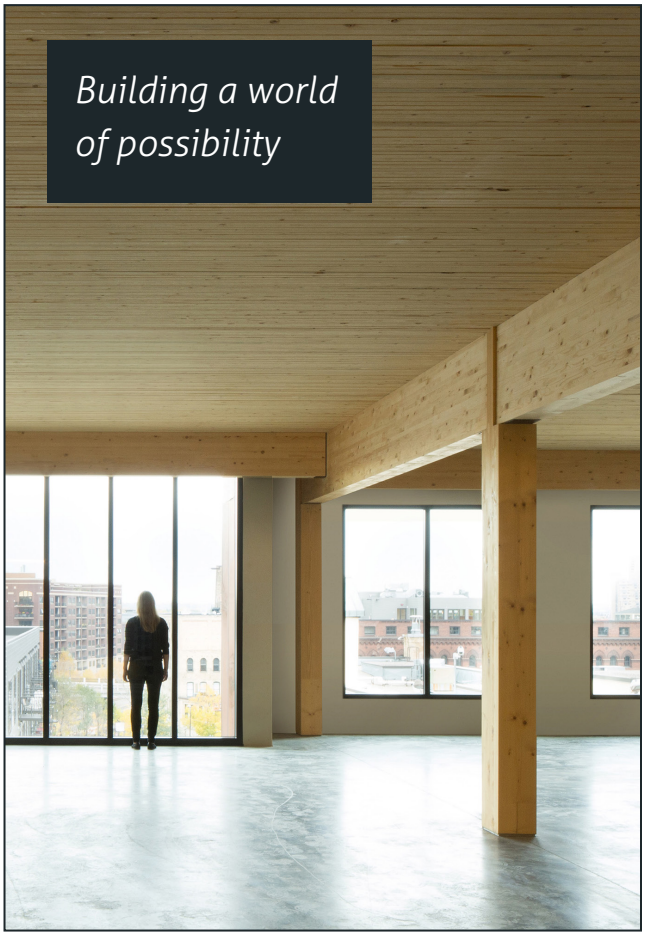
USDA Forest Service

Forest Products Laboratory



Our Mission

To promote healthy forests and forest-based economies through the efficient, sustainable use of our wood resources

The Forest Products Laboratory (FPL), established by Gifford Pinchot in 1910, is the national forest products research lab of the USDA Forest Service. By producing high-quality, science-based innovation, FPL research quite literally improves the safety, comfort, and well-being of every American, every day.

FPL research stimulates economic resilience in many sectors, including bioenergy, housing, tourism, and packaging and paper, all while helping remove barriers for innovative ideas to reach the marketplace.

FPL research benefits virtually every sector of American society

- Creates jobs
- Boosts rural economies
- Strengthens the housing market
- Promotes forest health
- Reduces wildfire risk

The long-term health of our Nation's forests depends on sound conservation practices, including wise utilization. FPL uses science and technology to conserve and extend our Nation's forest resources. Efficient use of forest resources is a forest management tool that can improve resilience to natural disturbances such as wildfires, invasive species, and a changing climate.

Many everyday products and processes have been improved through FPL research, such as building products (structural and composite), housing, paper, bridges, adhesives, packaging, recycling, biofuels, and wood preservatives, to name a few. Historically, FPL contributed to great improvements in areas such as wood finishes, sawing and drying techniques, prefabricated housing, lumber grading, and many more.

Our two research areas and nine work units

Wood Products Research

- Building and Fire Sciences
- Durability and Wood Protection Research
- Economics and Statistics Research
- Engineered Properties of Wood, Wood Based Materials, and Structures
- Wood Anatomy and Forest Mycology in a Changing Global Environment

Wood, Fiber, and Composites Research

- Engineered Composites Science
- Fiber and Chemical Sciences Research
- Institute for Microbial and Biochemical Technology
- Performance Enhanced Biopolymers

Forest Products Laboratory

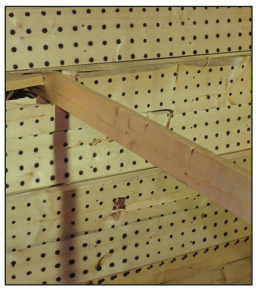
Public Service through Science

Wood as a Green Building Material

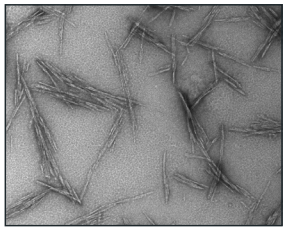
Use of wood in structures provides substantial environmental benefits, incentives for private landowners to maintain forest land, and a critical source of jobs in rural America. New product and technology research includes improved cross-lamination techniques, nanocellulose technology, and increased use and valuation of small-diameter trees and trees killed by insects, drought, and disease.

Quality of Life

From studies on fundamental mechanical properties for building codes to improved "tornado safe room" design, research at FPL continues to enhance the physical and economic well-being of the American public. Innovative FPL-led research funded by Major League Baseball reduced the incidence of shattered baseball bats by 50%, making baseball games safer for players and fans. FPL continually demonstrates improved, practical uses for wood products, making advancements that improve quality of life—for baseball fans and all Americans.



Wood-Based Nanotechnology: High-Value Markets from Low-Value Wood



Nanocellulose holds revolutionary potential for the forest products sector and is the economic key to accelerated forest restoration. Nanocellulose can be a cost-effective substitute for nonrenewable resources in all manufacturing sectors. A major problem in western forest management is that the trees needing to be removed to improve forest health are too small for traditional dimension lumber and panel products. As a product that can be made from small-diameter trees, cellulose nanomaterials increase the value of "low value" wood, helping to decrease the cost of forest restoration projects and creating new revenue streams for forest-based product manufacturers.

Improving Recycling Technologies

FPL researchers worked with the U.S. Postal Service to develop self-adhesive stamps that don't interfere with the recycling process. This technology was adopted by the entire label industry, and labels certified as recycling compatible allow an additional 20 million tons of waste paper to be recycled each year.

Biofuels from Wood

Working toward alternatives to petroleum-based fuels, FPL researchers developed a method to pretreat woody biomass for conversion to aviation fuel. Part of the Northwest Advanced Renewables Alliance, the work aims to address the urgent need for a domestic biofuel alternative for U.S. commercial and military air fleets. Also, with partners in industry and academia, FPL is working to develop torrefaction of wood as a drop-in replacement for coal that can help utilities meet the discharge targets of the clean air act and EPA's Clean Power Plan.

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