

## FOREST OWNERS AND CARBON MARKETS: CAN'T WE ALL JUST GET ALONG?

By James T. Spartz  
University of Wisconsin Graduate Student

The Forest Products Laboratory (FPL) battles global climate change on many fronts. Working with the Environmental Protection Agency, FPL estimates carbon emission offsets due to annual net additions of carbon stored in wood and paper products. Partnering with the National Council for Air and Stream Improvement, FPL estimates the carbon footprint of the U.S. forest products industry. Researchers and economists also collaborate with the Consortium for Research on Renewable Industrial Materials to conduct lifecycle assessments of carbon offsets caused by forest treatments, fire emissions reduction, wood energy offsets of fossil fuel emissions, and emission offsets from the substitution of wood for products that emit more carbon in production and use.

Much of this research, like most scientific work, is beyond the interest of the general public and remains “below the radar” of the 24-hour news cycle. Thanks to a high-profile conference in Copenhagen last December, however, one topic people have been buzzing about is carbon. Often followed by words like offset, sequestration, markets, emissions, and trading; carbon is shaping up to be hugely influential in terms of global economic and environmental policy and practice.

Talk about carbon markets, especially for cap-and-trade schemes and carbon-tax plans, becomes very complex very quickly. False-starts and renegotiations are all part of the global carbon market. When the Chicago Climate Exchange (CCX) started as a trading platform less than a decade ago, great promise was held in a burgeoning voluntary market for trading an exciting “new” agricultural and forest product: sequestered carbon. By late 2009, however, CCX had yet to extend its program as expected. As a result, its trading volumes and prices plummeted. Economists, landowners, and market aggregators are now left wondering how and when this market might spark back to life.

“Uncertainty is causing disruptions in the markets,” says Peter Becker, research coordinator at the Eastern Ozarks Forestry Council, a nonprofit organization located in Van Buren, Missouri. Among the aggregators who invested large amounts of time and money in developing CCX forest offset projects, says Becker, “there is great disappointment, it’s very regrettable. Fortunately, there are alternatives, yet these are not very accessible to family forest owners.”

For carbon-emitting entities producing more carbon emissions than a “cap” allows, proposed cap-and-trade



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scenarios would allow the option to buy or trade credits (allowances and offsets) to balance excess greenhouse gas pollution. These credits would come from businesses that have reduced emissions below the cap and thus have credits to trade (allowances) or from entities that voluntarily implement greenhouse gas reduction projects (offsets).

Sequestering carbon through improved forest management or by installing gas collection and destruction systems at landfill operations are two examples of projects that can create offset credits. These credits could then be traded on either voluntary or regulated markets.

North America has yet to develop a hard cap on carbon emissions and thus has had only partial success in establishing a voluntary market. Carbon emitters are looking for a road map, says Becker, so they can complete their due diligence assessments. Absent federal legislation, he says, “a helpful interim solution would be regional regulatory authorities with caps that actually lower emissions.”

Becker and Tim McAbee, a forestry consultant with LandMark Systems of Tallahassee, Florida, have worked with many landowners and aggregators to develop better tools and understanding in the American carbon market. In 2008, Becker and McAbee approached E.M. (Ted) Bilek, an economist with the Forest Products Laboratory, to work on an innovative spreadsheet tool for the evaluation of direct costs and benefits of carbon sequestration scenarios for managed forests. This spreadsheet tool, called CVal (Bilek et al. 2009), was built around the CCX market.

“CVal has been a very powerful tool and hopefully can be adapted to serve non-CCX protocols,” says Becker.

*(continued on p. 3)*

## NEWSLINE TEAM

Rebecca Wallace  
 Jim Anderson  
 Tivoli Gough  
 Bill Ireland  
 Sue Paulson  
 James Spartz

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## UPCOMING EVENTS

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### SMALL WOOD 2010, BRIDGES, BUSINESS AND BIOMASS CONFERENCE

April 20-22, 2010 Hot Springs, Arkansas

The objective of this conference is to provide state-of-the-art information on small-tree utilization and to foster peer-to-peer learning. Enormous quantities of woody biomass are being generated from thinning operations, land clearing, and hurricane disasters. This conference will include an international slate of speakers, including researchers, material and equipment suppliers, manufacturers, and end-users. For more information on SMALLWOOD 2010, contact Julie Lang at the Forest Products Society, [conferences@forestprod.org](mailto:conferences@forestprod.org), or visit the Forest Products Society website's SmallWood 2010 section.

### SOCIETY OF WOOD SCIENCE AND TECHNOLOGY, 2010 INTERNATIONAL CONVENTION

October 11-15, 2010 Geneva, Switzerland

The Society of Wood Science and Technology will hold its 2010 International Convention in Geneva, Switzerland at the Palais des Nations together with co-hosts the United Nations Economic Commission for Europe-Timber Committee (UNECE-TC), on October 11-15, 2010. The theme of the convention is "Role of Wood Science in the Green Building Movement." You can view all conference information at <http://www.swst.org/meetings/AM10>.

### FOREST PRODUCTS SOCIETY'S 64TH INTERNATIONAL CONVENTION

June 20-22, 2010 Madison, Wisconsin

The Forest Products Society's 64th International Convention will feature industry, university, trade association, and government leaders speaking on the future direction of forest products research and development. This stimulating forum will highlight creative contributions by the research and development community and lay out plans for new and emerging technological advances. The concurrent technical sessions offer great opportunities for industry, academic, and government professionals to network and learn about the latest research results. For more information, visit [www.forestprod.org/](http://www.forestprod.org/).

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## WOOD YOU BELIEVE...

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**WANTED**  
 INFORMATION AS TO THE  
 WHEREABOUTS OF

**CHAS. A. LINDBERGH, JR.**  
 OF HOPEWELL, N. J.  
**SON OF COL. CHAS. A. LINDBERGH**  
 World-Famous Aviator

This child was kidnaped from his home in Hopewell, N. J., between 8 and 10 p. m. on Tuesday, March 1, 1932.

**DESCRIPTION:**  
 Age, 20 months      Hair, blond, curly  
 Weight, 27 to 30 lbs.      Eyes, dark blue  
 Height, 29 inches      Complexion, light  
 Deep dimple in center of chin  
 Dressed in one-piece coverall night suit

ADDRESS ALL COMMUNICATIONS TO  
 COL. H. N. SCHWARZKOPF, TRENTON, N. J., or  
 COL. CHAS. A. LINDBERGH, HOPEWELL, N. J.

ALL COMMUNICATIONS WILL BE TREATED IN CONFIDENCE

COL. H. NORMAN SCHWARZKOPF  
 Supl. New Jersey State Police, Trenton, N. J.

March 11, 1932

- Aldo Leopold, famed conservationist and author of *A Sand County Almanac*, was Assistant Director of FPL from 1924-1928.
- FPL scientist Arthur Koehler studied the wooden ladder used in the 1932 Lindbergh kidnapping and connected it to Bruno Hauptmann, who was subsequently convicted of the crime.
- The first female scientist in the U.S. Forest Service, Eloise Gerry, began her 44-year career with the agency when FPL opened its doors in 1910.



*(continued from p. 1)*

As an instrument in the public domain, CVal allows free access to landowners and managers to run “what if” scenarios in forecasting project feasibility given variable cost inputs and contract lengths for carbon projects.

“The CVal program itself quite clearly shows that the fewer years you have to extend the value of carbon credits forward, the less appealing it is, and the less economical it becomes, to get into the [carbon market],” says economist Bilek.

And therein lies a problem. With CCX and many other carbon market protocols waiting for resolution on a national and global scale, it’s difficult for market analysts to predict when and how new projects might best move forward. As Becker points out, uncertainty can kill a market. Until targets for carbon emission reduction plans are agreed upon by large industrial polluters, namely those in the United States and China, uncertainty will continue to hobble the development of fair and effective domestic and international schemes and markets.

“It’s the regulated market that is going to drive the [larger carbon] market,” says McAbee. California and a coalition of Western states, he says, may step up where the federal legislature has stalled. This protocol, called the Climate Action Reserve (CAR) forest project protocol, grew out of the California Climate Action Registry, which was created by the State of California in 2001 to address climate change through voluntary calculation and public reporting of emissions (see [www.climateactionreserve.org](http://www.climateactionreserve.org)). The CAR protocol, says McAbee, requires a 100-year permanence, or balancing, period. This may be a long time to wait in the human dimension but for forests, not so much.

One element of legislation proposed by both the U.S. House and Senate is that of international forest offsets, particularly the Reduction in Emissions from Deforestation and Degradation (REDD) project. If such a proposal is enacted, project coordinators could go into developing countries with rainforests and would be followed by “a large and swift infusion of private capital,” says McAbee. Such projects would compete to tie up relatively low cost REDD credits. One problem, McAbee says, is the “huge level of concern and risk” regarding how this money is distributed.

Normally, the money would go to the person/organization that owns the land; however, says McAbee, “land tenure is much more complicated in these countries.” REDD is a complex scheme that critics suggest will benefit large

corporate interests more than the indigenous or local communities it is ostensibly meant to support. These are not small concerns. One question McAbee and other analysts have is how payments will best be used to ensure sustainable socio-economic frameworks (such as education, training, community engagement) where forests are protected and managed responsibly. Social theorists recommend solutions to these difficult questions be resolved before any sort of trading scheme begins.

For more information on these and other carbon trading questions, visit the Climate, Community & Biodiversity Alliance ([www.climate-standards.org](http://www.climate-standards.org)) for a project-level view. The EPA offers information on the topic at [www.epa.gov/captrade](http://www.epa.gov/captrade). A more animated but nonetheless serious primer buzzing about the Web is Annie Leonard’s “Story of Cap & Trade” ([www.storyofstuff.com/capandtrade](http://www.storyofstuff.com/capandtrade)). David Roberts, in his December 1, 2009 article at [www.grist.org](http://www.grist.org), also offers an interesting and lively rebuttal to Leonard’s somewhat simplistic appraisal.

No matter what proponents and critics might say about the evils or genius of cap-and-trade or any other emissions-reduction scheme, FPL’s Ted Bilek suggests that observers keep the real problem in perspective as the effects of talks in Copenhagen ripple across the pond.

“The issue is global climate change,” stresses Bilek. “Solutions to climate change are not mutually exclusive. Just because a cap-and-trade system is implemented does not prevent research into more efficient energy usage. It does not prevent implementation of cleaner transportation systems. It does not keep people and industries from continuing to reduce waste.”

Indeed, the overall issue is climate change, not cap-and-trade. Under the best circumstances, cap-and-trade and other climate change strategies will stimulate research into more efficient energy use and promote the wise use of natural resources across the global spectrum of industrialized and developing nations.

#### References

Bilek, E.M. (Ted); Becker, Peter; McAbee, Tim. 2009. CVal: A spreadsheet tool to evaluate the direct benefits and costs of carbon sequestration contracts for managed forests. General Technical Report FPL–GTR–180. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory. 27 p.

# CELEBRATING A CENTURY OF INNOVATION

## FOREST PRODUCTS LABORATORY, 1910–2010

For 100 years, the Forest Products Laboratory (FPL) has worked to develop products that improve the quality of life for all Americans while sustaining the health of our Nation's forests. Reflecting on the past century of research reveals breakthroughs that heavily impacted society, from the way people use wood products in their daily lives to the way we manage America's forest resources. Here are but a few examples of research success that have established FPL as a world leader in wood science and use, and inspire FPL researchers to continue this work into the next century with a renewed dedication to conservation.

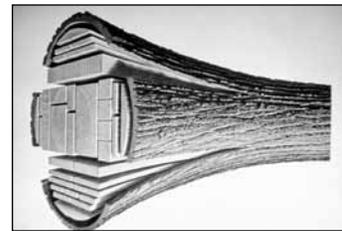


### WOOD PRESERVATIVES

One of the first tasks of FPL scientists was to develop preservatives to lengthen the service life of railroad ties. Building and repairing tracks took a heavy toll on America's forest resource, and wood preservatives were vital to slow the replacement of rotting ties and ease the demand for timber harvesting.

### SAWING TECHNOLOGY

A mathematical sawing model called Best Opening Face was developed in the 1970s to help sawmills maximize lumber recovered from small logs. This technology aided in the automation of softwood sawmills and helped prevent an industry collapse when mills shifted from processing old-growth to second-growth timber. Today, most dimension lumber in the United States and around the world is manufactured using this technology, which saves roughly a billion board feet of lumber annually.

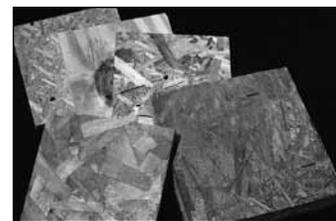


### PACKAGING

Packaging research at FPL was spurred by a heavy demand for shipping materials during World Wars I and II. Researchers redesigned boxes, crates, and paper cartons to provide better protection and use less space, and developed packaging manuals and training courses for thousands of military personnel. FPL was also instrumental in developing the pulping process that has now been used for decades to produce corrugating medium, the wavy fluting material in corrugated boxes.

### ENGINEERED WOOD PRODUCTS

The FPL played a role in the development of many common building products in use today, including oriented strandboard, I-joists, trusses, and glued-laminated beams. These products help extend forest resources and improve forest health by putting low-value or underutilized materials to valuable use.

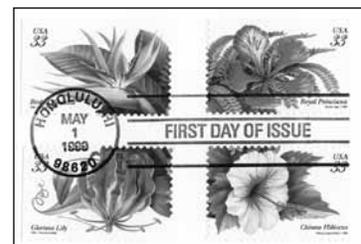


### HOUSING

In 1937, the first all-wood prefabricated house was built at FPL. Eleanor Roosevelt attended the dedication and was excited by the possibilities the FPL-designed housing system presented. Shortly thereafter, more than 300,000 prefabricated homes were needed to house war workers at production centers.

### IMPROVED RECYCLING PROCESSES

Recycling research at FPL encourages the use of waste materials. Work with the U.S. Postal Service resulted in the development of self-stick stamps that don't gum up recycling equipment. An additional 20 million tons of waste paper can be recycled each year thanks to this breakthrough.



# ASK FPL

## Questions?

Contact us at  
Forest Products Laboratory,  
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TDD: (608) 231-9544  
FAX: (608) 231-9592



WE GET THOUSANDS OF QUESTIONS EACH YEAR ABOUT WOOD AND PAPER PRODUCTS. IN EACH ISSUE OF NEWSLINE WE PRINT WHAT WE FEEL ARE SOME OF THE BEST QUESTIONS. HERE IS ONE WE RECENTLY RECEIVED.

I AM BUILDING A CABIN AND CONSIDERING HEATING IT WITH EITHER PROPANE, WOOD, OR WOOD PELLETS. IS THERE AN EASY WAY TO CALCULATE WHICH FUEL WOULD BE MOST COST EFFECTIVE?

The Fuel Value Calculator is a tool that can be used to compare typical unit costs of various fuels. It is available as an easy-to-use spreadsheet at

[http://www.fpl.fs.fed.us/products/publications/specific\\_pub.php?posting\\_id=17526](http://www.fpl.fs.fed.us/products/publications/specific_pub.php?posting_id=17526)

The spreadsheet allows you to select a fuel source and enter the cost of that fuel per unit. The calculator then computes the cost of other fuel sources for generating the same amount of heat. Here's an example: Let's say you can purchase propane at \$2.50 per gallon. Enter that information into the spreadsheet and the Fuel Value Calculator says you can afford to pay \$532 per cord of firewood or \$473 per ton of wood pellets for equal heating capabilities. If you can purchase a cord of firewood for \$125, you could generate more than four times the amount of heat than with propane at a comparable cost.

Remember, though, that the cost of the fuel alone isn't the only factor in determining your fuel of choice. For example, even if firewood were calculated as the least costly fuel, you should also consider the time and effort required for processing and handling the material. Wood pellets require less handling but still more than fossil fuels do. Also, fossil fuel heating systems typically cost less, sometimes significantly so, than firewood and wood pellet furnaces.

The Fuel Value Calculator was originally developed by A.B. Curtis, Jr., of the U.S. Forest Service's Southern Region. The sixth edition has been published in cooperation with the Forest Products Laboratory; the Pellet Fuels Institute in Arlington, Virginia; and the National Association of RC&D Councils. Printed copies of the calculator can be obtained by calling (608) 231-9200.

## U.S. FOREST SERVICE AND COLLEGE OF MENOMINEE NATION SIGN PARTNERSHIP AGREEMENT

Four units of the U.S. Forest Service signed a second 5-year Memorandum of Understanding (MOU) with the College of Menominee Nation (CMN) in Keshena, Wisconsin, on November 13, 2009.

The agreement pledges the Forest Service and the CMN "to cooperate in synthesizing best practices of forest management, ecology, utilization and Native American expertise and applying this knowledge to sustainable forestry practices and sustainable development."

The formal partnership between the Forest Service and the CMN dates back to 2003 when the first MOU was signed to facilitate the development of the Center for First Americans Forestlands, an educational research center focused on sustainable forestry practices and sustainable forest products utilization on American Indian forestlands.

The 2009 MOU continues to focus partnership projects on education, research, technical assistance, and Indigenous wisdom for sustainable forestry and sustainable forest products. It also expands the partnership to focus on cross-boundary natural and cultural resource management, to expand the engagement of tribal communities in forest management, and to recruit a diverse and skilled workforce for the tribes and the Forest Service.



**Forest Products Laboratory Director Chris Risbrudt and College of Menominee Nation President Dr. Verna Fowler at the MOU signing ceremony.**

The four Forest Service units represented in the MOU include the Forest Products Laboratory, Northern Research Station, Eastern Region of the National Forest System, and Northeast Area State and Private Forestry. The CMN serves more than 600 undergraduate and technical/trade students on campuses in Keshena and Green Bay, Wisconsin.

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