Market Conditions

South-wide average stumpage prices showed little change from last quarter. Extended holiday schedules and market-related curtailments slowed demand in some timber markets but prices generally remained steady. Heavy rainfall sporadically affected supply.

<table>
<thead>
<tr>
<th>South-wide Average Stumpage Prices $/ton</th>
<th>one quarter</th>
<th>year ago</th>
<th>2Q 02</th>
<th>prcnt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine Sawtimber</td>
<td>$36.38</td>
<td>$36.56</td>
<td>$36.47</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Pine Chip-n-saw</td>
<td>$22.29</td>
<td>$22.16</td>
<td>$22.84</td>
<td>-2.4%</td>
</tr>
<tr>
<td>Pine Pulpwood</td>
<td>$6.62</td>
<td>$7.06</td>
<td>$5.83</td>
<td>+13.6%</td>
</tr>
<tr>
<td>Hardwood Sawtimber</td>
<td>$19.59</td>
<td>$19.58</td>
<td>$18.34</td>
<td>+6.8%</td>
</tr>
<tr>
<td>Hardwood Pulpwood</td>
<td>$6.49</td>
<td>$6.76</td>
<td>$4.75</td>
<td>+36.7%</td>
</tr>
</tbody>
</table>

Note: 1st Quarter 2003 prices revised by TMS.

Pine Prices

Pine sawtimber and chip-n-saw prices remained at about the same level as last quarter. Reporters said that poor lumber prices and “uncertainty” attributed to the dispute regarding Canadian lumber tariffs affected sawlog markets.

Pine pulpwood prices declined after last quarter’s surge but were still much higher than a year ago. “Lots of wood on the road,” said one Texas reporter. “When sunshine increased, inventories and/or quotas quickly filled up.”
Market Indicators

Pulp & Paper Indicators

Northern Bleached Softwood Kraft (NBSK) pulp prices ended the quarter at $538 per ton, up from $520 at the end of the 1st Quarter 2003 and up from $477 one year ago. The NBSK price is commonly used as an indicator for pulp market prices and eventually paper prices.

Lumber Indicators

The Random Lengths Framing Lumber Composite price for the week of June 27th, was $317 per thousand board feet (mbf), up from $276 at the end of March and slightly higher than $311 the last week of June 2002.
Southern OSB prices have almost doubled since January according to Random Lengths. Southern pine plywood prices have also increased but OSB was trading at a premium to plywood by the end of the quarter.

At the end of June, southern kiln dried red oak lumber prices had dropped to $895 per mbf, about $30 less than they had been at the end of March but were still up about $30 from June 2002 according to the Hardwood Market Report. White oak ended the quarter at $650 per mbf, about the same as last quarter but an increase of about $80 from prices a year ago.

**U.S. Building Construction**

In June, the U.S. Census Bureau reported that both U.S. total privately-owned housing starts and those in the U.S. South increased in May. Year-to-date, 691 thousand new units were started in the U.S. compared to 683 thousand in the same period of 2002. Resulting construction levels are highest seasonally adjusted annual rate for the first five months of the year since 1987.

**Other Market Factors**

Mortgage rates remained low in the 2nd Quarter. Equity market values increased to the highest levels of the year this quarter, with the Dow Jones Industrial Average above 9,000 for most of June. The S&P 500 Index ended the quarter at 974 as opposed to 848 at the close of last quarter. The yield on 30-year U.S. Treasury Bonds ended the quarter at 4.56 percent on the Chicago Board Options Exchange, down from 4.84 percent at the end of last quarter but up from 10-year lows set in mid-June.

Economic expectations have fallen slightly, with Valueline Inc. estimating real GDP growth at 2 percent for 2003. According to the U.S. Bureau of Economic Analysis GDP grew 2.4 percent in 2002 and 1.4 percent in the 1st Quarter 2003.

On June 25th the Federal Open Market Committee (FOMC) decided to lower its target for the federal funds rate by 25 basis points to 1 percent. The Board of Governors also approved a 25 basis point reduction in the discount rate to 2 percent. The FOMC announcement included, “With inflationary expectations subdued, the Committee judged that a slightly more expansive monetary policy would add further support for an economy which it expects to improve over time.”

**Restructuring**

**Staff Cuts at Pulp & Paper Mills**

*International Paper* cut staff at its Natchez MS mill in April. The layoff cut about 80 persons, the first of 600 personnel IP plans to release or relocate when the company completes its plans to close the mill. By press time, IP had not announced a final decision on the future of the Natchez site. (See previous story on closing the mill in TMS Market News 1st Quarter 2003.) Mill employees have attempted to put together an offer to purchase the mill and several companies have visited the site to explore using all or part of the mill facility.

*Weyerhaeuser Company* announced on June 6th that it plans to cut staff at Flint River mill in Oglethorpe GA, part of an operational streamlining, the Flint River mill will eliminate about 18 percent of its job positions during 2003 and 2004. The layoff will cut about 40 persons.
The Flint River mill produces bleached softwood kraft fluff market pulp and has a capacity of 300 to 350 thousand metric tons per year.

**Pope Resources to Create TIMO**

In May, Pope Resources LP, a timber company based in Paulsbo WA, announced its creation of a new timberland investment management organization (TIMO.) The company intends to offer a $50 million private equity fund, Olympic Resource Management Timber Fund I LP, and allow individual participation with a minimum of $500,000 in capital investment. The company would structure the fund as limited partnership, with Olympic Resource Management, a Pope Resources subsidiary, in the role of general partner. Investors would be able to buy into the fund thus expanding the pool of individuals able to own commercial forests.

**Riverwood International**

Riverwood International and Graphic Packaging International Corporation of Golden CO detailed their merger announced at the end of last quarter. The companies will take the name of Graphic Packaging Corporation. Riverwood also announced plans to transfer its beverage carton converting operations from its Fort Atkinson WI plant to its West Monroe LA facility and consolidation of its soft drink carton converting operations to the company’s Perry GA facility. At Perry, Riverwood is adding a new 300,000 sq. ft. warehouse and product distribution center, enlarging the current facility by 150,000 sq. ft., and installing state-of-the art presses and high speed gluers. The company expects work on the new building and plant additions to begin in June and to finish in 2005.

**International Restructuring**

Aracruz Celulose S.A. announced its agreement to buy eucalyptus kraft pulp producer Riocell from Klabin S.A. for an estimated $610 million. Riocell, located in Rio Grande do Sul, Brazil, has a current annual installed capacity of 400,000 tons and has 40,000 hectares (98,800 acres) of eucalyptus plantations. Klabin intends to use the proceeds to reduce debt while Aracruz sees the purchase as an opportunity to grow. According to a report from the Center for International Forestry Research (CIFOR), Aracruz owns 180,000 hectares of eucalyptus plantation in the Brazilian states of Espírito Santo and Bahia as well as having
contractual agreements with some 2,200 outgrowers who produce pulpwood on 37,000 hectares (91,000 acres) of farmland. A racruz’s pulp production in 2002 was 1.6 million metric tons, derived from 6.1 million cubic meters of eucalyptus wood. Klabin, with operations in both Brazil and Argentina, has annual pulp production of about 1.7 million metric tons and operates 229,000 hectares (566,000 acres) of pinus and eucalyptus plantations.

Canfor Corporation, Canada’s largest lumber company, announced plans in April to begin reconstructing its Houston sawmill, located in northwestern B.C., into the largest sawmill in the world. The company hopes to lower production costs by four percent by increasing capacity and improving its efficiency. The mill will be able to produce 600 million board feet (mbf) a year, up from existing capacity of 450 mbf. Canfor also announced the purchase of two privately owned lumber and timber harvesting companies, Daaquam Lumber Inc. and Produits Forestiers Anticosti Inc., both based in Quebec City. Daaquam is a lumber manufacturing operation with an annual capacity of 150 mbf, and timber-cutting rights in the surrounding region. Anticosti holds additional timber rights and has harvesting operations on Anticosti Island.

Domtar Inc. and Tembec, Inc. of Montreal Quebec, announced on June 19th their plans to create a joint venture “the second largest solid wood products company in Canada.” The new company will have assets valued at approximately $850 million and net sales of about $900 million. It will have a manufacturing capacity of 2.1 billion board feet. Domtar had previously purchased four white paper mills from Georgia-Pacific. (See details in TMS Market News 2nd Quarter 2001.)

Fletcher Challenge Forests Ltd. of New Zealand announced on June 16th plans to sell all its timberland assets. The company would re-invest the proceeds of the sales in its processing and distribution activities. The company’s forest estate covers 106,000 net stocked hectares (262,000 acres) in the central North Island of New Zealand. Of this total, 99,000 hectares is FCF’s equity or owned estate, and minority interests hold 7,000 hectares. Manufacturing operations comprise seven sawmilling and remanufacturing facilities in New Zealand.
Zealand, all in close proximity to the forests.

Stora Enso Oyj and Aracruz Celulose S.A. announced on May 8th their plans to build a 900,000 metric ton per year eucalyptus pulp mill for Veracel Celulose S.A. at Eunapolis in the state of Bahia, Brazil. Each company has a 50 percent stake in the project and will be entitled to half of the mill’s output. The companies have budgeted $870 million for the mill project. The investors have already spent an additional $300 million in forestry-related activities and construction of infrastructure, mainly roads and a harbor. They expect start-up in mid 2005.

### Timberland Transactions

Timber Mart-South estimates forest industry corporations sold about 820,000 southern acres in large timberland transactions this quarter. Louisiana Pacific generated more than half these sales. (See details next page.) Industry publications such as the Timberland Market Report (Paperloop.com) and ForestWeb.com estimate that three to four million acres remain on the market in the U.S. with most of the sellers being forest industry corporations and most of the buyers being TIMOs. Table 1 shows the Top Ten timberland owners in the U.S. at the beginning of 2003 compared to 2002. Table 2 shows the Top Ten U.S. TIMOs.

#### Major Timberland Sales

**Allegheny Energy** sold 5,600 acres in West Virginia to **Allegheny Wood Products** for $9.75 million ($1,740 per acre.)

**Bowater** sold 82,000 acres in Georgia to Wachovia’s **Evergreen Investments** for $123 million ($1,500 per acre.)

**Glatfelter** sold approximately 25,000 acres of timberland in Maryland to **The Conservation Fund** for $38 million ($1,500 per acre.) The Fund plans to sell the majority of the land to The Forestland Group LLC subject to a conservation easement managed by the state.

**International Paper** sold 2,700 acres in Virginia to **Glawson Investments Corp.** for $2.7 million ($1,000 per acre.) In a separate transaction, I-P, through its subsidiary Blue Sky Timber Properties, LLC, sold 52,000 acres in Georgia to **Hancock Timber Resource Group** for an undisclosed amount.
Louisiana Pacific signed a letter of intent in May to sell 43,500 acres in Texas (Saratoga tract) for $30.5 million ($700 per acre) to an undisclosed buyer. L-P also announced closure of its sale of 34,500 acres in Idaho for $21 million ($610 per acre.) The buyers were Grouse Peak LLC and Patriot Investments LLC of Boston MA and the timberland managers, Forest Capital Investments.

In addition, L-P announced on June 24th the closure of two Texas sales. In the first transaction, reported in TMS Market News 1st Quarter 2003, L-P sold approximately 53,000 acres near Cleveland to Cleveland Properties of Texas, LLC of Macon GA for approximately $35.3 million ($670 per acre.) The second transaction was the sale of approximately 27,000 acres in and around San Augustine County to San Augustine Properties of Texas, LLC for approximately $18.2 million ($670 per acre.)

On July 8th L-P announced its agreement to sell 465,000 acres of timberland in east Texas to an undisclosed institutional investor for approximately $285 million ($615 per acre.) Molpus Woodlands Group (MWH) a TIMO based in Jackson MS will manage the land for timber production on behalf of the investor. The company expects to close the sale in the 4th Quarter. Regarding divestment plans, L-P Chairman and CEO Mark A. Suwyn said that this sale completes “everything we set out to do within the time period we stated.”

Plum Creek sold 1,700 acres of timberland in Montana to the Trust for Public Land and U.S. Forest Service for $8.7 million ($5,100 per acre.)

Potlatch announced agreement to sell 15,200 acres of hardwood timberland to Bradley Lumber Company of Warren AR, purchaser of its hardwood sawmill (See TMS Market Newsletter 3rd Quarter 2002.)

Sierra Pacific Industries sold 1,908 acres in Nevada to the Trust for Public Land and U.S. Forest Service for $2.9 million ($1,500 per acre.)

Smurfit-Stone Container Corp. sold 81,000 acres of timberland in Alabama and Tennessee to the Stevenson Tract Acquisition Co, LLC, a joint venture between Archer Woodlands Group, LLC, a privately-held timberland investment and management company, based in New York NY, and Coastal Lumber Company, a privately-held forest products company, based in Weldon NC. The sale brought $37.5 million or $460 per acre.

Weyerhaeuser Company sold 30,000 acres of land in Oregon to the Ponderosa Land and Cattle Company for $10.8 million ($360 per acre) according to Forestweb.com and Paperloop.com. The company has another 10,000 acres in the area for sale.

Timberland for Sale

MeadWestvaco Corp. announced plans to sell 636,000 acres of commercial forestland in Maine and New Hampshire. A sale, the company said, will be contingent upon three factors: favorable price; long-term wood supply agreements for the company’s paper mill in Rumford ME; and continued third-party certification to ensure that the land is managed using sustainable forestry practices.

Weyerhaeuser announced its intention to sell 344,000 acres of timberlands in the South. The land for sale includes about 172,000 acres in south-central Tennessee, 50,000 acres in central and western North Carolina and 122,000 acres in South Carolina. Following the sale, the company will own or manage approximately 552,000 acres of timberland, all in North Carolina. Employing approximately 700 in Tennessee, 3200 in North Carolina and 1200 in South Carolina, the company expects the proposed sale to affect approximately ten employees.
Openings & Closings

Pulp & Paper

The American Forest and Paper Association (AF&PA) reported that April 2003 paper production was down 1.8 percent from the same period last year while paperboard production was up 1.6 percent. Total U.S. wood pulp production increased, up 2.1 percent from a year ago and market wood pulp production was up 35.4 percent.


The U.S. Forest Service published Southern Pulpwood Production, 2001 (SRS-84) this quarter. Tony G. Johnson and Carolyn D. Stepleton provide pulpwood supply and mill capacity statistics and maps. In spite of capacity reductions, the 13 southeastern states surveyed still account for more than 70 percent of U.S. pulping capacity.

Alabama and Georgia lead the South in both the number of operating mills and pulping capacity.

Bowater Inc. restarted the No. 3 newsprint machine at its Calhoun TN mill this quarter. Along with the No. 1 mixed specialties machine which restarted in January, this startup will bring the mill to full historical capacity for the first time since 2001. (See the TMS Market Newsletter 2nd Quarter 2001 and 1st Quarter 2002.)

The Calhoun mill has a capacity of about 830,000 tons per year of paper and 215,000 tons per year bleached hardwood kraft market pulp. Mill furnish is about 90 percent roundwood of which 75% is pine.

In April, Bowater held rededication ceremonies for the successful conversion of the No. 3 machine at its Catawba SC mill to coated groundwood. The company announced that it expected to complete the $175 million upgrade to the bleached kraft fiberline at the Catawba mill by the end of 2003. Forestweb.com reported that Bowater said that the project would entail 25 days of pulp downtime in late September or early October. The Catawba mill has a capacity of about 712,000 tons per year of paper and 270,000 tons per year of softwood kraft market pulp.

Georgia-Pacific took a regularly-scheduled maintenance outage for three weeks at its Palatka FL mill, starting May 4th with re-start May 25th. The mill has capacity to produce about 527,000 tons per year of paper products, including both kraft and tissue. Pulp capacity is about 540,000 tons per year.

Gulf States Paper Corp. plans to convert a recovery boiler at its Demopolis AL paper mill to 100 percent waste bark-firing capability. The conversion to the boiler, originally supplied by Babcock & Wilcox in 1956, will allow operation on coal, bark or a combination.

International Absorbents Inc. broke ground for a new conversion facility at Jesup GA in May. The company will produce a line of small animal bedding derived from waste wood fiber (cellulose), a by-product of the pulp and paper manufacturing process, and create warehouse facilities for regional distribution of its other products. Reasons cited for locating in Jesup included multiple, reliable sources of pulp in the region.

Parsons & Whittmore's Alabama River Pulp mill switched production from hardwood to pine again this quarter in response to weather-related hardwood supply shortages. The switch occurred for a few days at the end of May.

Smurfit-Stone Container Corp. made capital improvements as well as repairs to a recovery boiler at its Hopewell VA containerboard mill during the annual 30-day outage from mid-April through mid-May. The mill has a capacity of about 360,000 tons of unbleached softwood kraft pulp.

Solid Wood: Lumber

The Southern Forest Products Association (SFPA) reported that April 2003 production year-to-date was 5.27 billion board feet, down 7 percent from the same period in 2002. The SFPA Weekly
Mill Activity Summary in mid-June showed softwood sawmills have increased production levels over the 2nd Quarter as lumber prices rose.

The U.S. Forest Service published Profile 2003: Softwood Sawmills in the United States and Canada (FPL-RP-608) this quarter. Henry Spelter and Matthew Alderman provide wood supply and mill capacity statistics and maps. In spite of mill closure or conversion to hardwood, mill capacity increased. The 13 southeastern states surveyed account for about 48 percent of U.S. softwood sawmill capacity. Alabama has the largest number of operating mills in the South while Georgia has the largest sawmill capacity followed closely by Alabama and Arkansas.

One sign of market weakness was the many mills that took downtime over the Memorial Day holiday week. Mills traditionally take the July 4th holiday but most said that had markets been stronger, there would not have been as much holiday time in May.

Deltic Timber Corp. at its Waldo and Ola AR sawmills; Jordan Lumber & Supply in Mount Gilead NC; New South in Graham NC, Camden SC, and Conway SC; Robbins Manufacturing sawmill in Tarrytown FL; and Weyerhaeuser's sawmill in Zwolle LA all took a week of downtime for the July 4th holiday starting June 30th.

Elliot Sawmilling Co. in Estill SC cut production by 25 percent May 22nd for an indefinite period. The cut was due to high log costs and poor lumber prices. The mill had been up to 90 percent production last quarter compared to 80 percent since early 2002.

Georgia-Pacific halted production at all 15 of its southern pine sawmills May 12th through Memorial Day. The mills used the downtime to perform maintenance and rebuild log inventories.

Keadle Lumber of Thomaston GA curtailed production by 25 percent for two weeks for Memorial Day due to poor lumber prices and low log supplies.

Rayonier curtailed production at its three Georgia sawmills May 21st through May 26th due to market conditions. Sawmills and planers shut down at Baxley and Swainsboro; the sawmill at Eatonton shut down while the planer continued. In addition Baxley will be down two weeks in July for machinery installation.

International Paper elaborated on its plans to keep its Tuscaloosa sawmill in Moundville AL closed indefinitely. After intermittent shutdowns in the 4th Quarter 2002, I-P had kept the mill closed all year in 2003. While not necessarily a “permanent” closure, the current mill status terminates employees while leaving the option to re-open the mill if economic conditions improve.

MeadWestvaco began curtailment and stopped receiving logs at its Greenville GA sawmill on June 27th. The company expects the mill to close by August 1st and the mill's 150 workers will be laid off in stages. Low lumber prices, high wood cost, transportation issues and competition from Canadian imports were reasons cited for the decision. The mill opened in 1975 and produced about 100 million board feet per year.

On a more positive note, Leesville Lumber Co., restarted its Leesville LA sawmill and planer in late April. The company plans to increase production gradually as market conditions permit but has still not restarted its Bernice LA mill. (See the TMS Market News 4th Quarter 2002.)
Solid Wood: Panels

The APA-Engineered Wood Association reported that both southern plywood and OSB production were down in the 1st Quarter 2003 compared to the same period in 2002. Through April, though, OSB production year-to-date was higher than the same period in any previous year except 2002 but plywood production was at the lowest levels since 1993. The APA expects this trend to continue through 2003.

Georgia-Pacific announced plans to close its particleboard mill in Oxford MS in April. The company cited poor manufactured housing markets and over-supply in the particleboard sector. G-P's Russelville SC and Gloster MS plywood mills remain closed.

Louisiana-Pacific announced taking downtime for maintenance and capital projects at eight of its OSB mills this quarter. The downtime varied in duration at each mill, occurring between June 1st and July 15th. The southern mills affected were Jasper TX, Carthage TX, Hanceville AL, Athens GA, and Roxboro NC.

Martco's southern pine plywood mill in Chopin LA shut down three days in April for scheduled maintenance.

Weyerhaeuser's southern pine plywood mill in Zwolle LA will shut down a week for the July 4th holiday.

Other News

Welcome Jesse Johnson

Jesse Johnson joined the staff of Timber Mart-South in June. He is a 2000 graduate of Warnell School of Forest Resources and worked in timberland management with Rayonier in Northeast Florida since graduation.

Jesse is replacing Craig Melton, who resigned to pursue other business interests. (He is opening a Locos Restaurant in Auburn AL.)

Jesse's new coordinates are email at jjohnson@forestry.uga.edu, phone number (706) 542-4756, and Room 4-219 at W SFR.

Global Agriculture Information Network (GAIN) Reports from USDA

The USDA released a Solid Wood Annual Report for Burma. Additional reports covered the EU Action Plan for forest law enforcement published in May 2003 and the WoodBuild, WoodMac and Furnitek wood and wood processing trade shows held in Shanghai, China in February 2003. For the complete reports, access USDA, Foreign Agricultural Service, www.fas.usda.gov, click on Attaché Reports and select Solid Wood Products from Commodities.

Editor's Note: President Bush's “Healthy Forest Initiative” and the public protest against its proposed forest management practices by some “environmental” groups evoked the following opinion from environmental advocate, Patrick Moore.

Nature vs. Politics

By Patrick Moore

Greenpeace has just issued a report claiming that it is better to let our forests burn to the ground than to adopt programs that will reduce catastrophic wildfire. As an ecologist, I can tell you that this approach ultimately leads to soil destruction, air and water pollution, and wildfires that can kill every living thing in our forests -- all in the name of “saving the forests.”

Having dedicated my life to the environment, I am always concerned when the forces of nature meet face-to-face with the forces of politics. This is especially true when the forces of nature are coming in loud and clear: Approximately 90 million acres of our nation's public forests are at risk of catastrophic wildfire right now. Every year we see millions of acres of forest burn when this could be prevented.
At the Western Governors’ Association summit this week in Missoula, Montana, the topic will be forest health. Earlier this month, the House passed a bill that would hopefully improve forest officials’ ability to properly manage the forests. The Senate is scheduled to begin hearings on this bill next week.

We live in an era when many activists believe we should leave our forests alone -- an ecologically dangerous policy that sets our forests up to be destroyed not just by fire, but by insects and disease. It is especially bewildering when you consider how simple it is, through the application of time-tested forest management practices, to maintain forests in a state that reduces the chance of such outcomes.

The root of the problem is that when we protect our forests from wildfires, over time they become susceptible to disease and to catastrophic wildfires as fuel loads build up. The only way to prevent this is to actively remove dead trees and to thin the forest. The active management of these forests is necessary to protect human life and property, along with air, water and wildlife. This does not prevent us from also maintaining a world-class system of parks and wilderness areas where industrial activity is restricted or banned.

Many activists have a mindset that is simply opposed to forestry. These groups favor policies that involve reducing the use of wood instead of encouraging its use as a renewable resource. We have been led to believe that when we use wood we are causing a bit of forest to be lost. This is not the case. When we buy wood we send a signal into the marketplace to plant more trees, and produce more wood. One of the main reasons there is still about the same area of forested land in the U.S. today as there was 100 years ago is because we use so much wood. Agriculture and urbanization cause forest loss, not forestry.

The inferno that began in the Bandelier National Monument near Los Alamos, N.M. in May 2000 is a classic case in point. The park officials who started this fire did so with good intentions. But they failed to take into account that more than 50 years of fire prevention had resulted in a fuel load build-up that nearly guaranteed what ensued: hundreds of homes destroyed and thousands of
acres of forest lost.

The only solution in these circumstances is removal of wood to reduce the fuel load. In some types of forests, it may be possible to manage fuel loads with prescribed fire. In other forest types, especially where there are homes and other property at risk, mechanical thinning and harvesting are the best options.

It is unfortunate that some organizations characterize the need to implement active management of national forests as damaging to the environment. It is actually the only way to break the present environmentally destructive pattern of fuel build-up that often results in catastrophic outcomes. I hope that those responsible for our forests will bring about the very necessary changes in law and practice -- and return the forces of nature to a more desirable state.

Dr. Moore is co-founder and former president of Greenpeace.

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Editor’s Note: While some talk about the weather without doing anything about it, the following shows how some are exploring options (pun intended.)

Managing Weather Risk

By Brooks C. Mendell, Center for Forest Business, Warnell School of Forest Resources, University of Georgia

Price volatility, unplanned mill downtime and surprise log truck inspections can disrupt expected wood flows. Fortunately, inventory management and good communication can mitigate most of these disruptions. However, catastrophic or severe weather events may exceed the abilities and flexibility of the most talented wood supply organization. Weather-related wood fiber shortages at major Southern pulp and paper mills this winter highlight the risk. Developments with insurance contracts and financial derivatives may eventually prove useful to weather-sensitive forestry activities.

What is weather risk? Weather risk is “volumetric” risk, representing the potential impacts on earnings and cash flow from changes in volume. Catastrophic weather events, such as hurricanes and floods, can halt normal business activities. Ordinary weather, such as temperature, rain, snow and wind, can affect business, too, if more gradually and subtly. For example, in the energy industry, temperatures affect the amount of heating or air conditioning used by consumers, thereby influencing the volume of electricity or energy bought and sold.

Weather protection takes two primary forms: insurance and derivatives. Insurance policies exist for catastrophic weather events or “business interruption.” Financial derivatives hedge, or protect from, certain types of weather risk. Derivatives, financial tools that include options and futures, are contracts that get their value from underlying assets such as stocks, oil or mortgages. These contracts enable buyers to lock in prices for future sales or purchases.

Weather derivatives, available since the mid 1990s, payoff based on changes in temperature or precipitation. Initially, these contracts traded over-the-counter (OTC), meaning they were negotiated to meet the needs of two specific parties. Since 1999, however, weather contracts have been available on the Chicago Mercantile Exchange (CME), where anyone with a trading account can view and purchase them. (Go to www.cme.com and click on “products” to find weather contracts.)

Who uses derivatives? For years, farmers and industrialists have used futures and options to protect against price volatility in buying and selling commodities such as corn, wheat, soybeans, oil, pork bellies, and cotton. More recently, farmers have used weather derivatives for heat-loving crops, such as cotton, or crops that cannot survive
frosts. Agricultural users can buy these contracts through CME on the open market, or over-the-counter through a financial institution. Who might take the other side of such contracts? Some industries benefit from cold weather, such as winter clothing manufacturers and car battery producers. Speculators and investors also buy and sell weather contracts.

Other users of weather derivatives include energy firms, ski resorts and Disney. For example, Disney knows that cold weather reduces theme park attendance. If the weather turns out warm, Disney loses only the premium paid for the contract; if the weather turns sour, Disney receives a payoff, partially compensating the park for fewer visitors. Sometimes, a competing theme park may be the counter party to the contract, selling Disney the weather contract and pocketing the premium if the weather remains warm, while taking on additional weather risk.

Any firm that can establish a clear connection between weather changes and revenue may find weather derivatives useful. In the forest products industry, potential applications for weather derivatives might include tree planting, logging and log hauling, wood procurement, and log inventories. Already, some building contractors use weather derivatives for projects with sensitive deadlines.

Weather derivatives have limitations. First, exchange-traded weather contracts are available in only ten U.S. cities, restricting their use for typical forestry activities. Second, weather derivatives continue to face pricing issues because the models used to calculate traditional futures and options prices rely on assumptions that may not apply to the weather. Third, measuring the need and performance of weather derivatives for day-to-day users remains challenging.

While ongoing research studies practical applications for weather derivatives in forestry, managers continue to handle weather risk by protecting wet weather tracts, making expensive spot log purchases on the open market and watching inventory levels. Eventually, tailored weather contracts may reduce uncertainty and costs associated with foul weather procurement decisions and forestry operations.

This article references current research by Brooks Mendell, Michael Clutter and David Newman, Center for Forest Business, Warnell School of Forest Resources. For further information on this topic, please contact Brooks at bcm3407@owl.forestry.uga.edu.

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![Increasing Size of Weather Derivative Market](image_url)

**Source:** Weather Risk Management Association
Weather, Etc.

General weather. The South-Atlantic states had wetter than average conditions but the western South was dry for most of the quarter. Virginia and the Carolinas had record rainfall for March-May 2003 while Texas had the second driest spring on record. Severe weather, including tornados hit the Tennessee Valley in May setting the record for the most tornados in a ten-day period. Tropical Storm Bill made landfall near New Orleans on June 30\textsuperscript{th} bringing heavy rainfall, not only to Louisiana and Mississippi but also Alabama, Georgia, Florida, Tennessee and southern Virginia.

Forecasts. The El Niño conditions of last winter ended. La Niña conditions have developed in the Pacific and may bring warmer, drier weather in the Southeast towards the end of the year. Until then, a predicted “very active” tropical storm season could bring heavier rainfall this summer. The National Climate Data Center predicts wet conditions for Florida, Georgia, and the Carolinas for the 3\textsuperscript{rd} Quarter.

Fire report. The 2003 national fire season is significantly below average year-to-date and the National Interagency Fire Center expects the current low level of fire threat for the South to persist. The U.S. Drought Monitor showed that dry conditions worsened in Texas, Louisiana and southern Arkansas but rainfall at the end of the quarter brought some relief.

Beetle watch. The Texas Forest Service published a report on June 16\textsuperscript{th} that predicts declining SPB activity across the South in 2003. Mississippi and Louisiana could have a slight increase but remain at a low level. The report predicts few or no infestations in Texas, Arkansas and western Louisiana.

For links to SPB survey results and trend predictions on the Internet, please see the U.S. Forest Service site.