



Forest Products Laboratory's

Newsline

2011
SUMMER

Study Suggests Deforestation Not Correlated with Industrial Roundwood Harvest

By Rebecca Wallace, Public Affairs Specialist

Researchers at the USDA Forest Service, Forest Products Laboratory (FPL), have determined that the lowest rates of deforestation and net forest carbon emissions (change in forest stock) occur in global regions with the highest rates of industrial wood harvest and forest product output. In turn, global regions with the highest rates of deforestation and forest carbon emissions rank lowest in industrial roundwood harvest and forest product output.

This seemingly contradictory conclusion was made by FPL Research Forester Peter Ince in the recently published book *Sustainable Development in the Forest Products Industry*.

“The historical data we examined in this study support the hypothesis that an economically vibrant industrial forest products sector has been key to forest policies and forestry practices that support sustainable timber supply and demand,” says Ince.

Ince explains that deforestation refers to the permanent removal of forests, and does not include selective harvesting or forests that are harvested and subsequently replanted. True deforestation commonly occurs based on simple economics.

If a forest is providing only low-value wood, such as fuelwood to heat homes or cook meals, there is less incentive for sustainable management. Such lands are also likely to be converted into a more profitable venture, such as agriculture, grazing, or development. These activities, rather than industrial wood harvest, appear to be more directly correlated with deforestation in South America, Africa, and parts of South Asia.

If, on the other hand, forests are providing wood for high-value industrial products, such as sawlogs, veneer logs, or pulpwood, deforestation is actually averted. In North America, Europe, and parts of Asia, the revenue brought in by such forests provides a financial incentive to keep those

– Continued on page 6 –



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In this issue

Upcoming Events	2
Wood You Believe?	2
Earth Day 2011	3
Celebrate Forests	4
FPL Director Retires	4
Historic Photo Highlight	6
Wood Wise	7
Researchers Patent Method	7
Join FPL on Twitter	7



Upcoming Events

Forest Products Society 65th International Convention

June 19–21, 2011, Doubletree Hotel Lloyd Center,
Portland, Oregon, USA

The International Convention is the premier event for professionals in the forest products field. Convened annually by the Forest Products Society, the International Convention brings together hundreds of scientists, design professionals, managers, decision-makers, and others from academia, government, non-profit, and private industry sectors to discuss the state of forest products research and learn about innovations in the field.

Attended by Forest Products Society members and non-members, the annual International Convention is the perfect venue to build new professional connections with top researchers from around the world and reconnect with colleagues and friends in the field. With over 170 technical presentations and 120 scientific posters, the International Convention is the place to learn about the latest developments in forest products research and application. For more conference information visit www.forestprod.org/ic65/.

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www.fpl.fs.fed.us

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Wood You Believe?



- Forests are home to 80% of our terrestrial biodiversity.
- Forests cover 31% of total land area.
- The livelihoods of over 1.6 billion people depend on forests.
- Forests are home to 300 million people around the world.

<http://www.un.org/en/events/iyof2011/>



Earth Day Open House

The Forest Products Laboratory (FPL) welcomed more than 1,000 visitors to an Open House on April 22, 2011. Attendees learned about FPL research first-hand from our scientists and had the opportunity to tour the Centennial Research Facility, Research Demonstration House, and Carriage House.

Activities for kids included papermaking, fun with bugs, and a wood "magic show." Young visitors also got to explore with microscopes and take on an engineering project. The event also featured free wood identification services and two showings of the Aldo Leopold documentary "Green Fire."

FPL retiree John W. Koning, Jr., was on hand to sign copies of his new book, *Forest Products Laboratory, 1910–2010: Celebrating a Century of Accomplishments*. Thanks to everyone who contributed and attended to make FPL's Earth Day Open House a success!





good time to retire, this feels like the right time because FPL seems well-positioned to move forward.”

Risbrudt came to FPL with an extensive background in planning and management, both at Forest Service headquarters in Washington, D.C., and in the field. He was also familiar with FPL, having begun his Forest Service career as a research forester in 1978.

After graduation from the University of Minnesota in 1972, he served in the Peace Corps as a forest planner in Morocco. After returning to the United States, he attended Michigan State University, where he earned a master’s degree in forest administration and a Ph.D. in forest economics.

In 1980 Risbrudt was assigned to the Forest Service’s Washington, D.C., office as an economist with State and Private Forestry staff. He then served as a research project leader at the North Central Forest Experiment Station in St. Paul, Minn., from 1983 to 1985, when he returned to Washington as director of Policy Analysis. He later was named deputy regional forester for the Forest Service’s Northern Region, headquartered in Missoula, Mont.

Risbrudt returned to Washington as director of Ecosystem Management in 1995. He was named director of Strategic Planning and Resource Assessment in 2001, and later that year, acting deputy chief, Programs and Legislation. He was also designated to assist the transition for the new administration.

Risbrudt’s career is marked by many accomplishments. Perhaps the most notable at FPL is the new Centennial



“The past 10 years at FPL have been among the most rewarding of my career.”
Chris Risbrudt

Research Facility (CRF), a dynamic 87,000-square-foot facility designed to consolidate research activities and allow for maximum collaboration between scientists and with outside partners. Risbrudt was also instrumental in developing new legislation that allows private start-ups or other entities to rent space and equipment at FPL, pilot-test new processes, and then sell any resulting products. His success in garnering support for this facility and for the new legislation is a testament to Risbrudt’s vision for the Forest Products Laboratory and unwavering belief in the Laboratory’s mission.

Developing the Natural Resource Information System (NRIS), a collection of databases that contain biological, social, and economic information, is also a stand-out achievement for Risbrudt. He and other colleagues consolidated the contents of 600 databases into just six that now make up the NRIS, a vital tool for forest planning and other analyses in the National Forest System.

In 2004, Risbrudt’s efforts and achievements were recognized when he was named Laboratory Director of the Year by the Federal Laboratory Consortium for Technology Transfer.

The Forest Service Chief and Deputy Chiefs are responsible for selecting the director of the Forest Products Laboratory. There has been no announcement on Risbrudt’s replacement.



lands forested instead of converting them to other uses. Additionally, demands for high-value forest products provide policy incentives to support sustainable forest management.

These findings are significant when looking at forest management not only in terms of sustainable timber supply and demand, but also from a climate change perspective. Global deforestation is a major contributor to carbon emissions and greenhouse gases, whereas forest management and growth are major factors in removal of carbon dioxide from the atmosphere.

Based on his observations, Ince concludes that the future direction of forest products technology can have a large influence on sustainability of forests and forest management.

“If future technology and wood demands generate sufficiently high values for timber as a raw material, then historical experience suggests that forests and forest management will thrive,” says Ince. “If the value of timber is cheapened, however, through low-value use or insufficient forest product technology development, then forests may face significant challenges regarding their future sustainability.”

The future direction of forest products technology can have a large influence on sustainability of forests and forest management

Ince and his colleagues compared global data on timber harvest by region with data on changes in forest area and net forest carbon emissions (change in forest stock). The team used timber harvest and inventory data from the United Nations Food and Agriculture Organization’s Global Forest Resources Assessment (2005) along with data on forest carbon emissions from the Intergovernmental Panel on Climate Change. Ince’s chapter is available online at www.treesearch.fs.fed.us/pubs/37326



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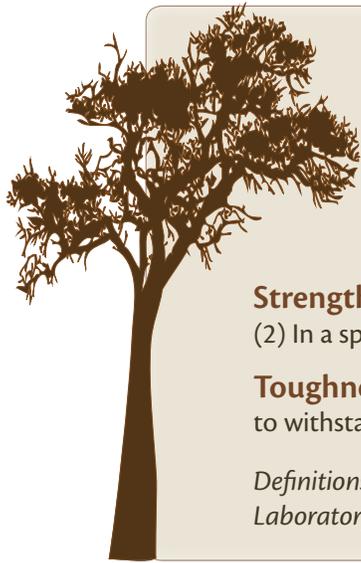
FPL Over The Years—*Historic Photo Highlight*

From 1942 to 1945, 14,972 people were trained through packaging courses conducted at FPL.

Pictured is one of many classes held at the FPL to train packaging personnel for the military. Trainings were held under the direction of George A. Garratt, Dean of the Yale University School of Forestry, who was on leave to be chief of FPL’s Division of Technical Service Training.



Wood Wise—Terms from the World of Wood



Density: As applied to wood of generally normal cellular form, density is the mass per unit volume of a given specimen. It is expressed as either pounds per cubic foot, kilograms per cubic meter, or grams per cubic centimeter.

Hardness: A property that enables wood to resist indentation. The Janka hardness test, for example, measures the load required to embed a 0.444-inch steel ball to one-half its diameter. One example of an extremely hard wood is *Lignumvitae* (*Guaiaecum* spp.).

Strength: (1) The ability of a beam or other structural member to sustain stress without failure. (2) In a specific mode of test, the maximum stress sustained by a member loaded to failure.

Toughness: A quality permitting a wood material to absorb a relatively large amount of energy, to withstand repeated shocks, and to undergo considerable deformation before breaking.

Definitions taken from the 2010 Wood Handbook—Wood as an Engineering Material (Forest Products Laboratory, General Technical Report 190, http://www.fpl.fs.fed.us/documnts/fplgtr/fpl_gtr190.pdf).

Researchers Patent Method for Measuring Anatomical Properties of Trees

A patent titled “Method for Characterizing the Density and Cross-Section Morphology of Trees” was recently awarded to FPL researchers David Vahey, Junyong Zhu, and Tim Scott. The invention is a method for reliably measuring the anatomical properties of trees and, in particular, characterizing their density and cross-section morphology.

This new method could aid national forest conservation and restoration efforts that require the selective thinning of small-diameter trees. Small-diameter trees are not conventionally accepted as a reliable source of fiber by the pulp and

paper industry because the industry lacks knowledge on how the wood properties differ from traditional pulpwood. This invention can address that lack of knowledge and help find high-value, large-volume uses for small-diameter trees, which will ultimately offset the high cost of forest thinning operations.

This invention is solely owned by the USDA Forest Service. The Forest Service is currently looking for licensees and/or collaborators for this technology. Further information can be found at <http://www.faqs.org/patents/app/20080285810>

Join FPL on Twitter!



fsWoodLab

Follow us for the word on wood!

The Forest Products Lab is now on Twitter! Social media is a great way to share all the latest FPL news and information with partners, colleagues, and the public. We regularly tweet about research, events, tips, and interesting FPL facts. We also pass along wood- and forest-related information from our network of friends.

<http://www.twitter.com/fsWoodLab>.



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In this issue

Newsline

Study Suggests Deforestation Not Correlated with Industrial Roundwood Harvest.....	1
Upcoming Events.....	2
Wood You Believe?	2
Earth Day Open House.....	3
Celebrate Forests, Celebrate Life: <i>The 2011 International Year of Forests</i>	4
Forest Products Laboratory Director Chris Risbrudt Retires	4
FPL Over The Years— <i>Historic Photo Highlight</i>	6
Wood Wise— <i>Terms from the World of Wood</i>	7
Researchers Patent Method for Measuring Anatomical Properties of Trees	7
Join FPL on Twitter!	7

