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US Forest Products Industry Emissions Detailed in Report

MADISON, Wis.— The first comprehensive evaluation of greenhouse gas impacts from the United States forest products industry has been released in an *Environmental Science and Technology* article titled “Greenhouse Gas and Carbon Profile of the U.S. Forest Products Industry Value Chain.”

As a joint effort of the USDA Forest Service’s Forest Products Laboratory (FPL) and Northern Research Station (NRS) office at Durham, New Hampshire, and the National Council for Air and Stream Improvement, Inc. (NCASI), in Raleigh, North Carolina, a greenhouse gas and carbon accounting profile was developed for the U.S. forest products industry value chain for 1990 and 2005.

Researchers estimated net atmospheric fluxes of CO₂ and other greenhouse gases using a variety of methods and data sources. Major greenhouse gas emission sources include direct and indirect (from purchased electricity generation) emissions from manufacturing and methane emissions from landfilled products.

According to FPL research forester Ken Skog, the forest products sector differs from other industries because factors such as forest carbon sequestration, wood and paper product carbon storage, and wood and paper product end-of-life emissions must be studied along with direct emissions to obtain a more accurate estimate of the industry’s impact.

“Although the forest products industry emits greenhouse gases, it also influences management of forests which sequester carbon and it generates wood and paper products that continue to store carbon,” said Skog. “For example, wood products store a significant amount of carbon in wood-framed housing. In 2001, the amount of carbon stored in residential single and multi-family housing was approximately 680 million metric tons of carbon, or 2.5 billion tons CO₂-equivalent.”

The newly-published profile states that annual net additions of carbon to the stock of wood and paper products was sufficient to offset all direct emissions plus all indirect emissions associated with purchased electricity, which amounts to about one-half of the industry's total emissions, or 104 of 212 million metric tons CO₂-equivalent in 2004-2005.

Additionally, results of the study indicate that one way to improve the industry's emissions profile is to increase the use of forest products manufactured from domestically grown wood, as many of the applications provide sequestration benefits and also avoid emissions by substituting for more greenhouse gas-intensive products and fuels.

Other notable findings include that between 1990 and 2005, energy-related manufacturing emissions decreased by almost 9% even though forest products output increased by approximately 15%, demonstrating increased efficiency within the forest products sector.

Researchers also found that the stocks of carbon in forests supplying wood to the industry were stable or increasing, citing improved forest management practices, regeneration of previously harvested forest areas, and harvesting less timber than is grown as resulting in net uptake of carbon in U.S. forests each year from 1990 through 2006.

This research was conducted in support of USDA's commitment to understanding and mitigating the effects of climate change on our natural environment. The full publication is available online at <http://pubs.acs.org/doi/pdf/10.1021/es902723x> with supplemental information is available at <http://pubs.acs.org/doi/suppl/10.1021/es902723x>

The U.S. Forest Service Forest Products Laboratory was established in 1910 in Madison, Wisconsin, with the mission to conserve and extend the country's wood resources. Today, FPL's research scientists work with academic and industrial researchers and other government agencies in exploring ways to promote healthy forests and clean water, improve papermaking and recycling processes, and improve homebuilding technologies and materials. The Northern Research Station, headquartered at Newtown Square, Pennsylvania, conducts research and delivers scientific information to improve people's lives and help sustain natural resources, focusing on the 20 states of the Northeast and Midwest. NCASI is an independent, nonprofit research institute that focuses on the technical and scientific aspects of environmental topics of interest to the forest products industry.