents’ walk-in closet on their copy machine and using words we cut out of the newspaper and taped onto a piece of paper.

Over the years our business grew. We used to be a decent-size supplier selling about 600 cords of firewood a year. But, unfortunately, we were selling our wood too cheaply. At the time, we sold a full cord for \$195—that was 2006. This past season, our company only sold 188 cords of firewood. But the nice thing is that we now sell our firewood, on average, for \$737 a cord, and that’s how we make decent money.

Cracking The Code

I guess you’d say we cracked the code for firewood marketing. We use marketing tactics that most people don’t, and to be honest, in the firewood industry, you don’t have to do anything really spectacular to catch people’s attention because a lot of companies aren’t marketing at all.

Like most of you, I’m in business to earn a profit. At times, I get caught up in the daily activities of owning and operating my business. Too often, I can get sidetracked on the production stuff — like what kind of saws to use, which splitters to buy, and where to get our wood. And if I’m not careful, over time, these things can distract me from taking the simple actions necessary to ensure my future success.

Marketing Tactics

This is really simple — remind your old customers that you’re the one they bought wood from last year or in past years. And you have to get back in front of them early in the season. I do this a few different ways:

In early September, I send all my previous customers a letter in the mail. Yes, on white paper in a plain-Jane #10 envelope. It’s a simple letter reminding them that they placed their trust in me last year. And I like to offer them a little something (free stacking, discount delivery, etc.) if they act by a certain time — say within the next five days.

Then we all know what happens — they put down the letter and go about their everyday activities — they forget! So what do we do? We send them another letter! Four days later, I send them a reminder letter. This one merely reiterates what I said in the first letter and reminds them that the special offer will end soon (and I give them the exact date).

How To Ask For More Money?

Sometimes the only thing you have to do to get your customers to pay more money is ask them — but how do we start?

If your firewood price last year for a full cord of wood was \$195, you're probably not going to be able to double it this year without losing a significant portion of your existing customers. But what if you start working with a market in addition to your existing customers?

Maybe most of your customers buy one, two, or maybe even three cords per year. That's great. I remember the days of getting all excited when a customer would call in to place a big order. But what's the first thing a "bigger buyer" asks? Yes, for a quantity discount!

In most areas that burned firewood across the United States last year, there was a wood shortage. We all know the story of supply and demand — you just need to leverage it to your advantage.

The very first year I wanted to dramatically increase margins on my firewood business, I changed one simple thing, and that was the quantities in which I sold my wood. I began by explaining to customers that there was a significant shortage of wood the previous year, and that left many people without firewood. I explained that I had a limited amount of firewood to sell for that season and most understood. Bear in mind that I market my firewood to people using it for ambience/social setting and not for heating their homes — and they're willing to pay more for it!

I used to sell wood by the 1/3, 1/2, and full cord. I immediately stopped selling the full cord. Shortly thereafter, I even added the 1/4 cord. I didn't want people to feel that I cranked my prices through the roof in just one year, so here's what the price structure looked like:

Quantity	1st Year Price	2nd Year Price
Full Cord	\$295	Not available
1/2 Cord	\$185	\$205
1/3 Cord	\$125	\$145

Notice the marginal increase in price from year one to year two. And guess what? I still sold a ton of full cord orders in year two. Yes — I offered it at 2x's the 1/2 cord price. So, what used to sell for \$295 in year one was suddenly selling for \$410 in year two — a 39% increase. Here's the other awesome thing: Toward the end of the season when people were nearly out of wood but still wanted to have fires, they didn't want to buy that monster load of wood and sit on most of it all summer so they bought the 1/4 cords! I can't tell you how many 1/4 cords I sold in the first year. And 4x's my 1/4 price of \$115 = \$460/cord. That's a far cry from the \$295/cord I was getting a year earlier.

Back to my initial point — sometimes all you have to do to get your customers to pay more money is to ask them for it — in a creative way!

Flyers

Until recently, I hired people on Craigslist to hand out flyers for me. Three days a week I'd have 6-8 people on the streets hand-delivering flyers for me. It was a lot to keep track of, but it worked. The problem was that it was nearly a full-time job in and of itself and that wasn't for me.

One day I came across a program offered through the U.S. Postal Service called Every Day Direct Mail, and it was a game changer. You can sign up for a free business account at www.usps.com. Once inside, click the Business Solutions tab to the right, then Try Every Door Direct. They have a simple checklist of exactly what you need to do in order to get your mail piece into the hands of your chosen carrier routes. If you have a problem, believe it or not, their customer service is pretty good.

Here's the deal: You're able to pick the exact carrier routes (think street-level marketing) that you want your mail pieces to reach. Your piece has to meet some basic criteria, but I've always used four-color, cardstock, 8.5 x 11 inch, double-sided paper.

How do you pick the carrier routes you want to reach? Chances are, neighbors of your customers would be good customers for you, too. So why not sell to them? There are a lot of different ways to do this, but start small. Get all your customers' names and addresses into something like an Excel file. From there, you can copy and paste them into a (free) mapping software like www.batchgeo.com.

Once you get all your customers mapped out, pick a few areas where you see nice clusters and then go back onto the USPS website and select the carrier routes that best fit areas around your current customers.

I think the minimum number for mailing is around 500. Depending on the total number you send, your price will be somewhere around \$0.165 each. That's cheaper than the cost of a postcard for a piece about 4x's the size!

Write something that lets them know that one of their close neighbors places their trust in you to attend to their firewood needs and that you'd like to offer the same great product and service to them. It's important to get the right message across in this flyer, but don't stress over it too much. Just get your general ideas/outline down on paper. It doesn't have to be fancy. Most commercial printers offer design for free, or at a minimal cost if you use their printing service. Keep in mind that this piece can be used year after year and so it really is a small investment.

Source: *Independent Sawmill & Woodlot Management* (IS&WM) magazine, October/November 2014, Article written by Brian Madden, Madden Brothers, Marketing Consultant and Strategic Advisor. For more information or to subscribe to IS&WM, call 1-888-762-8476 or website: www.sawmillmag.com.

Homemade Log Forwarder

The first step in solving any problem is recognizing that you have one. We own a farm in northern Pennsylvania that is a mix of fields and wooded areas, ranging from first-generation pasture succession to more mature woods that haven't been timbered in 40 to 80 years. For most of the 20 years we have owned the property, we have primarily concerned ourselves with building trails, thinning the hemlock to use in constructing outbuildings, removing the blighted beech and cull trees for firewood, and doing some timber stand improvement. Although we have a small hardwood lumber business and occasionally use some timber from the property, our main goal has been to improve the quality of our woodlands. This plan, however, never anticipated the arrival of the emerald ash borer, and after holding out as long as we dared, and at the urging of

(continued on page 7)

Nebraska Forest Industry Spotlight



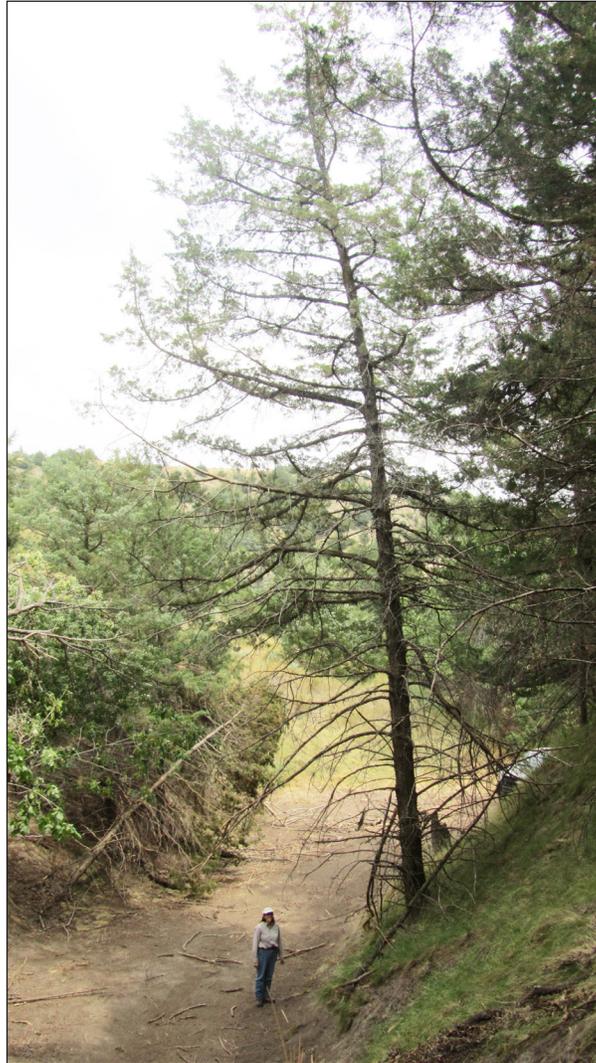
REJUVENATING THE FOREST INDUSTRY IN SOUTHWEST NEBRASKA



By the mid-19th century eastern redcedar was becoming established along the steep bluffs and northeast slopes, areas not reached by prairie fires. During this time, people found opportunities to utilize the wood on their property to meet their own needs. A circular sawmill may have been used to process larger trees into boards for buildings while smaller trees were turned into posts and poles used in fencing and corrals. But over time, with the cedar encroaching into the riparian hardwood forests and out into the prairie; the trees were far outgrowing the capacity to make use of the wood.

As eastern redcedar continued to spread unchecked and underutilized, the cedar forests became incredibly thick; it became harder to gain access for harvesting and utilizing the trees. More recently, as the situation became apparent, people made many efforts to clear and eradicate the cedar, often at great cost through state and federal cost-share programs. However, a few people noticed that they were missing an opportunity to utilize eastern redcedar as a product.

Adding to the situation, in recent years there have been wildfires in southwest Nebraska which have occurred not only in grasslands but often into and through the eastern redcedar. These fires can scorch and burn large areas because of increasingly dense expanses of cedar and the lack of forest management and access for fire suppression. All of this puts lives and property at risk. To that end, the Nebraska Forest Service (NFS) is working to mitigate the hazards and capitalize on the economic potential by working with federal, state and local partners. This began in the spring of this year with the development of a Community Wildfire Protection Plan (CWPP). This plan identified the potential wildfire threats in the area and strategies to mitigate them. With this plan in place, NFS now has the opportunity to seek federal grants to



Rachel Allison, Southwest District Forester

assist with providing 75% cost-share funding for the thinning and managing of forests in Nebraska's southwest as well as construct fuels breaks within the heavily forested regions to reduce the impacts of catastrophic wildfire.

As these funds are targeted for the management of dense forests with larger, more marketable cedar as opposed to low quality bushy trees growing on grasslands, these management efforts will drastically increase the amount and marketability of cedar coming out of the region. With this new opportunity to economically gain access to straighter, higher quality cedar, wood products such as lumber for flooring, siding, paneling, posts and poles have the potential to catalyze economic development in the region including new businesses and jobs.

The Forest Products Utilization program of NFS, tasked with developing markets for Nebraska wood and forest products, has developed a suite of financial and technical assistance programs to increase wood market development. These programs, "TREE Heat Nebraska" targeted at wood energy development and the "On-farm/Alternative Wood Use" program established to develop

pilot projects across the state for investigating non-traditional wood use options, will greatly improve the opportunities to create and market wood and forest products in the southwest.

In the Loess Canyons area of southwest Nebraska, the Cedar Canyon Demonstration Forest near North Platte is involved in demonstrating these opportunities. Managing their cedar can provide added income for landowners. While many people view eastern redcedar as a problem, the demonstration forest can show how eastern redcedar can be managed for its economic value. Management of these forests will help get people back to utilizing a resource, right here in southwest Nebraska.

Homemade Long Forwarder (continued from page 5)

our consulting forester from the Pennsylvania Department of Conservation and Natural Resources (PS DCNR), we reluctantly started cutting our stands of ash this past winter.

The Problem

The problem we encountered was moving large quantities of logs to an accessible location for sorting and distribution. Parts of our property are hard to reach due to the topography, and to easily access our most distant woodlands, we have to cross some hay fields belonging to a neighbor, travel along a township road and the up our driveway, a distance of over a mile that is not conducive to skidding the logs. Since we wanted to do the work ourselves, we tried to figure out a simple and inexpensive way to move the logs. We have a few trailers we use in the business, but didn't want to subject them to the abuse of hauling logs over rough ground, and so we briefly considered manufactured log trailers before concluding that the best solution would be to construct our own.

The Solution

The obvious choice to use was to convert an old running gear into a log forwarder, but hay wagons didn't seem strong enough to take such a heavy load over varied terrain, so we turned our attention to finding an old forage wagon, whose heavier construction and larger flotation tires would be rugged enough to do the job. The next stop was the local farm equipment dealers, but we found the prices pretty steep, and there were a lot of abandoned old wagons sitting on nearby farms. We placed an advertisement in the local paper and were able to find an old Grove Economy for \$500. After a few hours of Sawzall work, and with assistance from a backhoe, we were able to remove the forage box, haul the gear home, and commence construction.

The Process

We already have a pretty well-equipped repair shop for the business, and a couple of members in good standing in the FWRC, also known as the fabricate, wreck, and repair club, so my son Aubrey Irion and his helper Jesse Horrocks took over the job of working on the gear and fabricating the uprights. They decided to make bunks that would shorten the length of the bottom rail, and by angling the corners, keep the bottom row of logs between the tires and out of harm's way. While Jesse was cleaning and painting the gear, I procured a locust log for the main beams. I chose locust for its strength and rot resistance, as the forwarder was probably going to spend a good part of its life outdoors. The nice thing about having a sawmill is the ability to cut timber the way you want it, when you want it, so I was careful to split the log and remove the pith before squaring up the timbers. Locust is a tough tree when looking for a straight log in larger diameters, so I cut the beams to the size that the log would yield, which was 4 inches+ wide x 8 inches tall. I wouldn't have minded more height, but figured that they would carry the load. We considered bolting steel plate on the inside for more strength, but decided to see how the locust performed on its own.

My fabricators selected heavy-duty 3-inch-square tubing

with a 1/4-inch wall for the log bunks. Jesse was raised with a welder in his hand, so he put together the bunks with gussets centered over each joint to help strengthen them. With the timbers bolted to the newly painted frame, he located the position for the mounting plates, then predrilled them for the mounting bolts and welded the plates to the bunks. He also welded steel gussets on each side connecting the plates to the uprights, and caps to the top of the uprights to keep water from entering and rusting the tubing internally. The plates were fastened to the timbers with four long carriage bolts, two on either side of the bunk, with the bolt heads on the bottom side of the locust beams.

I do a lot of my woods work with 4 x 4 tractors in the 70-hp to 90-hp range, with a log winch on the back and a hydraulic loader with a grapple on the front. The idea was to keep this rig simple and to take as little equipment as possible to the woods. In order to tow the forwarder without dropping the winch, Jesse also welded a tongue to the back of the winch for the forwarder hookup.

The Result

Judgment day was pretty undramatic. We hitched up the forwarder, hauled it out of the woods, positioned it where we could load it, dropped the tongue, and commenced to set the logs on the bunks.

We were careful to make the uprights at a reasonable height for ease in loading, so they were not an issue. I purposely kept the first load light, but subsequent loads were piled right to the top of the uprights without any problems. By the end of winter we had probably hauled four or five triaxle loads of logs to the landing, where they were sorted for potential saw and veneer logs, some of which we sold and others we kept for our own use.

What I really appreciated was the volume of dirt-free logs that could be brought in on each load, saving many long trips to the woodlot. I quickly found other uses for the forwarder, such as moving my hemlock logs to our mill and bringing in some pole wood without having to drag it through the dirt.

The big test will come this winter when we have to get to our timber in the far corner, but I'm confident that the forwarder won't be the weak link.

The Costs

We did not keep a close account of our costs. We worked on the forwarder sporadically when we could find the time. We had \$500 in the running gear, the time to get the forage box off and bring the gear home, roughly \$350 in the steel and around \$800 in labor for the construction and repainting the running gear. So a forwarder can be constructed for as little as the cost of the running gear and the steel if you don't have to pay someone to do the work. Ours came in under \$2,000 and has a greater capacity than anything else we considered. It has turned out to be a cost-efficient way to move our logs.

Source: *Independent Sawmill & Woodlot Management* (IS&WM) magazine, October/November 2014, Article written by Lou Irion, The Irion Lumber Company. For more information or to subscribe to IS&WM, call 1-888-762-8476 or website: www.sawmillmag.com.

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For Sale

Sawmill. Mighty Mite band sawmill. 20 horse electric motor, tandem axles with brakes on one axle, 36" x 24' log capacity, (I have cut 46" beams) hydraulic operation includes winch, knees, taper, near arm, dogging arms, far arm, dogging spike, log loading arms, and electric clutch and blade lift. Also includes automatic blade sharpener, setting machine, 12 used blades and 4 new blades. Excellent condition. Never been used commercially. \$17,500. Contact: Gary Fisher, Crawford, NE. Phone: (308) 665-1580; email: fisher@bbcwb.net.

Tree Shear. 14" Dymax Model 2135D1, Double grapple. Used very little. Excellent condition. Fits universal skid loader mounts. \$4,000. Contact: Gary Fisher, Crawford, NE. Phone: (308) 665-1580; email: fisher@bbcwb.net.

Walnut Lumber. All dimensions. \$3.00 per board foot. Falls City, NE. Contact: Bruce Walker at (402) 245-2031.

Nyle Model L500 Dry Kiln. Single phase 100 amp, 230 volt, 12,000 bd/ft hardwood or 4,000 bd/ft softwood. Very energy efficient, approximately 3 cents/bd ft to produce. \$13,500. New kiln is \$20,000. Contact: David Champlin. Phone: (785-275-2181).

Wanted

Logs and Slabwood. Cottonwood, cedar and pine. 4" to 26" diameter and 90"-100" lengths. Below saw grade logs acceptable. Contact: American Wood Fibers, Clarks, NE at (800) 662-5459; or email: Pat Krish at pkrish@AWF.com

Cottonwood Logs. Veneer-quality cottonwood logs, 16" to 36" diameter, 7' and longer. Pick up service available. Contact: Barcel Mill & Lumber, Bellwood, NE 68624. Ask for Barton or Megan. Phone: (800) 201-4780; email: bj@barcelmill.com.

Services and Miscellaneous

Woodshop Services. Millwork made from your lumber on my planer/molder. Chris Marlowe, Butte, NE (402) 775-5000. Marlowepasture@nntc.net.

Sawmill Service and Supplies. Saw hammering and welding. Precision knife and saw grinding. Contact: Tim Schram, Schram Saw and Machine, PO Box 718, 204 E. 3rd St., Ponca, NE 68770, (402) 755-4294.

Used Portable Sawmills. North America's largest source of used portable sawmills and equipment. Contact: Sawmill Exchange (800) 459-2148, website: www.sawmillexchange.com.

If items have been sold, please contact editor to remove ads from the next publication.

Timber Sales

The following listings are for stands of timber or logs being offered for sale by owners or persons of delegated authority. Timber was cruised and/or marked for harvest by Nebraska Forest Service or other professional foresters. Volumes in board feet (Doyle scale unless otherwise indicated) are estimates by the forester. If no volume is listed, the trees or logs were not marked by a forester and the listing is included only as a marketing service to the owner. Listings are prepared according to information at the time of publication.

Item	Forester/Date	Contact
1. Black Walnut (31 trees) Veneer 3 - 200 bf Lumber 1 - 830 bf Lumber 2 - 1,080 bf Lumber 3 - 1,780 bf	4,890 bf Rasmussen 10/2014	Charles Sokos 207 South 5th Pierce, NE 68767 Ph: (402) 329-4816 (h) (402) 992-7398 (c) Location: Knox County

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