

Director's Message



Richard Vlosky
Director, Louisiana Forest Products
Development Center, School of
Renewable Natural Resources

Recently, Louisiana and our neighboring states on the Gulf Coast sustained two of the most severe natural disasters in history. In addition to the untold damage to the populations of these states, the timber industry in the region was severely impacted.

In Louisiana alone, more than 20,000 forest landowners representing an estimated 1.75 million acres of timberland were included in the parishes stricken by hurricanes Katrina and Rita. Total timber damages are estimated to be more than two billion board feet with a financial loss of nearly \$1 billion dollars.

Many efforts are under way to assess the impacts on sectors of the forest industry including timber landowners, loggers, and manufacturers. In the past year, Louisiana's timber economy provided more than \$5 billion annually to the state. What the future holds as a result of these disasters remains to be seen. All of us at the Louisiana Forest Products Development Center are involved in forest recovery efforts and offer our hopes and prayers to the people in Louisiana and our neighbors who were adversely affected.



Storm Cleanup?

Think Safety Before You Buy that Chainsaw!

Cornelis F. de Hoop

Look out! It has been said that more people are injured during storm cleanup than by a storm itself. Professional loggers have made great strides in chainsaw safety, but homeowner chainsaw users tend to violate nearly every safety rule in the book. Chainsaw accident rates are high.

Chainsaw cuts are particularly dangerous because they can easily cause severe bleeding. Unlike the clean cut of a knife, chainsaws remove body tissue as they cut. This makes injury repair and recovery difficult. Also, chainsaws are loud enough to cause permanent hearing loss. Of course, if one is felling trees, there are many overhead hazards to beware.

Chainsaw safety starts when the saw is purchased. Don't just purchase a saw by itself. Buy Personal Protective Equipment (PPE) along with it. This equipment is available from most dealers who sell chainsaws. While this equipment does not prevent an accident, it

may keep an accident from being as bad as it could have been.

The U.S. Occupational Safety and Health Administration, or OSHA, requires the following protective equipment to be used by any employee who uses a chainsaw — a hard hat (if an overhead hazard exists, such as when cutting a tree), eye protection, hearing protection, gloves, leg protection and foot protection. Homeowners using chainsaws should do the same.

If there are overhead hazards, such as trees and treetops, then the need for a hardhat is obvious. In cleanup cases, electric lines are commonly nearby, so one should use a plastic hardhat rather than a metal one. If the hardhat is old, it should be replaced. Plastic hardhats begin to deteriorate and weaken after five years. The liners in both plastic and metal hardhats should be replaced every two

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Experts Say Forest Management Requires Environmental Component

Forests will continue to be an integral part of the landscape of the South and Louisiana for years to come, according to speakers at the recent Louisiana Natural Resources Symposium sponsored by the LSU AgCenter's School of Renewable Natural Resources.

According to Dr. Todd Shupe, one of the organizers of the conference and a faculty member in the LSU AgCenter's School of Renewable Natural Resources, more than 100 people attended the symposium held in Baton Rouge on July 18-20.

The conference focused on regulatory issues, conservation, sustainability and certification of forest lands.

In the keynote presentation, one expert pointed out that while increasing urbanization puts pressure on environmental issues, forest harvesting is not an annual occurrence, and the land recovers as vegetation comes back.

"Forestry is not a permanent impact, but there is a recovery over time," said keynote speaker Dr. George Ice of the National Council for Air and Stream Improvement of Corvallis, Ore. "You have many options to achieve your environmental goals."

Ice said sustainable forest management has been improved by implementing best management practices that recognize technological, economic and institutional considerations.

Forests and forest products will continue to be important for rural economies in the South, said Dr. Dave Wear of the U.S. Department of Agriculture's Forest Service Southern Research Station in Research Triangle Park, N.C.

Noting that the South produces more timber than any other "country" in the world, Wear said, "The South's timber production won't go away."

Wear said forest land is being taken up by urbanization, but some agricultural crop and pasture land is being replaced by forests.

He said nearly every acre of timber was harvested at one time or another, then gave way to agriculture. He suggested the shift from agriculture to forests is reversible while the shift from agriculture or forests to urban areas is permanent.

As cities grow and if timber prices are strong, agricultural land would be moved to forests, he said.

"We'd get forests in different places," Wear said. "Urbanization is the

dominant dynamic."

But as the South becomes more urbanized, the aesthetics of managed forests will become more important, one expert said.

"Because they can see it, people think they have a right to see an aesthetically pleasing forest," said Dr. Bill Rockwell of The Plum Line in St. Johns, Mich.

He said landowners and loggers should consider how their harvesting practices fit into the landscape.

Rockwell suggested improving the aesthetics of harvested land by selecting small areas for harvest, leaving curved boundaries between harvested and unharvested trees, and cutting treetops and other material left behind.

Dr. Kenneth Richards of Indiana University talked about climate change and policy options regarding greenhouse gas emissions.

"States have been leading the charge in reducing greenhouse gas emissions," he said.

Richards reported on his research that looked at how plants remove carbon from the atmosphere and store it in plant tissue. Carbon is one of the components of what are generally regarded as greenhouse gasses, and removing carbon from the atmosphere reduces the presence of these gasses and the global warming that results.

He suggested that at some level government payments could subsidize forest lands to reduce carbon emissions in atmosphere.

In other presentations Dr. Warren Flick, editor and publisher of Forest Tax Review in Athens, Ga., suggested federal tax law provides an opportunity to think of ecosystem management as an investment.

"Conservation is widely supported in Federal tax law," he said.

Dr. Barbara McCutchan, director of enterprise stewardship and sustainability with MeadWestvaco in Stamford, Conn., said forest certification provides third-party credibility for forest management programs.

"Stewardship and sustainability are the price of participating in the market," she said.

Dr. Richard Vlosky, director of the LSU AgCenter's Louisiana Forest Products Development Center, said forest certification came in response to clearcutting forests in the United States and illegally logging tropical hardwoods in other

countries.

Vlosky said the industry needed third-party organizations to certify the companies are performing in an appropriate manner. The management, not the land, is certified, he said.

E. Scott Poole, chief operating officer and executive vice president of Martin Companies in Alexandria, La, provided a related presentation to that of Vlosky. Poole provided an industry perspective on forest certification.

"Although we were corporate sponsors of the Sustainable Forestry Initiative, the Martin family felt the certification was hindered, although not flawed, by its origin and historic membership makeup," Poole said.

He added that the Martin Companies were searching for something a little different. The Forest Stewardship Council certification provided a strategy more in line with what the family was after.

John L. Jechura Jr., senior engineer II with the US Department of Energy,

National Renewable Energy Laboratory (NREL), in Golden, Col. spoke about the utilization opportunities of biomass and the concept of a biorefinery. Their research focuses on developing several biomass types into bio-based fuels, chemicals, and energy, which can aid in economic development and lessen US demand for foreign oil.

Dr. Jim L. Chambers, Weaver Brothers Professor of Forestry in the LSU AgCenter School of Renewable Natural Resources, spoke about conservation of coastal wetland forests in Louisiana. Large-scale efforts to protect and restore coastal wetlands and the concurrent renewal of forest harvesting in cypress-tupelo swamps have brought new attention to Louisiana's coastal wetland forests in recent years. The Louisiana Governor's office commissioned a Science Working Group, chaired by Chambers, to examine these forests and make recommendations for their conservation, protection and use.

Chambers' presentation summarized the report findings and provides recommendations for what state government, professional foresters, research scientists, landowners, and the public can do to ensure the sustainability of Louisiana's coastal wetland forests well into the future.

Richard Martin, director of conservation programs and associate state director

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CBIT works with LFPDC on Supply Chain Initiative and Web Site

The Louisiana Forest Product Development Center (LFPDC) and Center for Business and Information Technologies (CBIT) have received a Louisiana Board of Regents grant to help in funding a project for the forest products industry.

According to Dr. Mark Smith, E.P. Nalley professor of management and associate director of the CBIT at the University of Louisiana at Lafayette, this project will identify the competitive advantages of the wood products cluster, as well as help companies improve their access to new markets and link the wood cluster companies to available resources.

"This proposed project will launch an entirely new direction to its ongoing supply chain and web site research," Smith said. "Partnering with the Forest Product Development Center allows Center for Business and Information Technologies to leverage existing industry partnerships and to benefit from the LSU Ag Center's economic development and outreach networks."

The grant will fund the enhancement of the Louisiana Forest Products Community Web site.

"The project will conduct marketing research to map the industry supply chain, identify potential new products, and identify new markets (including international markets) for companies that are adding value to forestry products," Smith said. "This information will be used to enhance the Louisiana Forest Products Community Web site."

The enhanced Web site will allow Louisiana companies to more easily locate sources of new markets, identify customers and suppliers, locate business development information, and generally facilitate transactions, Smith said, adding that the project will also enhance Louisiana's official economic development portal, www.Access.Louisiana.gov, by incorporating into it information regarding existing forest product supply chains.

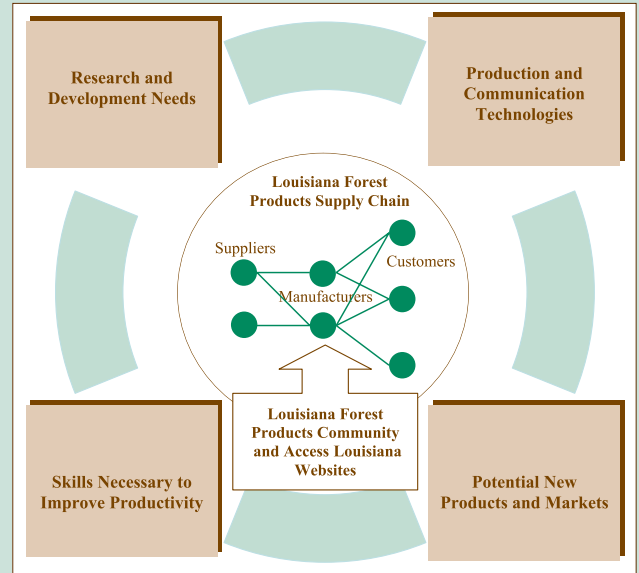
"Information on existing forest products businesses as well as their 1st and 2nd tier suppliers and consumers from other industries will be mined from the 88,000 businesses that are part of the *AccessLouisiana* database," he said. "This will create opportunities for the creation of new linkages and supply chains within the industry."

Another focus of the project will be determining the skills necessary for the industry's growth. According to Smith, the project will determine what skills are necessary to improve the productivity and profitability of wood processing companies. The grant will be used to identify any training sources that may be available through existing programs in the state's technical colleges/high schools. If no such sources exist, Smith said the project will develop recommen-

dations and resources to compensate for the lack of such training.

Finally the project will examine the possibility of banding small wood processors together to enable them to seek larger contracts. This would be particularly feasible in the cabinet making group, Smith said. This task will preserve and sustain small businesses in the Louisiana forest products supply chain.

"The personnel here at the Center for Business and Industrial Technologies look forward to working with the Louisiana Forest Products Development Center personnel in advancing the industry," Smith said. "We hope that this project is the first of many cooperative efforts to advance the economic development of Louisiana through its forest products cluster."



Forest Management

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for the Louisiana nature conservancy, provided a presentation on mitigation banking to enhance biodiversity conservation. According to Martin, there are approximately 230 active or approved wetland mitigation banks in the United States. Sixty-seven mitigation banks are currently active or are close to approval within the Mobile, Ala., Vicksburg, Miss., and New Orleans districts of the Corps of Engineers, which is nearly 30 percent of all active or approved mitigation banks in the United States.

For many years Louisiana State University hosted the premiere forestry

education event in the U.S. South, then known as the LSU Forestry Symposium. A recent resurgence of interest in renewing the symposium led to its revival. Topics and sessions of the symposium were selected to include the broad array of natural resource policy, management, and utilization issues that are critically important in the southeastern U.S. The symposium featured presentations from leading international experts covering a vast array of important natural resources topics.

The audience this year included private and corporate landowners, consulting and company foresters, mill operators and representatives of governmental agencies and environmental

organizations.

A comprehensive and professional summary of the proceedings will be delivered to all registrants and is available to the general public for a fee. Anyone interested in serving on the planning committee for the next symposium, please contact Shupe at tshupe@agctr.lsu.edu or tel. (225)578-6432.

The symposium was cosponsored by the USDA Forest Service Southern Research Station, Boise Cascade,; Louisiana Society of American Foresters, Louisiana Forestry Association, The Nature Conservancy of Louisiana, Southern Regional Extension Forester and Mockler Beverage Budweiser.

Process Holds Promise For Recycling Pressure Treated Wood

A process for recycling treated wood products could save on disposal costs and liability concerns by keeping treated wood out of high-cost landfills, according to developers at the LSU AgCenter.

According to Dr. Todd Shupe, a researcher in the LSU AgCenter School of Renewable Natural Resources' Louisiana Forest Products Development Center, disposal of decommissioned preservative-treated wood has increasingly become a major concern because the popular disposal options – incinera-

tion or land filling – are becoming more costly and impractical.

“Recycling – both of treated wood and of the preservatives – must be considered as a viable alternative,” Shupe said.

Open burning of treated wood is generally not allowed by law and not recommended by the treating industry, he said.

Finding new uses for these products is important to Louisiana because nearly half of the state's southern yellow pine

lumber production is treated with some type of preservative. Most of this material was treated with chromated copper arsenate (CCA) prior to voluntary phase out of CCA for consumer uses. Creosote, penta, and chromated copper arsenate are largely used for industrial applications ranging from utility poles to highway and bridge guardrails.

“Wood treaters in the United States can no longer treat wood with

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Forest Products Economic Development Update



Kelsey Short
Director of Agriculture/Forestry/Food Processing
Louisiana Department
of Economic Development

At the time of writing this article, the economic development community is concentrating on the business recovery efforts related to the Hurricane Katrina disaster. The Louisiana Department of Economic Development (LED), the state's economic development agency, has announced several programs designed to alleviate pressure on Louisiana businesses affected by Hurricane Katrina. These programs include: Direct Corporate Outreach, Federal Aid Package, Small Business Administration Aid, and www.AccessLouisiana.com.

More than 70,000 Louisiana businesses across 10 parishes were impacted by Hurricane Katrina. The primary mission of LED is to facilitate a return to operation for those businesses as quickly as possible by matching them with the resources available in the 54 parishes not directly affected by the storm. LED is also working diligently to put the infrastructure and plan in place so we

can rebuild Southeast Louisiana into one of this nation's premiere cultural and economic assets.

Details on each LED relief program are outlined below:

1. Direct Industry Outreach by Sector

LED is actively contacting impacted businesses by industry sector. Direct communication between LED and impacted companies is being used to gauge industry specific needs and to determine unique needs for each individual company in the face of relocation and a return to operations.

2. Federal Aid Package

LED is working closely with officials from Mississippi and Alabama to develop a comprehensive federal aid request modeled after the 9/11 Recovery Act. This package is expected to include tax incentives for returning individuals and businesses, as well as bond programs designed to jumpstart infrastructure development.

3. Small Business Financial Aid

The Small Business Administration (SBA) relocated to LED offices in the wake of Katrina. This has provided for unprecedented levels of cooperation between the state and federal entities, resulting in increased levels of aid for small businesses impacted by the storm. LED is facilitating assistance for these companies by initiating discussions to raise limits on low interest small business loans and lower the threshold for loan requirements.

The Louisiana Association of Business & Industry (LABI) has established the Small Business Disaster Relief Fund to provide grants to help small businesses damaged by Hurricane

Katrina get back into business as quickly as possible. These grants will serve as “gap funding” to pay expenses not covered by insurance. Information on how to contribute to the fund and how to apply for assistance can be found on LABI's website at www.labi.org.

4. AccessLouisiana (www.accesslouisiana.com)

This tool matches impacted businesses in need of resources or a physical location with those able to provide it. This can range from workforce or supply needs to a 42,000-square-foot industrial workspace in Shreveport, La. Individuals or businesses with commercial property for sale or rent can use a short form to submit their property electronically so it can be served up through links on a Louisiana map to those searching for space. Currently, the commercial property listing includes 3,500 entries posted since Hurricane Katrina.

In partnership with LABI, AccessLouisiana is also surveying impacted businesses about their specific needs to maintain or return to operations. These needs are then matched with resources that can fulfill their requests. The database currently has 88,000 businesses around Louisiana able to supply various resources.

These programs, along with the resolve and resiliency of our business leaders, will not only make Louisiana the case study in economic recovery, but also the global model for regional planning and development.

For additional information or to request updates on these programs contact Kelsey Short at short@la.gov or tel: (225) 342-5892.

Process

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chromated copper arsenate for residential uses such as lumber,” Shupe said.

CCA is a chemical wood preservative containing chromium, copper and arsenic. It has been used to treat lumber since the 1940s, and is used to protect wood from rotting due to insects and microbial agents.

The U.S. Environmental Protection Agency has classified CCA as a restricted-use product for use only by certified pesticide applicators. The agency has worked with manufacturers to voluntarily phase out CCA use for wood products around the home and in children’s play areas.

Effective Dec. 31, 2003, no wood treater, nor manufacturer may treat wood with CCA for residential uses, and pressure treated wood containing CCA is no longer being produced for use in most residential settings, including decks and play sets.

Nevertheless, CCA-treated wood products are still widely used in industrial applications such as utility poles, railroad crossties and guardrails, Shupe said.

The products will eventually come out of service and have to be dealt with, said Doug Arnold president of Arnold Forest Products in Shreveport.

“We need to do something with it when it’s out of use,” he said.

Arnold’s company produces CCA-treated products such as guardrail posts for state agencies. He said the industry needs a less-expensive method for disposing of treated wood products, and he sees the LSU AgCenter process as a reasonable alternative.

“The drive behind it is to use what we’ve put on the market in the past and recycle it,” Arnold said. “The technology is here, we just need to take advantage of it.”

In a process called liquefaction, treated wood is ground and liquefied with an organic solvent.

“The process uses relatively low temperature, short reaction time and small amounts of organic reagents,” Shupe said.

Shupe said the process is economically viable and environmentally friendly.

“This approach has the best opportunity for success,” he said. “There’s zero discharge and it produces multiple products.”

The end products from the process include the chemicals originally used to treat the wood as well as non-toxic

liquefied wood that can be used for resins, molded wood products, foams and plastics.

Liquefaction turns wood into liquid with or without a catalyst using a temperature that will vary depending on the catalyst used or not used. The reaction requires higher temperatures if a catalyst is not used.

The liquefaction technology was developed in the 1970s in Japan. There, the liquid wood is used for manufacturing a variety of resins and molded products, said Chung Hse, a researcher who has been working with Shupe on the project.

In the LSU AgCenter process, the wood is put in solution with an organic solvent, said Hse, a principal wood scientist at the U.S. Department of Agriculture Forest Service, Southern Research Station in Pineville and an adjunct professor in the LSU AgCenter.

The liquefied wood can be diluted with an aqueous solvent and then mixed with complexion/precipitation agents so that the CCA can be removed from the solution. After the metals are taken out, the process yields liquid wood for other applications, such as molded products

Hse said the work is done in a pressurized cooker at about 150 degrees centigrade.

Shupe said the process efficiently and effectively takes the metals out of the liquid wood at a rate greater than 99 percent for all three elements.

“Nobody has shown an ability to remove those three elements at that high

of a removal rate,” Shupe said. “We can do it quickly and efficiently.”

The next step is a pilot plant to see if the process can be done economically as well, he said.

The wood that comes out of the reaction is “finer than finely ground – it’s very, very viscous, syrup. It’s actually liquefied,” Shupe said.

“The process is now technologically viable,” he said. “Once the technology proves economically viable, there will be a domestic market.”

Shupe noted competitive products include steel, which is non-renewable and requires significant energy consumption for production.

“Research along these lines is helpful in facilitating the long-term viability of the wood preservative industry,” he said. “The industry uses a renewable resource and provides jobs.”

Even if CCA-treated wood products are no longer produced, there’s still a lot of CCA material being decommissioned, and it needs to be disposed of.

“The material that’s obsolete, damaged, whatever – will sustain a recycling industry for many years,” Shupe said. “Also, the liquefaction technology can easily be used to create products from non-treated wood.”

One of the products that can be made from the preservative-free liquefied wood is phenol. Shupe says that with oil prices currently more than \$50 per barrel, liquefied wood can be used to provide a viable alternative for oil-based phenol.

Shupe Receives Japanese Patent

A Japanese patent has been awarded to Dr. Todd Shupe, an associate professor in the Louisiana Forest Products Development Center, a unit of the LSU AgCenter’s School of Renewable Natural Resources.

The patent, titled “A Process to Convert Cellulose to Methanol,” has been assigned patent number 2005-254073.

“The present invention generally relates to the cellulose hydrolysis reaction and increase the convention rate of cellulose to glucose or oligosaccharides,” Shupe said.

The technology is being patented and marketed in Japan because the lead scientist on the project, Dr. Lianzhen Lin, lives and works in Kyoto, Japan. Lin formerly worked as a postdoctoral research scientist with Shupe and was housed at the USDA Forest Service, Southern Research Station in Pineville. Dr. Chung Hse, principal wood scientist with the USDA Forest Service, is also a co-inventor of the technology.



6 Mechanical Forest Fuel Reduction vs. Burn-Only

Cornelis F. de Hoop, Amith Hanumappa-Reddy, Robert H. Dupré and W. Ramsay Smith

With the devastation to commercial timber brought by Hurricane Katrina, there will be much dead, dry timber on the ground in the Florida Parishes and in southern Mississippi and Alabama. This wood has the potential to become a severe fire problem in the next few years.

The Louisiana Forest Product Development Center (LFPDC), a unit of the LSU AgCenter's School of Renewable Natural Resources, is ahead of the game by already studying mechanical forest fuel reduction operations.

Traditionally, foresters have used prescribed fire to reduce excess brush, low branches and other forest fuels to reduce the likelihood of catastrophic fires. This tactic is becoming increasingly difficult because of issues such as smoke management and liability.

Alternatives, such as mechanical forest fuel reduction, are being tried and studied. Some mechanical operations involve forestry mower/mulchers that grind brush and small trees down to ground level (no utilization of the biomass). Other operations chip the brush and small trees, creating a revenue stream (see LFPDC Newsletter, Fall 2003, P. 5). These operations are often followed by a "cool" fire, which subsequently allows foresters to prescribe a regular burning regime.

Figure 1. Types of fuels targeted in mechanical forest fuel reduction operations.

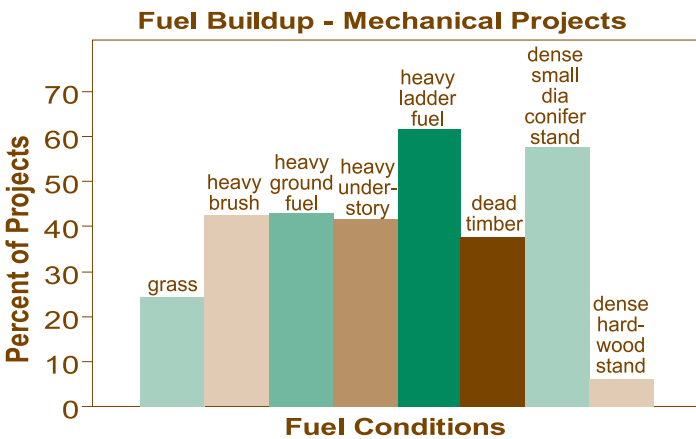


Table 1. Comparison of two types of forest fuel reduction operations by size and length of operations. Burn-only (prescribed burn) operations can cover more area in much less time than mechanical operations (such as masticating machines and chippers). However, prescribed burns suffer increasing restrictions because of liability, smoke management, and limited number of ideal burning days.

	Mechanical		Burn-Only	
	Acres	Days	Acres	Days
Mean	1,396	248	3,180	12
Min	5	1	5	1
Max	12,325	2,555	46,000	62

One of the research activities recently conducted by the LFPDC was a survey of 197 foresters and similar administrators nationwide who are familiar with forest fuel reduction operations. An unexpected and interesting result of this survey was an opportunity to compare mechanical operations with burn-only operations.

Mechanical operations were more common in conditions of heavy ladder fuels and dense small-diameter conifer stands (Fig. 1). Burn-only operations were commonly used where ground fuels, grass and brush were heavy (Fig. 2).

The mechanical and burn-only operations contrasted dramatically in size. Burn-only operations were three times larger, yet they were performed in much less time (Table 1).

While mechanical operations often had a revenue stream to offset costs to landowner, the revenues were not sufficient to overcome the costs (on average Table 2). Most of the really costly mechanical operations (over \$1,000 per acre) had very little offsetting revenues (often less than \$100 per acre).

Many other factors were also studied in this survey, including problems associated with fuel reduction operations and public awareness of fuel buildup and fire danger. For a full report, contact Dr. Cornelis de Hoop at cdehoop@agcenter.lsu.edu.

Figure 2. Types of forest fuels targeted in prescribed burns.

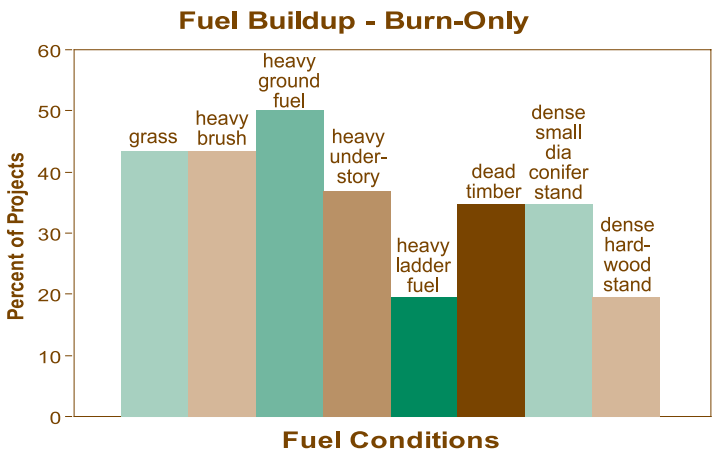


Table 2. Comparison of two types of fuel reduction operations by revenues and costs per acre. Prescribed burns are cheaper but have no offsetting revenues.

	Mechanical		Burn-Only	
	Revenue	Cost	Revenue	Cost
Mean	\$108	\$390	\$0	\$105
Min	\$0	\$0	\$0	0
Max	\$3,000	\$4,000	\$0	\$1,000

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www.nnr.lsu.edu/lfpdc

Tax Incentive Programs Offered for Louisiana Companies

Diana Simek, Vice President, Ark-La-Tex Regional Export and Technology Center (ARETC), Inc.

The Louisiana Department of Economic Development offers several tax incentive programs that could potentially mean more money for wood processing companies. While many of the larger companies are aware of these incentives, we are listing the three most popular programs below for the benefit of the many smaller Louisiana companies that are not aware of the existence of these programs.

Industrial Property Tax Exemption

New and expanding manufacturers are eligible to receive five-year property tax exemptions, renewable for an additional five years on new capitalized purchases. The exemption may include buildings, machinery, equipment, furniture, and fixtures for new, expanded, or renovated facilities. For information, call (225) 342-5382, or go to <http://led.state.la.us/businessresources/pdf/TY%205-2004.pdf>.

Enterprise Zone

Louisiana's Enterprise Zone Program provides tax credits and sales/use tax refunds to businesses that hire at least 35% of their new employees

from one of four targeted groups. A one-time \$2,500 tax credit is generated for each certified net new job created. An additional \$2,500 tax credit may be generated in the second year of employment if the new employee is certified as receiving assistance through the Family Independence Temporary Assistance Program (FITAP). Participation in this program excludes the use of the Quality Jobs Program. For information, call (225) 342-9228, or go to <http://led.state.la.us/businessresources/pdf/EZ%20Facts%207-2004.pdf>.

Louisiana Quality Jobs Program

Louisiana's Quality Jobs Program provides an annual rebate for up to 10-years of 5% of gross annual payroll for minimum hourly wage rates of \$9.01, or 6% of gross annual payroll for minimum hourly wage rates of \$11.59. The employer must offer a basic health plan (basic hospital care and basic physician care) within 90 days of qualifying for the program. For employees whose wages are less than \$50,000 per year, the employer must pay at least 85% of the total premium for health insurance coverage for full-time employees, or at least 50% of the total premium for health insurance coverage for full-time employees and their dependents. For employees whose

wages are equal to or greater than \$50,000 per year, the amount of the employer decreases from contribution from 85% to 70% for those employees. In addition, the program also provides a rebate of state sales/use tax (4%) on materials for building materials, machinery and equipment purchased during the construction period and used exclusively on site. Participation in this program excludes the use of the Enterprise Zone Program. For information, call (225) 342-5402, or go to <http://led.state.la.us/businessresources/pdf/QJ%20Facts%206-2005.pdf>.

Note: All of these programs require an Advanced Notification form and fee be submitted to Louisiana Department of Economic Development (LED) prior to any construction, renovations, purchases, etc. If you fail to submit this Advanced Notification, you will not be eligible to participate in the program(s). You may complete the application online at http://led.state.la.us/businessresources/adv_noti.aspx. Businesses and contractors receiving state tax rebates or credits under these programs are encouraged to give consideration to Louisiana manufacturers, suppliers, contractors, and labor for their project.

LSU AgCenter Experts Involved in Research Projects

Several LSU AgCenter researchers have been busy working with other researchers on several projects relating to the wood industry.

Dr. Richard Vlosky, professor in the LSU AgCenter's Louisiana Forest Products Development Center, and Dr. Michael Dunn, associate professor, Agricultural Economics Department, have partnered with Dr. Glenn Hughes, an Extension professor from Mississippi State University Extension Service in a study titled "Certified Forests: Preparing Private Landowners for the Future."

The \$102,000 project is funded by a grant from the Southern Region Sustainable Agricultural Research and Education Program (SARE). The two-year effort will be a combined research and extension effort to identify the potential for providing certified forest products in Louisiana and Mississippi.

Vlosky also recently completed a study titled "Identifying Employment Structure and Training Needs in the Louisiana Value-Added Wood Products Industry." The study was funded by the Louisiana Governor's Office of Rural Development, the Louisiana Department of Economic Development and the Louisiana Department of Labor.

In addition, Vlosky and Drs. Ramesh Kolluru and Mark Smith from the University of Louisiana at Lafayette received an \$87,300 grant from the Louisiana Board of Regents to research Louisiana wood products supply chain processes and determine

improvements to improve the state's competitive position in this industry sector.

In another project, Vlosky, together with Dr. Todd Shupe of the Louisiana Forest Products Development Center and Dr. Matt Fannin of the LSU AgCenter's Department of Agricultural Economics, have received a \$27,500 grant from the Southern Forest Products Association to conduct an analysis of the U.S. pressure-treated wood industry.

Robert Dupré is working toward a masters of science degree under Dr. Cornelis de Hoop in timber harvesting. Dupré graduated with a bachelor's degree in forestry from LSU in 2002 and went to work for the National Park Service as a wildland firefighter for two years before coming back to LSU for his graduate research program. The research he is doing will help loggers increase the productivity of their operations.



Cornelis F. de Hoop

Grants and Contracts

- Can Woody Biomass Utilization Be Profitable? USDA Forest Service and Travis Taylor Logging & Chipping. C.F. de Hoop and Travis Taylor. \$186,473.
- Analysis of Productivity, Efficiency and Cost Distribution of Travis Taylor Logging and Chipping, Phase I & II. Travis Taylor Logging & Chipping. C.F. de Hoop. \$16,387
 - Analysis of Productivity, Efficiency and Cost Distribution of Slaughter Logging LLC, Phase I & II. C.F. de Hoop. \$16,387

Publications

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- de Hoop, C.F. 2005. Learning First Aid Once is Enough, Right? The Louisiana Logger 10(3):10. Louisiana Logging Council, Alexandria, LA.
- de Hoop, C.F. 2005. 2004 Strategic Partnership Accidents. The Louisiana Logger 10(2):9. Louisiana Logging Council, Alexandria, LA.
- de Hoop, C.F. 2005. Accident Research Helps Save Lives of Loggers. Research Brief # 33, Louisiana Forest Products Development Center, School of Renewable Natural Resources; Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge, LA. 2pp.
- de Hoop, C.F. 2005. Accident Research Helps Save Loggers' Lives. Impact Statement. LSU AgCenter. 1 p. <http://www.lsuagcenter.com/impacts/publicold.asp?id=785>
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Todd F. Shupe

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Qinglin Wu

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Richard P. Vlosky

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- Enhancing Louisiana Forest Products Industry Development and Competitiveness. Louisiana Board of Regents-

Enhancement Program. \$83,700. (Co-Investigators: Ramesh Kolluru, Mark Smith)

- Certified Forests: Preparing Private Landowners for the Future. SARE: Sustainable Agriculture Research & Education. \$113,398. (Co-Investigators: Glenn Hughes, Michael Dunn)
- A Strategic Analysis of the U.S. Treated Wood Industry. Southern Forest Products Association. \$23,287. (Co-Investigators: James M. Fannin, Todd F. Shupe)
- Identifying Employment Structures and Training Needs in the Louisiana Wood Products Industry. La. Governor's Office of Rural Development, La. Dept. of Labor, La. Dept. of Economic Development. \$15,000.
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New Graduate Students, Post-Docs and Research Associates

Heng Gao started a doctoral program under the guidance of Dr. Todd Shupe in January 2005. She earned her M.S. degree in Environmental Engineering at the Beijing Institute of Technology in Beijing, China. Her doctoral work is examining the antioxidant activity of extracts from the heartwood, sapwood, inner bark and bark of Port-Orford-Cedar. This research has diverse potential applications such as human health improvement (i.e., anti-cancer agents) and environmentally friendly wood preservatives.

Lanying Lin is a new research associate for Dr. Shupe working on wood carbonization. She is a research associate at the Chinese Academy of Forestry (CAF) in Beijing, China, and is pursuing her Ph.D. degree at CAF. Wenjing Kuo is an associate professor also at CAF working with Dr. Shupe on wood-plastic composites. They are the latest in a long history of collaborative research exchange between the LFPDC and CAF initially established in a Memorandum of Understanding between the LSU AgCenter and CAF in 1999.

Dr. Yong Lei – Postdoc Research

Associate, Wood/natural fiber polymer composites. Dr. Lei holds a Ph.D. in polymer chemistry from Sichun University, Chengdu, China. He is working projects developing natural fiber reinforced plastics composites.

Dr. Weihong Guo – Postdoc Research Associate. Wood/natural fiber polymer composites. Dr. Guo holds a Ph.D. in polymer engineering from East China University of Science and Technology, Shanghai, China. She will be working projects developing co-polymer composites from recycled plastics

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Storm Cleanup

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years because they become brittle with age.

Because the most commonly injured body parts are the legs, the next most important piece of protective equipment is for leg protection. Leg protection is most commonly provided in the form of saw chaps. These chaps have multiple layers of KEVLAR® or ballistic nylon, similar to bullet-proof vests, that are easily drawn into the saw by the saw teeth. Once the material is drawn into the saw, it stops the chain from running. I personally know two occasional chainsaw users who prevented a severe injury to the leg because they were wearing saw chaps. The cost of these chaps, about \$70, is cheaper than a doctor's visit. Many loggers will tell you that saw chaps are hot in summer, but still worth wearing because of the protection they provide.

Pants with saw-resistant material sewn in are also available, but they are difficult to find.

A person's feet should also be protected. Foot protection is technically more difficult. Chainsaw-protective boots cost \$150 to \$400 per pair. Despite their cost, they are not as effective as leg protection because of natural design limitations. One solution for the occasional user is a protective overshoe called the SawJammer®. For information, call 1-800-969-9276.

The most economical solution is a ballistic nylon sock, available from Labonville; see contact info below. This sock requires use of a boot that is several sizes larger. Stout rubber boots that have the saw protection molded in are the most effective because the saw teeth have difficulty biting into rubber. By contrast,

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reinforced with wood/natural fibers.

Yao Fei – Ph.D. Student. Wood/natural fiber polymer composites. Yao holds an M.S. degree from Nanjing Forestry University, Nanjing, China. He will be working on mechanical performance of polymer composite reinforced with wood and straw fibers.

Yanjun Xu – Ph.D. student. Wood/natural fiber polymer composites. Xu holds an MS degree from Sichuan University, Chengdu, China. He will be working on composite interface analysis.

Zhenyang Wang – Ph.D. student.

chainsaws cut very easily into heavy leather.

Hearing protection is also very important. Operating a properly functioning chainsaw for more than two hours without hearing protection will begin permanent hearing loss. If the muffler is removed, permanent hearing loss will start in 15 minutes. Hearing protection comes in two forms – ear plugs and ear muffs. Muffs are slightly more effective than plugs and do not aggravate earwax buildup. Either kind works well with normal chainsaw use.

Because chainsaws spray small wood chips in all directions, some kind of eye protection is needed. Common safety glasses, goggles and face screens are effective. In hot weather, perspiration can cause fogging of goggles and face shields. Luckily, screens or glasses that wrap around to the side of the eye are effective.

For about \$45, one can purchase a chainsaw helmet system, a popular one is found at www.peltor.com. This is a hardhat with earmuffs and face screen attached. The muffs and screen can be flipped out of the way easily when not needed. This is a very convenient package for occasional users, as well as professionals. The major drawback is that the muffs are hot during Louisiana's summers.

A popular and effective alternative in hot weather is an ordinary hardhat, ear plugs, and the wrap-around sunglasses that are stylish today.

Other types of Personal Protective Equipment for chainsaw users include gloves and upper body protection, such as vests. Gloves are available that have a ballistic nylon lining on the back

Personal Protective Equipment is available from most dealers who sell chainsaws and from catalogs, such as:

Wood/natural fiber polymer composites. Wang holds an M.S. degree from Northeast Forestry University. He will be working on wood modification through chemical treatments and carbonization processes.

Priyan Perera is a new M.S. student from Sri Lanka working in Forest Certification. Priyan's thesis research is on small non-industrial private landowners' perceptions and drivers to participate in certification. His study examines these issues for forest landowners in Louisiana and Mississippi.

Construction Safety Products, Shreveport, LA, 800-592-6940, www.cspforestry.com

Forestry Suppliers, Jackson, MS, 800-647-5368, www.forestry-suppliers.com

Ben Meadows, Atlanta, GA, 800-241-6401, www.benmeadows.com

Bailey's, California and Tennessee, 800-322-4539, www.baileys-online.com

Forester's Friend, Pennsylvania, 800-782-2407, www.forestersfriend.com

Labonville, New Hampshire, 800-764-9969, www.labonville.com

Being properly outfitted for chainsaw use is only the beginning of chainsaw safety. Proper training, fueling, starting, cutting techniques and maintenance are all important, too.

There are several good publications on chainsaw safety and use, but none of them are very commonly available. Web sites on chainsaw safety are more easily accessed. North Dakota State University's Extension Service has an excellent Web site on the topic:

<http://www.ag.ndsu.nodak.edu/abeng/links/safety.htm#top>

This Web site is good because it has links to several particularly good Web sites. OSHA also has a good Web site (www.osha.gov – click on "L", then go to "Logging Technical Advisor"). The OSHA Web site also has other safety information on storm cleanup.

Many chainsaw manufacturers offer good safety information on their Web sites. Some also carry their own lines of chainsaw PPE. Some professional logger associations (such as www.laforestry.com, www.maine-loggers.org and www.americanloggers.org) also have links to safety sites.

For other information on disaster management, go to <http://www.lsuagcenter.com>.

All chainsaw users should obtain and wear proper PPE to reduce the chance of serious injury. Obtain them before cleaning up storm-damaged trees. They also make excellent Christmas wish-list items for the firewood season.

For more information contact

Cornelis F. de Hoop,
cdehoop@agcenter.lsu.edu

Brand names and businesses named herein are for the convenience of the reader only and are not endorsements. Businesses that market or manufacture chainsaw PPE that are not included in this article are encouraged to contact the author so that a more comprehensive list can be presented to loggers and casual chainsaw users in the future.



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LSU AgCenter Hurricane Recovery Efforts for Forest Industry

LSU AgCenter faculty members are providing leadership for the Louisiana forest products industry as a result of hurricanes Katrina and Rita.

Dr. Richard Vlosky of the LSU AgCenter's Louisiana Forest Products Development Center said many faculty members from the School of Renewable Natural Resources, Louisiana Forest Products Development Center, Department of Agricultural Economics and Agribusiness, and the Southeast Region have been actively involved in the recovery effort and attending various meetings throughout the hurricane impacted area to provide information to forest industry, loggers and private non-industrial forest landowners.

The Louisiana Forestry Association and Louisiana Department of Agriculture and Forestry organized a meeting in Hammond to form committees to investigate various aspects of the recovery process such as communications, legislative policy, wood utilization, etc. LSU AgCenter faculty members are participating in these committees and co-chairing a committee on data collection and reporting. Dr. Kurt Guidry, an associate professor in the LSU AgCenter's Agricultural Economics Department, led the effort to ascertain the economic impacts of the two storms.

The economic impact on the Louisiana forest sector was determined to be approximately \$611 million and \$256 million for Katrina and Rita, respectively. In addition, LSU AgCenter Chancellor William B. Richardson has established a task force to address hurricane recovery efforts and develop strategies across all sectors served by the AgCenter. Vlosky is leading the forest sector effort on this task force. For more information, please visit www.lsuagcenter.com, www.laforestry.com, <http://www.ldaf.state.la.us/>, and <http://sref.info/>. For more information, contact Dr. Todd Shupe at tshupe@agcenter.lsu.edu, or Vlosky at rvlosky@agcenter.lsu.edu.



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