



PULPWOOD & CHIPS: The North American Pulp and Paper Industry has experienced challenges and changes much like other business sectors, which have a direct bearing on its marketing policies and the raw material supply chain of pulpwood and chips. The issues surrounding raw materials for this industry play an important role in affecting timber and log purchases, logging contractors and sawmill operations throughout the hardwood industry, particularly in the Southern region. Availability and pricing of timber and logs can be impacted by the positive or negative factors affecting the pulpwood and chip supply chain.

The success or failure of many logging contractors depends on pulpwood markets and the logging of saw logs for the hardwood industry. If pulpwood is not in demand or is impacted by negative circumstances in areas of North America, then logging contractors may not be able to operate: consequently, sawmill operations in those same areas are challenged by a lack of

available timber and/or logs.

Too, a resulting loss of qualified loggers has a longer term impact on overall timber and log supply. Fewer qualified loggers can mean that available private timber and/or log sales are restricted or delayed by the harvesting process.

Pulpwood and chip supply issues also have a direct bearing on sawmill operations, since the consistent sale and pricing of hardwood residue chips can be an integral part of their business. During 2004, many of these issues were reported as impacting activity within the hardwood industry.

Recognized as an authority on the marketing aspects and supply chain of the North American Pulp & Paper industry, Mr. Peter Ince has provided the following Guest Editorial on issues facing this industry and the resulting effect on hardwood pulpwood and chips.

The Hardwood Chip Market in 2004: Up in the North/Down in the South

So What's Up?

by
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The hardwood chip market gained some stability in the first half of 2004 with a modest upturn in hardwood pulp production and as timber supply emerged from the dampening clouds of unusually wet weather that prevailed throughout the Eastern United States in 2003. Although U.S. pulp production and exports increased in 2004, the hardwood pulp market began to show signs of saturation in the second half of the year, as hardwood market pulp prices peaked around mid-year. Weather also again became an issue in the third quarter with the late summer arrival of hurricane season in the South.

As noted in last year's report, hardwood chips are an important element of wood fiber raw material supply for the pulp and paper industry and other pulp-based

products such as fiberboard, with hardwood chips accounting for 18% of total hardwood and softwood pulpwood receipts at U.S. wood pulp mills (Forest Resources Association, *Annual Pulpwood Statistics Summary Report*). Hardwood chips enter the market from two principal sources: (1) chips produced from pulpwood roundwood, primarily from chip mills and to a small extent from in-woods chipping operations, and (2) wood residue by-products from sawmills. A slightly larger volume of hardwood pulpwood, not part of the chip market, is purchased as roundwood and chipped on site at pulp mills (19% of total pulpwood receipts). The South accounts for the largest share of the U.S. hardwood chip market, 74% of hardwood chip receipts at wood pulp mills, followed by 20% in the North, and just 6% in the West (Forest Resources Association).



U.S. hardwood chip exports were equivalent to about 4% of domestic hardwood chip receipts at wood pulp mills in 2003.

Extended periods of wet weather at times interrupt or constrain hardwood chip supplies (particularly roundwood supplies to chip mills or chips from in-woods harvest operations). Historically, wet weather has always made logging operations less efficient, as it is generally more difficult and time-consuming to operate in muddy conditions. In addition, more widespread promulgation and adherence to sustainable forestry practices and principles has occurred over the past decade or so, with widespread adoption of programs such as the Sustainable Forestry Initiative, corresponding training programs for loggers, and adoption of so-called "Best Management Practices" (**BMPs**) by many states, loggers, and forestry professionals. Thus, for example many loggers today follow scientifically proven Best Management Practices (**BMPs**) to help protect water quality and soil during forest management activities. Among the principles and practices is recognition that logging operations may need to be postponed during wet weather conditions until drier conditions prevail, or that use of certain heavy equipment and skidding may need to be avoided during flooded or wet soil conditions on harvest sites.

The net result for hardwood pulpwood supply, particularly roundwood pulpwood supply, is that dry weather conditions clearly contribute to more normal pulpwood supply, while prolonged wet and muddy weather conditions tend to constrain or upset pulpwood supply. Recalling the old sailor's rhyme ("red sky at night sailor's delight. . ."), logging contractors and foresters might share a rhyme about pulpwood supply, something like "*weather fairly dry, normal supply – weather really wet, supply upset*".

Although prolonged wet weather conditions dissipated across much of the South in the first half of 2004, above-normal precipitation persisted in parts of the North, particularly the Great Lakes region and Midwest. *Figure 1* is a map of the United States showing regional deviation from normal precipitation levels in the first half of 2004 (from National Oceanic and Atmo-

spheric Administration). Although the Midwest and Great Lakes regions continued to experience above-normal precipitation, much of the South and Southeast in particular had drier than normal conditions in the first half of the year.

Whereas hardwood pulpwood supplies in the Eastern United States were dampened by persistent wet weather in 2003 (higher than normal levels of precipitation throughout the East had constrained pulpwood supply and pushed hardwood chip prices up in 2003, as explained in last year's report), drier weather patterns emerged in the first half of 2004 and helped return pulpwood supply to more normal conditions, particularly in the South, exposing hardwood chip markets to the sunshine of more normal supply and demand relationships. In the U.S. South for example, with abundant available inventories of mixed hardwood timber and with hardwood pulpwood used primarily for production of kraft pulp, the relaxation of weather-induced supply constraints contributed to more robust supply. Consequently, despite a modest nationwide upturn in production of hardwood kraft pulp, Southern hardwood roundwood pulpwood prices tumbled in the first half of the year (according to Timber Mart-South, **TMS**) and hardwood chip prices receded in 2004. Thus, judging by the direction of Southern hardwood pulpwood and chip prices in 2004, relatively abundant and available supplies of mixed hardwoods in the South appeared adequate to meet modest increases in demand, with little or no inflation in hardwood chip prices, so long as drier weather conditions prevailed.

A very different situation emerged however in the Northern United States in 2004, where delivered hardwood chip prices increased modestly in the Great Lakes region and more significantly in the New England region (by more than 20% according to *International Woodfiber Report*). Obviously (as shown in Fig. 1) wet weather in the Great Lakes region and Midwest may have contributed to supply shortages, but New England did not have unusually wet weather in the first half of 2004. However, another distinction besides weather between the U.S. North and South in terms of hardwood pulpwood resources is that lower-density hardwood species such as Aspen are used heavily for

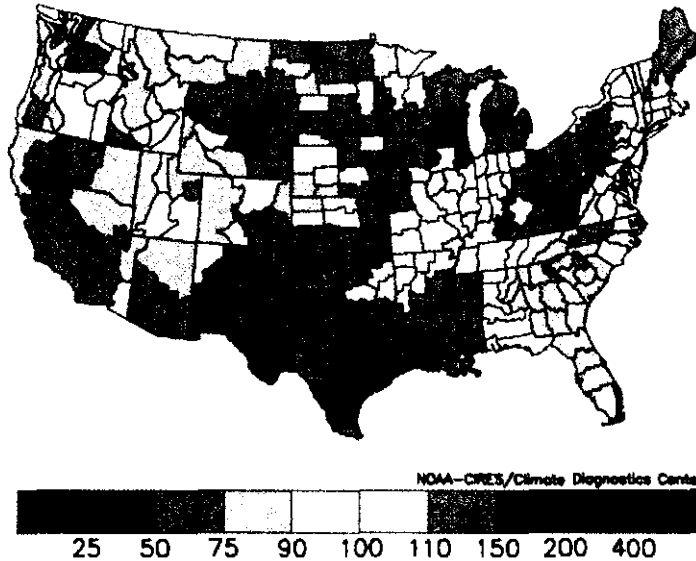


Fig. 1—Percent of normal precipitation (1895-2000) in the 6-month period, January to June 2004.

oriented strand board (**OSB**) production as well as for wood pulp and printing & writing paper production in the North, and 2004 was a record year for **OSB** prices and for output of **OSB** and related engineered wood products (with a very robust U.S. housing market). **OSB** is produced also in the South, but there it is produced more commonly from Southern Pine or from low-density hardwoods such as Yellow Poplar (species that are not used as heavily for wood pulp production in the South as the higher density hardwood species). Thus, another explanation for the divergence in hardwood chip price trends for the North and South besides weather is the somewhat different role of **OSB** technology in the two regions - **OSB** being more of a direct competitor for hardwood fiber against hardwood pulp in the North than in the South.

Hardwood market pulp is a globally traded commodity and as such the market and prices for hardwood pulp are determined largely by global supply and demand (quite independent of local weather conditions). Pulp prices are influenced by factors that broadly influence trade, such as shifts in currency exchange rates for example. The exchange value of the U.S. dollar continued to weaken in 2004 (as measured by the broad trade-weighted dollar index of the *U.S. Federal Reserve*) after having peaked in early 2002. A weaker dollar generally makes U.S. goods more competitive in other countries. The overall U.S. goods trade deficit climbed to record levels in 2004, but there was a

notable improvement in wood pulp trade, with total U.S. wood pulp exports climbing at an annual rate of 14% through the third quarter of 2004 (according to the monthly statistical summary published by *American Forest & Paper Association, AF&PA*). U.S. manufacturers still face stiff challenges from global competitors, and total U.S. wood pulp output in 2004 is still well below historical peak output levels of the mid-1990s. However, U.S. woodpulp output increased modestly, by about 2% in the first nine months of 2004 relative to 2003, marking 2004 as the first year that U.S. woodpulp production will have increased since peaking in the mid-1990s (U.S. woodpulp output in 2004 is still about ten percent less than the peak 1995 output level).

In 2003, with a more favorable demand outlook and more favorable currency exchange rates, the price of hardwood kraft pulp had already climbed by about ten percent early in the year and reached a plateau in U.S. markets in the second half of 2003 (according to *Pulp&Paper Week*). Hardwood pulp prices then climbed more modestly in the first half of 2004 to a recent peak in June and July. Hardwood kraft pulp prices then fell back to slightly lower levels in the second half of the year. Hardwood pulp prices are still almost \$100 per ton higher than they were in late 2001 and early 2002, but prices appear to have peaked in 2004. Thus, hardwood pulp prices have gradually improved since their most recent cyclical low in early 2002, and climbed to a recent peak in mid-2004, but the upward



momentum in hardwood pulp prices was not sustained in the third quarter of 2004.

U.S. output of printing and writing paper, the principal consumer of hardwood pulp, increased by 5% in the first nine months of 2004 over the same period in 2003 (according to **AF&PA**). Furthermore, a weaker U.S. dollar and falling prices for hardwood chips in the South increased the affordability of Southern hardwood chips in global markets, and U.S. exports of hardwood chips (particularly from the South) turned upward in 2004 for the first time in a number of years as shown in *Fig. 2* (after having collapsed since the mid-1990s)'. Thus, although imported printing & writing paper continued to make inroads into U.S. markets in 2004, overall U.S. output and consumption of hardwood pulp increased during the year, wood pulp exports increased, and hardwood chip exports increased as well, trends that boosted demand for hardwood pulpwood in 2004.

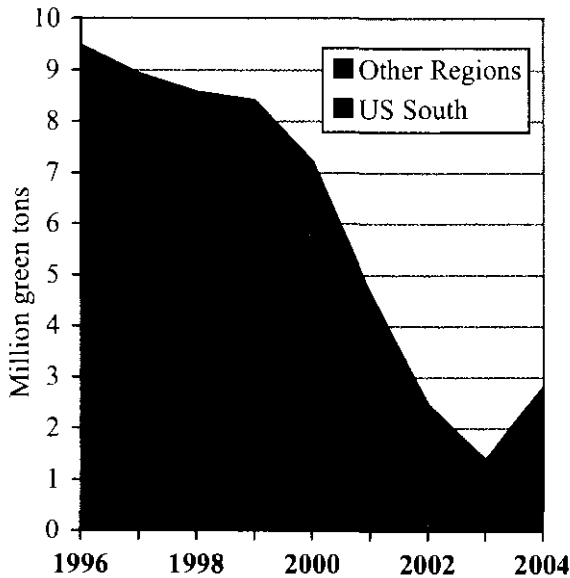


Fig. 2—U.S. hardwood chip exports, showing exports from the South and other regions.

Furthermore, apart from weather and global markets, hardwood timber growth volumes are generally higher across the South than in the North, contributing to more abundant supply and more long-term stability in pulpwood prices in the South than in the North as demand increases. Also, the pulp and paper industry in New England (and Great Lakes region) includes

concentrations of printing & writing paper mills that are heavily reliant on hardwood pulp, so that the upturn in printing & writing paper output in 2004 tended to concentrate increased demand for hardwood chips in the North.

Precipitation levels returned to higher than normal in the South in the third quarter of 2004, along with arrival of the hurricane season later in the summer. Hurricane "Ivan", a powerful Category 5 Cape-Verde type hurricane tracked across the Caribbean and into the Gulf of Mexico, and made landfall at Category 4 intensity on September 16 near Gulf Shores, Alabama (*Fig. 3*). The storm tracked northward from there, causing severe forest damage in Southern Alabama and Western Florida counties and moderate to lighter damage into central Alabama. Intense rain and tremendous flooding were associated with the storm as it tracked in a wide loop across Southeastern states, resulting in suspended logging operations and temporary shutdown of a number of pulp mills in September.

Although wet weather associated with hurricanes is generally transitory, the local storm damage to forests, particularly near the area of landfall, can be severe and result in local impacts on timber supply as cleanup and timber salvage operations tend to push additional wood supply into the market. Hurricane "Ivan" was no excep-

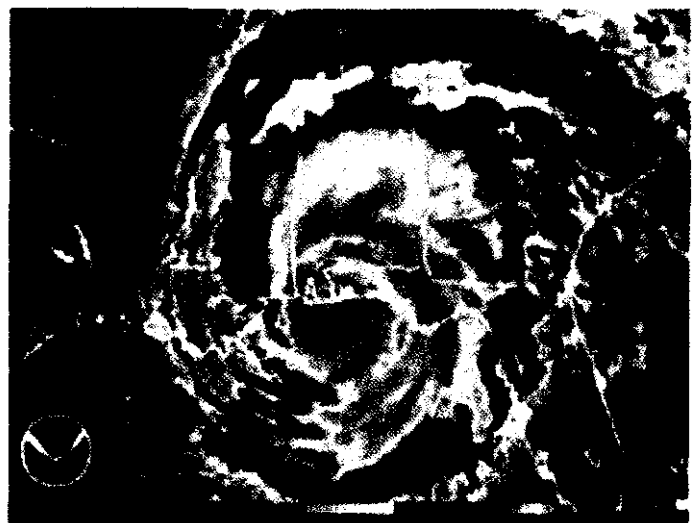


Fig. 3—Satellite image of hurricane "Ivan" making landfall in Southern Alabama and Western Florida, September 16 (NOAA).



HARDWOOD MARKET REPORT

Lumber News Letter



tion, as a flood of excess supply from storm-related salvage operations created a local glut that soon replaced the temporary supply disruptions caused by the storm and flooding of mid-September. Thus, although above-normal precipitation returned to the South in the third quarter of 2004, courtesy of the hurricane season, it was more transitory and has not resulted in the kind of supply constraints and hardwood pulpwood price increases that occurred in 2003 when more sustained wet weather conditions caused a supply shortage in the market.

As anticipated in last year's report, the hardwood chip market was influenced in 2004 by the ongoing U.S. economic recovery and the trend toward a weaker dollar, with an upturn in hardwood pulp production and exports, an upturn in hardwood chip exports, higher prices for hardwood market pulp, and increased output of printing & writing paper. Thus, as projected last year, the economic recovery, along with beneficial trade effects of a weaker dollar for U.S. manufacturing propelled a gradual upturn in paper and paperboard demand, wood pulp output, and pulpwood demand. The upturn in hardwood pulpwood demand (along with increased output of **OSB**) contributed in 2004 to an up trend for hardwood chip prices in the North, while in the South chip prices were down as drier weather and hurricane cleanup operations in the region boosted pulpwood supply and outpaced demand. The upshot was that hardwood chip prices exhibited diverging trends between the North and the South in 2004 - up in the North, and down in the South.

Looking ahead, if the weaker dollar continues to enhance U.S. competitiveness, with continued recovery in U.S. industrial output, business activity, and print advertising, it is likely that U.S. hardwood pulp producers as well as U.S. producers of printing & writing paper may continue to modestly expand output for domestic and export markets well into 2005 (as was the case in 2004). Thus the bulk of U.S. hardwood chip demand (at U.S. hardwood pulp mills and printing & writing paper mills) may continue to be positively influenced by a weaker dollar and positive trends in manufacturing, business growth, and advertising, barring unforeseen events.

However, hardwood pulp prices seem to have peaked around mid-year in 2004, and over the next year pulp prices are likely to move more under the influence of supply-side determinants, such as transitory mill outages, shutdowns for maintenance and shifts in global pulp inventories. Broader global shifts in pulp supply (new capacity), global demand, or global prices are driven by larger-scale shifts in global consumption. Over the next year Asia and China in particular hold the key to global shifts in pulp markets. Wood pulp demand and paper production in China is growing faster than in any other country, with China now the world's second-largest consumer of paper products.

Producers in Asia and Latin America, equipped with newly expanded production capacity, will meet much of the expected increase in global hardwood pulp demand in 2005. The world's largest new hardwood pulp mill for example was slated to begin production at Hainan Island, China, in December of 2004, with output capacity of one million tons per year, while another new hardwood pulp mill nearly as large was slated for mid-2005 startup in the state of Bahia in Brazil. Thus, although rising Asian demand could have spillover effects for U.S. hardwood pulp producers, global pulp capacity growth (mostly outside the United States) could also outpace global demand growth and thus potentially dampen the global hardwood pulp market with excess supply in 2005.

With a prospect for higher interest rates (given that the Federal Reserve has already repeatedly raised short-term lending rates in 2004) growth in the U.S. housing market (sensitive to mortgage interest rates) is expected to moderate. Indeed, by late 2004 **OSB** prices had dropped well below peak prices reached earlier in the year, and some **OSB** producers began to take downtime for maintenance. Consequently, growth in demand for wood at **OSB** plants is not likely to be as robust in 2005 as in 2004, likely reducing pressure on hardwood pulpwood and hardwood chip prices particularly in the North where hardwood pulp and **OSB** plants often compete for similar raw material.

¹ 2004 estimate extrapolated from exports for the first 9 months of the year; data from U.S. Department of Commerce and ITC compiled by Irene Durbak, Forest Products Laboratory, Madison, WI



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2004: THE YEAR AT A GLANCE

HARDWOOD MARKET REPORT'S

8TH ANNUAL

STATISTICAL ANALYSIS

OF THE

NORTH AMERICAN

HARDWOOD MARKETPLACE



2004: The Year At A Glance

Table of Contents

Looking Back	1	Pulpwood & Chips	75
		<i>Guest Editorial</i> _Peter J. Ince	75
Supply	4	Timber, Logs & Sawmills	80
Demand	11	<i>Guest Editorial</i> _William G. Luppold, Ph.D	80
Pallets	14	Looking Forward	85
<i>Guest Editorial</i> _E. R. "Dusty" Moller	17	Banking & Financial	89
Housing	20	<i>Guest Editorial</i> _Daniel L. Duncan	90
Furniture	26	Insurance	92
Cabinets	32	<i>Guest Editorial</i> _Keith "Dee" Peterson	93
<i>Guest Editorial</i> _C. Richard Titus	33	Safety	95
Dimension & Components	38	<i>Guest Editorial</i> _Amanda Mayer	95
<i>Guest Editorial</i> _Steve Lawser	38	Trucking	97
Flooring	46	<i>Guest Editorial</i> _Clifford F. Lynch	97
Crossties	56	Sloan Foundation Forest Industries	
<i>Guest Editorial</i> _James C. Gauntt	59	Center	99
Comparative Pricing	62	<i>Guest Editorial</i> _Dan Cumbo	
International	64	Hardwood Federation	102
		<i>Guest Editorial</i> _Christopher M. Allen	
		Sponsors	104

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