

FUTURE HARDWOOD HARVESTS?

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AREAS TO BE EXAMINED

- Current hardwood timber removal patterns and contrasting softwood timber removal patterns
- The two types of markets that will influence future hardwood timber harvests
 - Physical Markets
 - Money Markets
- Concluding comments



TYPES OF HARDWOOD HARVESTS OBSERVED FROM 2005 TO 2015

Type of Cut	Description
Diameter influenced hardwood cuts	At least 80 percent of basal area removed are hardwood sawtimber size trees (11" and larger), 85 percent of basal area removed are hardwood species, and basal area removal does not exceed 85 percent of basal area of all live trees.
Other partial hardwood cuts	At least some sawtimber size hardwood trees are cut, at least 85 percent of basal area removed are hardwood species, and basal area removal does not exceed 85 percent of basal area of all live trees.
Mixed hardwood softwood partial cuts	Mixed hardwood and softwood cuts of all diameters with hardwood plus softwood basal area removed not exceeding 85 percent of total live trees basal area and the proportion of hardwood or softwood basal removed not exceeding 85 percent total cut.
Hardwood clear cuts	Over 85 percent of basal area of all live trees is removed with at least 85 percent of removal being hardwoods.
Mixed hardwood softwood clear cuts	Over 85 percent of basal area of all live trees is removed with the proportion of hardwood or softwood basal removal not exceeding 85 percent total cut.



HOW HARDWOOD TIMBER COMES OUT OF THE FORESTS IN MAJOR NORTHERN STATES

State	Diameter influenced hardwood cuts	Other partial hardwood cuts	Mixed hardwood softwood partial cuts	Hardwood clear cuts	Mixed hardwood softwood clear cuts
Wisconsin	19.8%	38.5%	9.4%	19.7%	3.5%
Michigan	25.7%	39.5%	12.3%	10.3%	6.0%
Maine	7.2%	24.6%	42.1%	9.5%	9.5%
New York	41.9%	31.2%	14.3%	5.6%	trace



HOW HARDWOOD TIMBER COMES OUT OF THE FORESTS IN MAJOR CENTRAL STATES

State	Diameter influenced hardwood cuts	Other partial hardwood cuts	Mixed hardwood softwood partial cuts	Hardwood clear cuts	Mixed hardwood softwood clear cuts
Pennsylvania	72.1%	10.4%	4.9%	5.0%	4.1%
W Virginia	70.0%	8.9%	0	17.2%	0
Ohio	64.2%	11.1%	trace	21.3%	0
Indiana	86.0%	3.0%	0	6.7%	0
Kentucky	66.6%	7.1%	2.8%	19.6%	0
Missouri	67.3%	11.5%	6.6%	4.6%	trace
Tennessee	48.8%	11.5%	3.2%	32.7%	trace



HOW HARDWOOD TIMBER COMES OUT OF THE FORESTS IN MAJOR SOUTHERN STATES

State	Diameter influenced hardwood cuts	Other partial hardwood cuts	Mixed hardwood softwood partial cuts	Hardwood clear cuts	Mixed hardwood softwood clear cuts
Virginia	28.1%	18.1%	14.0%	20.3%	13.3%
N Carolina	14.1%	14.8%	14.4%	30.7%	20.7%
Arkansas	19.3%	16.1%	14.4%	15.4%	25.9%



TYPES OF SOFTWOOD HARVESTS OBSERVED FROM 2005 TO 2015

Type of Cut	Description
Mixed hardwood softwood partial cuts	Mixed hardwood and softwood cuts of all diameters with hardwood plus softwood basal area removed not exceeding 85 percent of total live trees basal area and the proportion of hardwood or softwood basal removed not exceeding 85 percent total cut.
Softwood cuts	Softwood cut of all diameters with hardwood cut not exceeding 15 percent of basal area removed, and basal area removal does not exceed 85 percent of basal area of all live trees.
Softwood clear cuts	Over 85 percent of basal area of all live trees is removed with at least 85 percent of removal being softwoods.
Mixed hardwood softwood clear cuts	Over 85 percent of basal area of all live trees is removed with the proportion of hardwood or softwood basal removal not exceeding 85 percent total cut.
Softwood thinning cuts	Partial removal or apparent thinning of loblolly pine (NC, VA, TN) or red pine (WI MI) and total basal area removal does not exceed 85 percent of the basal area of all live trees.



HOW SOFTWOOD TIMBER COMES OUT OF MAJOR HARDWOOD/SOFTWOOD STATES

State	Mixed hardwood softwood partial cuts	Softwood cuts	Softwood clear cuts	Mixed hardwood softwood clear cuts	Softwood thinning cuts
Wisconsin	23.4%	22.9%	16.0%	7.8%	25.9%
Michigan	21.6%	23.7%	20.8%	13.5%	17.0%
Maine	45.4%	37.5%	3.7%	11.3%	0
Tennessee	12.3%	19.7%	44.4%	6.8%	15.1%
Virginia	15.5%	7.9%	28.5%	13.5%	33.7%
N Carolina	11.7%	9.1%	27.6%	17.5%	33.2%
Arkansas	10.5%	20.1%	30.4%	trace	36.7%



THE TWO TYPES OF MARKETS THAT WILL INFLUENCE FUTURE LOGGING OPERATIONS

- **Physical Markets**
 - Roundwood markets
 - Traditional markets
 - Bio fuels market?
 - Merchandizing
 - Input markets – labor, equipment, and fuel
 - Land and timber markets
- **Money Markets**
 - Actual money availability, interest rates, and risk
 - Logging equipment and timber purchases
 - Plant construction and infrastructure



TRADITIONAL ROUNDWOOD MARKETS

- Roundwood has to have a market to be brought out of the woods
 - Sawtimber
 - Grade lumber, face veneer, exports, ties, other industrial
 - Pole timber
 - Pulp, peelers, OSB and other panels, industrial, bio-fuels
 - Cull timber
 - Pulp, industrial, composites, special cases, biofuels
 - Sound dead timber
 - Firewood other biofuels?
- Who is paying the freight - both literally and figuratively



BIOFUELS - I DON'T KNOW – SOMEWHAT CHECKERED TRACK RECORD

- Ethanol production from cellulose occurred during WWII in the U.S. while wood as a chemical feed stock occurred even earlier
- Still the most economically efficient method of wood energy (as implied by market activity) is some variant of firewood including pellets - bulky to transport
- Infrastructure – Is one achievable for a long run outcome?
Stable Markets/Risk
- Can traditional hardwood roundwood fiber compete with row crop woody fiber production? Tons of carbon that can be recycled per acre.



INPUT MARKETS

- Labor
 - A recurrent issue across all segments of the industries I examined
 - Work ethic, drugs, core competencies needed for logging and related work
- Equipment
 - The technology is available and equipment can be produced to meet the changing needs of the industry but at what cost? Must be developed to work with the core competencies of the emerging labor base
 - The manufacturers and vendors of equipment can do it
- Fuel and energy
 - The wild card that will influence everything from initial felling, merchandizing, and viability of roundwood markets. **One of the biggest sources of risk as seen by the finance guys**



LAND AND TIMBER MARKETS

- Many of the clear cuts I have recently examined in the survey data are associated with changes in land use
 - Hardwood softwood conversion
 - No longer a plot indicating conversion to non forest uses
- The timber market is changing because of changes in ownership
 - Ownership fragmentation which has been heavily influenced by inheritance tax law
 - Timber Management Organizations and Real-estate Investment Trusts have definitive mid term objectives



THE AVAILABILITY OF MONEY FOR EQUIPMENT

- When banks and other lenders examine the current state of the hardwood industry they cannot fail to see Risk –higher interest rates or no lending at all.
- Overall economic growth has been anemic and the hardwood industry in general seems to be at the low end of the recovery scale
- Until the economy in general and the hardwood market in particular shows continual growth, money will be difficult to obtain from traditional lenders.



CONCLUDING COMMENTS

- “the new normal for U.S. GDP growth has dropped to between 1½ % and 1¾ %, noticeably slower than the typical postwar pace” San Fran FED
- Uses of hardwood lumber and roundwood have been in a state of flux for the past decade - Risk
- New markets such as biofuels – could end up as woody agricultural crop
- Expanding export markets especially to China and India for internal consumption – would help
- A reemergence of a dynamic middle class with increased buying power – let’s hope and pray.

