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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: Dennis M. Adams, *Timber Talk* Editor, Nebraska Forest Service, University of Nebraska, 203E Forestry Hall, P.O. Box 830815, Lincoln, NE 68583-0815. Phone (402) 472-5822, FAX (402) 472-2964.

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Lumber Market

HARDWOODS



Northern. Increased residential construction has provided a much-needed boost to demand for interior fittings and furnishings. Additionally, strong to record-setting demand for crossties, pallet stocks, and board road material is fueling competition for supply within these market sectors, as well as with the flooring industries and other grade lumber markets. Sawmill production has adapted to the typical mode of operation for summer. Short but frequent production runs and commitment to rapid processing through the kiln drying phase are keeping whitewood supplies adequate for immediate needs, even though inventories are lean. There is more production devoted to Oak, and total mill output is up from earlier in the year. Yet, the market's growing need for raw materials is readily absorbing developing supplies of most species and grades.

Appalachian. Markets for hardwood lumber are mixed. The disparity in demand begins with customer type. Secondary manufacturers have been more aggressive pursuing developing supplies of raw materials, due to being a direct beneficiary of stronger residential construction. Distributors are seeing better business, though activity is more diluted than for secondary manufacturers. Concentration yards are taking an even more cautious approach to purchases, particularly yards that solely process green lumber. The positive message is that each market sector is experiencing higher demand for products sold. In fact, there are concerns that grade lumber and industrial timber supplies could fall short of buyers' needs later this year and into next year. While total sawmill output has edged up the past few months, few sawmill operators have been able to build log inventories for the winter months.

Southern. For much of the region, efforts to boost log decks and begin building winter log inventories have been derailed by persistent and, at times, heavy rainfall. Logging activity is not at expected or needed levels for hardwood lumber producers. Sawmill production is especially tight for low-grade Oak and industrial timbers. Supplies for other key species are only marginally adequate to meet the market's needs. Kiln dried inventories have grown slightly, but the backlog of material coming through the drying process is below volumes needed for winter. There is time for logging to increase and mills to up green lumber and industrial timber output before the peak production season is over. However, the lack of progress so far this summer has raised concerns that sawmill production will fall short of growing demand from domestic and international markets.

(Source: Condensed from *Hardwood Market Report*, August 16, 2013. 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			
	6/13	3/13	12/12	9/12	6/13	3/13	12/12	9/12	6/13	3/13	12/12	9/12
Ash	850	860	860	860	605	615	615	625	410	410	410	420
Basswood	795	765	735	715	465	445	410	400	235	225	205	205
Cottonwood	635	635	635	635	435	435	435	435	220	220	220	220
Cherry	1235	1235	1235	1260	700	640	640	640	385	330	330	330
Elm	635	635	635	635	420	420	420	420	245	245	245	245
Hackberry	475	475	475	475	455	455	455	455	265	265	265	265
Hickory	765	735	720	720	650	620	595	545	480	460	445	445
Soft Maple	1250	1250	1165	1140	765	735	705	690	440	410	385	385
Red Oak	1125	1005	895	870	735	660	600	585	530	495	480	480
White Oak	1050	1000	1000	1000	665	615	600	600	495	455	440	440
Walnut	1795	1795	1795	1795	875	875	875	875	475	475	475	475

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			
	6/13	3/13	12/12	9/12	6/13	3/13	12/12	9/12	6/13	3/13	12/12	9/12
Ash	1290	1290	1290	1290	930	930	930	930	735	735	735	745
Basswood	1120	1120	1060	1060	720	720	665	650	470	470	470	455
Cottonwood	780	725	780	780	570	530	570	530	—	—	—	—
Cherry	1800	1800	1830	1725	1115	1065	1065	990	720	670	670	625
Elm	—	—	—	—	—	—	—	—	—	—	—	—
Hackberry	—	—	—	—	—	—	—	—	—	—	—	—
Hickory	1290	1275	1275	1275	1080	1065	1065	1065	870	855	855	840
Soft Maple	1710	1710	1575	1510	1100	1085	1000	960	785	785	720	720
Red Oak	1650	1550	1490	1465	1090	1055	1000	1000	905	875	860	850
White Oak	1595	1595	1595	1595	1100	1045	1045	1045	860	845	830	830
Walnut	2915	2915	2915	2915	1645	1645	1645	1665	900	900	900	900

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.)

Timber Stumpage Prices

The Nebraska Forest Service does not have a reliable system of collecting data on timber stumpage prices paid for Nebraska timber. Since current timber stumpage price information would be useful to landowners, loggers, sawmills and forester's in Nebraska, timber stumpage price information will be summarized from selected states and periodically presented in Timber Talk. Although this data is not collected from Nebraska timber sales, it may serve as a general guide in tracking stumpage trends. Prices quoted in \$/MBF.

Species	(1) Illinois (May 2012 - Aug. 2012)		(2) Missouri (April 2013 - June 2013)	
	Sawtimber	Veneer	Sawtimber	Veneer
Ash	100-250 (160)		30-260 (95)	
Basswood	80-240 (120)			
Cherry	200-400 (300)	250800 (570)	80-80 (80)	
Cottonwood	50-80 (80)			
Elm	70-150 (100)		70-220 (75)	
Hackberry	70-150 (100)		80-80 (80)	
Hickory	150-300 (180)		30-290 (95)	
Soft Maple	80-220 (130)			
Red Oak	200-350 (230)	480-600 (510)	70-600 (120)	
White Oak	280-450 (330)	400-1800 (1030)	130-800 (210)	
Sycamore	50-140 (100)			
Black Walnut	50-800 (600)	500-2800 (2080)	500-2000 (1325)	1050-5430 (3155)
Redcedar				

- (1) Source: Illinois Timber Prices. Stumpage price range for Sawtimber reported from the Prairie Unit (Zone 3). Sawtimber price average, in parentheses, and veneer price range and average reported from Statewide statistics. Doyle Scale.
- (2) Source: Missouri Timber Price Trends. Stumpage price range and average, in parentheses, reported from the North Region statistics. Doyle Scale.

Nebraska Timber and Log Buyers Survey

The Nebraska Forest Service (NFS) receives numerous inquiries from woodland owners interested in selling timber and/or logs. As part of our forest products marketing and utilization services, the NFS maintains a directory of timber/log buyers who operate in Nebraska. Inclusion is voluntary and free. The directory is essentially FREE advertising for your business.

The current Nebraska Timber & Log Buyers directory is based on a survey conducted eleven years ago, in 2002. It is periodically updated as new information becomes available, but it is still probably woefully outdated. In the effort to develop a new directory, a 2013 *Nebraska Timber & Log Buyers Survey* was recently mailed to all known timber/log buyers who provide services in Nebraska. .

When you receive the survey, please take a few minutes to complete and return the one-page survey form, either by mail or FAX, by September 20, 2013. If you do not receive a survey by mail, the survey form can be accessed online at nfs.unl.edu under "What's New from NFS". The online form can either be: 1. printed and returned by mail, or 2. saved as a file, completed on your computer, and emailed to dadams2@unl.edu.

When the directory is published, it will be available on the NFS website and in hard copy.

Thanks for your cooperation. We look forward to having the new Nebraska Timber & Log Buyers directory available soon.

Band Saw Blades For Green Wood

When talking about saw blade design for sawing green wood, there are probably as many options as there are band sawmill owners. So, let's look at the basic ideas and concepts of a band blade, so we can appreciate what factors are critical for our operation and what designs might be "best."

Blade Body

Width

The width of a blade (that is the measurement from the top of the tooth to the back edge of the blade) becomes smaller each time the blade is sharpened. The wider blades are stiffer overall (more metal) and tend to track better on the band wheels. The wider blade has less ability to deviate because the back end, when in the cut, helps steer the blade, especially if the side clearance is not excessive. When sawing hardwoods and high density softwoods like southern yellow pine, it is my preference to use as wide a blade as the sawmill manufacturer allows. Low density wood can use a narrower blade, if desired.

Thickness

In general, the thicker the blade, the more tension that can be applied. More tension means straighter cuts. However, thicker blades mean more sawdust. Thicker blades are also more difficult to bend around the band wheels, so most manufacturers of band mills will specify a thickness or thickness range. In general, thicker blades will be the choice when sawing dense wood and woods with hard knots. The thickness of the blade is reported

(continued on next page)

in terms of actual measurement (such as inches); sometime the thickness is called the gauge.

Tooth Design

Everyone seems to have their own tooth design, incorporating different hook angles and gullet sizes and shapes. No matter what design is your favorite, all the teeth in an individual band should be identical in design (hook, clearance, and gullet) with uniform width (or side clearance), projecting evenly and identically on each side, and with the tips protruding the same amount from the saw body (that is, the blade width is the same for all teeth.) In general, many band saw blades have too many teeth. Oftentimes, a preferred design called a skip tooth. This blade has perhaps half as many teeth as a regular band. Each tooth must therefore do twice as much work, but the horsepower required for cutting a piece of lumber is still the same. Chips are larger with little fine dust. I have heard from quite a few people that their saw blade worked so much better when they ground off every other tooth (halved the TPI). It is something to consider indeed.

Shape

Gullet Depth. The distance from the tip of the tooth to the bottom (or back) of the gullet. Technically, this measurement is made perpendicular to the back of the blade and not at an angle. The deeper the gullet, the more sawdust it can hold, but the less metal left in the body for tension, which keeps the blade running straight. It is important that the gullet be smooth, as sharp corners will concentrate stress and cause cracking and eventual catastrophic breaking of the blade.

Hook Angle. The hook angle is the angle between a line drawn perpendicular to the back of the saw and a line parallel to the front edge of the tooth. Large hooks mean skinny teeth; the tooth will act like a chisel and try to split out the fibers. On the other hand, small hook angles mean that there will be more metal for the tooth and that the teeth will act more like a scraper or plow than a chisel. Further, more metal means stronger teeth, which is especially important when cutting dense wood or cutting knotty wood where large density variations exist. The larger the hook, the less energy that will be needed, as wood is weak in splitting strength. On the other hand, the surface will be very rough. Typically, for a dense wood, the wood is too strong for a smaller hook angle, so larger angles are used. What is the correct angle? Everyone has their own preference, which depends on species, depth of cut, horsepower available, and so on. My advice is to experiment with several different hook angles until you find what is best for you. (A common hook is 10 degrees, with 8 degrees used for real knotty wood or frozen wood. Experiment by a degree or two for your own mill.

Sharpening. The tooth tip must be sharp, no matter what the angle. If the tip is dull, the blade will not cut well and will tend to slip and slide giving a wavy cut. As teeth dull, the hook angle increases and can even become negative; negative angles cause feeding problems and produce poor quality cuts. Dull saws develop more heat which accelerates further dulling. The rule is ALWAYS KEEP A SAW SHARP.

Clearance Angle. The back of the tooth is ground away so that the back will not rub against the wood as the saw progresses into the cut. Typically, this angle will be 9 to 12 degrees. (The greater the angle, the less metal in the tooth.) However, if clearance is too small, the blade will not feed very well; that is feed fast enough.

Sharpness Angle. The three angles—clearance, hook, and sharpness—add up to 90 degrees. The sharpness angle is the

angle between the front and back of the tooth. In other words, it is the tooth angle.

Side Dressing. In order to get all the teeth with the same side clearance, left or right, the saw teeth are ground or filed. This process is called side dressing and is very important for straight, quality cuts.

Tooth Set

There are three basic ways to make band saw teeth wider than the saw body for sawmill blades.

- Each tooth can be bent slightly sideways (called setting the teeth), alternating adjacent teeth to the left and right. This is commonly done for handsaws, for example. It is important to make sure that each tooth projects to the left or right exactly the same amount. If one side projects more, the saw will pull to that side. Setting the teeth is easy, but requires practice, with a good setting tool. Setting tools can be manual (arm-strong) or automatic.
- The tip of the tooth can be mechanically forced to spread out; this process of widening the tip of the tooth is called swaging (pronounced swedging). Once the tip is swaged, it is filed or ground to give a uniform size to each tooth, in addition to sharpening the cutting edge.
- The tip can be formed by “welding” on a different material from the metal used for the body. Carbide tipping is probably the most common material. Other materials include diamond, ceramic, or Stellite. Because narrow blades tend to have short lives, it is hard to justify using a special, expensive tip material on them.

For longer-lasting blades, tip material modification is often done and can greatly extend the time between sharpening. Once a tooth is tipped, it is then ground to the correct shape with uniform side clearance and correct cutting angles, and then the cutting edge is sharpened.

Lubrication And Cleaning

Many band saw operations will lubricate the saw blade to avoid heating and to reduce energy demands. Commercial products are available at a reasonable cost. Many operators make their own solution, but make sure it will not stain the lumber, increase the fire hazard, or create environmental or human health issues.

Band saws must be kept free of pitch or other residue build-up. Slight discoloration is OK. Many people use turpentine for softwood blade cleaning. Watch the fire hazard with this or any other cleaning solution. Commercial products are available.

Experimenting Is The Key

There is no one blade design or tooth shape that will work for everyone. In fact, different designs can work well on the same mill cutting the same species. The key for a sawmill operator is to experiment to find the blade that works best for the operator's particular mill. Be willing to change blades when the size of the cut changes substantially and when the species changes.

Finally, remember that the band is traveling at 30 mph. Several hundred teeth go by one point in a second. Be safe. Read safety manuals from mill and blade manufacturers. Learn safe procedures and practice safe operation at your mill. Use appropriate safety equipment. Avoid an accident.

(Source: *Independent Sawmill & Woodlot Management magazine*, May-June 2007. Article written by Gene Wengert, Professor Emeritus, University of Wisconsin-Madison, and President of The Wood Doctor's Rx, LLC, in Madison, WI. For more information or to subscribe to IS & WM, phone: 1-800-762-8426 or www.sawmillmag.com)

Illegal Logging Crackdown in Central and South America

One-hundred-and-ninety-seven illegal loggers across a dozen Central and South American countries have been arrested during INTERPOL's first strike against widespread forestry crime, according to Smallwood News. INTERPOL, or The International Criminal Policy Organization, worked with local police forces to take a first crack at illegal logging. In all the effort, known as Operation Lead, resulted in the seizure of 50,000 cubic meters of wood worth around \$8 million.

"Operation Lead marks the beginning of INTERPOL's effort to assist its member countries to combat illegal logging and forestry crime, which affects not only the health, security and quality of life of local forest-dependent communities, but also causes significant costs to governments in terms of lost economic revenue," David Higgins, Programme Manager of the Environmental Crime Programme at INTERPOL said.

The global illegal logging trade has been estimated to be worth \$30-\$100 billion each year and is thought to account for 15-30 percent of all deforestation in the tropics. The destruction of forests threatens global biodiversity, watersheds, and releases greenhouse gases; in addition it often robs local communities and indigenous people of the forests they depend on. Illegal logging kingpins are also often involved in other crimes, such as human trafficking, weapons sales, drugs, and political corruption.

"This is a major development in the fight against illegal logging, which is a much bigger global problem that most of us realize," said Billy Kyte with Global Witness, an NGO that looks at the link between environmental and human rights abuses.

(Source: *The Northern Logger and Timber Processor*, March 2013.)

Coming To Terms With Terms

An understanding of standard hardwood lumber and log abbreviations is important in communications within the lumber industry. Some of the more common abbreviations and symbols used in this and other forest industry publications are presented below.

4/4, 5/4, 6/4, 10/4, etc.	lumber thickness in ¼ inch increments, e.g. 4/4 = 1 in., 10/4 = 2 ½ in.
AD	air dried
BF, bf, or Bd Ft	board foot or board feet
BTR	better
Cu. Ft	cubic foot or cubic feet
Com or C	Common
DIM	dimension
Fac	factory
FAS	Firsts and Seconds
KD	kiln dried
LBR	lumber
Lf	linear feet
M	thousand
MBF	thousand board feet
MC	moisture content
MR	mill run
R/L or RL	random lengths
R/W or RW	random widths
SEL or Sel	Select
STD or Std	standard
S1S, S2S, S4S, etc.	sides of a board surfaced, e.g. S2S = surfaced on 2 sides
TBR	timber

International Trade In Wood Chips Seeing Steady Increases

Wood chips are one of the few forest products commodities that have seen a steadily increasing trend in globally traded volumes the past decade. With the exception of 2009, when global production of pulp fell by about ten percent and the demand for wood fiber was down, international trade of wood chips has increased every year from 2000 to 2011, as reported in the *Wood Resource Quarterly*.

From 2009 to 2012, global chip trade increased by 6.5 million tons to just over 31 million tons, valued at over five billion US dollars, slightly below the all-time high reached in 2011. Much of the increase in chip imports has been because of the expansion of MDF production capacity in Turkey and due to major investments in pulp capacity in China.

The top ranking of chip-importing countries has changed quite considerably the past five years. Although Japan is still, by far, the largest chip importer in the world, import volumes have declined from a record-high of almost 15 million tons in 2008 to just over 11 million tons in 2012. China, on the other

hand, has gone from being a net exporter of chips less than ten years ago to become the second largest importer of wood chips in the world. With the expansion of pulp production capacity in China and the lack of domestic fiber sources, it is likely that China will surpass Japan as the world's largest chip importer within 2-3 years. Japan and China are the two dominant consumers of globally traded chips. Their dominance is particularly accentuated for hardwood chips, where they imported 83 percent of the world's total imports in 2012.

It is likely that global trade of wood chips will continue to go up in the coming years for two main reasons because 1) there are limited forest resources in some of the countries which are expanding industry capacity and 2) some forest companies are making the strategic decision of diversify their supply sources and import wood chips rather than procure marginal fiber supplies locally.

(Source: *The Northern Logger and Timber Processor*, August 2013)

Nebraska Forestry Industry Spotlight



FRICKE'S TIMBERCRAFT



Fricke's Timbercraft Construction is a small family operated logging and construction business located in Sioux County, near Fort Robinson. Herb and Deb Fricke wanted to raise their three, now grown children, Shawn, Amy and Christopher in the country and the beautiful Pine Ridge area. "People are surprised when we tell them our dad is a lumberjack in Nebraska!" says Amy Fricke.

A fire on Herb's father-in-law's ranch in 1990 prompted Herb to purchase a 230 Timberjack cable skidder to salvage the timber. So began a business of over 20 years logging private, state, and national forest land; utilizing and tending the ponderosa pine forests in northwest Nebraska.

Selling logs primarily to the Pope and Talbot sawmill in Spearfish, South Dakota, and various other mills, provided a living for the family. Herb came from a family that worked with wood and he also had experience in house framing construction and cabin/log home construction. So, in 2001, Herb was excited when approached by the Nebraska State Historical Society to furnish logs for and reconstruct the 4,500 sq. ft. 1874 Cavalry Barracks at Fort Robinson! This cavalry barracks was made famous by being part of one of the last Indian conflicts in the American west and is also known as the "Cheyenne Outbreak Barracks". This became a family project as the logs were harvested locally, hand-peeled, and sawn on two sides using



Herb and Amy Fricke

their portable Peterson Sawmill for the building. It took over a year to build, chink, and finish the barracks. The building was dedicated on June 7, 2003. It is now a unique free museum at Fort Robinson State Park. The Frickes are happy to be a part of preserving the history of this part of the country.

Since the completion of the Ft. Rob job, the Frickes have been involved in logging, sawing rough cut lumber, log structure restorations, and new post and beam timber

infill log home construction. The business provides jobs for the family and summer work for friends working their way through college. Currently, because of the severe drought and subsequent fire risk, the Frickes have been busy thinning local forests to reduce the fuel load. During the thinning process, usable logs are saved for cabin construction or sawn for rough cut lumber.

The latest building project is a 1200 square foot timber-framed meeting hall for Camp Norweska, a Methodist camp located south of Chadron, Nebraska. They are utilizing trees harvested from the camp after the fires of August, 2012, for the building materials. Construction of the meeting hall is planned for spring, 2014.

Contact information for Fricke's Timbercraft Construction is: Herb Fricke, 133 Vogl Loop, Crawford, NE 69339; phone: (308)665-1424; email: frickeys@yahoo.com.

Food for Thought

A lot of good could be accomplished in this world if nobody cared who got the credit!

—'Unknown'

The Trading Post

The Trading Post is provided as a free marketing service for forestry industry. Only forestry-related advertisements will be accepted with the exception of products manufactured in the normal course of your business. Please submit written ads to the *Timber Talk* editor at least 15 days before scheduled *Timber Talk* publication dates. Ads may be edited to meet space constraints.

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.

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@AWE.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.

Horse-drawn or Tractor-drawn grader. With front wheel dolly. Contact: Carl Hinds, S. Sioux City, NE. Phone: (402) 494-2127 or cell (712) 281-1472.

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.

How to Save Money With a Wood Stove

Stove, Pipe, Installation, etc.	\$958.68
Chain Saw	437.95
Gas and Maintenance for Chain Saw	87.40
4-Wheel Drive Pickup, used	12,379.04
4-Wheel Drive Pickup, maintenance	438.00
Replace Rear Window of Pickup, twice	710.57
Fine for Cutting Tree in State Park	500.00
Ten Cases of Budweiser	170.00
Littering Fine	100.00
Tow Charge from Creek	150.00
Doctor's Fee for Remvoing Splinter from Eye	140.00
Safety Glasses	98.00
Emergency Room (Broken Toe — Dropped Log)	550.75
Safety Shoes	98.50
New Living Room Carpet	1,200.00
Paint Walls and Ceiling	220.00
Chimney Brush and Rods	96.50
Log Splitter	500.00
Replace Coffee Table (Chopped Up and Burned After Drinking Bud	125.00
Divorce Settlement	33,678.00
TOTAL FIRST YEAR'S COSTS	\$52,638.39
Savings in "Conventional" Fuel — First Year	429.61
NET COST OF FIRST YEAR'S WOODBURNING	\$52,208.78

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 (18 trees) 3,734 bf Veneer 2 - 197 bf Veneer 3 - 1,239 bf Lumber 1 - 556 bf Lumber 2 - 1,274 bf Lumber 3 - 468 bf	Karloff 8/2013	Bob Cabell 20403 Meadow Ridge Drive Springfield, NE 68059 (402) 618-6446 bob.cabell2@gmail.com Location: Washington County
2. Black Walnut (25 trees) 2,428 bf Veneer 3 - 295 bf Lumber 1 - 352 bf Lumber 2 - 635 bf Lumber 3 - 1,146 bf	Karloff 8/2013	Evelyn Jensen 13012 Briar Road Liberty, MO 64068 Ph: (816) 510-1674 Location: Nemaha County

***You know you're
from Nebraska if...***

you have no problem
spelling or pronouncing
"Keya Paha."